Nortel Networks Multiservice Switch

7400/15000/20000

Component Aal1Ces

NN10600-060

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COMPONENT Aal1CircuitEmulationService (Aal1Ces)

Instance	Decimal (1..65535)
Groups	"GROUP Aal1Ces CustomerIdentifierData (CidData)" "GROUP Aal1Ces Provisioned (Prov)" "GROUP Aal1Ces OsiState (State)" "GROUP Aal1Ces Operational (Oper)" "GROUP Aal1Ces Statistics (Stats)"
Scope	Application
Description	*Aal11CircuitEmulationService/n* An *Aal1Ces* component identifies an instance of the AAL1 Circuit Emulation Service. A separate instance of this component is required for each logical channel of a port which is offering a constant bit rate service to a customer.

	Instance numbers, which are used to uniquely identify *Aal1Ces* component instances, are arbitrary.
Mib	CircuitEmulationService
Opt. Subcomp.	"COMPONENT Aal1Ces NailedUpAdaptationPoint (Nap)" "COMPONENT Aal1Ces ActiveEndPoint (Aep)" "COMPONENT Aal1Ces PassiveEndPoint (Pep)" "COMPONENT Aal1Ces Reroute"
Dyn. Subcomp.	"COMPONENT Aal1Ces LogicalConnection (LCo)" "COMPONENT Aal1Ces AtmConnection (AtmCon)" "COMPONENT Aal1Ces RerouteInfo (RerInfo)"
Common Verbs	Help List Display Add DELete

GROUP Aal1Ces CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only

	the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	CircuitEmulationService
Values	Decimal (0; 1..8191)
Default	0

GROUP Aal1Ces Provisioned (Prov)

Properties	Provisioned
Description	This group contains basic provisioning data for the AAL1 Circuit Emulation Service.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces serviceType (servType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the service type for the CES. In an ***unstructured*** service, the entire data stream at the service interface (including any framing bits which may be present) is passed across the network transparently. The unstructured service uses the Unstructured Data Transfer (UDT) mode of AAL1. In a structured service, an Nx64kbit/s fraction of the data stream at the service interface is passed across the network. Two modes of structured service are supported: ***basicStructured*** and ***casStructured***. In a ***casStructured*** service, the Channel Associated Signalling (CAS) bits are carried in a separate data

structure from the Nx64 payload. In a ***basicStructured*** service, they are not.

The structured service uses the Structured Data Transfer (SDT) mode as defined in ITU-T Recommendation I.363.1.

The ***4pDS1Aal1*** and ***4pE1Aal1*** cards can support either a combination of ***casStructured*** and ***basicStructured*** services, or ***unstructured*** services. A combination of structured (either ***casStructured*** or ***basicStructured***) and ***unstructured*** services on the same ***4pDS1Aal1*** or ***4pE1Aal1*** card is not supported.

Mib	CircuitEmulationService
Values	unstructured basicStructured casStructured
Default	unstructured

ATTRIBUTE Aal1Ces bufferSize (bufSize)

Access	Read and write
Criticality	Component
Description	On ***4pDS1Aal1*** and ***4pE1Aal1*** cards, this attribute specifies the size of the AAL1 receive segment reassembly buffer in bytes. On initialization the buffer is filled to a level determined by *cellDelayVariationTolerance.* Thereafter the buffer is emptied as TDM frames are transmitted, and is filled as ATM cells are received. If the buffer overflows, sufficient data is discarded to bring the level down to that set after initialization. The cause of a buffer overflow may be one or a combination of any of the following: cell-arrival-jitter, initialization with delayed ATM cells, or TDM clock difference or wander. On ***4pDS1Aal1*** and ***4pE1Aal1*** cards, if this attribute is ***autoConfigure***, the buffer size applied is equivalent to two times *cellDelayVariationTolerance*. A provisioned numeric value of *bufferSize* must be higher than the equivalent *cellDelayVariationTolerance*, plus an allowance of one ATM Cell for the quantization of data in cells, and an allowance, if

applicable, for the ATM overheads of structured CES.

On the ***4pDS3ChAal1***, ***4pOC3ChSmIr***, ***2pSTM1eCh*** and MSA cards, this attribute's value must be ***autoConfigure***, to acknowledge that *maximumBufferDelay* is provisioned instead of this attribute.

Setting this attribute too low allows traffic with normal CDV to cause unnecessary loss of data on the service interface. Setting this attribute too high permits the buffer to introduce an unnecessarily high propagation delay.

Mib	CircuitEmulationService
Values	Decimal (94..15651) autoConfigure
Units	bytes
Default	autoConfigure

ATTRIBUTE Aal1Ces cellLossIntegrationPeriod (lossPeriod)

Access	Read and write
Description	This attribute specifies the cell loss integration period. This period defines the interval of time (in milliseconds) for which a loss of cells condition must persist before a buffer underflow alarm is raised. A loss of cells condition occurs when the flow of cells to the AAL1 reassembly buffer stops, causing a buffer underflow or starvation condition. The operational attribute *cellLossStatus* will be set to ***loss*** when the buffer underflow alarm is raised. Value ***noLoss*** indicate it has not experienced any cell loss. The minimum value of this attribute is 10 seconds for the ***4pDS3ChAal1*** card. The value ***autoConfigure*** corresponds to a period of 10 seconds on the ***4pDS3ChAal1*** card, and 2 seconds on all other cards.
Mib	CircuitEmulationService

Values	Decimal (1000..60000) autoConfigure
Units	msec
Default	autoConfigure

ATTRIBUTE Aal1Ces interfaceName (ifName)

Access	Read and write
Criticality	Component
Description	This attribute identifies the instance of *Chan* to which an instance of *Aal1Ces* is linked.
Mib	CircuitEmulationService
Values	Link (Hardware, applicationFramerName)
Default	No default

ATTRIBUTE Aal1Ces partialFill (partFill)

Access	Read and write
Criticality	Component
Description	A significant source of delay in a structured service is the amount of time it takes to collect enough data to fill a cell. This period of time can be reduced by sending cells that are only partially filled with data (*idlePattern* octets are added to the ATM payload beyond the partial fill level). This attribute specifies the number of payload octets to fill with data. It is applicable to structured services only, and must be set to ***47*** for unstructured services. On a given AAL1 Function Processor, the maximum cell rate that can be sustained is dependent upon the combined bandwidths of the provisioned services, and (for structured services) the levels of *partialFill*. The smaller the *partialFill* level, the greater the cell rate and hence the fewer the services that can be sustained at that fill level.

	On the ***4pDS3ChAal1***, ***4pOC3ChSmIr*** and ***2pSTM1eCh*** cards, the only allowed value for this attribute is ***47***.
Mib	CircuitEmulationService
Values	Decimal (8..47)
Units	octets
Default	47

ATTRIBUTE Aal1Ces idlePattern (idlePat)

Access	Read and write
Criticality	Component
Description	This attribute sets the unused byte fill pattern when using *partialFill*. All bytes in the cell above the *partialFill* level will be set to this pattern.
Mib	CircuitEmulationService
Values	Hex (H.0..H.ff)
Default	H.7e

ATTRIBUTE Aal1Ces cellLossRecoveryPeriod (recPeriod)

Access	Read and write
Description	This attribute specifies the cell loss recovery period. This period defines the interval of time (in seconds) for which a loss of cells condition must desist before the buffer underflow alarm is cleared. The operational attribute *cellLossStatus* will be set to ***noLoss*** when the buffer underflow alarm is cleared.
Mib	CircuitEmulationService
Values	Decimal (0..60)
Units	seconds
Default	20

ATTRIBUTE Aal1Ces dummyDataByte

Access	Read and write
Criticality	Component
Description	This attribute specifies the pattern which is played out onto the service interface to maintain bit integrity when data is unavailable from the ATM network. For an unstructured service (*serviceType* is set to ***unstructured***), *dummyDataByte* must be set to ***0xFF***. On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***.
Mib	CircuitEmulationService
Values	Hex (H.0..H.ff)
Default	H.ff

ATTRIBUTE Aal1Ces maximumBufferDelay (maxBufDelay)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum delay that a Cell Delay Variation buffer is permitted to add to the egress stream. The delay in the buffer is modified in response to variation in the egress cell stream. At the point that the delay would be modified in excess of the maximum, sufficient data is discarded that the delay returns to *cellDelayVariationTolerance*. Setting this attribute too low allows traffic with normal CDV to cause unnecessary loss of data on the service interface. Setting this attribute too high permits the buffer to introduce an unnecessarily high propagation delay. If this attribute is ***autoConfigure***, the maximum delay tolerated in the buffer is two times *cellDelayVariationTolerance.* On MSA cards, “best-effort” applies on a channel with high

cellDelayVariationTolerance and low ATM bandwidth. The value applied is the same as the range limit on provisioned *maximumBufferDelay* on that channel.

On MSA cards this attribute's value is rounded up to the nearest multiple of 0.125 ms when applied to the buffer. The range is nominally 0.12 to 63.62 ms, but the upper limit may be reduced by up to 6 ms one a channel with high *cellDelayVariationTolerance* and low ATM bandwidth.

On ***4pDS1Aal1*** and ***4pE1Aal1*** cards this attribute's value is rounded up to the nearest multiple of 1 ms when applied to the buffer. The upper limit is roughly inverse- proportional to the ATM bandwidth of the channel.

On the ***4pDS3ChAal1***, ***4pOC3ChSmIr*** and ***2pSTM1eCh*** cards, this attribute's value is rounded up to the nearest multiple of 1 ms when applied to the buffer. The range is 2 to 32 ms in steps of 1 ms. Note that the *maximumBufferDelay* must be at least 1 ms greater than the *cellDelayVariationTolerance*.

Mib	CircuitEmulationService
Values	Decimal (0.01..655.00) autoConfigure
Units	msec
Default	autoConfigure

ATTRIBUTE Aal1Ces cellDelayVariationTolerance (cdvt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum time that a cell may arrive late, compared to a nominal time established at buffer initialization, without producing errors on the service interface. The nominal time of a cell's arrival is predicted according to the time interval required to transmit a cell's worth of data on the service interface.

This attribute's value is the delay that the Cell Delay Variation Tolerance buffer adds to the egress stream immediately after the buffer initializes. The buffer absorbs variation in the arrival time of cells from the network, so that a steady stream of data appears on the service interface. If the buffer underflows, due to a late cell, fill-in data is output on the service interface while the buffer re-initializes. When the buffer has re-initialized, normal data is output on the service interface and the delay in the buffer is restored to the value of this attribute.

This attribute must have a value lower than a numeric value of *maximumBufferDelay.* The relationship between this attribute and *bufferSize* is described under that attribute.

Setting this attribute too low allows traffic with normal CDV to cause unnecessary loss of data on the service interface. Setting this attribute too high imposes an unnecessarily high propagation delay on the egress stream.

On MSA cards this attribute's provisionable range is 0.01 to 31.87ms and the value applied is rounded up to the nearest multiple of 0.125ms. On ***4pOC3ChSmIr*** and ***2pSTM1eCh*** cards, this attribute's provisionable range is 1 to 31ms in steps of 1ms.

On ***4pDS1Aal1*** and ***4pE1Aal1*** cards, this attribute's provisionable range is strongly dependent on the bandwidth of the channel, and the value applied is rounded up to the nearest whole number of milliseconds, then rounded down to the equivalent number of cells.

Mib	CircuitEmulationService
Values	Decimal (0.01..655.00)
Units	msec
Default	1.00

ATTRIBUTE Aal1Ces remoteEndType (remEndType)

Access	Read and write
Criticality	Process

Description

If this attribute is set to ***ces***, then the remote end Inter Working Function (IWF) is a CES IWF as defined by the ATM Forum. This is the default value for all card types.

If this attribute is set to ***pvgExclusivePrs***, the remote end IWF is a CES IWF in a VSP (Voice Services function Processor) and the TDM channel is used as a PVG TDM service channel. Furthermore, the primary rate stream (that is, E1 or DS1 stream) that this CES uses cannot be shared with another CES with *remoteEndType* set to ***pvgExclusivePrs*** or ***pvgSharedPrs***. The Primary Rate Stream (PRS) may be shared with other *Aal1Ces* components with *remoteEndType* set to ***ces***.

If this attribute is set to ***pvgSharedPrs***, the remote end IWF is a CES IWF in a VSP FP and the TDM channel is used as a PVG TDM service channel. The PRS may be shared with other *Aal1Ces* components with *remoteEndType* set to ***pvgSharedPrs*** or ***ces***.

Mib

CircuitEmulationService

Values

ces
pvgSharedPrs
pvgExclusivePrs

Default

ces

GROUP Aal1Ces OsiState (State)

Properties

Operational

Description

This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib

CircuitEmulationService

ATTRIBUTE Aal1Ces adminState (osiAdmin)

Access

Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	CircuitEmulationService
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Aal1Ces operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

	The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	CircuitEmulationService
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Aal1Ces usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	CircuitEmulationService
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Aal1Ces availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: CircuitEmulationService

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Aal1Ces proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does

initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	CircuitEmulationService
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Aal1Ces controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: CircuitEmulationService

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Aal1Ces alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: CircuitEmulationService

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Aal1Ces standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the

	role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	CircuitEmulationService
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Aal1Ces unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	CircuitEmulationService
Values	false true
Default	false

GROUP Aal1Ces Operational (Oper)

Properties	Operational
Description	This group contains status information about the AAL1 Circuit Emulation Service.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces cellLossStatus (cellLoss)

Access	Read only
Description	This attribute is set to ***loss*** when a buffer underflow alarm is raised (see *cellLossIntegrationPeriod*). A value of ***loss*** indicates that the connection is either currently experiencing cell loss, or has experienced some cell loss in the past, possibly during connection setup. A value of ***noLoss*** indicates that the connection has not experienced any cell loss.
Mib	CircuitEmulationService
Values	noLoss loss
Default	noLoss

ATTRIBUTE Aal1Ces aal1LayerLossStatus (aal1Loss)

Access	Read only
Description	This attribute is set to ***loss*** when an AAL1 layer alarm is raised, and ***noLoss*** when it is clear. This attribute and the AAL1 layer alarm are not supported by the ***4pDS3ChAal1***, ***4pOC3ChSmIr*** and ***2pSTM1eCh*** cards. Thus, this attribute does not appear for these two cards.
Mib	CircuitEmulationService
Values	noLoss loss
Default	noLoss

ATTRIBUTE Aal1Ces connectionStatus (connStatus)

Access	Read only
Description	This attribute indicates whether a service is non-operational because of a problem with the service interface side of the service

(in which case, it is set to ***channelNotReady***) or because of a problem with the ATM side of the service (in which case, it is set to ***atmNotConfigured*** or ***atmNotReady***).

When this attribute is set to ***channelNotReady***, it is an indication that the corresponding *Chan* component (as defined by the attribute *interfaceName*) or the *Chan* component's parent port component (*Lp/n Ds1/m* or *Lp/n E1/m*) is locked.

When this attribute is set to ***atmNotConfigured***, it is an indication that no sub-component has been provisioned, and thus no ATM connection has been configured for the service.

When this attribute is set to ***atmNotReady***, it is an indication that the ATM connection with which the service is associated (as defined by a sub-component) has been lost or that it is currently unable to carry CES data.

This attribute is set to ***connected*** when a service is operational (that is, the OSI attribute *operationalState* is ***enabled***.)

Mib	CircuitEmulationService
Values	connected channelNotReady atmNotReady atmNotConfigured
Default	channelNotReady

GROUP Aal1Ces Statistics (Stats)

Properties	Operational
Description	This group contains statistical data for an AAL1 Circuit Emulation Service.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces cellsTransmitted (txCells)

Access	Read only

Description	This attribute counts the total number of cells transmitted to the backplane (ingress direction). This includes cells containing CBR data, trunk conditioning cells (structured services), and unframed AIS cells (unstructured services). The counter wraps when the maximum value is exceeded.
Mib	CircuitEmulationService
Values	Long Integer
Default	No default

ATTRIBUTE Aal1Ces cellsReceived (rxCells)

Access	Read only
Description	This attribute counts the total number of cells received from the backplane (egress direction). This includes CBR user data cells, cells with AAL1 header errors (correctable and non-correctable) and cells with AAL1 sequencing errors. The counter wraps when the maximum value is exceeded.
Mib	CircuitEmulationService
Values	Long Integer
Default	No default

ATTRIBUTE Aal1Ces lostCells (lostCells)

Access	Read only
Description	This attribute counts the number of cells declared as never received by the AAL1 protocol layer. The counter wraps when the maximum value is exceeded.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Aal1Ces bufferUnderflows (uFlows)

Access	Read only

Description	This attribute counts the number of times the AAL1 reassembly buffer underflows. In the case of a continuous buffer starvation, a single buffer underflow event will be counted. The counter wraps when the maximum value is exceeded.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Aal1Ces bufferOverflows (oFlows)

Access	Read only
Description	This attribute counts the number of times the AAL1 reassembly buffer overflows. Buffer overflows occur when AAL1 cells arrive at a rate above that which is expected. Occurrences of this condition may be reduced by increasing the value of the attribute *bufferSize* or *maximumBufferDelay*. The buffer overflow counter wraps when the maximum value is exceeded.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Aal1Ces reassembledCells (reassCells)

Access	Read only
Description	This attribute counts the number of received cells whose payload has been played out to the service interface. The counter wraps when the maximum value is exceeded.
Mib	CircuitEmulationService
Values	Long Integer
Default	No default

ATTRIBUTE Aal1Ces headerErrors (hdrErrors)

Access	Read only

Description	This attribute counts the number of cells received with AAL1 header errors. The counter wraps when the maximum value is exceeded.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Aal1Ces pointerReframes (ptrReframes)

Access	Read only
Description	This attribute counts the number of times that the AAL1 reassembly unit found an SDT pointer where it was not expected to be, and as a result had to reacquire it. Errors of this kind can occur because of problems at the far end. This attribute is meaningful for structured services only, and will be 0 for unstructured services. This counter wraps when the maximum value is exceeded.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Aal1Ces pointerParityErrors (ptrParityErrors)

Access	Read only
Description	This attribute counts the number of times that the AAL1 reassembly unit detects a parity check failure at the point where an SDT pointer is expected. Errors of this kind can occur because of problems at the far end. This attribute is meaningful for structured services only, and will be 0 for unstructured services. This counter wraps when the maximum value is exceeded.
Mib	CircuitEmulationService

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Aal1Ces aal1SequenceErrors (seqErrors)

Access	Read only
Description	This attribute counts the number of times that the sequence number of an incoming AAL1 Type 1 SAR-PDU gets out of synchronization, as defined by ITU-T Recommendation I.363.1. This counter wraps when the maximum value is exceeded.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Aal1Ces misinsertedCells (misinsertCells)

Access	Read only
Description	This attribute counts the number of AAL1 sequence violations which the AAL convergence sublayer interprets as misinserted cells, as defined by ITU-T I.363.1. This counter wraps when the maximum value is exceeded.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	0

COMPONENT Aal1Ces NailedUpAdaptationPoint (Nap)

Groups	"GROUP Aal1Ces Nap Provisioned (Prov)"
Scope	Application
Description	*Aal1Ces/n NailedUpAdaptationPoint* A *NailedUpAdaptationPoint* is a nailed-up point which straddles the CBR/ATM domains and which is associated with the

adaptation of CBR data to/from ATM cells.

If a *NailedUpAdaptationPoint* component is provisioned under an *Aal1Ces* component, no other components may be provisioned under the same *Aal1Ces* component.

Mib	CircuitEmulationService
Common Verbs	Help List Display Add DELete

GROUP Aal1Ces Nap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *NailedUpAdaptationPoint* component.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces Nap atmConnection (ac)

Access	Read and write
Criticality	Component
Description	This attribute specifies the identity of the component to which the *NailedUpAdaptationPoint* is linked. This is an *AtmIf Vcc NailedUpEndPoint or an AtmIf Vpt Vcc NailedUpEndPoint* (the AAL1 cells are transported off the switch over an ATM UNI, where they are routed to the appropriate AAL1 entity at the other end by the ATM bearer service).
Mib	CircuitEmulationService
Values	Link (Service, applicationName)
Default	No default

COMPONENT Aal1Ces ActiveEndPoint (Aep)

Groups	"GROUP Aal1Ces Aep ProvisionedEndPointAddresses (ProvEndPointAddr)" "GROUP Aal1Ces Aep Provisioned (Prov)" "GROUP Aal1Ces Aep EndPointAddressOper (EpOper)" "GROUP Aal1Ces Aep ActiveEndPointOper (Out)"
Scope	Application
Description	*Aal1Ces/n ActiveEndPoint* The *ActiveEndPoint* component attempts to set up a switched virtual circuit automatically between two *Aal1Ces* components. The *ActiveEndPoint* component will make connection setup attempts periodically whenever a connection has not been established. The component will cease connection setup attempts after a number of consecutive failed attempts, as specified by the *retryLimit* attribute. The *ActiveEndPoint* component may also accept an incoming setup request if a connection is not already established. To be accepted, an incoming connection setup request must have originated from *remoteAddress*. Additionally, either connection attempts must have been ceased due to *retryLimit* consecutive failures, or the *localAddress* of the incoming connection setup request must be smaller than the *remoteAddress* of the request. If an *ActiveEndPoint* component is provisioned under an *Aal1Ces* component, no other components may be provisioned under the same *Aal1Ces* component.
Mib	CircuitEmulationService
Common Verbs	Help List Display Add DELete

VERB Restart Aal1Ces Aep

Impact	Service
Description	This command is used to restart the automatic connections procedure. The operational attributes *retryTimerValue* and *retryFailures* will also be reset. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed, as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection will first be released. This command will fail if the *channel* associated with the parent *Aal1Ces* component is disabled, or if *svcStatus* has the value ***initialising***. If *svcStatus* has the value ***failed***, this command may fail.

GROUP Aal1Ces Aep ProvisionedEndPointAddresses (ProvEndPointAddr)

Properties	Provisioned
Description	This group contains NSAP address provisioning data for components using switched virtual circuits.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces Aep expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address prefix for an incoming connection setup request. If *expectedRemoteAddress* is not empty, only matching connections will be considered for acceptance. If *expectedRemoteAddress* is 40 characters long, the remote address must match exactly to be accepted. If *expectedRemoteAddress* is less than 40 characters long, the remote address must begin with

expectedRemoteAddress to be accepted.

If *expectedRemoteAddress* is empty, the component will process connection requests from any remote address.

Mib	CircuitEmulationService
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Aal1Ces Aep localAddress (localAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the local NSAP address.

If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on *nodePrefix* will be provided.

If *ModuleData nodePrefix* has not been provisioned and one or more alternate switch prefixes (the *alternatePorsPrefixes* attribute of the *ModuleData* component) have been provisioned, a default value for *localAddress* based on the first provisioned *alternatePorsPrefix* value will be provided.

If no switch prefixes have been provisioned, *localAddress* will default to an empty string. To obtain a valid default *localAddress* in this case, either or both of the *ModuleData nodePrefix* and *ModuleData alternatePorsPrefixes* attributes must be provisioned, and this end point component must then be deleted and re-added.

Mib	CircuitEmulationService
Values	String (40, ASCII)
Default	No default

GROUP Aal1Ces Aep Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisioning data specific to the *ActiveEndPoint* component.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces Aep addressToCall (addrToCall)

Access	Read and write
Criticality	Component
Description	This attribute specifies the remote NSAP address which this *ActiveEndPoint* will call.
Mib	CircuitEmulationService
Values	String (40, ASCII)
Default	No default

ATTRIBUTE Aal1Ces Aep routingOption (routing)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of routing to use for establishing the connection: The ***4pDS3ChAal1***, ***4pOC3ChsmIr*** and ***2pSTM1eCh*** cards accept only ***atmOnly***. Multi-Service Access cards accept all four options and have a default value of ***porsOnly***. All other CES cards accept only ***porsOnly***. ***porsOnly*** means that only the Path Oriented Routing System may be used in establishing a connection. ***atmOnly*** means that only the native ATM Routing may be used in establishing a connection. ***porsFirst*** means that the switch tries to establish a connection using the Path Oriented Routing System first, and, if the connection cannot be established, it tries native ATM Routing instead.

	atmFirst means that the switch tries to establish a connection using native ATM Routing first, and, if the connection cannot be established, it tries the Path Oriented Routing System instead.
Mib	CircuitEmulationService
Values	porsOnly atmOnly porsFirst atmFirst
Default	No default

ATTRIBUTE Aal1Ces Aep profile (profile)

Access	Read and write
Criticality	Component
Description	This attribute specifies the PORS routing profile to use for this connection. If *profile* is empty, PORS will provide a default profile.
Mib	CircuitEmulationService
Values	Link (Service, users)
Default	No default

ATTRIBUTE Aal1Ces Aep firstRetryInterval (int)

Access	Read and write
Criticality	Component
Description	This attribute specifies the time to wait, in seconds, before attempting to establish the connection after the first failed attempt. The time to wait between subsequent call attempts will generally differ due to a backoff scheme.
Mib	CircuitEmulationService
Values	Decimal (1..3600)

Units	seconds
Default	10

ATTRIBUTE Aal1Ces Aep retryLimit (limit)

Access	Read and write
Criticality	Component
Description	*retryLimit* specifies the maximum number of consecutive unsuccessful connection setup attempts that may be made before further attempts are abandoned. If this limit is reached, the *Restart* verb may be used to restart connection attempts. If *retryLimit* is ***0***, there is no limit; attempts will continue indefinitely until a successful connection is established.
Mib	CircuitEmulationService
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Aal1Ces Aep activeEndPointType (type)

Access	Read and write
Criticality	Component
Description	*activeEndPointType* specifies the type of end point: ***svc*** or ***softPvc***. The default is ***svc***. When *activeEndPointType* is ***svc***, *calledVpiVci* is not relevant. When *activeEndPointType* is ***softPVC***, *routingOption* must be ***atmOnly***, and *profile* is not relevant.
Mib	CircuitEmulationService
Values	svc softPVC
Default	svc

ATTRIBUTE Aal1Ces Aep calledVpiVci (vc)

Access	Read and write
Criticality	Component
Description	*calledVpiVci* specifies the identity of the PVC at the remote ATM node on which the softPVC connection terminates. *calledVpiVci* is relevant only when *activeEndPointType* is set to ***softPVC***. The default value is ***0.1***
Mib	CircuitEmulationService
Values	Integer Sequence (0..4095; 1..65535)
Default	No default

GROUP Aal1Ces Aep EndPointAddressOper (EpOper)

Properties	Operational
Description	This group contains general operational attributes for components using switched virtual circuits.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces Aep remoteAddress (remoteAddr)

Access	Read only
Criticality	Component
Description	*remoteAddress* is the address of the remote end point. If a connection is currently established, *remoteAddress* will contain the address of the remote end point. If a connection is not established, *remoteAddress* will be ***Unknown***.
Mib	CircuitEmulationService
Values	String (7..40, ASCII)

Default	No default

ATTRIBUTE Aal1Ces Aep lastTearDownCause (cause)

Access	Read only
Description	*lastTearDownCause* indicates the cause of the last connection tear down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	CircuitEmulationService
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Aal1Ces Aep lastTearDownDiagnostic (diag)

Access	Read only
Description	*lastTearDownDiagnostic* provides a diagnostic to supplement the *lastTearDownCause* attribute.
Mib	CircuitEmulationService
Values	String (0..8, ASCII)
Default	No default

GROUP Aal1Ces Aep ActiveEndPointOper (Out)

Properties	Operational
Description	This group contains status information about the AAL1 Circuit Emulation Service *ActiveEndPoint* component.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces Aep svcStatus (status)

Access	Read only
Description	*svcStatus* indicates the status of the incoming and outgoing connections.

When this attribute has the value ***initialising***, it indicates that the component is initialising when first created; a connection has not been established, and no incoming setup requests will be processed.

When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests will be processed.

When this attribute has the value ***connected***, it indicates that a connection has been established.

When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* consecutive connection setup attempts have failed, and the connection procedure has been aborted.

When this attribute has the value ***idle***, it indicates that a connection has not been established, and that no incoming setup requests will be processed.

When this attribute has the value ***failed***, it indicates that the connections is in a state other than those described above.

Mib: CircuitEmulationService

Values:
initialising
connecting
connected
idle
retriesExhausted
failed

Default: No default

ATTRIBUTE Aal1Ces Aep lastSetupFailureCause (failCause)

Access: Read only

Description: *lastSetupFailureCause* indicates the cause of the last connection setup failure.

The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

Mib	CircuitEmulationService
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Aal1Ces Aep lastSetupFailureDiagnostic (failDiag)

Access	Read only
Description	*lastSetupFailureDiagnostic* provides a diagnostic to supplement the *lastSetupFailureCause* attribute.
Mib	CircuitEmulationService
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Aal1Ces Aep retryTimeRemaining (timer)

Access	Read only
Description	*retryTimerValue* is the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt will be made. *retryTimerValue* is initialized when a connection attempt fails. When *retryTimerValue* reaches ***0***, an attempt will be made to establish the connection. When the timer is not running, for example when the connection has been established, *retryTimerValue* will be ***0***.
Mib	CircuitEmulationService
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Aal1Ces Aep retryFailures (failures)

Access	Read only

Description	*retryFailures* counts the number of consecutive failed connection attempts. *retryFailures* is reset to ***0*** whenever a connection is successfully established, or the connection is restarted using the *Restart* verb. The counter wraps when the maximum value is exceeded.
Mib	CircuitEmulationService
Values	Decimal (0..2147483647)
Default	No default

COMPONENT Aal1Ces PassiveEndPoint (Pep)

Groups	"GROUP Aal1Ces Pep ProvisionedEndPointAddresses (ProvEndPointAddr)" "GROUP Aal1Ces Pep EndPointAddressOper (EpOper)" "GROUP Aal1Ces Pep PassiveEndPointOper (PassiveOper)"
Scope	Application
Description	*Aal1Ces/n PassiveEndPoint* The *PassiveEndPoint* component provides a passive end point for a switched virtual connection between two applications. A *PassiveEndPoint* awaits incoming connection setup requests. A setup request will only be accepted if a connection is not already established, and the request originated from *expectedRemoteAddress*. If a *PassiveEndPoint* component is provisioned under an *Aal1Ces* component, no other components may be provisioned under the same *Aal1Ces* component.
Mib	CircuitEmulationService
Common Verbs	Help List Display Add DELete

GROUP Aal1Ces Pep ProvisionedEndPointAddresses (ProvEndPointAddr)

Properties	Provisioned
Description	This group contains NSAP address provisioning data for components using switched virtual circuits.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces Pep expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address prefix for an incoming connection setup request. If *expectedRemoteAddress* is not empty, only matching connections will be considered for acceptance. If *expectedRemoteAddress* is 40 characters long, the remote address must match exactly to be accepted. If *expectedRemoteAddress* is less than 40 characters long, the remote address must begin with *expectedRemoteAddress* to be accepted. If *expectedRemoteAddress* is empty, the component will process connection requests from any remote address.
Mib	CircuitEmulationService
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Aal1Ces Pep localAddress (localAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the local NSAP address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on *nodePrefix* will be provided.

If *ModuleData nodePrefix* has not been provisioned and one or more alternate switch prefixes (the *alternatePorsPrefixes* attribute of the *ModuleData* component) have been provisioned, a default value for *localAddress* based on the first provisioned *alternatePorsPrefix* value will be provided.

If no switch prefixes have been provisioned, *localAddress* will default to an empty string. To obtain a valid default *localAddress* in this case, either or both of the *ModuleData nodePrefix* and *ModuleData alternatePorsPrefixes* attributes must be provisioned, and this end point component must then be deleted and re-added.

Mib	CircuitEmulationService
Values	String (40, ASCII)
Default	No default

GROUP Aal1Ces Pep EndPointAddressOper (EpOper)

Properties	Operational
Description	This group contains general operational attributes for components using switched virtual circuits.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces Pep remoteAddress (remoteAddr)

Access	Read only
Criticality	Component
Description	*remoteAddress* is the address of the remote end point. If a connection is currently established, *remoteAddress* will contain the address of the remote end point. If a connection is not established, *remoteAddress* will be ***Unknown***.
Mib	CircuitEmulationService

Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Aal1Ces Pep lastTearDownCause (cause)

Access	Read only
Description	*lastTearDownCause* indicates the cause of the last connection tear down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	CircuitEmulationService
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Aal1Ces Pep lastTearDownDiagnostic (diag)

Access	Read only
Description	*lastTearDownDiagnostic* provides a diagnostic to supplement the *lastTearDownCause* attribute.
Mib	CircuitEmulationService
Values	String (0..8, ASCII)
Default	No default

GROUP Aal1Ces Pep PassiveEndPointOper (PassiveOper)

Properties	Operational
Description	This group contains status information about the AAL1 Circuit Emulation Service *PassiveEndPoint* component.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces Pep svcStatus (status)

Access	Read only

Description	*svcStatus* indicates the status of the incoming connection. When this attribute has the value ***initialising***, it indicates that the component is initialising when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests will be processed. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that a connection has not been established, and that no incoming setup requests will be processed. When this attribute has the value ***failed***, it indicates that the connections is in a state other than those described above.
Mib	CircuitEmulationService
Values	initialising connecting connected idle failed
Default	No default

COMPONENT Aal1Ces LogicalConnection (LCo)

Groups	"GROUP Aal1Ces LCo PathData" "GROUP Aal1Ces LCo Statistics (Stats)"
Scope	Application

Description ...*Lc*
This component contains all of the operation attributes for a Path Oriented Logical Connection.

Mib CircuitEmulationService

Common Verbs
Help
List
Display

VERB RERoute Aal1Ces LCo

Impact Service

Description RERoute ..Lc
This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *REReute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified.
This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively.

When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path.

If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP Aal1Ces LCo PathData

Properties Operational

Description This group contains all operational attributes for the path oriented LCo.

Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces LCo state

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.
Mib	CircuitEmulationService
Values	pathDown selectingRoute connecting pathUp pathDownRetrying
Default	No default

ATTRIBUTE Aal1Ces LCo overrideRemoteName (orn)

Access	Read: All Write: All
Description	If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.
Mib	CircuitEmulationService
Values	String (0..40, ASCII)

Default	""

ATTRIBUTE Aal1Ces LCo end

Access	Read only
Description	This attribute identifies whether this is the calling or called end of the path.
Mib	CircuitEmulationService
Values	calling called
Default	No default

ATTRIBUTE Aal1Ces LCo costMetric (cost)

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	CircuitEmulationService
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Aal1Ces LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.
Mib	CircuitEmulationService
Values	Decimal (0..100000)

Units	msec
Default	No default

ATTRIBUTE Aal1Ces LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	CircuitEmulationService
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE Aal1Ces LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	CircuitEmulationService

Values	Decimal (0..4)
Default	No default

ATTRIBUTE Aal1Ces LCo holdingPriority (hpri)

Access	Read only
Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	CircuitEmulationService
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Aal1Ces LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Aal1Ces LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value

Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Aal1Ces LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType***,** will be candidates for this connection.
Mib	CircuitEmulationService
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Aal1Ces LCo permittedTrunkTypes (pttyp)

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection

	determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.
Mib	CircuitEmulationService
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Aal1Ces LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	CircuitEmulationService
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Aal1Ces LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection

	determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	CircuitEmulationService
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Aal1Ces LCo emissionPriority (epri)

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority. EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	CircuitEmulationService
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Aal1Ces LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority.* One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).

Mib	CircuitEmulationService
Values	Decimal (1..3)
Default	No default

ATTRIBUTE Aal1Ces LCo pathType (pType)

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	CircuitEmulationService
Values	normal manual forced
Default	No default

ATTRIBUTE Aal1Ces LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count

should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology.
This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.

Mib	CircuitEmulationService
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Aal1Ces LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	CircuitEmulationService
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Aal1Ces LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This

reason is also issued when there is no physical connectivity between two end nodes.

Mib: CircuitEmulationService

Values:
none
destinationNameTooLong
destinationNotSpecified
unknownDestinationName
incorrectDestination
incorrectDestinationEndPoint
unknownSource
unknownDestination
sameNode
routeCostTooMuch
routesDelayTooLong
attributesNotMet
anError
attributeProfileProblem
manualPathIndexProblem

Default: none

ATTRIBUTE Aal1Ces LCo lastTearDownReason

Access: Read only

Description: This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons:
none - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up.
normalShutDown - This path has gone down due to normal call termination.
insufficientTxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction.
insufficientRxLcOrBandwidth - At present there is either no

available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction.
trunkFailure- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute.
trunkCardFailure- A trunk FP card has failed along the path.
accessCardFailure- The FP on which the peer access service was running has failed.
operatorForced- The path has terminated due to the operator locking a trunk along the path.
lostLcnClash- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get

bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib: CircuitEmulationService

Values:
none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound
farEndNotFound
wrongModuleReached
farEndBusy
callLoopedBack
unknownReason
farEndNotReady
remoteNameMismatch
serviceTypeMismatch
reconnectFromFarEnd
bumped
accessCardFailure

	optimized overrideRemoteName trunkOrFarEndDidNotSupportMode
Default	none

ATTRIBUTE Aal1Ces LCo pathFailureAction

Access	Read only
Description	This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends
Mib	CircuitEmulationService
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE Aal1Ces LCo bumpPreference (bpref)

Access	Read only
Description	This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is

	lower (numerically higher) than the connection's *setupPriority*. A connection may also always bump in order to obtain the best route.
Mib	CircuitEmulationService
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE Aal1Ces LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	CircuitEmulationService
Values	disabled enabled
Default	No default

ATTRIBUTE Aal1Ces LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	CircuitEmulationService
Values	Time (DHMS)
Default	No default

ATTRIBUTE Aal1Ces LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.
Mib	CircuitEmulationService
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP Aal1Ces LCo Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	CircuitEmulationService
Values	Long Integer
Default	No default

ATTRIBUTE Aal1Ces LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	CircuitEmulationService
Values	Long Integer

Default	No default

ATTRIBUTE Aal1Ces LCo pktsFromNetwork

Access	Read only
Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	CircuitEmulationService
Values	Long Integer
Default	No default

ATTRIBUTE Aal1Ces LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	CircuitEmulationService
Values	Long Integer
Default	No default

COMPONENT Aal1Ces AtmConnection (AtmCon)

Groups	"GROUP Aal1Ces AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	CircuitEmulationService
Common Verbs	Help List Display

GROUP Aal1Ces AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	CircuitEmulationService
Values	The name of the component
Default	No default

COMPONENT Aal1Ces Reroute

Groups	"GROUP Aal1Ces Reroute LocalOperational (LOper)" "GROUP Aal1Ces Reroute GlobalOperational (GOper)"
Scope	Application
Description	*Aal1Ces/n Reroute* This component represents the ATM rerouting capabilities of an AAL1 CES connection. The addition or deletion of this

component, or changes to its provisionable attributes, does not affect an established connection.

Mib	CircuitEmulationService
Subcomponents	"COMPONENT Aal1Ces Reroute Ov"
Common Verbs	Help List Display Add DELete

VERB OPTIMIZE Aal1Ces Reroute

Impact	Service
Description	*OPTimize Aal1Ces/n Reroute* This command triggers path optimization for the connection segment. If the interface is already processing a path optimization request, then the *Optimize* command is canceled. Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP Aal1Ces Reroute LocalOperational (LOper)

Properties	Operational
Description	This group contains the operational attributes for the *Aal1Ces Reroute* component.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces Reroute localLastRrCauseCode

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this service interface.

Mib	CircuitEmulationService
Values	Decimal (0..255)
Default	No default

GROUP Aal1Ces Reroute GlobalOperational (GOper)

Properties	Operational
Description	This group contains the operational attributes for the *Aal1Ces Reroute* component.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces Reroute globalLastRrCauseCode

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this service interface.
Mib	CircuitEmulationService
Values	Decimal (0..255)
Default	No default

COMPONENT Aal1Ces Reroute Ov

Groups	"GROUP Aal1Ces Reroute Ov Provisioned (Prov)" "GROUP Aal1Ces Reroute Ov CesProvisioned (CProv)"
Scope	Application
Description	*Aal1Ces/n Reroute Ov* This component represents the ability to override rerouting capability subscription options on a per connection basis for AAL1 CES connections.
Mib	CircuitEmulationService
Common Verbs	Help List Display

GROUP Aal1Ces Reroute Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces Reroute Ov protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsARtgPnniReroute***: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature. ***ebrOnly***: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.
Mib	CircuitEmulationService

Values	localGlobal localOnly globalOnly localEbr ebrOnly sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE Aal1Ces Reroute Ov numOptAttempts

Access	Read and write
Description	This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization. If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization. If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.
Mib	CircuitEmulationService
Values	Decimal (0..15) sameAsARtgPnniReroute (sameAs)
Default	sameAs

ATTRIBUTE Aal1Ces Reroute Ov moduleOptimizationConnections

Access	Read and write
Description	This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component. One of the following values can be specified: ***sameAsARtgPnniReroute***: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute. ***none***: No connection segments are considered for path optimization. ***recoveredOnly***: Only connection segments that are foration. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection ***allSubscribed***: All connection segments subscribed to path optimization are considered.
Mib	CircuitEmulationService
Values	none recoveredOnly allSubscribed sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE Aal1Ces Reroute Ov switchoverMechanism

Access	Read and write
Description	This attribute specifies the mechanism used for switchover of a rerouted connection segment. One of the following values can be specified: ***sameAsARtgPnniReroute***: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute. ***standard***: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”.

rcl: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib: CircuitEmulationService

Values:
standard
rcl
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

GROUP Aal1Ces Reroute Ov CesProvisioned (CProv)

Properties: Provisioned

Description: This group contains the provisionable attributes related to rerouting subscription options for AAL1 CES connections.

Mib: CircuitEmulationService

ATTRIBUTE Aal1Ces Reroute Ov localConnectionRecoverySubscr (lRecSub)

Access: Read and write

Description: This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute has no effect if the connection segment does not request the local rerouting protocols.

If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local connection recovery subscription.

One of the following values can be specified:
sameAsARtgPnniReroute: The subscription rule is determined by the *Artg Pnni Reroute localConnectionRecoverySubscr* attribute. If the attribute specifies the ***svcSvp*** value, the connection segment requests subscription to local connection recovery, otherwise, the connection segment does not request subscription.
yes: The connection segment subscribes to local connection recovery.

no: The connection does not subscribe to local connection recovery.

Mib: CircuitEmulationService

Values:
no
yes
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE Aal1Ces Reroute Ov localPathOptimizationSubscr (lOptSub)

Access: Read and write

Description: This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute has no effect if the connection segment does not request the local rerouting protocols.

If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local path optimization subscription.

One of the following values can be specified:
sameAsARtgPnniReroute: The subscription rule is determined by the *Artg Pnni Reroute localPathOptimizationSubscr* attribute. If the attribute specifies the ***svcSvp*** value, the connection segment requests subscription to local path optimization, otherwise, the connection does not request subscription.
yes: The connection segment subscribes to local path optimization.
no: The connection segment does not subscribe to local path optimization.

Mib: CircuitEmulationService

Values:
no
yes
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE Aal1Ces Reroute Ov globalConnectionRecoverySubscr (gRecSub)

Access	Read and write
Description	This attribute specifies whether the connection segment requests subscription to global or EBR connection recovery. This attribute has no effect if the connection segment does not request the global or EBR rerouting protocol. If the connection segment requests ***ebrOnly***, this attribute controls EBR connection recovery subscription. One of the following values can be specified: ***sameAsARtgPnniReroute***: The subscription rule is determined by the *Artg Pnni Reroute globalConnectionRecoverySubscr* attribute. If the attribute specifies the ***svcSvp*** value, the connection segment requests subscription to global or EBR connection recovery, otherwise, the connection segment does not request subscription. ***yes:*** The connection segment requests subscription to global or EBR connection recovery. ***no***: The connection segment does not request subscription to global or EBR connection recovery.
Mib	CircuitEmulationService
Values	no yes sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE Aal1Ces Reroute Ov globalPathOptimizationSubscr (gOptSub)

Access	Read and write
Description	This attribute specifies whether the connection segment requests subscription to global or EBR path optimization. This attribute has no effect if the connection segment does not request the global or EBR rerouting protocol. If the connection segment requests ***ebrOnly***, this attribute controls EBR connection recovery subscription. One of the following values can be specified:

sameAsARtgPnniReroute: The subscription rule is determined by the *Artg Pnni Reroute globalPathOptimizationSubscr* attribute. If the attribute specifies the ***svcSvp*** value, the connection segment requests subscription to global or EBR path optimization, otherwise, the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR path optimization.
no: The connection segment does not request subscription to global or EBR path optimization.

Mib: CircuitEmulationService

Values:
no
yes
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

COMPONENT Aal1Ces RerouteInfo (RerInfo)

Groups:
"GROUP Aal1Ces RerInfo Operational (Oper)"
"GROUP Aal1Ces RerInfo EbrOperational (EOper)"
"GROUP Aal1Ces RerInfo LocalOperational (LOper)"
"GROUP Aal1Ces RerInfo GlobalOperational (GOper)"
"GROUP Aal1Ces RerInfo EbrStatistics (EStats)"
"GROUP Aal1Ces RerInfo LocalStatistics (LStats)"
"GROUP Aal1Ces RerInfo GlobalStatistics (GStats)"

Scope: Device

Description:
AtmIf/n Vcc/vpi.vci RerouteInfo
AtmIf/n Vpc/vpi RerouteInfo
AtmIf/n Vpt/vpi Vcc/vci RerouteInfo
Aal1Ces/n RerouteInfo
Fratm/n Dlci/n Siwf RerouteInfo

This component represents the rerouting capabilities of a connection segment. The component is present at the DTL originator of the connection segment. It is also present at each

local domain rerouting node, if the local rerouting protocol has been granted to the connection segment.

Mib CircuitEmulationService

Common Verbs
Help
List
Display

GROUP Aal1Ces RerInfo Operational (Oper)

Properties Operational

Description This group contains the common operational attributes that indicate rerouting activities at the connection level.

Mib CircuitEmulationService

ATTRIBUTE Aal1Ces RerInfo lastOptimizationMetric (lOptMet)

Access Read only

Description This attribute indicates which optimization metric was last used to select a path for the connection segment.

Mib CircuitEmulationService

Values
cdv
maxCtd
aw
specifiedPath

Default No default

GROUP Aal1Ces RerInfo EbrOperational (EOper)

Properties Operational

Description This group contains attributes that indicate the EBR rerouting characteristics of a connection segment.

This group is only present if the connection segment has been granted the EBR rerouting protocol.

Mib CircuitEmulationService

ATTRIBUTE Aal1Ces RerInfo ebrRecoverySubscribed (eRecSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	CircuitEmulationService
Values	no yes
Default	No default

ATTRIBUTE Aal1Ces RerInfo ebrOptimizationSubscribed (eOptSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR path optimization. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	CircuitEmulationService
Values	no yes
Default	No default

ATTRIBUTE Aal1Ces RerInfo ebrOptimizationMetricValue (eOptVal)

Access	Read only
Description	This attribute indicates the EBR optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections.

This attribute is only present if the connection segment has been granted the EBR protocol.

Mib: CircuitEmulationService

Values: Decimal (0..4294967292)
primary
alternate

Default: No default

ATTRIBUTE Aal1Ces RerInfo ebrOptimalMetricValue (eOptMetVal)

Access: Read only

Description: This attribute indicates the EBR optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections.

This attribute is only present if the connection segment has been granted the EBR protocol.

Mib: CircuitEmulationService

Values: Decimal (0..4294967292)
primary
alternate

Default: No default

ATTRIBUTE Aal1Ces RerInfo ebrOptimizationState (eOptSt)

Access: Read only

Description: This attribute indicates the current EBR optimization state of the connection segment.

One of the following values is indicated:
optimal: This is the initial value when the connection segment is

	first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value. ***optimized:*** This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	CircuitEmulationService
Values	optimal recovered optimized
Default	No default

ATTRIBUTE Aal1Ces RerInfo ebrTimeOfLastRecovery (eTime)

Access	Read only
Description	This attribute indicates the date and time of the last EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	CircuitEmulationService
Values	Time (DHMS)
Default	No default

GROUP Aal1Ces RerInfo LocalOperational (LOper)

Properties	Operational
Description	This group contains attributes that indicate the local rerouting characteristics of a connection segment.

	This group is only present if the connection segment has been granted the local rerouting protocol.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces RerInfo localRecoverySubscribed (lRecSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to local connection recovery. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	CircuitEmulationService
Values	no yes
Default	No default

ATTRIBUTE Aal1Ces RerInfo localOptimizationSubscribed (lOptSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to local path optimization. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	CircuitEmulationService
Values	no yes
Default	No default

ATTRIBUTE Aal1Ces RerInfo localOptimizationMetricValue (lOptVal)

Access	Read only
Description	This attribute indicates the local optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection

between the rerouting and rendezvous nodes. A value of ***undefined*** indicates that the local optimization metric value is undetermined.

This attribute is only present if the connection segment has been granted the local rerouting protocol.

Mib: CircuitEmulationService

Values: Decimal (0..4294967294)
undefined

Default: No default

ATTRIBUTE Aal1Ces RerInfo localOptimalMetricValue (lOptMetVal)

Access: Read only

Description: This attribute indicates the local optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.A value of ***undefined*** indicates that the local optimal optimization metric value is undetermined.

This attribute is only present if the connection segment has been granted the local rerouting protocol.

Mib: CircuitEmulationService

Values: Decimal (0..4294967294)
undefined

Default: No default

ATTRIBUTE Aal1Ces RerInfo localOptimizationState (lOptSt)

Access: Read only

Description: This attribute indicates the current local optimization state of the connection segment.

	One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value. ***optimized:*** This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	CircuitEmulationService
Values	optimal recovered optimized
Default	No default

ATTRIBUTE Aal1Ces RerInfo localTimeOfLastRecovery (lTime)

Access	Read only
Description	This attribute indicates the date and time of the last local connection recovery. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	CircuitEmulationService
Values	Time (DHMS)
Default	No default

GROUP Aal1Ces RerInfo GlobalOperational (GOper)

Properties	Operational

Description	This group contains attributes that indicate the global rerouting characteristics of a connection. This group is only present if the connection segment has been granted the global rerouting protocol.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces RerInfo globalRecoverySubscribed (gRecSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to global connection recovery. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	CircuitEmulationService
Values	no yes
Default	No default

ATTRIBUTE Aal1Ces RerInfo globalOptimizationSubscribed (gOptSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to global path optimization. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	CircuitEmulationService
Values	no yes
Default	No default

ATTRIBUTE Aal1Ces RerInfo globalOptimizationMetricValue (gOptVal)

Access	Read only

Description	This attribute indicates the global optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	CircuitEmulationService
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE Aal1Ces RerInfo globalOptimalMetricValue (gOptMetVal)

Access	Read only
Description	This attribute indicates the global optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***globalOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.The ***primary*** and ***alternate*** values are used to denote the optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	CircuitEmulationService
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE Aal1Ces RerInfo globalOptimizationState (gOptSt)

Access	Read only
Description	This attribute indicates the current global optimization state of the connection segment. One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value. ***optimized:*** This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	CircuitEmulationService
Values	optimal recovered optimized
Default	No default

ATTRIBUTE Aal1Ces RerInfo globalTimeOfLastRecovery (gTime)

Access	Read only
Description	This attribute indicates the date and time of the last global connection recovery. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	CircuitEmulationService
Values	Time (DHMS)

Default	No default

GROUP Aal1Ces RerInfo EbrStatistics (EStats)

Properties	Operational
Description	This group contains statistics related to Ebr rerouting for the connection segment.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces RerInfo totalEbrConnectionRecoveries (eConnRec)

Access	Read only
Description	This attribute counts successful EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Aal1Ces RerInfo totalEbrPathOptimizations (ePathOpt)

Access	Read only
Description	This attributes counts successful EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Aal1Ces RerInfo totalEbrOptimizationAttempts (eOptAtt)

Access	Read only

Description	This attribute counts the total number of EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	No default

GROUP Aal1Ces RerInfo LocalStatistics (LStats)

Properties	Operational
Description	This group contains statistics related to local rerouting for the connection segment.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces RerInfo totalLocalConnectionRecoveries (lConnRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Aal1Ces RerInfo totalLocalPathOptimizations (lPathOpt)

Access	Read only
Description	This attributes counts successful local path optimization attempts. The counter wraps to zero when the maximum value is exceeded.

	This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Aal1Ces RerInfo totalLocalOptimizationAttempts (lOptAtt)

Access	Read only
Description	This attribute counts the total number of local path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	No default

GROUP Aal1Ces RerInfo GlobalStatistics (GStats)

Properties	Operational
Description	This group contains statistics related to global rerouting for the connection segment.
Mib	CircuitEmulationService

ATTRIBUTE Aal1Ces RerInfo totalGlobalConnectionRecoveries (gConnRec)

Access	Read only
Description	This attribute counts successful global connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.

Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Aal1Ces RerInfo totalGlobalPathOptimizations (gPathOpt)

Access	Read only
Description	This attributes counts successful global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Aal1Ces RerInfo totalGlobalOptimizationAttempts (gOptAtt)

Access	Read only
Description	This attribute counts the total number of global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	CircuitEmulationService
Values	Decimal (0..4294967295)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Aal1Ces

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component AAServ

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Nortel Networks Multiservice Switch 7400/15000/20000

Component AAServ

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COMPONENT ActiveAlarmServices (AAServ)

Scope	Device
Description	ActiveAlarmServices This component manages active alarms each of which resides on a running card. The term “active alarms” refers to a list of SET alarms without the matching CLR alarms that are generated by applications. The number of active alarms that a LP can store can be engineered via the *Lp Eng AAList Ov* component.
Mib	ActiveAlarmList
Common Verbs	Help List Display

VERB Replay AAServ

Impact	Passive
Description	Replay AAServ This verb causes all active alarms to be reissued to the NMIS session which issued the replay command. The maximum number of replay sessions allowed is eight. Also, concurrent replays from the same NMIS session are not supported. This verb is intended for use by MDM only and not recommended to be used by operators directly.

VERB Clear AAServ

Impact	System_admin
Description	Clear -notificationId(<**id**>) -comment(<**text**>) AAServ This verb removes an alarm containing the specified notificationId from a list of active alarms. If the active alarm corresponding to the specified notificationId is removed successfully, a CLR alarm is issued. The alarm is sent to all active NMIS sessions including SNMP. If an alarm with the specified notificationId does not exist, then the command fails. **Options**: -notificationId(<id>) specifies the notification id of an active alarm to be removed. If the argument id is not specified, an error response is generated. -comment(<text>) specifies a comment text to be added to the CLR alarm when the active alarm is successfully removed.

Nortel Networks Multiservice Switch 7400/15000/20000

Component AAServ

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Ac

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COMPONENT AccessControl (Ac)

Groups	"GROUP Ac Provisioned (Prov)"
Scope	Device
Description	*AccessControl* The *AccessControl* component performs security validation to restrict access to a node. *AccessControl* ensures that only authorized remote devices can log in to the Network Management Interfaces for management purposes. The *AccessControl* component is a placeholder to collect all the *Userid*, *IpAccess* and *Role* components below it.
Mib	MgmtInterfaces
Opt. Subcomp.	"COMPONENT Ac Userid" "COMPONENT Ac IpAccess" "COMPONENT Ac Radius (Radius)" "COMPONENT Ac Role"
Common Verbs	Help List Display Add

GROUP Ac Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes which apply to the overall access of the node.
Mib	MgmtInterfaces

ATTRIBUTE Ac publicKeyAuth (keyAuth)

Access	Read: System_admin Write: System_admin
Description	This attribute indicates whether Telnet sessions require a public key exchange in order to log in to the node. FMIP sessions always require a public key exchange for login authentication.
Mib	MgmtInterfaces
Set of	telnet
Default	No default

COMPONENT Ac Userid

Instance	String (1..8, ASCII)
Groups	"GROUP Ac Userid Provisioned (Prov)"
Scope	Application
Description	*AccessControl Userid/<string>* The *Userid* component holds all provisionable attributes for a userid. Every Network Management Interface requires a user to supply a valid userid and password to log in, like most computer systems. The instance value must be the userid string itself, consisting of 1-8 alphanumeric (letters and numbers) characters. Letters in the userid string are case-insensitive.
Mib	MgmtInterfaces
Common Verbs	Help List Display Add : System_admin DELete : System_admin

GROUP Ac Userid Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for a *Userid* component.
Mib	MgmtInterfaces

ATTRIBUTE Ac Userid password (passwd)

Access	Read: Illegal Write: System_admin
Description	This attribute holds a password for this user only if this user is to be authenticated locally by the node. If this user is to be authenticated remotely (for example, via a RADIUS server) then the password is left blank. This is a write-only attribute to provide additional security for passwords. The password string consists of 5-8 characters, which may be any printable ASCII characters. If the password string includes any non-alphanumeric character, such as $ or *, the entire string must be enclosed in double quotes. Letters in the password string are case-sensitive.
Mib	MgmtInterfaces
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Ac Userid customerIdentifier (cid)

Access	Read: System_admin Write: System_admin
Description	This attribute indicates the Customer Identifier (CID) assigned to the user. The CID is used in Customer Network Management (CNM). A CNM operator may only send commands to components provisioned with the same CID as the operator. A CNM operator will only receive event data, such as alarms, which is generated by components provisioned with the same CID as the operator. The special CID of 0 is reserved for the network owner, known as the Netman.

	The CID attribute is compatible with DPN-100 Netman and Basic CIDs.
Mib	MgmtInterfaces
Values	Decimal (0..8191)
Default	0

ATTRIBUTE Ac Userid commandScope (scope)

Access	Read: System_admin Write: System_admin
Description	This attribute indicates the command scope assigned to the user. The scope determines the importance of the components on which the userid will be allowed to execute commands. Scope has three levels: 1) ***network*** scope implies the userid can manage components that affect the operation of the entire network, such as trunks. 2) ***device*** scope implies the userid can manage components that affect the operation of the entire node, such as processors or the file system. 3) ***application*** scope implies the userid can manage components that affect the operation of a single application. Note that scope is hierarchical: A user provisioned with ***network*** scope can also manage components with a scope of ***device*** or ***application***.
Mib	MgmtInterfaces
Values	network device application
Default	application

ATTRIBUTE Ac Userid commandImpact (impact)

Access	Read: System_admin Write: System_admin

Description

This attribute indicates the command impact assigned to the user. The impact determines the importance of the commands which the userid will be allowed to execute. Impact has five levels:

1) ***debug*** impact implies the userid can issue all debugging commands. Debug is the highest impact level.
2) ***systemAdministration*** impact implies the userid can issue provisioning commands on security components. This means the userid can *Add*, *Delete*, *Display*, or *Set* the *Userid* and *IpAccess* subcomponents of *AccessControl*.
3) ***configuration*** impact implies the userid can issue provisioning commands to alter the provisioned configuration of the node, such as *Start Prov*, *Add*, *Delete*, and *Set*.
4) ***service*** impact implies the userid can issue operational commands which may affect the service of running components, such as *Lock* and *Unlock*.
5) ***passive*** impact implies the userid can only issue query commands which display unrestricted information but otherwise do not affect the operation or configuration of the node, such as *List* and *Display*. Passive is the lowest impact level.

Note that impact is hierarchical: A user provisioned with ***debug*** impact can also issue all other commands at lower impact levels.

Mib

MgmtInterfaces

Values

debug
systemAdministration
configuration
service
passive

Default

passive

ATTRIBUTE Ac Userid allowedAccess (nmifs)

Access

Read: System_admin
Write: System_admin

Description

This attribute indicates the set of network management interfaces through which the user will be allowed incoming access to the node. The *allowedAccess* attribute can be used to restrict a userid

	to a desired subset of the network management interfaces provided.
Mib	MgmtInterfaces
Set of	local telnet fmip ftp
Default	(local)

ATTRIBUTE Ac Userid loginDirectory (dir)

Access	Read: System_admin Write: System_admin
Description	This attribute is the login directory for file system commands or FTP commands. The user will initially be placed in this directory upon logging in via Telnet, FMIP, Local, or FTP. The default value of “/” is the root of the /sfs/ shadowed file system.
Mib	MgmtInterfaces
Values	String (1..128, ASCII)
Default	/

ATTRIBUTE Ac Userid allowedOutAccess (outAccess)

Access	Read: System_admin Write: System_admin
Description	This attribute specifies whether the user is allowed to initiate outgoing Telnet access from the node.
Mib	MgmtInterfaces
Set of	telnet
Default	No default

ATTRIBUTE Ac Userid timeoutProtocol

Access	Read: System_admin Write: System_admin
Description	This attribute specifies whether the user's sessions will override the *timeoutPeriod* attribute of the *Telnet* component. ***enabled***: The time-out protocol provisioned under the *Telnet* component will be followed. ***disabled:*** The *Userid* is exempt from the time-out protocol.
Mib	MgmtInterfaces
Values	disabled enabled
Default	enabled

ATTRIBUTE Ac Userid remoteAuth

Access	Read: System_admin Write: System_admin
Description	This attribute specifies whether the user is to be authenticated locally by the node or remotely by an off-switch device such as a RADIUS server. The *password* attribute needs to be specified when the value of this attribute is set to ***disabled***. The default is ***disabled***. ***disabled***: The user is authenticated locally on the node. ***enabled:*** The user is authenticated remotely.
Mib	MgmtInterfaces
Values	disabled enabled
Default	disabled

COMPONENT Ac IpAccess

Instance	IP address

Groups	"GROUP Ac IpAccess Provisioned (Prov)"
Scope	Application
Description	*AccessControl IpAccess/<IP address>* This component represents a single “friendly” remote IP address which is permitted to call into the Telnet, FTP, or FMIP Interfaces on the node. All the friendly IP addresses must be provisioned as *IpAccess* components. The *IpAccess* components, taken together, form a complete list of all the IP addresses which are allowed access to the node’s Network Management Interfaces. This set of friendly IP addresses excludes all other addresses, restricting access only to the friendly computers. The instance value is the IP address itself, or an IP subnetwork address, entered in Internet nnn.nnn.nnn.nnn notation. An IP subnetwork address, in combination with the *ipAddressMask* attribute described below, may be provisioned to include an entire IP subnetwork into the friendly list with a single *IpAccess* component. Note that with the introduction of Telnet client capability, the *IpAccess* lists must allow for the fact that Telnet access may now be from another node in the network, not just management workstations.
Mib	MgmtInterfaces
Common Verbs	Help List Display Add : System_admin DELete : System_admin

GROUP Ac IpAccess Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for an *IpAccess* component.
Mib	MgmtInterfaces

ATTRIBUTE Ac IpAccess ipAddressMask (mask)

Access	Read: System_admin Write: System_admin
Description	This attribute indicates the bit mask indicating the significant bits which are used in the comparison of an incoming IP address against the “friendly” IP address in the instance value of the *IpAccess* component. This bit mask is ANDed to the incoming IP address, and ANDed to the instance value, before the comparison. An IP subnetwork address, in combination with this bit mask attribute, may be provisioned to include an entire IP subnetwork into the friendly IP address list with a single *IpAccess* component.
Mib	MgmtInterfaces
Values	IP address
Default	255.255.255.255

COMPONENT Ac Radius (Radius)

Groups	"GROUP Ac Radius Operational (Oper)" "GROUP Ac Radius Provisioned (Prov)"
Scope	Device
Description	*Ac Radius* This component contains all the provisioned and operational information necessary to support the RADIUS protocol as specified in RFC 2865. The *Radius* component represents the on-switch RADIUS client that communicates with a RADIUS server to authenticate usernames and passwords for Telnet, FTP, FMIP, and Local sessions. The RADIUS server sends back user settings that are used to start a session. This component also represents the state of the node as a Network Access Server (NAS). The *Radius* component must have at least one *Server*

	subcomponent provisioned. Note that a *Server* subcomponent is created automatically when the *Radius* component is first created.
Mib	OamRadius
Subcomponents	"COMPONENT Ac Radius Server (Server)"
Common Verbs	Help List Display Add : System_admin DELete : System_admin

GROUP Ac Radius Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Radius* component.
Mib	OamRadius

ATTRIBUTE Ac Radius badServerAddressPdus (badServerAdd)

Access	Read only
Description	This attribute counts the PDUs which are dropped because the source address in the PDU does not match the *serverIpAddress* specified by one *Ac Radius Server* component. Access to the node is rejected even if the rest of the contents of the RADIUS response PDU are correct. An increase in the value of this attribute may indicate an unauthorized attempt to gain entry into the node. The counter wraps to zero when it exceeds its maximum value.
Mib	OamRadius
Values	Decimal (0..4294967295)
Default	No default

GROUP Ac Radius Provisioned (Prov)

Properties	Provisioned
Description	This group controls the provisioned attributes of the *Radius* component
Mib	OamRadius

ATTRIBUTE Ac Radius nasIdentifier (nasId)

Access	Read: Service Write: System_admin
Description	This attribute specifies the IP address used by the node to communicate with the RADIUS server. This IP address must exist as a valid instance under the *VirtualRouter ProtocolPort IpPort LogicalInterface* component and the instance of the *VirtualRouter* component must have the *managementAccess* attribute set to ***enabled***. The IP Address specified by this attribute is known as a NAS (Network Access Server). ***In order to interoperate with a RADIUS server, the IP address specified by this attribute must be configured on the RADIUS server.*** The significance of this IP address is that it is sent as part of the RADIUS Access-Request PDU. The IP address is also used to configure the RADIUS server to allow authentication attempts from the node.
Mib	OamRadius
Values	IP address
Default	No default

ATTRIBUTE Ac Radius numberOfRetries (numRetries)

Access	Read: Service Write: System_admin
Description	This attribute specifies the number of times that a RADIUS Access-Request PDU is resent to a RADIUS server if a time-out occurs. If a time-out occurs while attempting to authenticate with a

	RADIUS server, the *timeouts* attribute under the *Server* subcomponent is incremented by one.
Mib	OamRadius
Values	Decimal (1..5)
Default	3

ATTRIBUTE Ac Radius requestTimeout (reqto)

Access	Read: Service Write: System_admin
Description	This attribute specifies the amount of time to wait for a RADIUS response from a RADIUS server after a RADIUS Access-Request PDU has been sent before declaring a time-out. This value should be increased if there are a large number of time-outs that occur due to latencies in the network or if a RADIUS server is slow to respond. This value should be decreased if the authentication wait time needs to be reduced. However, decreasing the value may cause more authentication failures because the time specified is not sufficient to receive a RADIUS response PDU from the RADIUS server. Furthermore, a smaller value may result in more time-outs and therefore more retransmissions to occur.
Mib	OamRadius
Values	Decimal (1..15)
Units	seconds
Default	8

COMPONENT Ac Radius Server (Server)

Instance	Decimal (0..1)
Groups	"GROUP Ac Radius Server OsiState (State)" "GROUP Ac Radius Server Operational (Oper)" "GROUP Ac Radius Server Provisioned (Prov)"

Scope	Device
Description	*Ac Radius Server/n* The *Server* component contains all the provisioned and operational information necessary to describe interactions with a RADIUS server. When this component is in a locked state, authentication with the RADIUS server specified by the *serverIpAddress* attribute under the *Server* component is not possible. When this component is in an unlocked state, it becomes available to use for authentication. Note that there must be at least one *Server* component that is in an unlocked state at any time. If only one *Server* instance exists, it is not possible to lock it. The RADIUS server selected to use for authentication is the last one from which the RADIUS client has received a response to an authentication request, provided that the *Server* component is not locked. If the RADIUS client has not received a response from any servers, the servers are tried in numeric order. There must exist at least one instance of this component.
Mib	OamRadius
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Ac Radius Server OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib OamRadius

ATTRIBUTE Ac Radius Server adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib OamRadius

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Ac Radius Server operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	OamRadius
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ac Radius Server usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	OamRadius
Values	idle active (activ) busy
Default	idle

GROUP Ac Radius Server Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Server* component.
Mib	OamRadius

ATTRIBUTE Ac Radius Server accessRequests (req)

Access	Read only
Description	This attribute counts the RADIUS Access-Request PDUs that are sent to this particular RADIUS server. The counter wraps to zero when it exceeds the maximum value.
Mib	OamRadius
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ac Radius Server accessAccepts (acc)

Access	Read only
Description	This attribute counts the RADIUS Access-Accept PDUs that are received from the RADIUS server with the minimum number of required Vendor-Specific Attributes (VSAs). The counter wraps to zero when it exceeds the maximum value.
Mib	OamRadius
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ac Radius Server accessRejects (rej)

Access	Read only
Description	This attribute counts the RADIUS Access-Reject PDUs that are received from this RADIUS server. The counter wraps to zero when it exceeds the maximum value.
Mib	OamRadius
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ac Radius Server packetsDropped (pktdrop)

Access	Read only
Description	This attribute counts the RADIUS PDUs that are dropped. A RADIUS PDU is dropped if there are no matching Access-Request PDUs for it. The counter wraps to zero when it exceeds the maximum value.
Mib	OamRadius
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ac Radius Server accessRetransmissions (retran)

Access	Read only
Description	This attribute counts the RADIUS Access-Request PDUs that are retransmitted to a RADIUS server due to a time-out. The counter wraps to zero when it exceeds the maximum value.
Mib	OamRadius
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ac Radius Server timeouts (to)

Access	Read only
Description	This attribute counts the time-outs that have occurred for the *Server* component. A time-out occurs when a RADIUS Access-Request PDU has been sent, but a corresponding RADIUS Access-Accept or Access-Reject PDU has not been received from the RADIUS server within the time specified by the *requestTimeout* attribute under the *Radius* component. When a time-out occurs, the node retries the same server if the number of attempts on the same server is less than the number specified by the *numberOfRetries* attribute under the R*adius* component. If the number of attempts is greater than the *numberOfRetries* attribute, the next available RADIUS server is

attempted.

If a retry is attempted, the *accessRetransmissions* attribute is incremented.

The counter wraps to zero when it exceeds the maximum value.

Mib	OamRadius
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ac Radius Server badAuthenticators (badauth)

Access	Read only
Description	This attribute counts the RADIUS Access-Accept or Access-Reject PDUs that are received from this RADIUS server with an incorrect response authenticator. An increase in this attribute value may indicate that there is an attempt by a malicious attacker to gain access to the switch by “spoofing” RADIUS response PDUs. The response authenticator consists of a one-way MD-5 hash of the RADIUS PDU type, RADIUS PDU identifier, request authenticator, attributes, and the shared secret as specified in RFC 2865. The counter wraps to zero when it exceeds the maximum value.
Mib	OamRadius
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ac Radius Server pendingRequests (pendReqs)

Access	Read only
Description	This attribute counts the RADIUS Access-Request packets destined for RADIUS server that have not yet timed-out or received a response. This variable is incremented when an Access-Request is sent. It is decremented when a matching

	RADIUS Access-Accept or Access-Reject PDU is received, or a time-out occurs.
Mib	OamRadius
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ac Radius Server unknownTypes (unkwn)

Access	Read only
Description	This attribute counts the RADIUS PDUs which are received from a RADIUS port that are of an unsupported RADIUS PDU type. The only RADIUS PDU types supported by the node are RADIUS Access-Accept and Access-Reject. All other RADIUS PDU types received by the node are considered invalid. The counter wraps to zero when it exceeds its maximum value.
Mib	OamRadius
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ac Radius Server malformedAccessResponses (malResp)

Access	Read only
Description	This attribute counts the malformed AccessResponses that are received by this Server. Malformed responses include RADIUS type PDUs with incorrect fields, non-RADIUS PDUs that are sent to this port, and Access-Accept PDUs that do not have the minimum number of required Vendor-Specific Attributes (VSAs). The counter wraps to zero when it exceeds the maximum value.
Mib	OamRadius
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Ac Radius Server roundTripTime (rtt)

Access	Read only
Description	This attribute measures the time interval between the most recent RADIUS Access-Request PDU sent to a RADIUS server and the corresponding RADIUS Access-Accept PDU or RADIUS Access-Reject PDU from that RADIUS server.
Mib	OamRadius
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

GROUP Ac Radius Server Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *Server* component.
Mib	OamRadius

ATTRIBUTE Ac Radius Server sharedSecret (secret)

Access	Read: Illegal Write: System_admin
Description	This attribute specifies the key used for the MD-5 hashing algorithm for encrypting a password for transmission to a RADIUS server. It is stored using a symmetrical encryption algorithm. Since the key is large, it is recommended that it be generated randomly to further make the *sharedSecret* attribute difficult to guess by an attacker. It is also recommended that this attribute be changed in accordance with the encryption key change policies used by the

	network operator. This includes algorithms used for generating the *sharedSecret* string and frequency of change policies.
Mib	OamRadius
Values	String (16..64, ASCII)
Default	No default

ATTRIBUTE Ac Radius Server serverIpAddress (servip)

Access	Read: Service Write: System_admin
Description	This attribute specifies the IP address of the RADIUS server that is used by the node to authenticate usernames and passwords. IP addresses ending with 0 or 255 are not allowed. No IP address must end with 0 or 255 as these are typically used as broadcast addresses. In addition, the IP address cannot be greater than 224.0.0.0.
Mib	OamRadius
Values	IP address
Default	No default

ATTRIBUTE Ac Radius Server serverPortNumber (servport)

Access	Read: Service Write: System_admin
Description	This attribute specifies the UDP port the node uses to send and receive RADIUS PDUs. The valid port addresses to use according to the RFC are 1645 or 1812. Port 1812 is specified by the latest RFC 2865.
Mib	OamRadius
Values	1645 1812
Default	1812

ATTRIBUTE Ac Radius Server ipStack

Access	Read: Service Write: System_admin
Description	This attribute specifies the IP stack to use for transmitting and receiving RADIUS PDUs between the node and RADIUS Server. If a value of ***ipiFrIpiVc*** is selected, then an *IpiFr* or *IpiVc* component must be provisioned on this module. If a value of ***vrIp*** is selected, then IP must be provisioned under the management VR on this module.
Mib	OamRadius
Values	ipiFrIpiVc vrIp
Default	ipiFrIpiVc

COMPONENT Ac Role

Instance	String (1..128, ASCII)
Groups	"GROUP Ac Role Provisioned (Prov)"
Scope	Application
Description	*AccessControl Role/<string>* A *Role* component represents a job function for a group of users. This component holds the provisionable attributes for a role. The instance value is the name of the role itself. The value is a string consisting of 1-128 alphanumeric (letters and numbers) characters. Letters in the *Role* component instance are case-insensitive.
Mib	MgmtInterfaces
Common Verbs	Help List Display Add : System_admin DELete : System_admin

GROUP Ac Role Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes for a *Role* component.
Mib	MgmtInterfaces

ATTRIBUTE Ac Role customerIdentifier (cid)

Access	Read: System_admin Write: System_admin
Description	This attribute indicates the Customer Identifier (CID) assigned to the *Role* component. The CID is used in Customer Network Management (CNM). A CNM operator may only send commands to components provisioned with the same CID as the operator. A CNM operator will only receive event data, such as alarms, which is generated by components provisioned with the same CID as the operator. The special CID of 0 is reserved for the network owner, known as the Netman. The CID attribute is compatible with DPN-100 Netman and Basic CIDs.
Mib	MgmtInterfaces
Values	Decimal (0..8191)
Default	0

ATTRIBUTE Ac Role commandScope (scope)

Access	Read: System_admin Write: System_admin
Description	This attribute specifies the command scope assigned to the users with this role. The scope determines the components on which a user with this role will be allowed to operate on (that is, issue the display, set, add, and delete verbs). Scope has three levels: 1) ***network*** scope implies a user with this role can manage components that affect the operation of the entire network, such as trunks. 2) ***device*** scope implies a user with this role can manage

components that affect the operation of the entire node, such as processors or the file system.
3) ***application*** scope implies a user with this role can manage components that affect the operation of a single application.

Note that scope is hierarchical: A user provisioned with ***network*** scope can also manage components with a scope of ***device*** or ***application***.

Mib: MgmtInterfaces

Values:
network
device
application

Default: application

ATTRIBUTE Ac Role commandImpact (impact)

Access:
Read: System_admin
Write: System_admin

Description: This attribute indicates the command impact assigned to users with this role. The impact determines the importance of the commands which the users with this role will be allowed to execute. The impact has five levels:

1) ***debug*** impact implies a user with this role can issue all debugging commands. Debug is the highest impact level.
2) ***systemAdministration*** impact implies a user with this role can issue provisioning commands on security components. This means the users with this role can *Add*, *Delete*, *Display*, or *Set* the *Userid*, *Role* and *IpAccess* subcomponents of *AccessControl*.
3) ***configuration*** impact implies a user with this role can issue provisioning commands to alter the provisioned configuration of the node, such as *Start Prov*, *Add*, *Delete*, and *Set*.
4) ***service*** impact implies a user with this role can issue operational commands which may affect the service of running components, such as *Lock* and *Unlock*.
5) ***passive*** impact implies a user with this role can only issue query commands which display unrestricted information but otherwise do not affect the operation or configuration of the node., such as *List* and *Display*. Passive is the lowest impact level.

	Note that the impact is hierarchical: A user provisioned with ***debug*** impact can also issue all other commands at lower impact levels.
Mib	MgmtInterfaces
Values	debug systemAdmin config service passive
Default	passive

ATTRIBUTE Ac Role allowedAccess (nmifs)

Access	Read: System_admin Write: System_admin
Description	This attribute indicates the set of network management interfaces through which a user with this role will be allowed incoming access to the node. The *allowedAccess* attribute can be used to restrict a user with this role to a desired subset of the network management interfaces provided.
Mib	MgmtInterfaces
Set of	local telnet fmip ftp
Default	(local)

ATTRIBUTE Ac Role allowedOutAccess (outAccess)

Access	Read: System_admin Write: System_admin
Description	This attribute specifies whether a user with this role is allowed to initiate outgoing Telnet access from the node.

Mib	MgmtInterfaces
Set of	telnet
Default	No default

ATTRIBUTE Ac Role loginDirectory (dir)

Access	Read: System_admin Write: System_admin
Description	This attribute is the login directory for file system commands or FTP commands. A user with this role will initially be placed in this directory upon logging in via Telnet, FMIP, Local, or FTP. The default value of “/” is the root of the /sfs/ shadowed file system.
Mib	MgmtInterfaces
Values	String (1..128, ASCII)
Default	/

ATTRIBUTE Ac Role timeoutProtocol

Access	Read: System_admin Write: System_admin
Description	This attribute specifies whether a user session with this role will override the *timeoutPeriod* attribute of the *Telnet* component. ***enabled***: The time-out protocol provisioned under the *Telnet* component will be followed. ***disabled:*** Users with this role are exempt from the time-out protocol.
Mib	MgmtInterfaces
Values	disabled enabled
Default	enabled

ATTRIBUTE Ac Role remoteOverride

Access	Read: System_admin Write: System_admin
Description	This attribute specifies whether or not remotely defined access privileges will override the privileges defined for this role. ***disabled***: The privileges assigned to this role are used. ***enabled:*** Privileges provided remotely will override any privileges defined for this role.
Mib	MgmtInterfaces
Values	disabled enabled
Default	enabled

Nortel Networks Multiservice Switch 7400/15000/20000

Component Ac

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Aps

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Aps

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COMPONENT AutomaticProtectionSwitching (Aps)

Instance	Decimal (0..15999)
Groups	"GROUP Aps CustomerIdentifierData (CidData)" "GROUP Aps Provisioned (Prov)" "GROUP Aps OsiState (State)" "GROUP Aps Operational (Oper)"
Scope	Device
Description	*AutomaticProtectionSwitching/n* This component manages the line protection of a SONET or SDH interface. Automatic Protection Switching (APS) can switch traffic from an active line onto a standby line when a failure or degradation occurs on the active line. The *Aps* component must have a valid *workingLine* attribute and a valid *protectionLine* attribute. **Note**: A *Test* component provisioned under *Lp/n Sonet/m* is dynamically deleted when that line is added into an APS group. This is because the *Aps* component has a dynamic test component of its own for testing the active line. The *Aps* component may be provisioned only on the Nortel Networks Multiservice 7400. The equivalent component on the

	Nortel Networks Multiservice Switch 15000 and the Nortel Networks Multiservice Switch 20000 is the *Laps* component.
Mib	Aps
Dyn. Subcomp.	"COMPONENT Aps Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

VERB PROTECTIONLOCKOUT (PROTLOCK) Aps

Impact	Service
Description	*ProtectionLockout Aps/n* This command instructs the *Aps* component to lock out the protection line from being used as the receive active line, using the *nearEndRequest* ***lockoutOfProtection***. If the protection line is active when the *ProtectionLockout* command is entered the working line is made active, even if there is a failure or degradation present on the working line. If the provisioned *mode* is ***unidirectional*** and a *nearEndRequest* of ***lockoutOfProtection*** is already in effect then this command is ignored. If the provisioned *mode* is ***bidirectional*** and a *nearEndRequest* or *farEndRequest* of ***lockoutOfProtection*** is already in effect then this command is ignored. This command can be issued if the *Aps* component is either unlocked or locked. It remains in effect until cancelled with the *Clear* command.

VERB SWITCH Aps

Impact	Service
Description	*Switch [-force] [-workingToProtection] [-protectionToWorking] Aps/n* This command instructs the *Aps* component to switch the *nearEndRxActiveLine* attribute from the working line to the protection line (or vice versa) using the *nearEndRequest attribute to* ***manualSwitch***. If the *-force* option is specified, the *Aps* component is instructed to switch using the higher priority value of ***forcedSwitch for the*** *nearEndRequest attribute*. If the *-workingToProtection* option is specified, the *Aps* component switches the *nearEndRxActiveLine* from the working line to the protection line. If the *-protectionToWorking* option is specified, the *Aps* component switches the *nearEndRxActiveLine* attribute from the protection line to the working line. If a *nearEndRequest* of equal or higher priority is already in effect then this command will be ignored. The command will also be ignored if the provisioned *mode* is ***bidirectional*** and a *farEndRequest* of equal or higher priority is already in effect. For the list of request priorities refer to the description of the *nearEndRequest* attribute of the *Aps* component. If the *-force* option is specified, this command can be issued when the *Aps* component is either unlocked or locked; otherwise it can only be issued when the *Aps* component is unlocked. It remains in effect until cancelled with the *Clear* command, or until a *nearEndRequest* (or *farEndRequest* if the provisioned *mode* is ***bidirectional***) of higher priority goes into effect.

VERB CLEAR Aps

Impact	Service
Description	*Clear Aps/n* This command clears the *nearEndRequests* ***lockoutOfProtection***, ***forcedSwitch***, and ***manualSwitch***. This command can be issued when the *Aps* component is either unlocked or locked.

GROUP Aps CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Aps

ATTRIBUTE Aps customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Aps

Values	Decimal (0; 1..8191)
Default	0

GROUP Aps Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Aps* component.
Mib	Aps

ATTRIBUTE Aps applicationFramerName (framer)

Access	Read and write
Description	This attribute is a link to the service component which utilizes the protected *Sonet* or *Sdh* interface managed by the *Aps* component.
Mib	Aps
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Aps workingLine (working)

Access	Read and write
Description	This attribute is a link to the *Path* component whose parent *Sonet* or *Sdh* component provides the *Aps* component's working line. A value must be defined for this component. The working line must exist under the same *Lp* component as the protection line and must link to a *Path* component under the same type of port component (*Sonet* or *Sdh*) as the protection line. Valid *workingLine* attribute and *protectionLine* attribute pairs must exist. For APS compatible cards the *workingLine* attribute and *protectionLine* attribute pairs must be provisioned on consecutive ports. For example, port 0 would be paired with port 1 and port 2 with port 3, and if the *workingLine* attribute is linked to a *path* component on port 0, then the *protectionLine* attribute must be linked to a *path* component on port 1.

	Sonet APS is available on cards of type ***2pOC3SmAtm2 and 2pOC3MmAtm2.***
Mib	Aps
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Aps protectionLine (protection)

Access	Read and write
Criticality	Process
Description	This attribute is a link to the *Path* component whose parent *Sonet* or *Sdh* component provides the *Aps* component's protection line. A value must be defined for this component. This attribute is critical because the APS process runs on the LP associated with the protectionLine. The protection line must exist under the same *Lp* component as the working line, and must link to a *Path* component under the same type of port component (*Sonet* or *Sdh*) as the working line. Valid *workingLine* attribute and *protectionLine* attribute pairs must exist. For APS compatible cards the *workingLine* attribute and *protectionLine* attribute pairs must be provisioned on consecutive ports. For example, port 0 would be paired with port 1 and port 2 with port 3, and if the *workingLine* attribute is linked to a *path* component on port 0, then the *protectionLine* attribute must be linked to a *path* component on port 1. Sonet APS is available on cards of type ***2pOC3SmAtm2***, ***and 2pOC3MmAtm2.***
Mib	Aps
Values	Link (Hardware, applicationFramerName)
Default	No default

ATTRIBUTE Aps mode

Access	Read and write
Description	This attribute specifies the protection mode to use. It has possible values of ***unidirectional*** and ***bidirectional***. The ***unidirectional*** mode allows the *Aps* component to decide independently of the far end which channel, either working or protection, is active for receive. For this value, the transmit and receive may be on different channels. Therefore one end may receive from the protection line while the other end receives from the active line. The ***bidirectional*** mode instructs the *Aps* component to decide jointly with the far end which channel, either working or protection, is active for receive.For this value, the transmit and receive is to be on the same channel. Therefore both the ends receive from the same line. Note that if either end is set to ***unidirectional***, the link operates in ***unidirectional*** mode. Note that while an *Aps Test* component is being run, the *Aps* component operates in unidirectional mode, regardless of the actual provisioned mode.
Mib	Aps
Values	unidirectional bidirectional
Default	unidirectional

ATTRIBUTE Aps revertive

Access	Read and write
Description	This attribute specifies whether revertive switching is to be used. When this attribute is ***no***, the *Aps* component will not revert the receive active line from protection back to working when a working line request is cleared.

When this attribute is ***yes***, the *Aps* component will revert the receive active line from protection back to working when a working line request is cleared, after the provisioned *waitToRestorePeriod* has expired.

Note that it is acceptable for the near end and far end to be provisioned with a mix of revertive and non-revertive switching; one end can be revertive and the other non-revertive.

Mib	Aps
Values	no yes
Default	no

ATTRIBUTE Aps holdOffTime (hoTime)

Access	Read and write
Description	This attribute specifies delay between the detection of a Signal Fail or Signal Degrade on the active line and the initiation of a switchover.
Mib	Aps
Values	Decimal (0.0..10.0)
Units	seconds
Default	0.0

ATTRIBUTE Aps waitToRestorePeriod (wtrPeriod)

Access	Read and write
Description	This attribute specifies the time during which the protection line will remain the receive active line after the working line recovers from the fault that caused the switch. This attribute is only applicable when the provisionable attribute *revertive* has a value of ***yes***.
Mib	Aps
Values	Decimal (5..12)

Units	minutes
Default	5

ATTRIBUTE Aps signalDegradeRatio (sdRatio)

Access	Read and write
Description	This attribute specifies the minimum bit error ratio (BER) for which a Signal Degrade failure is declared. Its value is the exponent of the BER, with possible values of ***-5*** through ***-9*** inclusive, which correspond to a BER range of 10e-5 through 10e-9. The switch initiation time for a Signal Degrade varies depending on the observed BER (*not* the provisioned *signalDegradeRatio*), as described in the following table. **BER - Switch Initiation Time** 10e-3 - 10 milliseconds 10e-4 - 100 milliseconds 10e-5 - 1 second 10e-6 - 10 seconds 10e-7 - 100 seconds 10e-8 - 16 minutes 40 seconds 10e-9 - 2 hours 46 minutes 40 seconds The clearing threshold for a Signal Degrade is one-tenth the *signalDegradeRatio*; for example, if the provisioned *signalDegradeRatio* is ***-5***, the corresponding clearing threshold will be 10e-6. The clearing time varies depending on the clearing threshold (*not* the observed BER), and can be determined from the above table.
Mib	Aps
Values	Signed (-9..-5)
Default	-5

GROUP Aps OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Aps

ATTRIBUTE Aps adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Aps
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Aps operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Aps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Aps usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Aps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Aps availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to

place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Aps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Aps proceduralStatus (osiProc)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	Aps
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Aps controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Aps
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Aps alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Aps
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Aps standbyStatus (osiStby)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Aps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Aps unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

	The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Aps
Values	false true
Default	false

GROUP Aps Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Aps* component.
Mib	Aps

ATTRIBUTE Aps nearEndRxActiveLine (neRxLine)

Access	Read only
Description	This attribute indicates which near end line is active for receiving data from the far end.
Mib	Aps
Values	protection working
Default	No default

ATTRIBUTE Aps nearEndRequest (neReq)

Access	Read only
Description	This attribute indicates the request currently being transmitted to the far end in the SONET/SDH line overhead K1 byte of the protection line. Requests are prioritized so that high priority requests preempt or block those with a lower priority. The possible requests, in order of priority from highest to lowest, are as follows. ***lockoutOfProtection*** — the working line is prevented from switching to the protection line under any circumstances due to

an *ProtectionLockout* command being in effect.

forcedSwitch — the line indicated by attribute *nearEndRequestChannel* has a *Switch -force* command in effect against it. Note that a ***signalFail*** on the protection line has higher priority than a ***forcedSwitch***.

signalFail — the line indicated by attribute *nearEndRequestChannel* is experiencing a signal failure (SF). Failures include LOS, LOF, received AIS-L, a signal BER exceeding 10^{-3}, LOP, received AIS-P, LCD, or a locked *Sonet*, *Sdh*, or *Path* component. Note that a ***signalFail*** on the protection line has higher priority than a ***forcedSwitch***.

signalDegrade — the line indicated by attribute *nearEndRequestChannel* is experiencing a signal degradation (SD).

manualSwitch — the line indicated by attribute *nearEndRequestChannel* has a *Switch* command in effect against it.

waitToRestore — the protection line is active, provisioned attribute *revertive* is ***yes***, and the working line has recovered from a Signal Fail or Signal Degrade. After the period defined by attribute *waitToRestorePeriod* the working line will automatically revert to being the receive active line and the request will change to ***noRequest***.

reverseRequest — the line indicated by attribute *nearEndRequestChannel* is active due to a request from the far end. This request is only applicable when the provisioned *mode* is ***bidirectional***.

doNotRevert — the protection line is active, provisioned attribute *revertive* is ***no***, and either: (1) the working line has recovered from a ***signalFail*** or ***signalDegrade***; or (2) a ***forcedSwitch*** or ***manualSwitch*** request has been cleared. The receive active line will not automatically revert to the working line.

noRequest — the working line is active and no other requests are in effect.

Mib: Aps

Values:
lockoutOfProtection
forcedSwitch
signalFail
signalDegrade
manualSwitch
waitToRestore
reverseRequest
doNotRevert
noRequest

Default: No default

ATTRIBUTE Aps nearEndRequestChannel (neReqChan)

Access: Read only

Description: This attribute indicates to which channel the *nearEndRequest* applies.

Mib: Aps

Values:
protection
working

Default: No default

ATTRIBUTE Aps farEndRequest (feReq)

Access: Read only

Description: This attribute indicates the request currently being received from the far end in the SONET/SDH line overhead K1 byte of the protection line. Requests are prioritized so that high priority requests preempt or block those with a lower priority. The possible requests, in order of priority from highest to lowest, are as follows.

lockoutOfProtection — the working line is prevented from switching to the protection line under any circumstances due to an *ProtectionLockout* command being in effect.

forcedSwitch — the line indicated by attribute *nearEndRequestChannel* has a *Switch -force* command in effect against it. Note that a ***signalFail*** on the protection line has higher priority than a ***forcedSwitch***.

signalFail — the line indicated by attribute *nearEndRequestChannel* is experiencing a signal failure (SF). Failures include LOS, LOF, received AIS-L, a signal BER exceeding 10^{-3}, LOP, received AIS-P, LCD, or a locked *Sonet*, *Sdh*, or *Path* component. Note that a ***signalFail*** on the protection line has higher priority than a ***forcedSwitch***.

signalDegrade — the line indicated by attribute *nearEndRequestChannel* is experiencing a signal degradation (SD).

manualSwitch — the line indicated by attribute *nearEndRequestChannel* has a *Switch* command in effect against it.

waitToRestore — the protection line is active, provisioned attribute *revertive* is ***yes***, and the working line has recovered from a Signal Fail or Signal Degrade. After the period defined by attribute *waitToRestorePeriod* the working line will automatically revert to being the receive active line and the request will change to ***noRequest***.

reverseRequest — the line indicated by attribute *nearEndRequestChannel* is active due to a request from the far end. This request is only applicable when the provisioned *mode* is ***bidirectional***.

doNotRevert — the protection line is active, provisioned attribute *revertive* is ***no***, and either: (1) the working line has recovered from a ***signalFail*** or ***signalDegrade***; or (2) a ***forcedSwitch*** or ***manualSwitch*** request has been cleared. The receive active line will not automatically revert to the working line.

noRequest — the working line is active and no other requests are in effect.

Mib	Aps
Values	lockoutOfProtection forcedSwitch signalFail signalDegrade manualSwitch waitToRestore reverseRequest doNotRevert noRequest
Default	No default

ATTRIBUTE Aps farEndRequestChannel (feReqChan)

Access	Read only
Description	This attribute indicates to which channel the *farEndRequest* applies.
Mib	Aps
Values	protection working
Default	No default

ATTRIBUTE Aps sdOnLines

Access	Read only
Description	This attribute indicates which lines (if any) are currently experiencing a Signal Degrade (SD).
Mib	Aps
Set of	protection working
Default	No default

ATTRIBUTE Aps switchovers

Access	Read only

Description	This attributes counts the number of times that a switchover of the active line has occurred since the *Aps* component became active.
Mib	Aps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Aps timeUntilRestore

Access	Read only
Description	This attribute indicates the amount of time until the receive active line is automatically switched back from the protection line to the working line. It is only applicable for *Aps* components that are provisioned to be revertive, and which currently have the protection line as the receive active line and a *nearEndRequest* of ***waitToRestore***.
Mib	Aps
Values	Decimal (0..12)
Units	minutes
Default	No default

ATTRIBUTE Aps protocolFailureAlarm (pfAlarm)

Access	Read only
Description	This attribute indicates whether the *Aps* component is experiencing an APS protocol failure alarm. Protocol failure alarms include the protection switching byte mismatch alarm (code 7011 5270) and the channel mismatch failure alarm (code 7011 5271).
Mib	Aps
Values	on off
Default	No default

ATTRIBUTE Aps modeMismatchAlarm (mmAlarm)

Access	Read only
Description	This attribute indicates whether the *Aps* component is experiencing an APS mode mismatch alarm (code 7011 5272). This alarm indicates either: (1) that the far end is operating with a 1:n switching architecture, as opposed to 1+1; or (2) that the far end's provisioned *mode* is not the same as the nears end's provisioned *mode*. When a mode mismatch occurs: (1) if the far end is operating with a 1:n switching architecture it will operate as 1+1; and (2) if either end has a provisioned *mode* of ***unidirectional*** then both ends will operate unidirectionally.
Mib	Aps
Values	on off
Default	No default

COMPONENT Aps Test (Test)

Groups	"GROUP Aps Test OsiState (State)" "GROUP Aps Test Setup (Setup)" "GROUP Aps Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility

test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.

Mib: Aps

Common Verbs:
- Help
- List
- Display

VERB START Aps Test

Impact: Service

Description:

This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Aps Test

Impact: Service

Description:

This command stops a test running on the hardware component.

GROUP Aps Test OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Aps

ATTRIBUTE Aps Test adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Aps

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Aps Test operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Aps

Values:
enabled (ena)
disabled (dis)

Default	disabled

ATTRIBUTE Aps Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Aps
Values	idle active (activ) busy
Default	idle

GROUP Aps Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Aps

ATTRIBUTE Aps Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Aps
Values	String (0..40, ASCII)

Default No default

ATTRIBUTE Aps Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib Aps

Values
card
manual
localLoop
remoteLoop
externalLoop

payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default card

ATTRIBUTE Aps Test frmSize (size)

Access Read and write

Description

This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib Aps

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Aps Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib Aps

Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Aps Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Aps
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Aps Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Aps
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Aps Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Aps
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Aps Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Aps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Aps Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.

Mib	Aps

ATTRIBUTE Aps Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of

loopCodeSyncFailed, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: Aps

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Aps Test bitsTx

Access: Read only

Description:

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: Aps

Values: Long Integer

Default: No default

ATTRIBUTE Aps Test bytesTx

Access: Read only

Description:

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib: Aps

Values	Long Integer
Default	No default

ATTRIBUTE Aps Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Aps
Values	Long Integer
Default	No default

ATTRIBUTE Aps Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Aps
Values	Long Integer
Default	No default

ATTRIBUTE Aps Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Aps
Values	Long Integer

Default	No default

ATTRIBUTE Aps Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Aps
Values	Long Integer
Default	No default

ATTRIBUTE Aps Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Aps
Values	Long Integer
Default	No default

ATTRIBUTE Aps Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib: Aps

Values: String (5, ASCII)

Default: No default

ATTRIBUTE Aps Test elapsedTime

Access: Read only

Description:

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib: Aps

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 0.00

ATTRIBUTE Aps Test timeRemaining

Access: Read only

Description:

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib	Aps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

Nortel Networks Multiservice Switch 7400/15000/20000

Component Aps

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component ARtg

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component ARtg

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COMPONENT AtmRouting (ARtg)

Groups	"GROUP ARtg Statistics (Stats)" "GROUP ARtg Provisioned (Prov)"
Scope	Device
Description	*AtmRouting* This component contains the provisionable and operational attributes related to ATM routing. The *Dna* subcomponents can be listed to view all the provisioned and registered ATM end system addresses and prefixes stored against any of the *Uni*, *Iisp* or *Pnni* interfaces. The *Pnni* subcomponent can be provisioned to identify that this node participates in a PNNI hierarchy.

	The *PhysicalPort* subcomponent can be listed to view all the physical ports available for ATM routing.
Mib	AtmRouting
Subcomponents	"COMPONENT ARtg SparedServices (SpServ)"
Opt. Subcomp.	"COMPONENT ARtg Pnni"
Dyn. Subcomp.	"COMPONENT ARtg DataNetworkAddress (Dna)" "COMPONENT ARtg PhysicalPort (Port)"
Common Verbs	Help List Display Add DELete

GROUP ARtg Statistics (Stats)

Properties	Operational
Description	This group contains the statistical operational attributes of an *ARtg* component.
Mib	AtmRouting

ATTRIBUTE ARtg routingAttempts

Access	Read: All Write: Illegal
Description	This attribute counts the calls routed. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg failedRoutingAttempts

Access	Read: All Write: Illegal

Description	This attribute counts the calls that were not successfully routed.The counter wraps to zero when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

GROUP ARtg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the generic provisionable attributes of a *ARtg* component.
Mib	AtmRouting

ATTRIBUTE ARtg useBestMatchAddrOnCrankback (useBma)

Access	Read: All Write: All
Description	This attribute specifies when the ATM routing system should be using best match addresses for a crankback. By default, when performing a crankback, the ATM routing system only considers addresses that are equal to the length of the address used during the first routing attempt. With this attribute, you may specify that the ATM routing system also considers best match addresses for a crankback when this node is the DTL originating node, the DTL terminating node, or acts as both the DTL originating and terminating node. The possible values for this attribute are: **none**: specifies that the DTL originator and the DTL terminator are not using best match address resolution when calculating a route. **originatingOnly**: specifies that only the DTL originator uses best match address resolution. **terminatingOnly**: specifies that only the DTL terminator uses best match address resolution.

	originatingTerminating: specifies that both the DTL originator and the DTL terminator use best match address resolution.
Mib	AtmRouting
Values	none originatingOnly (origOnly) terminatingOnly (termOnly) originatingTerminating (origTerm)
Default	none

ATTRIBUTE ARtg discardCallsOnOverload (discCallsOnOverld)

Access	Read: All Write: All
Description	This attribute specifies whether or not ATM signalling overload control is in effect on this node for each FP. A value of ***enabled*** causes new incoming calls to be discarded on overloaded egress FPs. Overload is detected when more than 39% of signalling message buffers are in use, or more than 63 SSCOP PDUs have not been acknowledged. Set the attribute to ***enabled*** when low call setup latency is preferred over calls being discarded.
Mib	AtmRouting
Values	disabled enabled
Default	disabled

COMPONENT ARtg DataNetworkAddress (Dna)

Instance	String (1..40, ASCII)
Scope	Application

Description	*ARtg DataNetworkAddress/<ATM address>* This component represents an ATM NSAP address that has been provisioned or dynamically registered through ILMI.
Mib	AtmRouting
Dyn. Subcomp.	"COMPONENT ARtg Dna DestInfo"
Common Verbs	Help List Display

COMPONENT ARtg Dna DestInfo

Instance	Decimal (0..50)
Groups	"GROUP ARtg Dna DestInfo Operational (Oper)"
Scope	Application
Description	*ARtg Dna/<ATM address> DestInfo/<n>* This component represents a destination associated with the parent *Dna*.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Dna DestInfo Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *DestInfo* component.
Mib	AtmRouting

ATTRIBUTE ARtg Dna DestInfo type

Access	Read: All Write: Illegal

Description	This attribute indicates the type of the address at the destination interface. Provisioned addresses are assigned a type of ***primary*** or ***alternate***; ATM routing will try primary routes and then the alternate routes if none of the primary routes succeed. The type ***registered*** is used for dynamic addresses registered through ILMI. The type ***default*** is used for Soft PVC addresses. The type ***ebr*** indicates addresses used by Edge Based Rerouting.
Mib	AtmRouting
Values	primary alternate registered default reroute
Default	No default

ATTRIBUTE ARtg Dna DestInfo scope

Access	Read: All Write: Illegal
Description	This attribute indicates the highest level (meaning the lowest numeric value) in the hierarchy where the address will be advertised. A value of -1 indicates that the scope is not applicable because this node has not been configured as a PNNI node.
Mib	AtmRouting
Values	Signed (-1..104)
Default	No default

ATTRIBUTE ARtg Dna DestInfo componentName

Access	Read: All Write: Illegal
Description	This attribute indicates the component name of the interface through which the address can be reached.

Mib	AtmRouting
Values	The name of the component
Default	No default

ATTRIBUTE ARtg Dna DestInfo reachability (reach)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the address is ***internal*** or ***exterior*** to this domain.
Mib	AtmRouting
Values	internal exterior
Default	No default

COMPONENT ARtg Pnni

Groups	"GROUP ARtg Pnni Provisioned (Prov)" "GROUP ARtg Pnni PglElectionParms (PglParms)" "GROUP ARtg Pnni HelloParms (HlParms)" "GROUP ARtg Pnni PTSETimerParms (PtseParms)" "GROUP ARtg Pnni ChangeThresholds (ThreshParms)" "GROUP ARtg Pnni Operational (Oper)" "GROUP ARtg Pnni Statistics (Stats)" "GROUP ARtg Pnni SvccBasedRccParms (SvccRcc)"
Scope	Device
Description	*ARtg Pnni* This component represents the PNNI Routing capability. Provisioning the *Pnni* component under the *ARtg* component indicates that this switch has PNNI routing capability.

	The *Pnni* component must have at least one and no more than 10 *ConfiguredNode* subcomponents.
Mib	AtmRouting
Subcomponents	"COMPONENT ARtg Pnni LoadBalancing (Lb)"
Opt. Subcomp.	"COMPONENT ARtg Pnni ConfiguredNode (CfgNode)" "COMPONENT ARtg Pnni Cache" "COMPONENT ARtg Pnni NodeName (Node)" "COMPONENT ARtg Pnni MdtlPath (Mdtl)" "COMPONENT ARtg Pnni Reroute"
Dyn. Subcomp.	"COMPONENT ARtg Pnni RouteFinder (Rf)" "COMPONENT ARtg Pnni Topology (Top)" "COMPONENT ARtg Pnni Port"
Common Verbs	Help List Display Add DELete

GROUP ARtg Pnni Provisioned (Prov)

Properties	Provisioned
Description	This group contains the generic provisionable attributes of a *Pnni* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni nodeAddressPrefix

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM address prefix of this node for all levels of the hierarchy. If this attribute is set to the null string, then a default node address prefix is computed as follows: the value provisioned for

the *ModuleData* component's *nodePrefix* attribute, followed by a unique MAC address (6 octets).

If a value is assigned, it must be exactly 38 characters long. All characters must be hexadecimal with the following restrictions:
- the first two characters must be a number between 10 and FE, inclusive.
- if the first two characters are'45', the 18th character must be an 'F' or an 'f'.

Mib: AtmRouting

Values: String (0..19, Hex)

Default: No default

ATTRIBUTE ARtg Pnni defaultScope

Access: Read: All
Write: All

Description: This attribute specifies the default PNNI scope for ATM addresses associated with this node. The PNNI scope determines the level to which the address is advertised within the PNNI routing domain. A provisioned *Addr* component may override the default scope in a *PnniInfo* subcomponent.

The defaultScope can't be used for default address advertizement unless the prefix of the default address is different from that of the node address.

A value of 0 means that all addresses which do not have provisioned scopes is advertised globally within the PNNI routing domain.

The value specified must be numerically smaller than or equal to that of the lowest level at which this node is configured in the PNNI hierarchy.

Mib: AtmRouting

Values: Decimal (0..104)

Default: 0

ATTRIBUTE ARtg Pnni domain

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the routing domain name. This attribute should be set identically for all nodes in the same routing domain.
Mib	AtmRouting
Values	String (1..32, ASCII)
Default	1

ATTRIBUTE ARtg Pnni maxAlternateRoutesOnCrankback (maxAltRtsOnCrankbck)

Access	Read: All Write: All
Description	This attribute specifies the number of rerouting attempts before a call requiring crank-back is rejected.
Mib	AtmRouting
Values	Decimal (0..20)
Default	1

ATTRIBUTE ARtg Pnni horizontalLinkInactivityTime

Access	Read: All Write: All
Description	This attribute specifies the length of time a node continues to advertise a horizontal (logical) link for which it has not received an LGN Horizontal Link Information Group. Increasing this timer allows the link to increase tolerance of Information Group packet loses, but also increases the duration of advertising a stale link. Decreasing the timer has the reverse effect.
Mib	AtmRouting
Values	Decimal (30..3600)
Units	seconds

Default	120

ATTRIBUTE ARtg Pnni pathDiversity

Access	Read: All Write: All
Description	This attribute specifies, as a percentage, how diverse the alternate paths should be relative to each other. For example, diversity degree of 60% means that the alternate paths have at least 60% of their links distinct. Setting this attribute to 0 means that all alternate paths are accepted.
Mib	AtmRouting
Values	Decimal (0..100)
Units	%
Default	50

ATTRIBUTE ARtg Pnni outgoingNcciIeFormat (nccile)

Access	Read: All Write: All
Description	This attribute specifies the Network Call Correlation Identifier (NCCI) IE format in outgoing SETUP messages for all PNNI interfaces on this node. ***backwardsCompatible*** selects both the Nortel Networks proprietary 0xF0 NCCI IE format and the ATM Forum standard 0xEF NCCI IE format. The Nortel Networks Multiservice Switch is able to differentiate the 0xF0 MDCR IE from 0xF0 NCCI IE. ***atmForum*** selects the ATM Forum0xEF NCCI IE format. ***backwardsCompatible*** should be selected if any node within the network is not running the software release containing this *outgoingNcciIeFormat* attribute. ***atmForum*** should only be selected if all nodes within the

network have been upgraded to the software release containing this *outgoingNcciIeFormat* attribute.

Mib: AtmRouting

Values:
backwardsCompatible
atmForum

Default: No default

ATTRIBUTE ARtg Pnni optimizationMetric (optMetric)

Access:
Read: All
Write: All

Description: This attribute is a vector that specifies the optimization metric for each ATM service category. The optimization metric is used during Generic Connection Admission Control (GCAC) route computation.

Setting the value to ***cdv*** for a particular service category causes GCAC to optimize for cell delay variation on call setups requiring that service category.

Setting the value to ***maxCtd*** for a particular service category causes GCAC to optimize for maximum cell transfer delay on call setups requiring that service category.

Setting the value to ***aw*** for a particular service category causes GCAC to optimize for administrative weight on call setups requiring that service category.

Mib: AtmRouting

Vector of:
cdv
maxCtd
aw

Index:
cbr
rtVbr
nrtVbr
ubr

Default: (aw, aw, aw, aw)

ATTRIBUTE ARtg Pnni uniToPnniScopeMap

Access	Read: All Write: All
Description	This attribute specifies the mapping of the UNI scope into a PNNI routing level. The mapping applies to the membership scope which is passed across the UNI via ILMI address registration. The PNNI routing level is then advertised along with the corresponding reachable address. The mapping also applies to the connection scope of an incoming SETUP message for Anycast call requests. The PNNI routing level then specifies the routing range for the call. The table must be provisioned in descending order.
Mib	AtmRouting
Vector of	Decimal (0..104)
Index	Decimal (1..15)
Default	([3] 96, [2] 80, [2] 72, [3] 64, [2] 48, [2] 32, 0)

GROUP ARtg Pnni PglElectionParms (PglParms)

Properties	Provisioned
Description	This group contains the default provisionable attributes for the peer group leader election timer parameters of a *Pnni* component. These attributes can be overridden by setting the corresponding attribute in *cfgnode* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni pglInitTime

Access	Read: All Write: All
Description	This attribute specifies how long this node delays advertising its choice of preferred peer group leader after having reached the full peer state with at least one neighbor in the peer group. Increasing this timer allows the node to be more informed before choosing a

	leader, thus fewer rounds of elections are required, but more time is required for each round of election.
Mib	AtmRouting
Values	Decimal (0..65535)
Units	seconds
Default	15

ATTRIBUTE ARtg Pnni overrideDelay

Access	Read: All Write: All
Description	This attribute specifies how long a node waits for itself to be declared the preferred peer group leader by unanimous agreement among its peers. On timeout, if the node receives 2/3 majority, it declares itself as leader; otherwise, election enters the ***HungElection*** state.
Mib	AtmRouting
Values	Decimal (1..65535)
Units	seconds
Default	30

ATTRIBUTE ARtg Pnni reElectionInterval

Access	Read: All Write: All
Description	This attribute specifies how long this node waits, after losing connectivity to the current peer group leader, before re-starting the process of electing a new peer group leader.
Mib	AtmRouting
Values	Decimal (1..65535)
Units	seconds
Default	15

GROUP ARtg Pnni HelloParms (HlParms)

Properties	Provisioned
Description	This group contains the default provisionable Hello protocol parameters.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni helloHoldDown (hhd)

Access	Read: All Write: All
Description	This attribute specifies the rate at which this node sends out Hello packets. It specifies the default minimum length of time between successive Hellos used by routing control channels on this node. A provisioning check is made to ensure that this value cannot be greater than *helloInterval*. The value can be overridden on a per interface or per VPT basis by changing the *Atmif Pnni Rcc* or *Atmif Vpt Pnni Rcc helloHoldDown* attribute.
Mib	AtmRouting
Values	Decimal (0.1..65535.0)
Units	seconds
Default	1.0

ATTRIBUTE ARtg Pnni helloInterval (hli)

Access	Read: All Write: All
Description	This attribute specifies the default duration of the Hello Timer for routing control channels on this node. Every *helloInterval* seconds, this node sends out a Hello packet to the neighbor node, subject to the *helloHoldDown* timer having expired at least once since the last Hello packet was sent. A provisioning check is made to ensure that this value cannot be less than *helloHoldDown*.

	The value can be overridden on a per interface or per VPT basis by changing the *Atmif Pnni Rcc* or *Atmif Vpt Pnni Rcc helloInterval* attribute.
Mib	AtmRouting
Values	Decimal (1..65535)
Units	seconds
Default	15

ATTRIBUTE ARtg Pnni helloInactivityFactor (hif)

Access	Read: All Write: All
Description	This attribute specifies the number of Hello intervals allowed to pass without receiving a Hello from a neighbor, before an attempt is made to re-stage the RCC to that neighbor. The hello inactivity timer is enabled if the *helloState* of the *RCC* component is ***oneWayInside***, ***twoWayInside***, ***oneWayOutside***, ***twoWayOutside*** or ***commonOutside***. The value can be overridden on a per interface or per VPT basis by changing the *Atmif Pnni Rcc* or *Atmif Vpt Pnni Rcc helloInactivityFactor* attribute.
Mib	AtmRouting
Values	Decimal (1..65535)
Default	5

GROUP ARtg Pnni PTSETimerParms (PtseParms)

Properties	Provisioned
Description	This group contains the provisionable attributes for the PTSE timer values of a *Pnni* component. Group *AtmPnniPtseTimerParms* also exist under *ARtg Pnni CfgNode/ <n>* that can override values specified here.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni ptseHoldDown (ptHldDn)

Access	Read: All Write: All
Description	This attribute is used to limit the rate at which this node sends out PTSE packets. It specifies the minimum length of time that this node must wait between sending successive PTSE packets. The value of this attribute is constraint by the equation: *ptseHoldDown* * 2 < *ptseRefreshInterval* * *ptseLifetimeFactor*.
Mib	AtmRouting
Values	Decimal (0.1..65535.0)
Units	seconds
Default	1.0

ATTRIBUTE ARtg Pnni ptseRefreshInterval (ptRefInt)

Access	Read: All Write: All
Description	This attribute specifies the duration of the PTSE Timer. Every *ptseRefreshInterval* seconds, this node sends out a self-originated PTSE packet to the neighbor node, subject to the ptseHoldDown timer having expired at least once since the last PTSE packet was sent. The value of this attribute is constraint by the equation: *ptseHoldDown* * 2 < *ptseRefreshInterval* * *ptseLifetimeFactor*.
Mib	AtmRouting
Values	Decimal (300..65535)
Units	seconds
Default	1800

ATTRIBUTE ARtg Pnni ptseLifetimeFactor (ptLifeFac)

Access	Read: All Write: All

Description	This attribute specifies the PTSE lifetime multiplier. The result of multiplying the *ptseRefreshInterval* by this value is used as the initial lifetime that this node places into PTSEs. The value of this attribute is constraint by the equation: *ptseHoldDown* * 2 < *ptseRefreshInterval* * *ptseLifetimeFactor*.
Mib	AtmRouting
Values	Decimal (101..1000)
Units	%
Default	200

ATTRIBUTE ARtg Pnni requestRxmtInterval (reqRxInt)

Access	Read: All Write: All
Description	This attribute specifies the period between retransmissions of unacknowledged Database Summary packets, PTSE Request packets and PTSPs.
Mib	AtmRouting
Values	Decimal (1..65535)
Units	seconds
Default	5

ATTRIBUTE ARtg Pnni peerDelayedAckInterval (peerDAckInt)

Access	Read: All Write: All
Description	This attribute specifies the minimum length of time between transmissions of delayed PTSE acknowledgment packets.
Mib	AtmRouting
Values	Decimal (0.1..65535.0)
Units	seconds
Default	1.0

GROUP ARtg Pnni ChangeThresholds (ThreshParms)

Properties	Provisioned
Description	This group contains the provisionable attributes for the change thresholds of an *ARtg Pnni* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni avcrMt

Access	Read: All Write: All
Description	This attribute multiplied by the Maximum Cell Rate specifies the minimum threshold used in the algorithms that determine significant change for average cell rate parameters.
Mib	AtmRouting
Values	Decimal (1..99)
Units	%
Default	3

ATTRIBUTE ARtg Pnni avcrPm

Access	Read: All Write: All
Description	This attribute multiplied by the current Available Cell Rate specifies the threshold used in the algorithms that determine significant change for AvCR parameters. If the resulting threshold is lower than the minimum threshold, the minimum threshold is used. Increasing the value of this attribute increases the range of insignificance and reduces the amount of PTSP flooding due to changes in resource availability.
Mib	AtmRouting
Values	Decimal (1..99)
Units	%

Default	50

ATTRIBUTE ARtg Pnni cdvPm

Access	Read: All Write: All
Description	This attribute specifies the proportional multiplier used in the algorithms that determine significant change for CDV metrics. Increasing the value of this attribute increases the range of insignificance and reduces the amount of PTSP flooding due to changes in resource availability.
Mib	AtmRouting
Values	Decimal (1..99)
Units	%
Default	25

ATTRIBUTE ARtg Pnni ctdPm

Access	Read: All Write: All
Description	This attribute specifies the proportional multiplier used in the algorithms that determine significant change for CTD metrics. Increasing the value of the attribute increases the range of insignificance and reduces the amount of PTSP flooding due to changes in resource availability.
Mib	AtmRouting
Values	Decimal (1..99)
Units	%
Default	50

GROUP ARtg Pnni Operational (Oper)

Properties	Operational
Description	This group contains the generic operational attributes of an *ARtg Pnni* component.

Mib	AtmRouting

ATTRIBUTE ARtg Pnni topologyMemoryExhaustion (topMemExhaustion)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the topology database is overloaded. A node goes into a database overload state when it fails to store the complete topology database due to insufficient memory in the node. A node in this state performs resynchronization periodically by restarting all its Neighbor Peer Finite State Machines. The node stays in this state until it synchronizes with all of its neighbors without any overload problems. When this attribute is set an alarm is issued.
Mib	AtmRouting
Values	false true
Default	No default

ATTRIBUTE ARtg Pnni ptsesInDatabase

Access	Read: All Write: Illegal
Description	This attribute indicates the number of PTSEs stored in this node's topology database for this level.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

GROUP ARtg Pnni Statistics (Stats)

Properties	Operational
Description	This group contains the statistical operational attributes of an *ARtg Pnni* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni successfulRoutingAttempts

Access	Read: All Write: Illegal
Description	This attribute counts successful PNNI routing attempts. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni failedRoutingAttempts

Access	Read: All Write: Illegal
Description	This attribute counts all calls routed through PNNI which failed. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni alternateRoutingAttempts

Access	Read: All Write: Illegal
Description	This attribute counts successful PNNI alternate routing attempts. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

GROUP ARtg Pnni SvccBasedRccParms (SvccRcc)

Properties	Provisioned

Description	This group contains the default attributes of SVCC-based Rcc. Group *AtmPnniDefaultSvccBasedRccParms* also exists under *ARtg Pnni Cfgnode* that can override the values specified here.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni svccInitTime (iTime)

Access	Read: All Write: All
Description	This attribute specifies the default time this node delays initiating establishment of an SVCC to a neighbor after determining that such an SVCC should be established.
Mib	AtmRouting
Values	Decimal (0..120)
Units	seconds
Default	4

ATTRIBUTE ARtg Pnni svccRetryTime (rTime)

Access	Read: All Write: All
Description	This attribute specifies the length of time this node delays before attempting to re-establish the SVCC-base RCC. This condition occurs when an RCC cannot be established, either during the initial setup, or is unexpectedly torn down.
Mib	AtmRouting
Values	Decimal (20..60)
Units	seconds
Default	30

ATTRIBUTE ARtg Pnni svccCallingIntegrityTime (clgIntegTime)

Access	Read: All Write: All

Description	This attribute specifies the length of time this node waits for an SVCC to become fully established before giving up and tearing it down. The condition occurs when the node initiates establishment of the SVCC as the calling party.
Mib	AtmRouting
Values	Decimal (10..3600)
Units	seconds
Default	35

ATTRIBUTE ARtg Pnni svccCalledIntegrityTime (cldIntegTime)

Access	Read: All Write: All
Description	This attribute specifies the length of time this node waits for an SVCC to become fully established before giving up and tearing it down. This condition occurs when the node has accepted the SVCC setup as the called party.
Mib	AtmRouting
Values	Decimal (25..3615)
Units	seconds
Default	50

ATTRIBUTE ARtg Pnni svccEstablishIntegrityTime (estIntegTime)

Access	Read: All Write: All
Description	This attribute specifies the length of time this node waits for an SVCC SETUP message from a neighbor, from which a SVCC SETUP message is expected, once the node knows of the existence of that neighbor. An alarm is raised when the *svccEstablishIntegrityTimer* expires.
Mib	AtmRouting
Values	Decimal (15..3600)

Units	seconds
Default	60

COMPONENT ARtg Pnni RouteFinder (Rf)

Groups	"GROUP ARtg Pnni Rf Criteria"
Scope	Device
Description	*ARtg Pnni RouteFinder* This component is used to compute a list of routes to a specified destination that satisfy certain traffic and routing requirements. To display a list of computed routes: - set the route computation criteria - issue the *Run* command
Mib	AtmRouting
Common Verbs	Help List Display

VERB Run ARtg Pnni Rf

Impact	Passive
Description	Run ARtg Pnni RouteFinder This verb computes a list of routes according to the specified routing criteria and displays the results. The results are in the following format: Route 1: node id = <node ID > node name@level = <EM/node name@level> port id = <port ID> interface name = <atmif/number> node id = <node ID > node name@level = <EM/node name@level> port id = <port ID>

interface name = <atmif/number>
...
node id = <node ID>
node name@level = <EM/node name@level>

Route 2:
node id = <node ID >
node name@level = <EM/node name@level>
port id = <port ID>
interface name = <atmif/number>

node id = <node ID >
node name@level = <EM/node name@level>
port id = <port ID>
interface name = <atmif/number>
...
node id = <node ID>
node name@level = <EM/node name@level>
...
...
Route n:
node id = <node ID >
node name@level = <EM/node name@level>
port id = <port ID>
interface name = <atmif/number>
...
node id = <node ID>
node name@level = <EM/node name@level>

The *interface name*'s value can take one of the following forms:
(a) ***AtmIf/<1-4095>*** - If the interface is an Atm Interface.
(b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the interface is a VPT interface.
(c) Values ***<0-4294967295>*** - If the link is a logical link.

If the port id is not decoded (for example, on nodes that are not a Nortel Networks Multiservice switch), the *interface name* is left blank.

If the node name is not available, the *node name@level* is left blank.

GROUP ARtg Pnni Rf Criteria

Properties	Operational
Description	This group contains the attributes specifying the routing criteria for the route computation.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Rf destinationAddress (destAddr)

Access	Read: All Write: All
Description	This attribute specifies the destination NSAP address to be used for the computation. If this attribute specifies an invalid address then no routes will be found.
Mib	AtmRouting
Values	String (1..20, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Rf maxRoutes

Access	Read: All Write: All
Description	This attribute specifies the maximum number of local and PNNI routes to be computed and displayed. When the *lbMethod* attribute is set to ***maxAvCr***, ***random***, ***avCrProb***, ***optMetricProb***, or ***avCrOptMetricProb***, a single PNNI route will be displayed in the result of the *RouteFinder* because only one path is computed during the PNNI routing process. When the *lbMethod* attribute is set to ***none***, the number of PNNI routes that will be displayed is limited by the smallest of the number of best paths found or the *Artg Pnni Lb/<srvCat> maxPaths* attribute.
Mib	AtmRouting
Values	Decimal (1..15)
Default	1

ATTRIBUTE ARtg Pnni Rf txTrafficDescType (txTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management that is applied to the transmit direction as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmRouting
Values	1 2 3 4 5 6 7 8 9
Default	1

ATTRIBUTE ARtg Pnni Rf rxTrafficDescType (rxTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management that is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute. When ***sameAsTx*** is selected, the *rxTrafficDescType* as well as the *rxTrafficDescParm* are taken from the transmit values.
Mib	AtmRouting
Values	1 2 3 4

5
6
7
8
9
sameAsTx

Default sameAsTx

ATTRIBUTE ARtg Pnni Rf atmServiceCategory (service)

Access Read: All
Write: All

Criticality Component

Description This attribute specifies the ATM service category for both directions of the connection.

If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

If this attribute is set to other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduced value to the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate that varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are

assumed to be of significantly reduced value to the application. VBR real time service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications that have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS. For those cells that are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, the application expects a bound on the mean cell transfer delay. VBR non-real time service may support statistical multiplexing of connections.

The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to either the cell loss ratio experienced by a UBR connection, or the cell transfer delay experienced by cells on the connection.

Mib	AtmRouting
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) derivedFromBBC (derived)
Default	unspecifiedBitRate

ATTRIBUTE ARtg Pnni Rf fwdQosClass (fwdQos)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A

performance requirements (Circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that will meet Service Class B performance requirements (Variable bit rate audio and video).

Class ***3*** supports a QOS that will meet Service Class C performance requirements (Connection-Oriented Data Transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (Connectionless Data Transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib	AtmRouting
Values	0 1 2 3 4
Default	0

ATTRIBUTE ARtg Pnni Rf bwdQosClass (bwdQos)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C

performance requirements (Connection-Oriented Data Transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (Connectionless Data Transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.

Mib: AtmRouting

Values:
0
1
2
3
4
sameAsFwd

Default: sameAsFwd

ATTRIBUTE ARtg Pnni Rf bearerClassBbc (bcBbc)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. This attribute must either be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing

requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***) and timing requirements are user defined (that is, transparent to the network).When ***x*** is set the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.

Mib: AtmRouting

Values:
a
c
x
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE ARtg Pnni Rf transferCapabilityBbc (tcBbc)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the transfer capability for this connection. Uni 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability - TrafficType, Timing>
0 - NoIndication, NoIndication
1 - NoIndication, yes
2 - NoIndication, no
5 - CBR, yes
8 - VBR, NoIndication
9 - VBR, yes

10 - VBR, no

A value of ***notApplicable*** specifies that the user does not want to specify the transfer capability.

The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data.

The NoIndication for traffic type is used if the user has not set the traffic type; this is also the case for end-to-end timing.

The yes for end-to-end timing indicates that end-to-end timing is required.

The no for end-to-end timing indicates that end-to-end timing is not required.

The value ***derivedFromServiceCategory*** specifies that the actual value used for this connection is derived from the value of the *atmServiceCategory.* This attribute must either be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib	AtmRouting
Values	0 1 2 5 8 9 10 notApplicable derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE ARtg Pnni Rf clippingBbc (cBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered but before an associated connection is switched through.
Mib	AtmRouting
Values	no yes
Default	no

ATTRIBUTE ARtg Pnni Rf bestEffort

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. The value ***derivedFromServiceCategory*** specifies that the actual value used for this connection is derived from the value of the *atmServiceCategory.* This attribute must either be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib	AtmRouting
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE ARtg Pnni Rf optimizationMetric (optMetric)

Access	Read: All Write: All
Description	This attribute specifies the optimization metric to be used in the route computation; one of cell delay variation (***cdv***), maximum cell transfer delay (***maxCtd***), or administrative weight (***aw***).
Mib	AtmRouting
Values	cdv maxCtd aw
Default	aw

ATTRIBUTE ARtg Pnni Rf routingLevelScope

Access	Read: All Write: All
Description	This attribute specifies the highest PNNI level used for the route computation. Routes are not computed beyond this level.
Mib	AtmRouting
Values	Decimal (0..104)
Default	0

ATTRIBUTE ARtg Pnni Rf lbMinVariance (minVar)

Access	Read: All Write: All
Description	This attribute specifies the minimum variance value to be used for the *RouteFinder*'s optimization metric and service category.

A larger variance allows more usable paths to be considered for load balancing.

A minimum variance of zero means that only the *lbSlopeVariance* attribute is used in determining the acceptable variance.

The maximum range boundaries for each of the optimization metrics are:
- *cdv*: 2147483647 (for cbr and rtVbr only).
- *maxCtd*: 2147483647 (for cbr and rtVbr only).
- *aw*: 4294967295.

The acceptable variance is calculated based on the following formula:
*acceptableVariance = lbMinVariance + optM * lbSlopeVariance/* **100**
where *optM* represents the optimization metric value of the best path.

Mib: AtmRouting

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE ARtg Pnni Rf lbSlopeVariance (slopeVar)

Access: Read: All
Write: All

Description: This attribute specifies the slope of the acceptable variance for the *RouteFinder*'s optimization metric and service category.

A *lbSlopeVariance* of zero means that the acceptable variance is given only by the *lbMinVariance* attribute. If both *lbMinVariance* and *lbSlopeVariance* attributes are zero, means that only the best paths of equal value to the *optimizationMetric* will be considered for load balancing.
The acceptable variance is calculated based on the following formula:
*acceptableVariance = lbMinVariance + optM * lbSlopeVariance/*

	100 where *optM* represents the optimization metric value of the best path.
Mib	AtmRouting
Values	Decimal (0..1900)
Units	%
Default	0

ATTRIBUTE ARtg Pnni Rf lbMethod (method)

Access	Read: All Write: All
Description	This attribute specifies the load balancing method for the selected service category of the call. ***maxAvCr***. PNNI routing chooses the path that has the maximum available cell rate as the routing path. ***random***. The routing path is chosen randomly from all the acceptable paths. ***avCrProb***. The routing path is chosen with a probability in proportion to its available cell rate. This method will result in the more frequent selection of a route having a higher available cell rate over that with a lower available cell rate. ***optMetricProb***. The routing path is chosen with a probability inversely proportional to the optimization metric. This method will result in the more frequent selection of a route having the lowest value of the optimization metric over that with a higher optimization metric. ***avCrOptMetricProb***. The routing path is chosen with a probability that is based on both the proportional value of the available cell rate and the inverse proportional value of the optimization metric. ***none***. The routing path is chosen such that only the best path(s)

will be displayed. No load balancing is applied.

When this attribute is set to ***maxAvCr***, ***random***, ***avCrProb***, ***optMetricProb***, or ***avCrOptMetricProb***, a single PNNI route will be displayed in the result of the *RouteFinder* because only one path is selected during the PNNI routing process for these methods. When this attribute is set to ***none***, the number of PNNI routes that will be displayed is limited by the smallest of, the *maxRoutes* attribute, the number of best paths found, or the *Artg Pnni Lb/<srvCat> maxPaths* attribute.

Mib: AtmRouting

Values:
maxAvCr
random
avCrProb
optMetricProb
avCrOptMetricProb
none

Default: random

ATTRIBUTE ARtg Pnni Rf useRouteCaching (useRc)

Access:
Read: All
Write: All

Description: This attribute specifies whether to look in the route cache before doing an on-demand route computation.

Setting *useRouteCaching* to ***no*** causes *RouteFinder* to use on-demand route computation and displays the resulting list of computed routes. Acceptable paths found in this computation are not stored in the *Cache*.

Setting *useRouteCaching* to ***yes***, and using the same values as the provisioned *LoadBalancing* variance attributes, causes *RouteFinder* to search the cache for an acceptable route before performing an on-demand route computation. The acceptable paths are displayed and the newly computed routes are stored in the cache.

Setting *useRouteCaching* to ***yes*** and applying load balancing on

this iteration of the *RouteFinder*, uses the regular *LoadBalancing minVariance* and *slopeVariance* values since all routes stored in the cache are within these provisioned multi_path variance parameters.

Setting the *RouteFinder* attributes to a different value from their *LoadBalancing* counterparts is the same as setting *useRouteCaching* to ***no***.

Mib: AtmRouting

Values: no
yes

Default: no

ATTRIBUTE ARtg Pnni Rf rxTrafficDescParm (rxTdp)

Access: Read: All
Write: All

Description: This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and minimum cell rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. The value of CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for usage parameter control (UPC).

When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused).

When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused).

When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for

CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000

I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2 or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or
I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute will be taken from the *txTrafficDescParm*.

Mib	AtmRouting
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE ARtg Pnni Rf txTrafficDescParm (txTdp)

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of

PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero.

When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9*** the transmit traffic will be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7*** and ***8***, the transmit traffic will be

shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic will be shaped at the next rate above the PCR.

Mib	AtmRouting
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE ARtg Pnni Rf fwdQosParameters (fqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR, and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR, and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmRouting
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE ARtg Pnni Rf bwdQosParameters (bqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR, and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR, and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmRouting
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

COMPONENT ARtg Pnni ConfiguredNode (CfgNode)

Instance	Decimal (0..104)
Groups	"GROUP ARtg Pnni CfgNode Provisioned (Prov)" "GROUP ARtg Pnni CfgNode Operational (Oper)" "GROUP ARtg Pnni CfgNode HelloParms (HlParms)" "GROUP ARtg Pnni CfgNode PTSETimerParms (PtseParms)" "GROUP ARtg Pnni CfgNode SvccBasedRccParms (SvccRcc)" "GROUP ARtg Pnni CfgNode ChangeThresholds (ThreshParms)"
Scope	Device

Description	*ARtg Pnni ConfiguredNode/<level>* This component specifies the participation of this node at the level in the PNNI hierarchy indicated by the *level*.
Mib	AtmRouting
Opt. Subcomp.	"COMPONENT ARtg Pnni CfgNode SummaryAddress (SAddr)" "COMPONENT ARtg Pnni CfgNode PeerGroupLeader (Pgl)"
Dyn. Subcomp.	"COMPONENT ARtg Pnni CfgNode Neighbor (Nbr)" "COMPONENT ARtg Pnni CfgNode DefSummaryAddress (DefSAddr)" "COMPONENT ARtg Pnni CfgNode UpLink" "COMPONENT ARtg Pnni CfgNode RoutingControlChannel (Rcc)"
Common Verbs	Help List Display Add DELete

GROUP ARtg Pnni CfgNode Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of a *ConfiguredNode* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode nodeId

Access	Read: All Write: All
Criticality	Component
Description	This attribute allows explicit specification of a node ID for this configured node. If a value is assigned in this attribute, it overrides any system computed node ID for this configured node. If this attribute is empty, then the node ID is computed by the system in *opNodeId*.

Mib	AtmRouting
Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode peerGroupId (pgId)

Access	Read: All Write: All
Criticality	Component
Description	This attribute allows explicit specification of the peer group ID of the Logical Group Node (LGN). The peer group ID is specified by 14 octets where the first octet specifies the level of the node and the remaining 13 octets form the identifier information. The value in the identifier information field must be encoded with the 104-n right-most bits set to zero, where n is the level. If this value is set to null, then the peer group ID is computed by the system and displayed under attribute *opPeerGroupId*.
Mib	AtmRouting
Values	String (0..14, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode restrictTransit

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies whether the *configurednode* should restrict tandeming of SVCs. If this attribute is set to ***true***, then other nodes in the PNNI hierarchy avoids traversing this node during route computation.
Mib	AtmRouting
Values	false true

Default	false

ATTRIBUTE ARtg Pnni CfgNode horizontalLinkInactivityTime

Access	Read: All Write: All
Description	This attribute specifies the length of time a node continues to advertise a horizontal (logical) link for which it has not received and processed an LGN Horizontal Link Information Group. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni horizontalLinkInactivityTime*.
Mib	AtmRouting
Values	Decimal (30..3600) sameAsPnni
Units	seconds
Default	sameAsPnni

GROUP ARtg Pnni CfgNode Operational (Oper)

Properties	Operational
Description	This group contains the generic operational attributes of a *ConfiguredNode* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode nodeAddress

Access	Read: All Write: Illegal
Description	This attribute indicates the address of the node at this level. At the lowest level, the *nodeAddress* is determined by the value of the *nodeAddressPrefix* attribute (19 octets) for the *ARtg Pnni* component followed by the level of this *CfgNode* (1 octet). For LGNs, the *nodeAddress* is the same as the *nodeAddress* of the node at the lowest level, with the selector field set to the level of the peer group containing the LGN.

Mib	AtmRouting
Values	String (20, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode opNodeId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the node id of the node at this level. The default node id is computed as follows. If this is the lowest level node, then the default node id is computed as the level (one octet), followed by the integer value 160 (one octet), followed by the node address (20 octets). If this is not the lowest level node, then the default node id is computed as the level (one octet), followed by the 14 octet peer group id of the child peer group which the LGN represents, followed by the ESI specified in the node address (6 octets), followed by the integer value 0 (one octet).
Mib	AtmRouting
Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode opPeerGroupId (pgIdOp)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the peer group id of the node at this level. The value is determined by the provisioned *peerGroupId* attribute. If the *peerGroupId* is a null string then the peer group id is computed as follows: The peer group id for a lowest level node is computed to be the

node's level (one octet), followed by the first <level> bits of the *nodeAddress*, followed by zero or more padding 0 bits.

The peer group id for an LGN is computed to be the LGN's level (one octet), followed by the first <level> bits of the id of the peer group which this LGN represents, followed by zero or more padding 0 bits.

Mib	AtmRouting
Values	String (14, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode numNeighbors

Access	Read: All Write: Illegal
Description	This attribute indicates the number of PNNI nodes which are neighbors of this node at this level.
Mib	AtmRouting
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode pglElectionState

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the peer group leader election process. Possible values for this attribute are: ***notApplicable***: the node is inactive (***lgnState*** = inactive) ***starting***: the initial state of the state machine. ***awaiting***: the node has started the Hello Finite State Machine on at least one link, and no peer has been found yet. ***awaitingFull***: no database synchronization process has been completed yet but at least one neighboring peer has been found.

initialDelay: Database synchronization has been completed with at least one neighboring peer. The node must wait *pglInitTime* seconds before it can select and advertise its preferred Peer Group Leader (PGL).

calculating: the node is in the process of calculating what its new choice for preferred PGL.

operNotPgl: a non PGL node is in the process of determining which node has the highest priority to be PGL by examining PTSEs sent by other nodes.

operPgl: a PGL node is in the process of determining whether another node has a higher priority than itself by examining PTSEs sent by other nodes.

awaitUnanimity: the node has chosen itself as PGL. If the node has been elected unanimously, it generates a Unanimity event. It waits for unanimity or expiration of the *overrideDelay* timer before declaring itself peer group leader.

hungElection: the node has chosen itself as PGL with less than 2/3 of the other nodes advertising it as their preferred PGL. In this case either this node should change its choice of preferred PGL, or the other nodes are going to accept it as PGL.

awaitReElection: the node has lost connectivity to the current PGL. The connectivity must be reestablished before the *reElectionInterval* timer fires, otherwise the election is done again.

Mib: AtmRouting

Values:
notApplicable
starting
awaiting
awaitingFull
initialDelay
calculating
operNotPgl

operPgl
awaitUnanimity
hungElection
awaitReElection

Default: No default

ATTRIBUTE ARtg Pnni CfgNode lgnState

Access: Read: All
Write: Illegal

Description: This attributes indicates whether the node has become operational at that level of the hierarchy. For *CfgNode* instances above the lowest level, a value of ***Active*** indicates that the node has been elected PGL at the next lower level and has instantiated an LGN at this level to represent this peer group. A value of ***Inactive*** indicates that this node has not been elected PGL at the lower level.
At the lowest level, the value is set to ***notApplicable***.

Mib: AtmRouting

Values:
inactive
active
notApplicable

Default: No default

ATTRIBUTE ARtg Pnni CfgNode preferredPglNodeId

Access: Read: All
Write: Illegal

Description: This attribute indicates the Node ID of the node which this node believes should be the peer group leader. This is also the value the node is currently advertising in the ‘Preferred Peer Group Leader Node Id’ field of its nodal information group within the given peer group. If this attribute is empty, it indicates the preferred PGL node id is unknown.

Mib: AtmRouting

Values: String (0..22, Hex)

Default	No default

ATTRIBUTE ARtg Pnni CfgNode preferredPglLeadershipPriority

Access	Read: All Write: Illegal
Description	This attribute indicates the leadership priority of the node that this node believes should be the peer group leader at this point in time.
Mib	AtmRouting
Values	Decimal (0..255)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode opLeadershipPriority

Access	Read: All Write: Illegal
Description	This attribute indicates the leadership priority advertised by this node.
Mib	AtmRouting
Values	Decimal (0..255)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode preferredPglNodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the value of the *nodeName* attribute for the node that this node believes should be the peer group leader. This attribute corresponds to the Node ID value that the node is currently advertising in the ‘Preferred Peer Group Leader Node Id’ field of its nodal information group within the given peer group. If this attribute is empty, it indicates the preferred PGL node name is unknown.
Mib	AtmRouting

Values	String (0..12, ASCII)
Default	No default

GROUP ARtg Pnni CfgNode HelloParms (HlParms)

Properties	Provisioned
Description	This group contains the default provisionable Hello protocol parameters.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode helloHoldDown (hhd)

Access	Read: All Write: All
Description	This attribute specifies the rate at which this node sends out Hello packets. It specifies the default minimum length of time between successive Hellos used by routing control channels on this node at this level. This value cannot be greater than *helloInterval*. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni helloHoldDown.*
Mib	AtmRouting
Values	Decimal (0.1..65535.0) sameAsPnni
Units	seconds
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode helloInterval (hli)

Access	Read: All Write: All
Description	This attribute specifies the default duration of the Hello Timer for routing control channels on this node. Every *helloInterval* seconds, this node sends out a Hello packet to the neighbor node, subject to the *helloHoldDown* timer having expired at least once since the last Hello packet was sent. This value cannot be less than *helloHoldDown*. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni helloInterval*.

Mib	AtmRouting
Values	Decimal (1..65535) sameAsPnni
Units	seconds
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode helloInactivityFactor (hif)

Access	Read: All Write: All
Description	This attribute specifies the number of Hello intervals allowed to pass without receiving a Hello from a neighbor, before an attempt is made to re-stage the RCC to that neighbor. The hello inactivity timer is enabled when the *helloState* is one of ***oneWayInside***, ***twoWayInside***, ***oneWayOutside***, ***twoWayOutside*** or ***commonOutside***. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni helloInactivityFactor*.
Mib	AtmRouting
Values	Decimal (1..65535) sameAsPnni
Default	sameAsPnni

GROUP ARtg Pnni CfgNode PTSETimerParms (PtseParms)

Properties	Provisioned
Description	This group contains the provisionable attributes for the PTSE timer values of a *CfgNode* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode ptseHoldDown (ptHldDn)

Access	Read: All Write: All
Description	This attribute is used to limit the rate at which this node sends out PTSE packets. It specifies the minimum length of time that this

node must wait between sending successive PTSE packets.
The value of this attribute is constraint by the equation:
ptseHoldDown * 2 < *ptseRefreshInterval* * *ptseLifetimeFactor*.
If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni ptseHoldDown*.

Mib: AtmRouting

Values: Decimal (0.1..65535.0)
sameAsPnni

Units: seconds

Default: sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode ptseRefreshInterval (ptRefInt)

Access: Read: All
Write: All

Description: This attribute specifies the duration of the PTSE Timer. Every *ptseRefreshInterval* seconds, this node sends out a self-originated PTSE packet to the neighbor node, subject to the ptseHoldDown timer having expired at least once since the last PTSE packet was sent.
The value of this attribute is constraint by the equation:
ptseHoldDown * 2 < *ptseRefreshInterval* * *ptseLifetimeFactor*.
If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni ptseRefreshInterval*.

Mib: AtmRouting

Values: Decimal (300..65535)
sameAsPnni

Units: seconds

Default: sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode ptseLifetimeFactor (ptLifeFac)

Access: Read: All
Write: All

Description	This attribute specifies the PTSE lifetime multiplier. The result of multiplying the *ptseRefreshInterval* by this value is used as the initial lifetime that this node places into PTSEs. The value of this attribute is constraint by the equation: *ptseHoldDown* * 2 < *ptseRefreshInterval* * *ptseLifetimeFactor*. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni ptseLifetimeFactor*.
Mib	AtmRouting
Values	Decimal (101..1000) sameAsPnni
Units	%
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode requestRxmtInterval (reqRxInt)

Access	Read: All Write: All
Description	This attribute specifies the period between retransmissions of unacknowledged Database Summary packets, PTSE Request packets and PTSPs. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni requestRxmtInterval*.
Mib	AtmRouting
Values	Decimal (1..65535) sameAsPnni
Units	seconds
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode peerDelayedAckInterval (peerDAckInt)

Access	Read: All Write: All
Description	This attribute specifies the minimum length of time between transmissions of delayed PTSE acknowledgment packets. If the

value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni peerDelayedAckInterval*.

Mib: AtmRouting

Values: Decimal (0.1..65535.0)
sameAsPnni

Units: seconds

Default: sameAsPnni

GROUP ARtg Pnni CfgNode SvccBasedRccParms (SvccRcc)

Properties: Provisioned

Description: This group contains the attributes of SVCC-based Rcc for this *cfgnode*. A similar group exists under *ARtg Pnni*.

Mib: AtmRouting

ATTRIBUTE ARtg Pnni CfgNode svccInitTime (iTime)

Access: Read: All
Write: All

Description: This attribute specifies the length of time this node delays initiating establishment of an SVCC to a neighbor after determining that such an SVCC should be established.
If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni svccInitTime*.

Mib: AtmRouting

Values: Decimal (0..120)
sameAsPnni

Units: seconds

Default: sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode svccRetryTime (rTime)

Access: Read: All
Write: All

Description	This attribute specifies the length of time this node delays before attempting to re-establish the SVCC-base RCC. This condition occurs when an RCC cannot be established, either during the initial setup, or is unexpectedly torn down. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni svccRetryTime*.
Mib	AtmRouting
Values	Decimal (20..60) sameAsPnni
Units	seconds
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode svccCallingIntegrityTime (clgIntegTime)

Access	Read: All Write: All
Description	This attribute specifies the length of time this node waits for an SVCC to become fully established before giving up and tearing it down. The condition occurs when the node initiates establishment of the SVCC as the calling party. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni svccCallingIntegrityTime*.
Mib	AtmRouting
Values	Decimal (10..3600) sameAsPnni
Units	seconds
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode svccCalledIntegrityTime (cldIntegTime)

Access	Read: All Write: All
Description	This attribute specifies the length of time this node waits for an SVCC to become fully established before giving up and tearing it down. This condition occurs when the node has decided to accept

	the SVCC setup as the called party. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni svccCalledIntegrityTime*.
Mib	AtmRouting
Values	Decimal (25..3615) sameAsPnni
Units	seconds
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode svccEstablishIntegrityTime (estIntegTime)

Access	Read: All Write: All
Description	This attribute specifies the length of time this node waits for an SVCC SETUP message from its neighbor once the node knows the existence of the neighbor. An alarm is raised when the timer expires. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni svccEstablishIntegrityTime*.
Mib	AtmRouting
Values	Decimal (15..3600) sameAsPnni
Units	seconds
Default	sameAsPnni

GROUP ARtg Pnni CfgNode ChangeThresholds (ThreshParms)

Properties	Provisioned
Description	This group contains the provisionable attributes for the change thresholds of a *ARtg Pnni* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode avcrMt

Access	Read: All Write: All

Description	This attribute multiplied by the Maximum Cell Rate specifies the minimum threshold used in the algorithms that determine significant change for average cell rate parameters. This value is used for logical links only. For physical links, the value in *ARtg Pnni avcrMt* is used. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni avcrMt*.
Mib	AtmRouting
Values	Decimal (1..99) sameAsPnni
Units	%
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode avcrPm

Access	Read: All Write: All
Description	This attribute multiplied by the current Available Cell Rate specifies the threshold used in the algorithms that determine significant change for AvCR parameters. This value is used for logical links only. For physical links, the value in *ARtg Pnni avcrPm* is used. If the resulting threshold is lower than the minimum threshold, the minimum threshold is used. Increasing the value of the attribute increases the range of insignificance and reduces the amount of PTSP flooding due to changes in resource availability. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni avcrPm*.
Mib	AtmRouting
Values	Decimal (1..99) sameAsPnni
Units	%
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode cdvPm

Access	Read: All Write: All
Description	This attribute specifies the proportional multiplier used in the algorithms that determine significant change for CDV metrics. Increasing the value of the attribute increases the range of insignificance and reduces the amount of PTSP flooding due to changes in resource availability. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni cdvPm.*
Mib	AtmRouting
Values	Decimal (1..99) sameAsPnni
Units	%
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode ctdPm

Access	Read: All Write: All
Description	This attribute specifies the proportional multiplier used in the algorithms that determine significant change for CTD metrics. Increasing the value of the attribute increases the range of insignificance and reduces the amount of PTSP flooding due to changes in resource availability. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni ctdPm.*
Mib	AtmRouting
Values	Decimal (1..99) sameAsPnni
Units	%
Default	sameAsPnni

COMPONENT ARtg Pnni CfgNode SummaryAddress (SAddr)

Instance	address [String (19, Hex)] prefixLength [Decimal (1..152)] reachability [internal exterior]
Groups	"GROUP ARtg Pnni CfgNode SAddr Provisioned (Prov)" "GROUP ARtg Pnni CfgNode SAddr Operational (Oper)"
Scope	Device
Description	*ARtg Pnni CfgNode/<level> SummaryAddress/<address>, <prefixLength>, <reachability>* A summary address is an abbreviation of a set of addresses, represented by an address prefix that all of the summarized addresses have in common. A suppressed summary address is used to suppress the advertisement of addresses which match this prefix, regardless of scope. The *prefixLength* specifies the number of bits of the *reachability* specifies whether the address is to summarize internal or exterior addresses. An ***internal*** address is an address of a destination that is directly attached to the logical node. An ***exterior*** address is an address of a destination that is located outside of the PNNI routing domain but can be reached through a port attached to the logical node.
Mib	AtmRouting
Common Verbs	Help List Display Add DELete

GROUP ARtg Pnni CfgNode SAddr Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes of a *SummaryAddress* component. A summary address is an abbreviation of a set of addresses, represented by an address prefix that all of the summarized addresses have in common. A suppressed summary address is used to suppress the advertisement of addresses which match this prefix, regardless of scope.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode SAddr suppress

Access	Read: All Write: All
Description	This attribute specifies whether or not the address should be suppressed. If this attribute is set to ***true***, then all addresses matching that prefix will not be advertised above this level.
Mib	AtmRouting
Values	false true
Default	false

GROUP ARtg Pnni CfgNode SAddr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of a *SummaryAddress* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode SAddr state

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the address: one of ***advertising***, ***suppressing*** or ***inactive***. ***inactive***: the summary address has been configured but is not suppressing or summarizing any ATM addresses.

suppressing: the summary address has suppressed at least one ATM address on the node.
advertising: the summary address is summarizing at least one ATM address on the node.

Mib: AtmRouting

Values: advertising
suppressing
inactive

Default: No default

ATTRIBUTE ARtg Pnni CfgNode SAddr scope

Access: Read: All
Write: Illegal

Description: This attribute indicates the scope of the summary address. The scope corresponds to the scope of the underlying summarized address with the highest advertised scope. A value of -1 means the scope is unknown.

Mib: AtmRouting

Values: Signed (-1..104)

Default: No default

COMPONENT ARtg Pnni CfgNode Neighbor (Nbr)

Instance: String (22, Hex)

Groups: "GROUP ARtg Pnni CfgNode Nbr Operational (Oper)"
"GROUP ARtg Pnni CfgNode Nbr Statistics (Stats)"

Scope: Device

Description: *ARtg Pnni CfgNode/n Neighbor/<node id>*
This component represents a neighbor node at this level.

If this *cfgnode* is not an LGN and the *Neighbor* node is not an LGN (in other words, both the *cfgnode* and its *Neighbor* are physical nodes), the *rccList* attribute indicates the component names of all Routing Control Channels (RCC) to that neighboring node. Under this condition, there is no *RCC*

subcomponent under this *Neighbor.*

If this *cfgnode* and/or the *Neighbor* node is a Logical Group Node (LGN) at this level, the *Rcc* subcomponent indicates the SVCC-based RCC to the *Neighbor.* The *rccList* attribute, in this case, points to the *Rcc* subcomponent.

Mib	AtmRouting
Dyn. Subcomp.	"COMPONENT ARtg Pnni CfgNode Nbr HorizontalLink (HLnk)"
Common Verbs	Help List Display

GROUP ARtg Pnni CfgNode Nbr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of a *Neighbor* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode Nbr peerState

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the routing database exchange with the peer node.

npDown: There are no active links (that is, in the ***twoWayInside*** Hello state) to the neighboring peer.

negotiating: The first step in creating an adjacency between the two neighboring peers; this step determines which node is the master, and what the initial DS sequence number will be.

exchanging: The node describes its topology database by sending Database Summary packets to the neighboring peer.

loading: A full sequence of Database Summary packets has been exchanged with the neighboring peer. The required PTSEs are requested and at least one has not yet been received.

full: All PTSEs known to be available have been received from the neighboring peer. At this point the all ports leading to the neighbor node are flooded in PTSEs within the peer group.

Mib	AtmRouting
Values	npDown negotiating exchanging loading full
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr neighborName

Access	Read: All Write: Illegal
Description	This attribute indicates the value of the *nodeName* attribute for the node that is a neighbor to this node at this level.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr rccList

Access	Read: All Write: Illegal
Description	If this *cfgnode* and the *Neighbor* are not LGN at this level, the value is the component names of all Routing Control Channels to the neighbor PNNI node. Otherwise (this *cfgnode* and/or the *Neighbor* is/are logical group nodes), this attribute indicates the component name of the *Rcc* subcomponent of this *Neighbor*.

Mib	AtmRouting
List of	The name of the component
Default	No default

GROUP ARtg Pnni CfgNode Nbr Statistics (Stats)

Properties	Operational
Description	This group contains the statistical operational attributes of a *Neighbor* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode Nbr ptspRx

Access	Read: All Write: Illegal
Description	This attribute counts the PNNI Topology State Packets received from the neighbor node. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr ptspTx

Access	Read: All Write: Illegal
Description	This attribute counts the PTSPs sent to the neighbor node.The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr ptseRx

Access	Read: All Write: Illegal

Description	This attribute counts the PTSEs received from the neighbor node. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr ptseTx

Access	Read: All Write: Illegal
Description	This attribute counts the PTSEs sent to the neighbor node. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr ptseReqRx

Access	Read: All Write: Illegal
Description	This attribute counts the PTSE requests received from the neighbor node. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr ptseReqTx

Access	Read: All Write: Illegal
Description	This attribute counts the PTSE requests sent to the neighbor node. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr ptseAcksRx

Access	Read: All Write: Illegal
Description	This attribute counts the PTSE acknowledgments received from the neighbor node. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr ptseAcksTx

Access	Read: All Write: Illegal
Description	This attribute counts the PTSE acknowledgments sent to the neighbor node. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr dbSummariesRx

Access	Read: All Write: Illegal
Description	This attribute counts the database summary packets (including bad summary packets) received from the *Neighbor*. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr dbSummariesTx

Access	Read: All Write: Illegal
Description	This attribute counts the database summary packets transmitted to the neighbor. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr badPtspRx

Access	Read: All Write: Illegal
Description	This attribute counts the invalid PTSP packets received from the neighbor node. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr badPtseRx

Access	Read: All Write: Illegal
Description	This attribute counts the invalid PTSE packets received from the neighbor node. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr badPtseReqRx

Access	Read: All Write: Illegal
Description	This attribute counts the invalid PTSE requests received from the neighbor node. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr badPtseAckRx

Access	Read: All Write: Illegal
Description	This attribute counts the invalid PTSE acknowledgments received from the neighbor node. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr badDbSummariesRx

Access	Read: All Write: Illegal
Description	This attribute counts the bad and invalid database summary packets received from the neighbor. The counter wraps to 0 when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

COMPONENT ARtg Pnni CfgNode Nbr HorizontalLink (HLnk)

Instance	Decimal (0..4294967295)

Groups	"GROUP ARtg Pnni CfgNode Nbr HLnk Operational (Oper)"
Scope	Device
Description	ARtg Pnni CfgNode/n Nbr/<node id> Rcc HorizontalLink/ <port Id> The *HorizontalLink* component indicates a logical connection between the *CfgNode* and its *Nbr*. Links are aggregated together to form one Horizontal Link if they have the same aggregation token. This component indicates the operational attributes for the *HorizontalLink* component. The index is the unique port Id associated with the link.
Mib	AtmRouting
Dyn. Subcomp.	"COMPONENT ARtg Pnni CfgNode Nbr HLnk InducingUpLink"
Common Verbs	Help List Display

GROUP ARtg Pnni CfgNode Nbr HLnk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for a *HLnk* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode Nbr HLnk aggregationToken

Access	Read: All Write: Illegal
Description	This attribute indicates the derived aggregation token used for this horizontal link. The aggregation tokens at both ends are use to form the *AggregationToken* for the link. The aggregation token controls how links are aggregated together. Except for the lowest level nodes, links between two logical nodes are aggregated

together if they have the same aggregation token. Link aggregation is not done at the lowest level node, except in the degenerate node situation, where the lowest level node is a neighbor to an LGN.

Mib: AtmRouting

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE ARtg Pnni CfgNode Nbr HLnk state

Access: Read: All
Write: Illegal

Description: This attribute indicates the state of the horizontal link Hello protocol exchange over this link. The following are the possible values for this attribute:

down: No uplink PTSEs have been received including an uplink to the neighboring peer LGN with the same aggregation token value as that indicated in the LGN horizontal link Hello data structure.

attempt: At least one uplink PTSE has been received including an uplink to the neighboring peer LGN with the same aggregation token value as that indicated in the LGN horizontal link Hello data structure.

oneWay: Hello packets have been recently received from the neighbor. The LGN Horizontal Link Extension IG contains an entry for this horizontal link with the remote port ID set to zero.

twoWay: Hello packets have been recently received from the neighbor. The LGN Horizontal Link Extension IG contains an entry for this horizontal link with the correct remote port ID. When this state is reached, the port IDs at both ends of the horizontal link are determined. The horizontal link must be in this state before the LGN will advertise it.

Mib: AtmRouting

Values	notApplicable down attempt oneWay twoWay
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Nbr HLnk remotePortId

Access	Read: All Write: Illegal
Description	This attribute indicates the logical group node's port id at the far end of this horizontal link. If the *state* attribute is ***down*** or ***attempt,*** the value of this attribute is 0.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

COMPONENT ARtg Pnni CfgNode Nbr HLnk InducingUpLink

Instance	nodeId [String (22, Hex)] portId [Decimal (0..4294967295)]
Groups	"GROUP ARtg Pnni CfgNode Nbr HLnk InducingUpLink Operational (Oper)"
Scope	Device
Description	*ARtg Pnni CfgNode/n Nbr/<node id> Rcc HLnk/<port id> InducingUpLink/<node Id>, <port Id>* *ARtg Pnni CfgNode/n Nbr/<node id> ULnk/<port id> InducingUpLink/<node Id>, <port Id>* This component represents the underlying link that induces this uplink or horizontal link. The index is the (*node Id*, *port Id*) tuple that uniquely identifies the port. The *node Id* is the Id of one of

the *cfgnodes*, and the *port Id* is the Id that represents an *Uplink* from that *cfgnode*.

Mib: AtmRouting

Common Verbs:
Help
List
Display

GROUP ARtg Pnni CfgNode Nbr HLnk InducingUpLink Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the *InducingUplink* component.

Mib: AtmRouting

ATTRIBUTE ARtg Pnni CfgNode Nbr HLnk InducingUpLink inducingNodeName

Access: Read: All
Write: Illegal

Description: This attribute indicates the node name and the hierarchy level for the *InducingUpLink* component.

A typical value for this attribute has the following form:
OBELIX@96

Here, OBELIX is the node name and 96 is the hierarchy for the up node. The @ symbol is used to separate the node name from the hierarchy level in the display.

This attribute is left blank if the uplink is being induced by a node that is not a Nortel Networks Multiservice Switch.

Mib: AtmRouting

Values: String (0..12, ASCII)

Default: No default

ATTRIBUTE ARtg Pnni CfgNode Nbr HLnk InducingUpLink inducingInterfaceName

Access	Read: All Write: Illegal
Description	This attribute indicates the interface name of the *inducing uplink* component. This attribute's value can take one of the following forms: (a) ***Atmif/<1-4095>*** - If the far end is an ATM interface. (b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT interface. The value of this attribute is an empty string if the link is a logical link or the remote end is not a Nortel Networks Multiservice Switch.
Mib	AtmRouting
Values	String (0..19, ASCII)
Default	No default

COMPONENT ARtg Pnni CfgNode DefSummaryAddress (DefSAddr)

Groups	"GROUP ARtg Pnni CfgNode DefSAddr DefaultAddress (DefAddr)" "GROUP ARtg Pnni CfgNode DefSAddr Operational (Oper)"
Scope	Device
Description	*ARtg Pnni CfgNode/<level> DefSAddr* A default summary address is an internal summary address computed for every logical group node as follows: If this is not the lowest configured node, then the default summary address is identical to the peer group id that this logical group represents. If this is the lowest configured node but not at level 104, then the default summary address is the 13-octet prefix of the node's

address.
A node at level 104 has no default summary address.

Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni CfgNode DefSAddr DefaultAddress (DefAddr)

Properties	Operational
Description	This group contains the operational attributes of a DefSummaryAddress component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode DefSAddr address

Access	Read: All Write: Illegal
Description	This attribute indicates the default summary address of the node at this level.
Mib	AtmRouting
Values	String (13, Hex)
Default	No default

GROUP ARtg Pnni CfgNode DefSAddr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of a *SummaryAddress* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode DefSAddr state

Access	Read: All Write: Illegal

Description	This attribute indicates the state of the address: one of ***advertising***, ***suppressing*** or ***inactive***. ***inactive***: the summary address has been configured but is not suppressing or summarizing any ATM addresses. ***suppressing***: the summary address has suppressed at least one ATM address on the node. ***advertising***: the summary address is summarizing at least one ATM address on the node.
Mib	AtmRouting
Values	advertising suppressing inactive
Default	No default

ATTRIBUTE ARtg Pnni CfgNode DefSAddr scope

Access	Read: All Write: Illegal
Description	This attribute indicates the scope of the summary address. The scope corresponds to the scope of the underlying summarized address with the highest advertised scope. A value of -1 means the scope is unknown.
Mib	AtmRouting
Values	Signed (-1..104)
Default	No default

COMPONENT ARtg Pnni CfgNode UpLink

Instance	Decimal (0..4294967295)
Groups	"GROUP ARtg Pnni CfgNode UpLink Operational (Oper)"
Scope	Device

Description	*ARtg Pnni CfgNode/<n> UpLink/<n>* This component describes a logical uplink associated with the node. The index of this component is the port id of the uplink.
Mib	AtmRouting
Dyn. Subcomp.	"COMPONENT ARtg Pnni CfgNode UpLink InducingUpLink"
Common Verbs	Help List Display

GROUP ARtg Pnni CfgNode UpLink Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of a logical uplink.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode UpLink aggregationToken

Access	Read: All Write: Illegal
Description	This attribute indicates the derived aggregation token value for this link. The aggregation token value can be traced back to the aggregation token given to the physical ATM interface in *AtmIf Pnni Rcc* or *AtmIf Vpt Pnni Rcc*.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode UpLink upnodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node ID of the upnode at the far end of the uplink.
Mib	AtmRouting

Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode UpLink upnodeAddress

Access	Read: All Write: Illegal
Description	This attribute indicates the node address of the upnode at the far end of the uplink.
Mib	AtmRouting
Values	String (20, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode UpLink upnodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the node name and the hierarchy level for the upnode at the far end of the uplink. A typical value for this attribute has the following form: ***OBELIX@96.*** Here, ***OBELIX*** is the node name and ***96*** is the hierarchy level for the upnode. The **@** symbol is used to separate the node name from the hierarchy level in the display.
Mib	AtmRouting
Values	String (0..16, ASCII)
Default	No default

COMPONENT ARtg Pnni CfgNode UpLink InducingUpLink

Instance	nodeId [String (22, Hex)] portId [Decimal (0..4294967295)]
Groups	"GROUP ARtg Pnni CfgNode UpLink InducingUpLink Operational (Oper)"

Scope	Device
Description	*ARtg Pnni CfgNode/n Nbr/<node id> Rcc HLnk/<port id> InducingUpLink/<node Id>, <port Id>* *ARtg Pnni CfgNode/n Nbr/<node id> ULnk/<port id> InducingUpLink/<node Id>, <port Id>* This component represents the underlying link that induces this uplink or horizontal link. The index is the (*node Id*, *port Id*) tuple that uniquely identifies the port. The *node Id* is the Id of one of the *cfgnodes*, and the *port Id* is the Id that represents an *Uplink* from that *cfgnode*.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni CfgNode UpLink InducingUpLink Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *InducingUplink* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode UpLink InducingUpLink inducingNodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the node name and the hierarchy level for the *InducingUpLink* component. A typical value for this attribute has the following form: ***OBELIX@96*** Here, OBELIX is the node name and 96 is the hierarchy for the up node. The @ symbol is used to separate the node name from the hierarchy level in the display.

	This attribute is left blank if the uplink is being induced by a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode UpLink InducingUpLink inducingInterfaceName

Access	Read: All Write: Illegal
Description	This attribute indicates the interface name of the *inducing uplink* component. This attribute's value can take one of the following forms: (a) ***Atmif/<1-4095>*** - If the far end is an ATM interface. (b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT interface. The value of this attribute is an empty string if the link is a logical link or the remote end is not a Nortel Networks Multiservice Switch.
Mib	AtmRouting
Values	String (0..19, ASCII)
Default	No default

COMPONENT ARtg Pnni CfgNode PeerGroupLeader (Pgl)

Groups	"GROUP ARtg Pnni CfgNode Pgl Provisioned (Prov)"
Scope	Device
Description	*ARtg Pnni CfgNode/<level> PeerGroupLeader* This component represents the participation of this node as a candidate for Peer Group Leader in the Peer Group Election.

If this component is not provisioned, the *cfgNode* cannot be elected as a Peer Group Leader.

Mib: AtmRouting

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP ARtg Pnni CfgNode Pgl Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisional attributes of a candidate for Peer Group Leader.

Mib: AtmRouting

ATTRIBUTE ARtg Pnni CfgNode Pgl leadershipPriority (lPrio)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the leadership priority to be advertised by this node during the election process. Currently, this attribute must be changed manually after provisioning the *PGL* component.
Note: If a node is the Peer Group Leader and its *leadershipPriority* is modified such that another node has a higher *leadershipPriority*, then a re-election is held immediately on activation.

Mib: AtmRouting

Values: Decimal (1..205)

Default: 1

ATTRIBUTE ARtg Pnni CfgNode Pgl initTime

Access	Read: All Write: All
Description	This attribute specifies how long this node delays advertising its choice of preferred peer group leader after having initialized operation and reached the full peer state with at least one neighbor in the peer group. If the value is ***sameAsPnni***, then this value is taken from *ARtg Pnni initTime*.
Mib	AtmRouting
Values	Signed (0..65534) sameAsPnni
Units	seconds
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode Pgl overrideDelay

Access	Read: All Write: All
Description	This attribute specifies how long a node waits for itself to be declared the preferred peer group leader by unanimous agreement among its peers. If the value is ***sameAsPnni***, then this value is taken from *ARtg Pnni overrideDelay.*
Mib	AtmRouting
Values	Decimal (1..65534) sameAsPnni
Units	seconds
Default	sameAsPnni

ATTRIBUTE ARtg Pnni CfgNode Pgl reElectionInterval

Access	Read: All Write: All
Description	This attribute specifies how long this node waits after losing connectivity to the current peer group leader before re-starting the process of electing a new peer group leader. If the value is

	sameAsPnni, then this value is taken from *ARtg Pnni reElectionInterval*.
Mib	AtmRouting
Values	Decimal (1..65534) sameAsPnni
Units	seconds
Default	sameAsPnni

COMPONENT ARtg Pnni CfgNode RoutingControlChannel (Rcc)

Instance	String (20, Hex)
Groups	"GROUP ARtg Pnni CfgNode Rcc OsiState (State)" "GROUP ARtg Pnni CfgNode Rcc Operational (Oper)" "GROUP ARtg Pnni CfgNode Rcc Statistics (Stats)"
Scope	Device
Description	*ARtg Pnni CfgNode/n Nbr/<node id> RoutingControlChannel* This component represents the operational attributes for the *RoutingControlChannel* component to a neighboring node. If this *cfgnode* is not an LGN and the *Neighbor* node is not an LGN (in other words, both the *cfgnode* and its *Neighbor* are physical nodes), this component is not created. If this *cfgnode* and/or the *Neighbor* node is a Logical Group Node (LGN) at this level, the *Rcc* subcomponent indicates the SVCC-based RCC to the *Neighbor.*
Mib	AtmRouting
Dyn. Subcomp.	"COMPONENT ARtg Pnni CfgNode Rcc AtmConnection (AtmCon)"
Common Verbs	Help List Display

GROUP ARtg Pnni CfgNode Rcc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode Rcc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmRouting
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE ARtg Pnni CfgNode Rcc operationalState (osiOper)

Access	Read only

Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmRouting
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE ARtg Pnni CfgNode Rcc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmRouting
Values	idle active (activ) busy
Default	idle

GROUP ARtg Pnni CfgNode Rcc Operational (Oper)

Properties	Operational

Description	This group contains the operational attributes for an *RoutingControlChannel* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode Rcc negotiatedVersion

Access	Read: All Write: Illegal
Description	This attribute indicates the PNNI version negotiated with the neighbor node.
Mib	AtmRouting
Values	unsupported version1point0
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc neighborId (neighbor)

Access	Read: All Write: Illegal
Description	This attribute indicates the neighbor node id associated with the SvccRcc.
Mib	AtmRouting
Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc helloState

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the Hello protocol exchange over this *Svcc Rcc* link. The following are the possible values for this attribute: ***down***: The link is down; no PNNI routing packets will be sent or received over such a link. This is the initial state of the Hello Finite State Machine. It can also be reached when lower-level protocols have indicated that the link is not usable.

attempt: No Hello packets, or Hello packets with mismatched information, have been received recently from the neighbor. Attempts are made to contact the neighbor node by sending out Hello packets every *helloInterval* seconds.

oneWayInside: Hello packets have been recently received from the neighbor and it has been established that both nodes are members of the same peer group, but the remote node ID and remote port ID in the neighbor's Hello packets were set to zero. A Hello packet is sent to the neighbor and the Hello timer is restarted.

twoWayInside: Bidirectional communication over this link between this node and the neighbor node has been achieved.

Mib	AtmRouting
Values	notApplicable down attempt oneWayInside twoWayInside
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc remoteAddress

Access	Read: All Write: Illegal
Description	This attribute indicates the neighboring peer LGN's address.
Mib	AtmRouting
Values	String (20, Hex)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc neighborName

Access	Read: All Write: Illegal

Description	This attribute indicates the node name of the neighbor associated with the SvccRcc.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc retryCount

Access	Read: All Write: Illegal
Description	This attribute counts the attempts to set up this Routing Control Channel since the last successful attempt.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc lastFailureCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last transmitted signaling message for this Routing Control Channel that contained the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages. A value of 0 means that no failure has occurred since the last successful attempt.
Mib	AtmRouting
Values	Decimal (0..255)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc lastFailureDiagCode

Access	Read: All Write: Illegal

Description	This attribute contains the diagnostic code in the last transmitted signaling message for this Routing Control Channel. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is empty.
Mib	AtmRouting
Values	String (0..28, ASCII)
Default	No default

GROUP ARtg Pnni CfgNode Rcc Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes for an *Rcc* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode Rcc helloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the Hello packets received across this SVCC-based RCC, including bad and mismatched Hello packets. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc helloPacketsTx

Access	Read: All Write: Illegal
Description	This attribute counts the Hello packets transmitted across this SVCC-based RCC. The counter wraps to zero when it exceeds the maximum value.

Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc mismatchedHelloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the mismatched Hello packets received over this SVCC-based RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni CfgNode Rcc badHelloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the bad Hello packets received over this SVCC-based RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

COMPONENT ARtg Pnni CfgNode Rcc AtmConnection (AtmCon)

Groups	"GROUP ARtg Pnni CfgNode Rcc AtmCon Operational (Oper)"
Scope	Device

Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni CfgNode Rcc AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni CfgNode Rcc AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	AtmRouting
Values	The name of the component
Default	No default

COMPONENT ARtg Pnni Topology (Top)

Instance	Decimal (0..104)
Groups	"GROUP ARtg Pnni Top Operational (Oper)"
Scope	Device
Description	*ARtg Pnni Topology/<level>* The *Topology* component provides access to information in this

	node's PNNI topology database for the level in the PNNI hierarchy specified by the instance value.
Mib	AtmRouting
Dyn. Subcomp.	"COMPONENT ARtg Pnni Top NodeId (Node)" "COMPONENT ARtg Pnni Top NodeName"
Common Verbs	Help List Display

GROUP ARtg Pnni Top Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of a *Topology* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top pglNodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node ID of the Peer Group Leader (PGL) for this level. If this attribute is empty, it indicates that the PGL node ID is unknown.
Mib	AtmRouting
Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top activeParentNodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node identifier of the LGN representing this peer group in the next higher level.
Mib	AtmRouting

Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top activeParentNodeAddress

Access	Read: All Write: Illegal
Description	This attribute indicates the node address of the LGN representing this peer group in the next higher level.
Mib	AtmRouting
Values	String (19, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top peerGroupId

Access	Read: All Write: Illegal
Description	This attribute indicates the peer group identifier of the LGN representing this peer group in the next higher level.
Mib	AtmRouting
Values	String (0..14, Hex)
Default	No default

COMPONENT ARtg Pnni Top NodeId (Node)

Instance	String (22, Hex)
Groups	"GROUP ARtg Pnni Top Node Operational (Oper)"
Scope	Device
Description	*ARtg Pnni Top/<level> NodeId/<node ID>* This component represents the nodal information stored in this node's topology database at this level. The reachable ATM end system addresses (both internal and exterior reachable addresses) advertised by the node can be listed through the *Addr* subcomponent instances.

All advertised horizontal links associated with the node can be listed through the *HLnk* subcomponent instances, indexed by their port ID.

All advertised uplinks associated with the node can be listed through the *ULnk* subcomponent instances, indexed by their port ID.

Mib	AtmRouting
Dyn. Subcomp.	"COMPONENT ARtg Pnni Top Node Address (Addr)" "COMPONENT ARtg Pnni Top Node HorizontalLink (HLnk)" "COMPONENT ARtg Pnni Top Node UpLink (ULnk)"
Common Verbs	Help List Display

GROUP ARtg Pnni Top Node Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Artg Pnni Top NodeId* and the *ARtg Pnni Top NodeName* components.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top Node physicallyReachable (reachable)

Access	Read: All Write: Illegal
Description	This attribute indicates whether there exists a PNNI path that connects the node corresponding to this component to the local node.
Mib	AtmRouting
Values	no yes unknown

Default	No default

ATTRIBUTE ARtg Pnni Top Node preferredPglNodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the preferred Peer Group Leader (PGL) node ID advertised by the parent *NodeId* component. If this attribute is empty, it indicates the preferred PGL node ID is unknown.
Mib	AtmRouting
Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top Node pglLeadershipPriority (pglLPrio)

Access	Read: All Write: Illegal
Description	This attribute indicates the leadership priority advertised by the parent *NodeId* component. If this value is 0, it indicates that the node cannot be elected as a peer group leader.
Mib	AtmRouting
Values	Decimal (0..205)
Default	0

ATTRIBUTE ARtg Pnni Top Node preferredPglNodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the node name corresponding to the preferred Peer Group Leader (PGL) node ID advertised by the parent *NodeId* component. If this attribute is empty, it indicates the preferred PGL node name is unknown.
Mib	AtmRouting
Values	String (0..12, ASCII)

Default	No default

ATTRIBUTE ARtg Pnni Top Node nodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the corresponding node ID instance for this *NodeName* under the *ARtg Pnni Top/<level> NodeId/<node id>* component.
Mib	AtmRouting
Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top Node nodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the corresponding instance for this *NodeId* component under the *ARtg Pnni Top/<level> NodeName/ <node name>* component.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

COMPONENT ARtg Pnni Top Node Address (Addr)

Instance	address [String (19, Hex)] prefixLength [Decimal (1..152)] reachability [internal exterior]
Groups	"GROUP ARtg Pnni Top Node Addr Operational (Oper)"
Scope	Device
Description	ARtg Pnni Top NodeId/<node ID> Address/<address>, <prefixLength>, <reachability> This component represents an address advertised by the parent *NodeId* component.

The address is a string of 38 hex digit s.

The *prefixLength* attribute specifies the number of significant bits in the address.

The *reachability attribute* specifies whether the address is ***internal*** or ***exterior***.

An ***internal*** reachable address is the address of a destination that is directly attached to the logical node advertising the address. An ***exterior*** reachable address is an address that can be reached through a PNNI routing domain, but that is not located in that PNNI routing domain.

Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni Top Node Addr Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *Address* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top Node Addr scope

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy.
Mib	AtmRouting
Values	Decimal (0..104)

Default	No default

COMPONENT ARtg Pnni Top Node HorizontalLink (HLnk)

Instance	Decimal (0..4294967295)
Groups	"GROUP ARtg Pnni Top Node HLnk Operational (Oper)"
Scope	Device
Description	*ARtg Pnni Top/<level> NodeId/<node ID> HorizontalLink/ <port ID>* This component represents the horizontal link information stored in this node's topology database at this level. All advertised horizontal links associated with the parent *NodeId* component can be listed through the *HorizontalLink* subcomponent instances indexed by their port ID.
Mib	AtmRouting
Dyn. Subcomp.	"COMPONENT ARtg Pnni Top Node HLnk Metrics"
Common Verbs	Help List Display

GROUP ARtg Pnni Top Node HLnk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of a *HLnk* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top Node HLnk remoteNodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node ID of the node at the far end of this horizontal link.
Mib	AtmRouting

Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk remotePortId

Access	Read: All Write: Illegal
Description	This attribute indicates the link's port ID on the node at the far end of this horizontal link.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk remoteNodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the node name of the node at the far end of this horizontal link. This attribute corresponds to the *remoteNodeId* attribute under this component.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk remoteInterfaceName

Access	Read: All Write: Illegal
Description	This attribute indicates the interface name at the far end of this horizontal link. This attribute's value can take one of the following forms: (a) ***AtmIf/<1-4095>*** - If the far end is an ATM interface. (b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT interface. (c) Values ***0-4294967295*** - If the link is a logical link.

	The value of this attribute is an empty string if the far end is a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmRouting
Values	String (0..19, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk nodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the *nodeName* of the node at this end of the horizontal link. The value of this attribute is an empty *string* if a node name is not provisioned under the *ModuleData* component.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk interfaceName

Access	Read: All Write: Illegal
Description	This attribute indicates the interface name at this end of the horizontal link. This attribute's value can take one of the following forms: (a) ***AtmIf/<1-4095>*** - If the far end is an ATM interface. (b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT interface. (c) Values ***0-4294967295*** - If the link is a logical link. The value of this attribute is an empty string for a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmRouting
Values	String (0..19, ASCII)

Default	No default

COMPONENT ARtg Pnni Top Node HLnk Metrics

Instance	ubr cbr rtVBR nrtvbr abr
Groups	"GROUP ARtg Pnni Top Node HLnk Metrics OutRaig"
Scope	Device
Description	*ARtg Pnni Top/<level> NodeId/<node ID> HLnk/<port ID> Metrics/<service category>* This component contains the advertised metrics of a horizontal link associated with the parent *NodeId* component for a particular service category, stored in this node's topology database for this PNNI level.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni Top Node HLnk Metrics OutRaig

Properties	Operational
Description	This group contains the advertised metrics of a *Ulnk* or *Hlnk* for the outgoing direction.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics outAdminWeight

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised administrative weight of an uplink or a horizontal link for the specified service category for the outgoing direction.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the actual administrative weight attribute for the specified service category provisioned under *Atmif Pnni* component. The attribute names in *Atmif Pnni* are *cbrWeight*, *rtVbrWeight*, *nrtVbrWeight* and *UbrWeight* corresponding to the service category ***cbr***, ***rtVbr***, ***nrtVbr*** and ***Ubr***.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the administrative weight attribute for the specified service category provisioned under that node's *Atmif Vpt Pnni* component.

Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics outAvailableCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised available cell rate of an uplink or a horizontal link, in cells per second, for the specified service category for the outgoing direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics outMaxCellRate

Access	Read: All Write: Illegal

Description	This attribute indicates the advertised maximum cell rate of an uplink or a horizontal link for the specified service category for the outgoing direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics outMaxCtd

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell transfer delay (maxCtd) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics outCdv

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised peak-to-peak cell delay variation (CDV) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *cdv* attribute for the specified service category, provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics outClr0

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr0* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -

n.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics outClr01

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0+1 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr01* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and

	the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics outCellRateMargin

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell rate margin in cells per second of an uplink or a horizontal link for the specified service category for the outgoing direction. This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top Node HLnk Metrics outVarianceFactor

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised variance factor of an uplink or a horizontal link for the specified service category for the outgoing direction. The value is displayed in the power of 2 to the power of -8.

	This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

COMPONENT ARtg Pnni Top Node UpLink (ULnk)

Instance	Decimal (0..4294967295)
Groups	"GROUP ARtg Pnni Top Node ULnk Operational (Oper)"
Scope	Device
Description	*ARtg Pnni Top/<level> NodeId/<node ID> UpLink/<port ID>* This component represents the uplink information stored in this node's topology database at this level. All advertised uplinks associated with the parent *NodeId* component can be listed through the *UpLink* component instances which are indexed by their port ID.
Mib	AtmRouting
Dyn. Subcomp.	"COMPONENT ARtg Pnni Top Node ULnk Metrics"
Common Verbs	Help List Display

GROUP ARtg Pnni Top Node ULnk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of a *ULnk* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top Node ULnk upnodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node ID of the node at the far end of this uplink.
Mib	AtmRouting
Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk upnodeAddress

Access	Read: All Write: Illegal
Description	This attribute indicates the address of the node at the far end of this uplink.
Mib	AtmRouting
Values	String (19, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk upnodePeerGroupId

Access	Read: All Write: Illegal
Description	This attribute indicates the peer group identifier of the node at the far end of this uplink.
Mib	AtmRouting
Values	String (0..14, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk upnodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the node name and the hierarchy level for the node at the far end of this uplink.

A typical value for this attribute has the following form: ***OBELIX@96.***

Here, ***OBELIX*** is the node name and ***96*** is the hierarchy level for the upnode. The **@** symbol is used to separate the node name from the hierarchy level in the display.

Mib	AtmRouting
Values	String (0..16, ASCII)
Default	No default

COMPONENT ARtg Pnni Top Node ULnk Metrics

Instance	ubr cbr rtvbr nrtvbr abr
Groups	"GROUP ARtg Pnni Top Node ULnk Metrics OutRaig" "GROUP ARtg Pnni Top Node ULnk Metrics InRaig"
Scope	Device
Description	*ARtg Pnni Top/<level> NodeId/<node ID> ULnk/<port ID> Metrics/<service category>* This component contains the advertised metrics of an uplink associated with the parent *NodeId* component for a particular service category, stored in this node's topology database at this PNNI level.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni Top Node ULnk Metrics OutRaig

Properties	Operational

Description	This group contains the advertised metrics of a *Ulnk* or *Hlnk* for the outgoing direction.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics outAdminWeight

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised administrative weight of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the actual administrative weight attribute for the specified service category provisioned under *Atmif Pnni* component. The attribute names in *Atmif Pnni* are *cbrWeight*, *rtVbrWeight*, *nrtVbrWeight* and *UbrWeight* corresponding to the service category ***cbr***, ***rtVbr***, ***nrtVbr*** and ***Ubr***. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the administrative weight attribute for the specified service category provisioned under that node's *Atmif Vpt Pnni* component.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics outAvailableCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised available cell rate of an uplink or a horizontal link, in cells per second, for the specified service category for the outgoing direction.
Mib	AtmRouting

Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics outMaxCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell rate of an uplink or a horizontal link for the specified service category for the outgoing direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics outMaxCtd

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell transfer delay (maxCtd) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not

applicable for a particular service category, it is displayed as ***notApplicable***.

Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics outCdv

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised peak-to-peak cell delay variation (CDV) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *cdv* attribute for the specified service category, provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics outClr0

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr0* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics outClr01

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0+1 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The

value in *outClr01* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics outCellRateMargin

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell rate margin in cells per second of an uplink or a horizontal link for the specified service category for the outgoing direction. This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	cell/s

Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics outVarianceFactor

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised variance factor of an uplink or a horizontal link for the specified service category for the outgoing direction. The value is displayed in the power of 2 to the power of -8. This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

GROUP ARtg Pnni Top Node ULnk Metrics InRaig

Properties	Operational
Description	This group contains the advertised metrics of a *Ulnk* or *Hlnk* for the incoming direction.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics inAdminWeight

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised administrative weight of an uplink for the specified service category for the incoming direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the administrative weight attribute for the specified service category provisioned under the *Atmif Pnni* component. If the subject node is a Nortel Networks Multiservice Switch and

	the link is a virtual path connection (VPC), this attribute corresponds to the administrative weight attribute for the specified service category provisioned under the *Atmif Vpt Pnni* component.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics inAvailableCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised available cell rate of an uplink for the specified service category for the incoming direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics inMaxCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell rate of an uplink for the specified service category for the incoming direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics inMaxCtd

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell transfer delay (*maxCtd*) of an uplink for the specified service category for the incoming direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics inCdv

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised peak-to-peak cell delay variation (CDV) of an uplink for the specified service category for the incoming direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *cdv* attribute for the specified service category provisioned under *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *cdv* attribute for the specified service category, provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics inClr0

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0 of an uplink for the specified service category for the incoming direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *inClr0* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the

Atmif Ca component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Default: No default

ATTRIBUTE ARtg Pnni Top Node ULnk Metrics inClr01

Access: Read: All
Write: Illegal

Description: This attribute indicates the advertised cell loss ratio (CLR) for CLP0+1 of an uplink for the specified service category for the incoming direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *inClr01* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Default: No default

COMPONENT ARtg Pnni Top NodeName

Instance	String (1..12, ASCII)
Groups	"GROUP ARtg Pnni Top NodeName Operational (Oper)"
Scope	Device
Description	*ARtg Pnni Top/<level> NodeName/<node name>* This component represents the nodal information stored in this node's topology database at this level, indexed on the names of the nodes. The reachable ATM end system addresses (both internal and exterior reachable addresses) advertised by the node can be listed through the *Addr* subcomponent instances. All advertised horizontal links associated with the node can be listed through the *HLnk* subcomponent instances, which are indexed by their interface names. All advertised uplinks associated with the node can be listed through the *ULnk* subcomponent instances, indexed by their interface names. The topology information for nodes running older loads and for nodes that are not a Nortel Networks Multiservice Switch is not available under this component. The information for these nodes is visible under the *Artg Pnni Top Node* hierarchy.
Mib	AtmRouting
Dyn. Subcomp.	"COMPONENT ARtg Pnni Top NodeName Address (Addr)" "COMPONENT ARtg Pnni Top NodeName HorizontalLink (HLnk)" "COMPONENT ARtg Pnni Top NodeName UpLink (ULnk)"
Common Verbs	Help List Display

GROUP ARtg Pnni Top NodeName Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Artg Pnni Top* *NodeId* and the *ARtg Pnni Top NodeName* components.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top NodeName physicallyReachable (reachable)

Access	Read: All Write: Illegal
Description	This attribute indicates whether there exists a PNNI path that connects the node corresponding to this component to the local node.
Mib	AtmRouting
Values	no yes unknown
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName preferredPglNodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the preferred Peer Group Leader (PGL) node ID advertised by the parent *NodeId* component. If this attribute is empty, it indicates the preferred PGL node ID is unknown.
Mib	AtmRouting
Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName pglLeadershipPriority (pglLPrio)

Access	Read: All Write: Illegal

Description	This attribute indicates the leadership priority advertised by the parent *NodeId* component. If this value is 0, it indicates that the node cannot be elected as a peer group leader.
Mib	AtmRouting
Values	Decimal (0..205)
Default	0

ATTRIBUTE ARtg Pnni Top NodeName preferredPglNodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the node name corresponding to the preferred Peer Group Leader (PGL) node ID advertised by the parent *NodeId* component. If this attribute is empty, it indicates the preferred PGL node name is unknown.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName nodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the corresponding node ID instance for this *NodeName* under the *ARtg Pnni Top/<level> NodeId/<node id>* component.
Mib	AtmRouting
Values	String (0..22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName nodeName

Access	Read: All Write: Illegal

Description	This attribute indicates the corresponding instance for this *NodeId* component under the *ARtg Pnni Top/<level> NodeName/ <node name>* component.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

COMPONENT ARtg Pnni Top NodeName Address (Addr)

Instance	address [String (19, Hex)] prefixLength [Decimal (1..152)] reachability [internal exterior]
Groups	"GROUP ARtg Pnni Top NodeName Addr Operational (Oper)"
Scope	Device
Description	*ARtg Pnni Top/<level> NodeName/<node name> Addr/ <address>, <prefixLength>, <reachability>* This component represents an address advertised by the parent *NodeName* component. The address is a string of 38 hex digits. The *prefixLength* attribute specifies the number of significant bits in the address. The *reachability* attribute specifies whether the address is ***internal*** or ***exterior***. A value of ***internal*** refers to a reachable address of a destination that is directly attached to the logical node advertising the address. A value of ***exterior*** refers to a reachable address that can be reached

	through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni Top NodeName Addr Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *Address* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top NodeName Addr scope

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy.
Mib	AtmRouting
Values	Decimal (0..104)
Default	No default

COMPONENT ARtg Pnni Top NodeName HorizontalLink (HLnk)

Instance	String (1..10, ASCII)
Groups	"GROUP ARtg Pnni Top NodeName HLnk Operational (Oper)"
Scope	Device
Description	*ARtg Pnni Top/<level> NodeName/<node name> HorizontalLink/<interface name>*

This component represents the horizontal link information stored in this node's topology database at this level.

All advertised horizontal links associated with the parent *NodeName* component can be listed through the *HorizontalLink* subcomponent instances, indexed by their interface names.

The interface names can take one of the following forms:
(a) ***AtmIfNumber.VptNumber*** to indicate a physical interface. Therefore, ***HLnk/100*** indicates *AtmIf/100* while ***HLnk/100.22*** indicates *AtmIf/100 Vpt/22*.
(b) Values ***<0-4294967295>*** to indicate a logical link. Therefore, ***HLnk/4202201295*** indicates a logical link.

Mib	AtmRouting
Dyn. Subcomp.	"COMPONENT ARtg Pnni Top NodeName HLnk Metrics"
Common Verbs	Help List Display

GROUP ARtg Pnni Top NodeName HLnk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of a *HLnk* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top NodeName HLnk remoteNodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node ID of the node at the far end of this horizontal link.
Mib	AtmRouting
Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk remotePortId

Access	Read: All Write: Illegal
Description	This attribute indicates the link's port ID on the node at the far end of this horizontal link.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk remoteNodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the node name of the node at the far end of this horizontal link. This attribute corresponds to the *remoteNodeId* attribute under this component.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk remoteInterfaceName

Access	Read: All Write: Illegal
Description	This attribute indicates the interface name at the far end of this horizontal link. This attribute's value can take one of the following forms: (a) ***AtmIf/<1-4095>*** - If the far end is an ATM interface. (b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT interface. (c) Values ***0-4294967295*** - If the link is a logical link. The value of this attribute is an empty string if the far end is a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmRouting

Values	String (0..19, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk nodeName

Access	Read: All Write: Illegal
Description	This attribute indicates the *nodeName* of the node at this end of the horizontal link. The value of this attribute is an empty *string* if a node name is not provisioned under the *ModuleData* component.
Mib	AtmRouting
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk interfaceName

Access	Read: All Write: Illegal
Description	This attribute indicates the interface name at this end of the horizontal link. This attribute's value can take one of the following forms: (a) ***AtmIf/<1-4095>*** - If the far end is an ATM interface. (b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT interface. (c) Values ***0-4294967295*** - If the link is a logical link. The value of this attribute is an empty string for a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmRouting
Values	String (0..19, ASCII)
Default	No default

COMPONENT ARtg Pnni Top NodeName HLnk Metrics

Instance	ubr cbr rtVBR nrtvbr abr
Groups	"GROUP ARtg Pnni Top NodeName HLnk Metrics OutRaig"
Scope	Device
Description	*ARtg Pnni Top/<level> NodeName/<node name> HLnk/ <interface name> Metrics/<service category>* This component contains the advertised metrics of a horizontal link associated with the parent *NodeName* component for a particular service category, stored in this node's topology database for this PNNI level.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni Top NodeName HLnk Metrics OutRaig

Properties	Operational
Description	This group contains the advertised metrics of a *Ulnk* or *Hlnk* for the outgoing direction.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics outAdminWeight

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised administrative weight of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and

the link is a physical link, this attribute corresponds to the actual administrative weight attribute for the specified service category provisioned under *Atmif Pnni* component. The attribute names in *Atmif Pnni* are *cbrWeight*, *rtVbrWeight*, *nrtVbrWeight* and *UbrWeight* corresponding to the service category ***cbr***, ***rtVbr***, ***nrtVbr*** and ***Ubr***.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the administrative weight attribute for the specified service category provisioned under that node's *Atmif Vpt Pnni* component.

Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics outAvailableCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised available cell rate of an uplink or a horizontal link, in cells per second, for the specified service category for the outgoing direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics outMaxCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell rate of an uplink or a horizontal link for the specified service category for the outgoing direction.
Mib	AtmRouting

Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics outMaxCtd

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell transfer delay (maxCtd) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics outCdv

Access	Read: All Write: Illegal

Description	This attribute indicates the advertised peak-to-peak cell delay variation (CDV) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *cdv* attribute for the specified service category, provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics outClr0

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr0* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr*

attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Default: No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics outClr01

Access: Read: All
Write: Illegal

Description: This attribute indicates the advertised cell loss ratio (CLR) for CLP0+1 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr01* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr*

attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Default: No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics outCellRateMargin

Access: Read: All
Write: Illegal

Description: This attribute indicates the advertised cell rate margin in cells per second of an uplink or a horizontal link for the specified service category for the outgoing direction.

This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Units: cell/s

Default: No default

ATTRIBUTE ARtg Pnni Top NodeName HLnk Metrics outVarianceFactor

Access: Read: All
Write: Illegal

Description: This attribute indicates the advertised variance factor of an uplink or a horizontal link for the specified service category for the outgoing direction. The value is displayed in the power of 2 to the power of -8.

This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.

Mib: AtmRouting

Values	Decimal (0..4294967294) notApplicable
Default	No default

COMPONENT ARtg Pnni Top NodeName UpLink (ULnk)

Instance	String (1..10, ASCII)
Groups	"GROUP ARtg Pnni Top NodeName ULnk Operational (Oper)"
Scope	Device
Description	*ARtg Pnni Top/<level> NodeName/<node name> UpLink/ <interface name>* This component represents the uplink information stored in this node's topology database at this level. All advertised uplinks associated with the parent *NodeName* component can be listed through the *UpLink* component instances, indexed by their interface names. The interface names can take one of the following forms: (a) ***AtmIfNumber.VptNumber*** to indicate a physical interface. Therefore, ***ULnk/100*** indicates *AtmIf/100* while ***ULnk/100.22*** indicates *AtmIf/100 Vpt/22*. (b) Values ***<0-4294967295>*** to indicate a logical link. Therefore, ***ULnk/3902201295*** indicates a logical link.
Mib	AtmRouting
Dyn. Subcomp.	"COMPONENT ARtg Pnni Top NodeName ULnk Metrics"
Common Verbs	Help List Display

GROUP ARtg Pnni Top NodeName ULnk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of a *ULnk* component.

Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top NodeName ULnk upnodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node ID of the node at the far end of this uplink.
Mib	AtmRouting
Values	String (22, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk upnodeAddress

Access	Read: All Write: Illegal
Description	This attribute indicates the address of the node at the far end of this uplink.
Mib	AtmRouting
Values	String (19, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk upnodePeerGroupId

Access	Read: All Write: Illegal
Description	This attribute indicates the peer group identifier of the node at the far end of this uplink.
Mib	AtmRouting
Values	String (0..14, Hex)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk upnodeName

Access	Read: All Write: Illegal

Description	This attribute indicates the node name and the hierarchy level for the node at the far end of this uplink. A typical value for this attribute has the following form: ***OBELIX@96.*** Here, ***OBELIX*** is the node name and ***96*** is the hierarchy level for the upnode. The **@** symbol is used to separate the node name from the hierarchy level in the display.
Mib	AtmRouting
Values	String (0..16, ASCII)
Default	No default

COMPONENT ARtg Pnni Top NodeName ULnk Metrics

Instance	ubr cbr rtvbr nrtvbr abr
Groups	"GROUP ARtg Pnni Top NodeName ULnk Metrics OutRaig" "GROUP ARtg Pnni Top NodeName ULnk Metrics InRaig"
Scope	Device
Description	*ARtg Pnni Top/<level> NodeName/<node name> ULnk/ <interface name> Metrics/<service category>* This component contains the advertised metrics of an uplink associated with the parent *NodeName* component for a particular service category, stored in this node's topology database at this PNNI level.
Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Pnni Top NodeName ULnk Metrics OutRaig

Properties	Operational
Description	This group contains the advertised metrics of a *Ulnk* or *Hlnk* for the outgoing direction.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics outAdminWeight

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised administrative weight of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the actual administrative weight attribute for the specified service category provisioned under *Atmif Pnni* component. The attribute names in *Atmif Pnni* are *cbrWeight*, *rtVbrWeight*, *nrtVbrWeight* and *UbrWeight* corresponding to the service category ***cbr***, ***rtVbr***, ***nrtVbr*** and ***Ubr***. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the administrative weight attribute for the specified service category provisioned under that node's *Atmif Vpt Pnni* component.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics outAvailableCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised available cell rate of an uplink or a horizontal link, in cells per second, for the specified service category for the outgoing direction.

Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics outMaxCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell rate of an uplink or a horizontal link for the specified service category for the outgoing direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics outMaxCtd

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell transfer delay (maxCtd) of an uplink or a horizontal link for the specified service category for the outgoing direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *maxCtd* attribute for the specified service category

provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Units: microsec

Default: No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics outCdv

Access: Read: All
Write: Illegal

Description: This attribute indicates the advertised peak-to-peak cell delay variation (CDV) of an uplink or a horizontal link for the specified service category for the outgoing direction.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *cdv* attribute for the specified service category, provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Units: microsec

Default: No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics outClr0

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *outClr0* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics outClr01

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell loss ratio (CLR) for CLP0+1 of an uplink or a horizontal link for the specified service category for the outgoing direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to

the total number of cells transmitted across the link or node. The value in *outClr01* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics outCellRateMargin

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised cell rate margin in cells per second of an uplink or a horizontal link for the specified service category for the outgoing direction. This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	cell/s

Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics outVarianceFactor

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised variance factor of an uplink or a horizontal link for the specified service category for the outgoing direction. The value is displayed in the power of 2 to the power of -8. This attribute is not supported on a Nortel Networks Multiservice Switch, hence it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Default	No default

GROUP ARtg Pnni Top NodeName ULnk Metrics InRaig

Properties	Operational
Description	This group contains the advertised metrics of a *Ulnk* or *Hlnk* for the incoming direction.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics inAdminWeight

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised administrative weight of an uplink for the specified service category for the incoming direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the administrative weight attribute for the specified service category provisioned under the *Atmif Pnni* component. If the subject node is a Nortel Networks Multiservice Switch and

	the link is a virtual path connection (VPC), this attribute corresponds to the administrative weight attribute for the specified service category provisioned under the *Atmif Vpt Pnni* component.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics inAvailableCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised available cell rate of an uplink for the specified service category for the incoming direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics inMaxCellRate

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell rate of an uplink for the specified service category for the incoming direction.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics inMaxCtd

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised maximum cell transfer delay (*maxCtd*) of an uplink for the specified service category for the incoming direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *maxCtd* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.
Mib	AtmRouting
Values	Decimal (0..4294967294) notApplicable
Units	microsec
Default	No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics inCdv

Access	Read: All Write: Illegal
Description	This attribute indicates the advertised peak-to-peak cell delay variation (CDV) of an uplink for the specified service category for the incoming direction. If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *cdv* attribute for the specified service category provisioned under *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *cdv* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *cdv* attribute for the specified service category, provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Units: microsec

Default: No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics inClr0

Access: Read: All
Write: Illegal

Description: This attribute indicates the advertised cell loss ratio (CLR) for CLP0 of an uplink for the specified service category for the incoming direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *inClr0* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the

Atmif Ca component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Default: No default

ATTRIBUTE ARtg Pnni Top NodeName ULnk Metrics inClr01

Access: Read: All
Write: Illegal

Description: This attribute indicates the advertised cell loss ratio (CLR) for CLP0+1 of an uplink for the specified service category for the incoming direction. CLR is defined as the ratio of the number of cells that do not make it across the link or node to the total number of cells transmitted across the link or node. The value in *inClr01* is encoded as the negative logarithm of the value. That is, the value n indicates a CLR of 10 to the power of -n.

If the subject node is a Nortel Networks Multiservice Switch and the link is a physical link, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component.

If the subject node is a Nortel Networks Multiservice Switch and the link is a virtual path connection (VPC), this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Vpt Ca* component. If the *Atmif Vpt Ca* component doesn't exist, this attribute corresponds to the *clr* attribute for the specified service category provisioned under the *Atmif Ca* component. If this attribute is not applicable for a particular service category, it is displayed as ***notApplicable***.

Mib: AtmRouting

Values: Decimal (0..4294967294)
notApplicable

Default: No default

COMPONENT ARtg Pnni Port

Instance	Decimal (0..4294967295)
Scope	Device
Description	*ARtg Pnni Port/<n>* This component represents a port advertised within the PNNI routing domain.
Mib	AtmRouting
Common Verbs	Help List Display

COMPONENT ARtg Pnni Cache

Groups	"GROUP ARtg Pnni Cache Provisioned (Prov)" "GROUP ARtg Pnni Cache Operational (Oper)"
Scope	Device
Description	*Artg Pnni Cache* This component represents the PNNI Routing Cache. It enhances call setup performance by providing a call setup request with a previously computed route from the *Cache*, whenever possible. The *Cache* must be populated with previously computed routes before it is usable and it reduces the number of on-demand route computations once populated. The *Cache* stores and maintains entries to several destinations and uses them to provide suitable routing paths for subsequent call setup requests. The *clear* verb removes all *Cache* entries. A *Cache* route entry consists of multiple alternate routes to a

destination node. The number of alternate routes is set by the *maxPaths* value under the *Artg Pnni lb<svcCat>*component.

Mib AtmRouting

Common Verbs
Help
List
Display
Add
DELete

VERB Clear ARtg Pnni Cache

Impact Configuration

Description *Clear Artg Pnni Cache*
This verb clears all the previously computed route entries stored in the PNNI cache.

GROUP ARtg Pnni Cache Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attributes for the *Artg Pnni Cache* component.

Mib AtmRouting

ATTRIBUTE ARtg Pnni Cache agingPeriod

Access Read: All
Write: All

Description This attribute specifies the maximum lifetime of a *Cache* entry.

Specifying a low *agingPeriod* is useful when many SVCs are expected to be routed through the network to ensure that the *Cache* is periodically refreshed.

Specifying a high *agingPeriod* is useful when many permanent connections are expected to be routed through the network.

As the fluctuations in the available network resources become

more frequent, the value of *agingPeriod* should be decreased to reflect the dynamic nature of the network.

Mib	AtmRouting
Values	Decimal (180..7200)
Units	seconds
Default	1800

ATTRIBUTE ARtg Pnni Cache maxNumEntries

Access	Read: All Write: All
Description	This attribute specifies the maximum number of the cache entries to be stored in the routing cache. Reducing the *maxNumEntries* below the current *Cache* size causes the *Cache* to shrink by purging the oldest entries. A larger value of *maxNumEntries* causes more CP memory to be used. The value of this attribute is bound by the value of *maxPaths* of *Artg Pnni lb<srvCat>* component and may not exceed 30000/ *maxPaths.*
Mib	AtmRouting
Values	Decimal (100..10000)
Default	5000

ATTRIBUTE ARtg Pnni Cache purgeEntryAtPathInvalid

Access	Read: All Write: All
Description	This attribute specifies whether to purge the whole route cache entry when a path becomes invalid, or to remove only the invalid path. A route cache entry consists of one or more paths and support

calls of certain traffic requirements. A path becomes invalid if it can no longer support the traffic requirements of the associated route. This may happen if any link along the path fails, or its capacity is reduced.

If this attribute is set to *yes*, the whole route cache entry will be purged after a path becomes invalid. If this attribute is set to *no*, only the path will be removed.
For most networks, it is desirable to purge the whole route cache entry when one path becomes invalid since this allows for better load balancing. However, for some network scenarios, this behavior is not desirable, because it may lead to many unnecessary route cache purges at high network utilization.

The default value of this attribute is *yes*. It should only be changed if recommended by Nortel Networks.

Mib: AtmRouting

Values: no
yes

Default: yes

ATTRIBUTE ARtg Pnni Cache maxPathsToIntermediateNode

Access: Read: All
Write: All

Description: This attribute specifies the maximum number of equal cost paths that are kept to an intermediate node during on-demand route computation. The default value is 1.

Setting this attribute to a value greater than 1 benefits customers who want to calculate more than 3 alternate paths to the destination and store them in the cache. This helps them achieve better load balancing across their network. However, changing the default value to more than 1 will degrade route calculation performance. It should only be changed from the default if recommended by Nortel Networks.

Mib: AtmRouting

Values	Decimal (1..20)
Default	1

GROUP ARtg Pnni Cache Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the routing cache.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Cache currentNumEntries

Access	Read: All Write: Illegal
Description	This attribute indicates the number of route entries currently stored in the cache. The *currentNumEntries* value should be used for diagnostic or engineering purposes in conjunction with the other operational indicators for *Cache* entries: *avgLifetime*, *numReplacements*, *numCrankbackInvalidations*, *numTopologyInvalidations*, and *numAgedEntries*. Together, these attributes indicate the utilization of the Route Cache.
Mib	AtmRouting
Values	Decimal (0..10000)
Default	No default

ATTRIBUTE ARtg Pnni Cache peakNumEntries (pkEntries)

Access	Read: All Write: Illegal
Description	This attribute indicates the highest number of entries stored in the cache since the cache was last created or cleared by using the *Clear* command. The *peakNumEntries* value is a useful diagnostic and engineering tool in evaluating the memory impacts of the *Cache*. If the

	peakNumEntries equals the *maxNumEntries* for a significant amount of time, then the *maxNumEntries* may need to be increased.
Mib	AtmRouting
Values	Decimal (0..10000)
Default	No default

ATTRIBUTE ARtg Pnni Cache hitRatio

Access	Read: All Write: Illegal
Description	This attribute indicates the percentage of PNNI routing requests fulfilled using the routing cache since the time the cache was last created or cleared by using the *clear* command. If the *cacheHits* value is low, then this is an indication that the cache is not engineered properly or is not appropriate for the profile of the network traffic. A low value of *cacheHits* may indicate that the traffic profiles are constantly changing are not being reused. If this is the case, the *Cache* may need to be disabled on this node. An equilibrium has to be reached within the network before an accurate value from *cacheHits* is obtained.
Mib	AtmRouting
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE ARtg Pnni Cache cacheUptime (uptime)

Access	Read: All Write: Illegal
Description	This attribute indicates the time since the routing Cache was last created or cleared.

Mib	AtmRouting
Values	Decimal (0..4294967295)
Units	minutes
Default	No default

ATTRIBUTE ARtg Pnni Cache avgLifetime

Access	Read: All Write: Illegal
Description	This attribute indicates the average lifetime of the route entries in the cache. The *avgLifetime* can be used for diagnostic or engineering purposes in setting an appropriate value for the *agingPeriod*. An *avgLifetime* value lower than the *agingPeriod* indicates that some fraction of the *Cache* entries are removed before they are normally aged. When the *avgLifetime* equals the *agingPeriod*, this indicates that the *agingPeriod* value might have to be increased. However, note that other conditions in the network can also cause this condition, such as very stable network topology. The *avgLifetime* value should be used for diagnostic or engineering purposes in conjunction with the other operational indicators for *Cache* entries: *currentNumEntries*, *numReplacements*, *numCrankbackInvalidations*, *numTopologyInvalidations*, and *numAgedEntries*.
Mib	AtmRouting
Values	Decimal (0..7200)
Units	seconds
Default	No default

ATTRIBUTE ARtg Pnni Cache numReplacements (nRep)

Access	Read: All Write: Illegal
Description	This attribute counts the entries that have been removed from the *Cache* in order to make room for newer entries. It is set to zero when the *Cache* is created or cleared using the *Clear* command. The *numReplacements* value wraps to zero when the maximum value is exceeded or when the *totalEntriesRemoved* value is exceeded. If the number of entries removed from the *Cache* due to replacement operations is high, the *maxPaths* value may need to be increased. The *numReplacements* value should be used for diagnostic or engineering purposes in conjunction with the other operational indicators for *Cache* entries: *currentNumEntries*, *avgLifetime*, *numCrankbackInvalidations*, *numTopologyInvalidations*, and *numAgedEntries*, *totalEntriesRemoved*.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Cache numCrankbackInvalidations (nCrank)

Access	Read: All Write: Illegal
Description	This attribute counts the entries removed from the *Cache* due to crankback purging operations. It is set to zero when the *Cache* is created or cleared using the *Clear* command. The *numCrankbackInvalidations* value wraps to zero when the maximum value is exceeded or when the *totalEntriesRemoved* value is exceeded. If this value is high, it suggests that the route entries in the *Cache* are becoming invalid during their lifetime. This means that the *agingPeriod* might have to be decreased. Reroutes due to

crankbacks are resource-intensive and add to network latency. Therefore *numCrankbackInvalidations* takes precedence over the *avgLifetime* status.

The *numCrankbackInvalidations* value should be used for diagnostic or engineering purposes in conjunction with the other operational indicators for *Cache* entries: *currentNumEntries*, *avgLifetime*, *numReplacements*, *numTopologyInvalidations*, and *numAgedEntries*, *totalEntriesRemoved*.

Mib: AtmRouting

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE ARtg Pnni Cache numTopologyInvalidations (nTopInv)

Access: Read: All
Write: Illegal

Description: This attribute indicates the number of entries in the *Cache* that have replaced older entries due to significant changes in known resources within the PNNI network. It is set to zero when the *Cache* is created or cleared using the *Clear* command.

The *numTopologyInvalidations* value wraps to zero when the maximum value is exceeded or when the *totalEntriesRemoved* wraps to zero.

If this value is high, it indicates that the dynamic nature of the network topology may be decreasing the effectiveness of the *Cache*.

The *numTopologyInvalidations* value must be used for diagnostic or engineering purposes in conjunction with the other operational indicators for *Cache* entries: *currentNumEntries*, *avgLifetime*, *numReplacements*, *numCrankbackInvalidations*, *numAgedEntries*, *totalEntriesRemoved*.

Mib: AtmRouting

Values: Decimal (0..4294967295)

Default	No default

ATTRIBUTE ARtg Pnni Cache numAgedEntries (nAged)

Access	Read: All Write: Illegal
Description	This attribute counts the entries that have aged out of the *Cache* since the *Cache* was last created or cleared using the *clear* command. It is set to zero when the *Cache* is created or cleared using the *clear* command. The *numAgedEntries* value wraps to zero when the maximum value is exceeded or when the *totalEntriesRemoved* wraps to zero. If this value is low, either the *agingPeriod* is either too high or the other *Cache* purging operations occur very frequently. The *numAgedEntries* value should be used for diagnostic or engineering purposes in conjunction with the other operational indicators for *Cache* entries: *currentNumEntries*, *avgLifetime*, *numReplacements*, *numCrankbackInvalidations*, *numTopologyInvalidations*, and *totalEntriesRemoved*.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Cache totalEntriesRemoved (totRm)

Access	Read: All Write: Illegal
Description	This attribute counts the *Cache* entries that have been removed from the *Cache*. The counter starts from zero when the *Cache* is created or cleared using the *clear* command. The counter wraps to zero when the maximum value is exceeded. This value should be used for diagnostic or engineering purposes in conjunction with other operational indicators for *Cache*

	entries: *currentNumEntries*, *avgLifetime*, *numReplacements*, *numCrankbackInvalidations*, *numTopologyInvalidations*, and *numAgedEntries*.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE ARtg Pnni Cache numHits

Access	Read: All Write: Illegal
Description	This attribute indicates the actual number of PNNI routing requests fulfilled using the routing cache since the time the cache was last created or cleared by using the *Clear* command. An increase in the value after a call setup request is an indication that the call setup request was satisfied using the routing cache.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

COMPONENT ARtg Pnni LoadBalancing (Lb)

Instance	cbr rtVbr nrtVbr ubr abr
Groups	"GROUP ARtg Pnni Lb Provisioned (Prov)" "GROUP ARtg Pnni Lb Operational (Oper)"
Scope	Device
Description	*Artg Pnni LoadBalancing/<serviceCategory>* This component represents the load balancing functionality of

PNNI Routing for the service category specified by the instance value.

Mib: AtmRouting

Common Verbs: Help, List, Display

VERB Clear ARtg Pnni Lb

Impact: Configuration

Description: *Clear Artg Pnni LoadBalancing/<serviceCategory>*
This verb sets to zero all the Load Balancing operational attributes for the service category specified by the instance value.

GROUP ARtg Pnni Lb Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the load balancing functionality of PNNI Routing.

Mib: AtmRouting

ATTRIBUTE ARtg Pnni Lb method

Access: Read: All
Write: All

Description: This attribute specifies the load balancing method to be used by PNNI routing for the corresponding service category.

maxAvCr. PNNI routing chooses the path that has the maximum available cell rate as the routing path.

random. The routing path is chosen randomly from all the acceptable paths.

avCrProb. The routing path is chosen with a probability in proportion to its available cell rate. This method will result in the more frequent selection of a route having a higher available cell rate over that with a lower available cell rate.

optMetricProb. The routing path is chosen with a probability inversely proportional to the optimization metric. This method will result in the more frequent selection of a route having the lowest value of the optimization metric over that with a higher optimization metric.

avCrOptMetricProb. The routing path is chosen with a probability that is based on both the proportional value of the available cell rate and the inverse proportional value of the optimization metric.

When the value of *maxPaths* attribute is greater than 3, only the *random* method is allowed for all service categories.

Mib: AtmRouting

Values:
maxAvCr
random
avCrProb
optMetricProb
avCrOptMetricProb

Default: random

ATTRIBUTE ARtg Pnni Lb maxPaths

Access:
Read: All
Write: All

Description: This attribute specifies the maximum number of paths to be used for load balancing and route caching.

Setting this attribute to ***1*** turns the load balancing off for all load balancing technique except for ***maxAvCr***. This load balancing technique requires *maxPaths* to be set to ***1***.

When the *Artg Pnni Cache* component is provisioned, this attribute also specifies the maximum number of paths to be stored in a route *Cache* entry for each destination node.

Setting this attribute to a value greater than ***3*** is not recommended except for certain specific topologies. In these cases, it allows a

better load distribution when route cache is used. However, for other topologies, it will significantly slow down on-demand route computation. Also when this attribute is set to a value greater than ***3***, the *Artg Pnni lb<srvCat> method* attribute can only be set to ***random***.

When this attribute is set to a value greater than ***3***, *maxNumEntries* in the *Artg Pnni Cache* subcomponent is limited to ensure that maximum memory consumption by the route cache on the CP does not increase when *maxPaths* is greater than ***3***. *maxNumEntries* may not exceed the value of ***30000***/ *maxPaths*.

Mib	AtmRouting
Values	Decimal (1..20)
Default	2

ATTRIBUTE ARtg Pnni Lb minVariance (minVar)

Access	Read: All Write: All
Description	This attribute specifies the minimum variance value to be used for each optimization metric supported by the service category of this *LoadBalancing* instance. This attribute is a vector indexed by the optimization metric. Note that the values of this vector are explicit values as opposed to the factors required to set the *slopeVariance* attribute. A larger variance allows more usable paths to be considered for load balancing. A low variance of zero means that only the *slopeVariance* attribute is used in determining the acceptable variance. The maximum range boundaries for each of the optimization metrics are: **- *cdv***: 2147483647 (for cbr and rtVbr only). **- *maxCtd***: 2147483647 (for cbr and rtVbr only). **- *aw***: 4294967295. The acceptable variance is calculated based on the following

formula:
*acceptableVariance = minVariance + optM * slopeVariance/100*
where *optM* represents the optimization metric value of the best path.

Mib: AtmRouting

Vector of: Decimal (0..4294967295)

Index: cdv
maxCtd
aw

Default: (0, 0, 0)

ATTRIBUTE ARtg Pnni Lb slopeVariance (slopeVar)

Access: Read: All
Write: All

Description: This attribute specifies the slope of the acceptable variance, for each optimization metric supported by the service category of this *LoadBalancing* instance. This attribute is a vector indexed by optimization metric. The values of this vector are factors.

A larger variance allows more usable paths to be considered for load balancing.

A *slopeVariance* of zero means that only the acceptable variance is given by the *minVariance* attribute. If both *minVariance* and *slopeVariance* attributes are zero, means that only the best paths of equal value to the *optimizationMetric* will be considered in load balancing.

The acceptable variance is calculated based on the following formula:
*acceptableVariance = minVariance + optM * slopeVariance/100*
where *optM* represents the optimization metric value of the best path.

Mib: AtmRouting

Vector of: Decimal (0..1900)

Units	%
Index	cdv maxCtd aw
Default	(0, 0, 0)

GROUP ARtg Pnni Lb Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the load balancing functionality of PNNI Routing.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Lb avgNumComputedPaths (avgPaths)

Access	Read: All Write: Illegal
Description	This attribute indicates the average number of computed paths that resulted from a Dijkstra calculation using the variance constraints provisioned in the *minVariance*, and *slopeVariance* attributes. It is set to zero when the *Load Balancing/<serviceCategory>* component is cleared using the *Clear* command. This attribute is a vector indexed by the optimization metric: ***cdv***, ***maxCtd***, and ***aw***. The *avgNumComputedPaths* value is a useful diagnostic and engineering tool in determining the most useful variance values for each *optimizationMetric*.
Mib	AtmRouting
Vector of	Decimal (1.0..3.0)
Index	cdv maxCtd aw

Default	No default

ATTRIBUTE ARtg Pnni Lb optMetricLoadDistribution (optMLd)

Access	Read: All Write: Illegal
Description	This attribute indicates the distribution of the routed path relative to the acceptable paths sorted by the *optimizationMetric*. It indicates, in percentage, the number of times the best optimized path and subsequent sub-optimal paths are chosen as the routing path. Here *path1* is the best path, and *path2* and *path3* variables are the subsequent sub-optimal paths. It is set to zero when the *Load Balancing/<serviceCategory>* component is cleared using the *Clear* command. The *optMetricLoadDistribution* value is a useful diagnostic and engineering tool in determining the most useful load balancing *method* when taken in consideration with: *avgNumComputedPaths*, *avCrLoadDistribution*, *minVariance*, and *slopeVariance*.
Mib	AtmRouting
Vector of	Decimal (0.0..100.0)
Units	%
Index	path1 path2 path3
Default	No default

ATTRIBUTE ARtg Pnni Lb avCrLoadDistribution (avCrLd)

Access	Read: All Write: Illegal
Description	This attribute indicates the distribution of the routed path relative to the acceptable paths sorted by best available cell rate. It indicates, in percentage, the number of times the widest path, relative to the available cell rate, and subsequent narrower paths

are chosen as the routing path. Here *path1* is the best path, and *path2* and *path3* variables are the subsequent sub-optimal paths.

It is set to zero when the *Load Balancing/<serviceCategory>* component is cleared using the *Clear* command.

The *avCrLoadDistribution* value is a useful diagnostic and engineering tool in determining the most useful load balancing *method* when taken in consideration with: *avgNumComputedPaths*, *optMetricLoadDistribution*, *minVariance*, and *slopeVariance*.

Mib	AtmRouting
Vector of	Decimal (0.0..100.0)
Units	%
Index	path1 path2 path3
Default	No default

COMPONENT ARtg Pnni NodeName (Node)

Instance	String (1..12, ASCII)
Groups	"GROUP ARtg Pnni Node Provisioned (Prov)"
Scope	Device
Description	*Artg Pnni NodeName/<string>* This component represents a node in the PNNI network. The recommendation is that the instance string should match the nodeName of the node. To get the nodeName of the node, log in to the remote node and enter this command:

d -p Mod nodeName

Mib	AtmRouting
Common Verbs	Help List Display Add DELete

GROUP ARtg Pnni Node Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Artg Pnni NodeName* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Node nodeId

Access	Read and write
Description	This attribute specifies the *nodeId* of the remote node. The *nodeId* can be retrieved by logging in to the remote node and executing this command: *d ARtg Pnni Cfg/* opNodeId*
Mib	AtmRouting
Values	String (22, Hex)
Default	No default

COMPONENT ARtg Pnni MdtlPath (Mdtl)

Instance	String (1..32, ASCII)
Scope	Device
Description	*Artg Pnni MdtlPath/[string] Hop/n*

	This component represents a *MDTL* path. It is composed of a list of hops. 1) Each hop in a path must use a physical *node ID*. 2) Each hop must be at the same PNNI level. 3) Each *MDTL* must have at least two hops. 4) Maximum number of hops is 20. 5) First hop *node ID* must be the originator's *node ID*. 6) Loopback is not allowed in a path. 7) Destination *port ID* should be zero, but not enforced by semantic checks. 8) One cannot delete a *nodename* if the *nodename* is used by one of the hops. 9) Maximum number of MDTL paths is 128.
Mib	AtmRouting
Opt. Subcomp.	"COMPONENT ARtg Pnni Mdtl Hop"
Common Verbs	Help List Display Add DELete

COMPONENT ARtg Pnni Mdtl Hop

Instance	Decimal (1..255)
Groups	"GROUP ARtg Pnni Mdtl Hop Provisioned (Prov)"
Scope	Device
Description	*Artg Pnni Mdtl/n hop/n* This component represents a node that the MDTL path has to traverse.
Mib	AtmRouting
Common Verbs	Help List Display Add DELete

GROUP ARtg Pnni Mdtl Hop Provisioned (Prov)

Properties	Provisioned
Description	(//CHECK:AntPnniSemanticChecks::checkMdtlHopProv // Verify that the nodeName is initialize.)This group contains the provisionable attributes for the *Artg Pnni Mdtl/n Hop/n* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Mdtl Hop nodeName (name)

Access	Read and write
Description	This attribute specifies the node corresponding to this hop.
Mib	AtmRouting
Values	String (1..12, ASCII)
Default	No default

ATTRIBUTE ARtg Pnni Mdtl Hop portId

Access	Read and write
Description	This attribute specifies the portId to be used on the exiting side of the node. A value set to 0 indicates that the node will determine the proper *portId.*
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	0

COMPONENT ARtg Pnni Reroute

Groups	"GROUP ARtg Pnni Reroute Provisioned (Prov)" "GROUP ARtg Pnni Reroute Operational (Oper)"
Scope	Device
Description	*ARtg Pnni Reroute*

This component represents the rerouting capabilities of the module.

Mib AtmRouting

Common Verbs

Help
List
Display
Add
DELete

VERB OPTIMIZE ARtg Pnni Reroute

Impact Service

Description *Optimize [-cancel] ARtg Pnni Reroute*

This command triggers a module optimization pass for all eligible connections. Connection eligibility is determined by the *moduleOptimizationConnections* attribute under the node-level *Reroute* component or under the application-level *Reroute Ov* component.

The *-cancel* option causes the current module optimization pass to be cancelled. The pass terminates after the current application completes its optimization pass.

Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP ARtg Pnni Reroute Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attributes for the *Artg Pnni Reroute* component.

Mib AtmRouting

ATTRIBUTE ARtg Pnni Reroute protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols which are requested by connection segments for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the last rendezvous node is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature. ***ebrOnly***: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.
Mib	AtmRouting
Values	localGlobal localOnly globalOnly localEbr ebrOnly
Default	localGlobal

ATTRIBUTE ARtg Pnni Reroute localDomain (domain)

Access	Read and write

Description	This attribute specifies the local domain for the node. This value is advertised to all PNNI neighbors to determine the type of local domain link. Use of the default value, ***unspecified***, will result in a warning being issued, since it is recommended that this value be initialized. If the value is set to ***intraDomain***, all PNNI neighbors will identify their connecting links as intra-domain links.
Mib	AtmRouting
Values	Decimal (2..1024) intraDomain (intra) unspecified (unspec)
Default	unspecified

ATTRIBUTE ARtg Pnni Reroute numOptAttempts

Access	Read and write
Description	This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization attempts to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations do not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization. If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization does not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.
Mib	AtmRouting
Values	Decimal (0..15)

Default	1

ATTRIBUTE ARtg Pnni Reroute moduleOptimizationConnections

Access	Read and write
Description	This attribute specifies which connection segments are considered by a module optimization pass. One of the following values can be specified: ***none***: No connection segments are considered for path optimization. ***recoveredOnly***: Only connection segments which are foration. The best known optimization metric value for the connection segment is found under *RerouteInfo* component. If the rerouting protocol is Ebr then the *ebrOptimalMetricValue* attribute indicated the best known optimization metric value. If the local rerouting protocol is actived to this connection segment then the *localOptimalMetricValue* attribute indicated the best known optimization metric value for the local segment. If the global rerouting protocol is actived to this connection segment then the *globalOptimalMetricValue* attribute indicated the best known optimization metric value for the global connection segment. ***allSubscribed***: All connection segments subscribed to path optimization are considered.
Mib	AtmRouting
Values	none recoveredOnly allSubscribed
Default	recoveredOnly

ATTRIBUTE ARtg Pnni Reroute switchoverMechanism

Access	Read and write
Description	This attribute specifies the mechanism used for switchover of a rerouted connection segment. One of the following values can be specified: ***standard***: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value

ensures interoperability with other vendors' equipment running ATM Forum "Domain based Rerouting".
rcl: The Reduced Cell Loss (RCL) mechanism is used for switchover. RCL is a value-added extension to the standard mechanism that allows faster switchover time.

Mib: AtmRouting

Values: standard
rcl

Default: standard

ATTRIBUTE ARtg Pnni Reroute localConnectionRecoverySubscr (lConRec)

Access: Read and write

Description: This attribute specifies which connection segments request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified type(s) which request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery.

Connection segments of the specified type(s) which request ***localEbr*** request subscription to the local connection recovery. Only one will be granted.

One or more of the following values can be specified:
svcSvp: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery.
sourceSpvcSpvp: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery.
transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.

Mib	AtmRouting
Set of	svcSvp (svc) sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(svcSvp, sourceSpvcSpvp, transitSpvcSpvp)

ATTRIBUTE ARtg Pnni Reroute localPathOptimizationSubscr (lPathOpt)

Access	Read and write
Description	This attribute specifies which connection segments request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified type(s) which request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization. Connection segments of the specified type(s) which request ***localEbr*** request subscription to the local path optimization. Only one will be granted. One or more of the following values can be specified: ***svcSvp***: If this value is set, all SVC and SVP connection segments request subscription to local path optimization. ***sourceSpvcSpvp***: If this value is set, all source SPVC and SPVP connection segments request subscription to local path optimization. ***transitSpvcSpvp***: If this value is set, all transit SPVC and SPVP connection segments request subscription to local path optimization.
Mib	AtmRouting
Set of	svcSvp (svc) sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(svcSvp, sourceSpvcSpvp, transitSpvcSpvp)

ATTRIBUTE ARtg Pnni Reroute globalConnectionRecoverySubscr (gConRec)

Access	Read and write
Description	This attribute specifies which connection segments request subscription to global or Ebr connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. Connection segments of the specified type(s) which request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery. Connection segments of the specified type(s) which request ***EbrOnly*** protocol request subscription to EBR connection recovery. Connection segments of the specified type(s) which request ***localEbr*** request subscription to the EBR connection recovery. Only one will be granted. One or more of the following values can be specified: ***svcSvp***: If this value is set, all SVC and SVP connection segments request subscription to global or EBR connection recovery. ***sourceSpvcSpvp***: If this value is set, all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery. ***transitSpvcSpvp***: If this value is set, all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
Mib	AtmRouting
Set of	svcSvp (svc) sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(svcSvp, sourceSpvcSpvp, transitSpvcSpvp)

ATTRIBUTE ARtg Pnni Reroute globalPathOptimizationSubscr (gPathOpt)

Access	Read and write
Description	This attribute specifies which connection segments request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. Connection segments of the specified type(s) which request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization. Connection segments of the specified type(s) which request ***ebrOnly*** protocols request subscription to EBR path optimization. Connection segments of the specified type(s) which request ***localEbr*** request subscription to the EBR path optimization. Only one is granted. One or more of the following values can be specified: ***svcSvp***: If this value is set, all SVC and SVP connection segments request subscription to global or EBR path optimization. ***sourceSpvcSpvp***: If this value is set, all source SPVC and SPVP connection segments request subscription to global or EBR path optimization. ***transitSpvcSpvp***: If this value is set, all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.
Mib	AtmRouting
Set of	svcSvp (svc) sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(svcSvp, sourceSpvcSpvp, transitSpvcSpvp)

ATTRIBUTE ARtg Pnni Reroute optimizationTime (optTime)

Access	Read and write

Description	This attribute specifies the times at which a module optimization pass occurs. A maximum of 12 times can be specified. If no times are provisioned, then the module optimization pass only occurs when triggered manually using the *Optimize* verb.
Mib	AtmRouting
List of	Time (HM)
List Size	12
Default	No default

GROUP ARtg Pnni Reroute Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *ARtg Pnni Reroute* component.
Mib	AtmRouting

ATTRIBUTE ARtg Pnni Reroute optimizationState (state)

Access	Read only
Description	This attribute indicates the current state of module optimization. One of the following values is indicated: ***idle:*** There is no module optimization pass currently in progress. The next pass will occur at the next available time specified by the *optimizationTime* attribute, or when the operator issues the *Optimize* command against this component. ***active***: A module optimization pass is in progress and the module is attempting to optimize eligible connections.
Mib	AtmRouting
Values	idle active
Default	No default

ATTRIBUTE ARtg Pnni Reroute optimizationProgress (progress)

Access	Read only

Description	This attribute indicates the percentage of eligible interfaces that have been sent an optimization request as part of a module optimization pass. This value is reset to zero at the beginning of each module optimization pass.
Mib	AtmRouting
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE ARtg Pnni Reroute pathsOptimized

Access	Read only
Description	This attribute indicates how many paths have been successfully optimized during the latest module optimization pass. Successfully optimized paths are paths that switched to a better route. This value is reset to zero at the beginning of each module optimization pass.
Mib	AtmRouting
Values	Decimal (0..4294967295)
Default	No default

COMPONENT ARtg PhysicalPort (Port)

Instance	Decimal (0..4294967295)
Groups	"GROUP ARtg Port Operational (Oper)"
Scope	Device
Description	*ARtg PhysicalPort/<n>* This component represents a port on this node within the ATM

routing domain. The index is the port ID used to uniquely identify this port.

Mib	AtmRouting
Common Verbs	Help List Display

GROUP ARtg Port Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of a *Port* component.
Mib	AtmRouting

ATTRIBUTE ARtg Port componentName

Access	Read: All Write: Illegal
Description	This attribute indicates the component name of the port.
Mib	AtmRouting
Values	The name of the component
Default	No default

COMPONENT ARtg SparedServices (SpServ)

Groups	"GROUP ARtg SpServ Provisioned (Prov)" "GROUP ARtg SpServ OsiState (State)"
Scope	Device
Description	*ARtg SparedServices* This component represents the Hitless ATM Routing capability.

This capability reduces the length of routing outage during CP switchover and Hitless Software Migration.

Mib: AtmSparedServices

Common Verbs: Help, List, Display

GROUP ARtg SpServ Provisioned (Prov)

Properties: Provisioned

Description: This group contains the generic provisionable attributes of the *ARtg SparedServices* component.

Mib: AtmSparedServices

ATTRIBUTE ARtg SpServ sparing

Access: Read: All
Write: All

Description: This attribute specifies the administrative state of ATM Spared Services.

When this attribute is set to ***enabled***, the ATM routing system on the CP is hot-spared, resulting in a reduced ATM routing outage during CP switchover and Hitless Software Migration.

This attribute may be set to ***enabled*** only if the *shelf cpEquipmentProtection* attribute is set to ***hot*** and the *prov journaling* attribute is set to ***enabled***.

When the value of this attribute is changed from ***enabled*** to ***disabled***, the standby CP restarts.

Mib: AtmSparedServices

Values: disabled
enabled

Default: disabled

GROUP ARtg SpServ OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmSparedServices

ATTRIBUTE ARtg SpServ adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	AtmSparedServices
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE ARtg SpServ operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	AtmSparedServices
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE ARtg SpServ usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: AtmSparedServices

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE ARtg SpServ availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	AtmSparedServices
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE ARtg SpServ proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	AtmSparedServices
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE ARtg SpServ controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.

Mib	AtmSparedServices
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE ARtg SpServ alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	AtmSparedServices
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE ARtg SpServ standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	AtmSparedServices
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)

Default	notSet

ATTRIBUTE ARtg SpServ unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	AtmSparedServices
Values	false true
Default	false

Nortel Networks Multiservice Switch 7400/15000/20000

Component ARtg

Release 6.1

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7400/15000/20000

Component AtmIf

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

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COMPONENT AtmInterface (AtmIf)

Instance	Decimal (1..4095)
Groups	"GROUP AtmIf CustomerIdentifierData (CidData)" "GROUP AtmIf Provisioned (Prov)" "GROUP AtmIf Loopback (Lbk)" "GROUP AtmIf OsiState (State)" "GROUP AtmIf Operational (Oper)" "GROUP AtmIf Statistics (Stats)"

"COLLECTED STATS AtmInterface"

Scope	Device
Description	*AtmInterface/n* An *AtmIf* component is provisioned for each ATM interface. It

	manages the set of ATM connections that terminate at or traverse the interface.
Mib	AtmCore
Subcomponents	"COMPONENT AtmIf ConnectionAdministrator (CA)" "COMPONENT AtmIf PerformanceMonitoring (Pm)"
Opt. Subcomp.	"COMPONENT AtmIf UserNetworkInterface (Uni)" "COMPONENT AtmIf Iisp" "COMPONENT AtmIf NailedUpAccounting (NAcct)" "COMPONENT AtmIf VirtualPathTerminator (Vpt)" "COMPONENT AtmIf EmissionPriority (Ep)" "COMPONENT AtmIf LinkTxUtilization (Ltu)" "COMPONENT AtmIf Aini" "COMPONENT AtmIf Pnni"
Opt. Subcomp.	"COMPONENT AtmIf ConnectionMapping (ConnMap)" "COMPONENT AtmIf VirtualPathConnection (Vpc)" "COMPONENT AtmIf VirtualChannelConnection (Vcc)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	AtmCore

ATTRIBUTE AtmIf customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute,

	the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	AtmCore
Values	Decimal (0; 1..8191)
Default	0

GROUP AtmIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *AtmIf* component.
Mib	AtmCore

ATTRIBUTE AtmIf interfaceName

Access	Read and write
Criticality	Process
Description	This attribute associates the *AtmIf* component with a specific interface on a Function Processor—for example, *Lp/1 Ds3/0*. This implicitly defines the logical processor on which the *AtmIf* component is activated.
Mib	AtmCore
Values	Link (Hardware, applicationFramerName)

Default	No default

ATTRIBUTE AtmIf oamSegmentBoundary (sb)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the interface is on an OAM segment boundary. When the value is ***yes***, the interface is on an OAM segment boundary and all connections passing through the interface terminate OAM segment cells. When the value is ***no***, the interface is not on an OAM segment boundary and the interface permits segment OAM cells to be passed transparently.
Mib	AtmCore
Values	no yes
Default	yes

ATTRIBUTE AtmIf maxVpiBits (vpiBits)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of VPI bits that may be active for this *AtmIf* component. These bits start at the least significant bit position and are contiguous. In general, the maximum VPI which may be used on the interface is 2***maxVpiBits* - 1. The value of the remaining (inactive) VPI bits is ignored on cells received from the link. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, and ***2pJ6MAtm*** cards, the value of this attribute must be ***8***. The maximum VPI supported is 255. For all other cards, the value of this attribute may be ***8*** or ***12***. The

maximum VPI supported is 4095. An exception is for the ***8pE1Atm***, and ***8pDS1Atm*** cards, which do not support VPI 4095. The maximum VPI supported on these cards is 4094.

If a *Uni* or an *Iisp* component is present directly under the *AtmIf* component, the value of this attribute must be ***8***.

Mib	AtmCore
Values	Decimal (8; 12)
Default	8

ATTRIBUTE AtmIf remoteAtmInterfaceLabel (remoteAtmIf)

Access	Read and write
Description	This attribute specifies a unique indication of the remote ATM service or interface component connected to this one. The value of this attribute can be used by network management applications to discover the network's ATM topology from its configuration information. The syntax of the value, such as component ID, address, or other numerical identifier, must follow the conventions of the network management platform. In absence of such convention or platform, the value should be left empty. The value is only stored by the module. It is neither validated nor used to perform any form of remote connectivity validation.
Mib	AtmCore
Values	String (0..60, ASCII)
Default	""

ATTRIBUTE AtmIf txCellMemory

Access	Read and write
Criticality	Component
Description	This attribute specifies the percentage of total transmit cell memory which is available for use by connections under this

AtmIf component. Transmit cell memory is used for storing ATM cells to be transmitted by connections under this *AtmIf* component.

This attribute is not applicable, and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***1pOC48ChSmIrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

If the value of this attribute is ***100***, connections under this *AtmIf* may use up to 100% of the total transmit cell memory. If the value of this attribute is less than ***100***, then only that percentage of the total transmit cell memory may be used by connections under this *AtmIf* component. The minimum value for this attribute is ***1*** since some cell memory is always required for connections.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, the total transmit cell memory is indicated in the *Lp/x Eng Arc Aqm/x txCellMemoryThresholds* 0 attribute.

For ***3pDS3Atm2***, ***3pE3Atm2***, ***2pSTM1eCh***, ***12pDS3Atm***, and ***12pE3Atm*** cards, the total transmit cell memory of an *Aqm* component is shared across multiple *AtmIf* interfaces of the card. Specifying a value of ***100*** for each *AtmIf* enables complete overbooking of the total transmit cell memory by the *AtmIf* components which share the *Aqm* component. Specifying values for this attribute such that the value for each *AtmIf* is less than ***100*** but the sum for all *AtmIf* components is more than 100% enables partial overbooking of the transmit cell memory. Specifying values for this attribute such that the sum for all *AtmIf* components is exactly 100%, ensures that each *AtmIf* has a dedicated pool of transmit cells with no overbooking. Specifying values for this attribute such that the sum for all *AtmIf* components is less than 100% restricts the total size of the free list. This can be used to ensure the functioning of port aggregation even with a small number of connections.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***,

4pOC3MmAtm, and ***4pOC3SmIrAtm*** cards, the total transmit cell memory of an *Aqm* component is dedicated to a single *AtmIf* interface of the card. Specifying a value for this attribute that is less than ***100*** restricts the total size of the free list. This can be used to ensure the functioning of port aggregation even with a small number of connections.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the total transmit cell memory is indicated in the *Lp/x Eng Arc txCellMemoryThresholds* 0 attribute. The total transmit cell memory of the *Arc* component is shared across all *AtmIf* interfaces of the card. Specifying a value of ***100*** for each *AtmIf* enables complete overbooking of the total transmit cell memory by the *AtmIf* components. Specifying values for this attribute such that the value for each *AtmIf* is less than ***100*** but the sum for all *AtmIf* components is more than 100% enables partial overbooking of the transmit cell memory. Specifying values for this attribute such that the sum for all *AtmIf* components is exactly 100%, ensures that each *AtmIf* has a dedicated pool of transmit cells with no overbooking. Specifying values for this attribute such that the sum for all *AtmIf* components is less than 100% restricts the total size of the free list. The attribute value does not affect the transmit cell memory allocated for common queues used by any of the service categories.

Mib	AtmCore
Values	Decimal (1..100)
Units	%
Default	100

ATTRIBUTE AtmIf faultHoldOffTime (faultHOT)

Access	Read and write
Description	This attribute specifies the delay before faults detected at the VP layer are propagated to the VC layer, and thus to the application using the connection. If the value is ***0***, applications using a *VirtualPathTerminator* component are immediately notified of faults detected by the VP.

Using this value allows these applications to be advised of faults without requiring loopbacks on each *Vcc* component. Typically, the application goes out of service when advised of a fault.

If the value is ***infinity***, applications using a *VirtualPathTerminator* component are not notified of VP layer faults. Using this value allows the applications to survive transient VP layer fault conditions.

The value chosen applies only to Vpts and Vccs directly beneath a *Vpt*.

Mib: AtmCore

Values: 0
infinity

Default: infinity

ATTRIBUTE AtmIf ctdCalculation (ctdCalc)

Access: Read and write

Description: This attribute specifies whether cell transfer delay calculation should be performed on loopback cells for each SPVC and SPVP connection under this interface.

Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell.

Cell transfer delay calculation is only supported when segment switch side loopback is enabled on the source segment endpoint. Cell transfer delay calculation is only performed on supported connections when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason. Cell transfer delay calculation is not provided for connections under the *Vpt*.

Attribute value *version2on* is currently not supported. To enable cell transfer delay calculation, value *version1on* should be used.

Mib: AtmCore

Values	off version1on (on) version2on
Default	off

GROUP AtmIf Loopback (Lbk)

Properties	Provisioned
Description	This group contains the default loopback attribute values for all *Vcc, Vpc, and Vpt* components. Note that these attribute values can be overridden by setting different values in the *Vcd* component of a provisioned *Vcc* component, or the *Vpd* component of a provisioned *Vpc* or *Vpt* component. Certain loopback requests may not be possible on a given connection. In such cases, the value of the corresponding operational loopback attribute in the *AtmStatus* group of the *Vcc, Vpc,* or *Vpt* component is ***notApplicable*** and the requested loopback is not performed.
Mib	AtmCore

ATTRIBUTE AtmIf segLinkSideLoopback (segLkLbk)

Access	Read and write
Description	This attribute specifies the default value for link-side segment loopback insertion for all connections under this interface. Link-side segment loopback is not possible if the value of the *oamSegmentBoundary* attribute of the *AtmIf* component is ***no***.
Mib	AtmCore
Values	on off
Default	off

ATTRIBUTE AtmIf segSwitchSideLoopback (segSwLbk)

Access	Read and write

Description	This attribute specifies the default value for switch-side segment loopback insertion for all connections under this interface. Switch-side segment loopback is not possible if the value of the *oamSegmentBoundary* attribute of the *AtmIf* component is ***no***.
Mib	AtmCore
Values	on off
Default	off

ATTRIBUTE AtmIf endToEndLoopback (eeLbk)

Access	Read and write
Description	This attribute specifies the default value for end-to-end loopback insertion for all connections under this interface. End-to-end loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***, or ***segmentEndPoint***. End-to-end loopback insertion is possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectionEndPoint***. End-to-end loopback insertion is always possible on a *Vpt* component.
Mib	AtmCore
Values	on off
Default	off

GROUP AtmIf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	AtmCore

ATTRIBUTE AtmIf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	AtmCore
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	AtmCore
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	AtmCore
Values	idle active (activ) busy
Default	idle

ATTRIBUTE AtmIf availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: AtmCore

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE AtmIf proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	AtmCore
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE AtmIf controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	AtmCore
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE AtmIf alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently

being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: AtmCore

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE AtmIf standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: AtmCore

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE AtmIf unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: AtmCore

Values:
false
true

Default: false

GROUP AtmIf Operational (Oper)

Properties	Operational
Description	This group contains operational attributes which show the status of the *AtmIf* component.
Mib	AtmCore

ATTRIBUTE AtmIf txCellMemoryCongestionState (txCellCcState)

Access	Read only
Description	This attribute indicates the congestion state of the transmit cell memory for this *AtmIf* component. The congestion state is used to determine if cells of a particular discard priority are discarded or queued for transmit. This attribute is not applicable and is not displayed for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***1pOC48ChSmIrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. The congestion state of transmit cell memory is indicated by a numeric value ranging from ***3*** to ***0***. A value of ***3*** indicates no congestion and a value of ***0*** indicates maximum congestion. When transmit cell memory is in congestion state “x”, traffic with discard priority greater than “x” is discarded. Traffic with discard priority less than “x” may be queued for transmit, depending on the congestion level of the connection transmit queue. Traffic with discard priority equal to “x” may either be queued or discarded depending on how close the value of the *txCellMemoryUsage* attribute is to the next threshold as indicated by the value of the *txCellMemoryThreshold* attribute. For example, discard priority 3 traffic is queued until the value of the *txCellMemoryUsage* attribute equals the value of the *txCellMemoryThreshold* 3 attribute. At that point, discard priority 3 traffic is discarded. This attribute indicates which *txCellMemoryThreshold* attribute corresponds to the current value of the *txCellMemoryUsage* attribute.

Mib	AtmCore
Values	Decimal (0..3)
Default	No default

ATTRIBUTE AtmIf txCellMemoryUsage

Access	Read only
Description	This attribute indicates the current number of cells that are stored in transmit cell memory for this *AtmIf* component. Transmit cell memory is used for storing ATM cells to be transmitted by connections under this *AtmIf* component. This attribute is not applicable and is not displayed for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***1pOC48ChSmIrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, the value of this attribute includes all cells for nrt-VBR, and UBR connections. It also includes cells for CBR, and rt-VBR connections which are doing per-VC queuing. It does not include cells for CBR, or rt-VBR connections that are doing common queuing. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the value of this attribute includes all cells regardless of the connection service category or queuing discipline. The attribute value does not include the transmit cell memory consumed by common queues for any of the service categories.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE AtmIf txCellMemoryThreshold

Access — Read only

Description — This attribute is a vector which indicates the size and three discard thresholds for transmit cell memory for this *AtmIf* component. Transmit cell memory used for storing ATM cells to be transmitted by connections under this *AtmIf* component.

This attribute is not applicable and is not displayed for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***1pOC48ChSmIrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

The threshold 0 value indicates the transmit cell memory size. It is the multiplication of the total transmit cell memory by the value of the *txCellMemory* attribute of this *AtmIf* component.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, the threshold 1 value is set at approximately 90 percent of the threshold 0 value. The threshold 2 value is set at approximately 85 percent of the threshold 0 value. The threshold 3 value is set at approximately 75 percent of the threshold 0 value.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the threshold 1 value is set at approximately 90 percent of the threshold 0 value. The threshold 2 value is set at approximately 80 percent of the threshold 0 value. The threshold 3 value is set at approximately 60 percent of the threshold 0 value.

The current value of the *txCellMemoryUsage* attribute together with the vector of values in the *txCellMemoryThreshold* attribute determines the value of the *txCellMemoryCongestionState* attribute. The congestion state determines whether cells of a given discard priority are discarded or queued for transmit.

When the value of the *txCellMemoryUsage* attribute is between

the threshold 0 and threshold 1 values, the value of the *txCellMemoryCongestionState* attribute is ***0***. In congestion state 0, traffic with discard priority greater than 0 is discarded.

When the value of the *txCellMemoryUsage* attribute is between the threshold 1 and threshold 2 values, the value of the *txCellMemoryCongestionState* attribute is ***1***. In congestion state 1, traffic with discard priority greater than 1 is discarded.

When the value of the *txCellMemoryUsage* attribute is between the threshold 2 and threshold 3 values, the value of the *txCellMemoryCongestionState* attribute is ***2***. In congestion state 2, traffic with discard priority greater than 2 is discarded.

When the value of the *txCellMemoryUsage* attribute is below the threshold 3 value, the value of the *txCellMemoryCongestionState* attribute is ***3***. In congestion state 3, all traffic is queued for transmit.

Mib	AtmCore
Vector of	Decimal (0..4294967295)
Units	cells
Index	Decimal (0..3)
Default	No default

ATTRIBUTE AtmIf opShapingRates

Access	Read only
Description	This attribute indicates the values of the 31 shaping rates currently in use at the interface. It is a vector of 31 elements, each representing a shaping rate value. A shaping rate value of ***0*** means the entry is empty and can be used. This attribute is only applicable to ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. It is not displayed for all other cards.

Mib	AtmCore
Vector of	Decimal (0..163839)
Units	cells
Index	Decimal (0..30)
Default	No default

ATTRIBUTE AtmIf shapeUsage

Access	Read only
Description	This attribute counts the connections that currently use the 31 shaping rates. It is a vector of 31 elements, each representing the number of connections using a particular shaping rate. The value of the shaping rate is indicated in the *opShapingRates* attribute. This attribute is only applicable to ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. It is not displayed for all other cards.
Mib	AtmCore
Vector of	Decimal (0..163839)
Index	Decimal (0..30)
Default	No default

GROUP AtmIf Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes which keep statistics about the behavior of the *AtmIf* component.
Mib	AtmCore

ATTRIBUTE AtmIf txCell

Access	Read only
Description	This attribute counts cells transmitted from the ATM interface. It does not include cells discarded due to congestion before transmit.

	The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf txCellClp

Access	Read only
Description	This attribute counts cells transmitted from the ATM interface which have the CLP bit set to 1. This count is included in the *txCell* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards. The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf txCellEfci

Access	Read only
Description	This attribute counts cells transmitted from the ATM interface which have the EFCI bit set to 1. This count is included in the *txCell* attribute. This attribute is not supported and is not displayed on

3pOC3MmAtm, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf txCellDiscard

Access	Read only
Description	This attribute counts cells discarded and not transmitted out the ATM interface. Since cells are discarded before they are transmitted, this count is not included in the *txCell* attribute. This count is independent of the value of the *txFrameDiscard* attribute. This attribute is not applicable and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards. This attribute is not supported and is not displayed for ***4pOC12SmIrAtm***, and ***4pOC12SmIrAtm*** cards when channelized. Transmit cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. For ***16pOC3SmIrAtm*** cards, this attribute is updated at the end of every five-minute cycle.

The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf txCellDiscardClp

Access: Read only

Description: This attribute counts cells discarded and not transmitted out the ATM interface which have the CLP bit set to 1. Since cells are discarded before they are transmitted, this count is not included in the *txCellClp* attribute. This count is included in the *txCellDiscard* attribute, but it is independent of the value of the *txFrameDiscardClp* attribute.

This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

Transmit cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled.

The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf txFrameDiscard

Access	Read only
Description	This attribute counts frames discarded and not transmitted out the ATM interface. This count is independent of the value of the *txCellDiscard* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. Transmit frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the number of AAL5 cells discarded is included in the value of the *txCellDiscard* attribute if the frame has undergone AAL5 segmentation prior to being discarded. The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf txFrameDiscardClp

Access	Read only
Description	This attribute counts frames which have at least one cell with the CLP bit set to 1, and have been discarded and not transmitted out the ATM interface. This count is independent of the value of the *txCellDiscard* attribute. This count is included in the

txFrameDiscard attribute.

This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

Transmit frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the number of AAL5 cells discarded is included in the value of the *txCellDiscard* attribute if the frame has undergone AAL5 segmentation prior to being discarded.

The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf rxCell

Access	Read only
Description	This attribute counts valid cells received from the ATM interface. Valid cells are any cell with a correct HEC field in the ATM header. This count includes cells which may be subsequently discarded. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm,*** and

4pMRPosAtm cards, this count includes cells that are received with a VPI.VCI value that does not translate to any connection on the *AtmIf* component. These cells may also be counted in the *droppedRxCell* attribute. The value of this *rxCell* attribute should be greater than or equal to the sum of the *droppedRxCell* attribute and all of the connection *rxCell* attributes under this *AtmIf* component.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this count does not include cells that are received with a VPI.VCI value that does not translate to any connection on the *AtmIf* component. These cells are counted in the *droppedRxCell* attribute.

For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm,*** and ***8pE1Atm*** cards, this count will be increased when either a PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or F4 and F5 OAM cells are transmitted.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2,*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when a PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either a PVC or PVP connection is down, while be increased when either a SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards, if only user traffic is transmitted, this count will not be increased when either a PVC, PVP, SPVC or SPVP connection is down. If F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either a PVC or PVP connection is down, and will be increased when either a SPVC or SPVP connection is down.

For ***16pOC3PosAtm*** card, if only the user traffic is transmitted, this count will be increased when either a PVC, PVP, SPVC or

SPVP connection is down. If F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either a PVC or PVP connection is down, and is increased when either a SPVC or SPVP connection is down.

The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf rxCellClp

Access	Read only
Description	This attribute counts valid cells received from the ATM interface which have the CLP bit set to 1. Valid cells are any cell with a correct HEC field in the ATM header. This count includes cells which may be subsequently discarded. This count is included in the *rxCell* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, this count includes cells that are received with a VPI.VCI value that does not translate to any connection on the *AtmIf* component. These cells may also be counted in the *droppedRxCell* attribute. The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The

counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib AtmCore

Values Long Integer

Default No default

ATTRIBUTE AtmIf rxCellEfci

Access Read only

Description This attribute counts valid cells received from the ATM interface which have the EFCI bit set to 1. Valid cells are any cell with a correct HEC field in the ATM header. This count includes cells which may be subsequently discarded. This count is included in the *rxCell* attribute.

This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***1pOC48ChSmIrAtm, 16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, this count includes cells that are received with a VPI.VCI value that does not translate to any connection on the *AtmIf* component. These cells are also counted in the *droppedRxCell* attribute.

The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib AtmCore

Values Long Integer

Default No default

ATTRIBUTE AtmIf rxCellDiscard

Access	Read only
Description	This attribute counts cells received from the ATM interface which have been discarded. This count is included in the *rxCell* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***16pOC3SmIrAtm*** cards. This attribute is not supported and is not displayed for ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards when channelized. This count includes cells discarded due to non-conformance with UPC, Partial Packet Discard (PPD), Early Packet Discard (EPD), and cells received while the ingress data path is down. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, for connections that reassemble incoming cells into frames, this count also includes cells discarded due to AAL5 frame reassembly error, processor (CPU) congestion, and insufficient frame memory. For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when either a PVC or PVP connection is down, while not be increased when either a SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either a PVC or PVP connection is down, while not be increased when either a SPVC or SPVP connection is down. For***16pOC3PosAtm*** card, if only user traffic is transmitted, this count will not be increased when either a PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either a PVC or

PVP connection is down while not be increased when either a SPVC or the SPVP connection is down.

The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib AtmCore

Values Long Integer

Default No default

ATTRIBUTE AtmIf rxCellDiscardClp

Access Read only

Description This attribute counts valid cells received from the ATM interface that have the CLP bit set to 1, which have been discarded. This count is included in the *rxCell* and *rxCellDiscard* attributes.

This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

This count includes cells discarded due to non-conformance with UPC, Partial Packet Discard (PPD), Early Packet Discard (EPD), and cells received while the ingress data path is down.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, for connections that reassemble incoming cells into frames, this count also includes cells discarded due to AAL5 frame reassembly error, processor (CPU) congestion, and insufficient frame memory.

This counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib AtmCore

Values	Long Integer
Default	No default

ATTRIBUTE AtmIf rxFrameDiscard

Access	Read only
Description	This attribute counts frames received from the ATM interface which have been discarded. This count includes the value of the *rxFrameDiscardClp* and *aal5RxErrors* attributes. It is independent of the value of the *rxCellDiscard* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards. This count includes frames discarded due to AAL5 frame reassembly error, Early Packet Discard (EPD), processor (CPU) congestion, and insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component. For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, this count does not include frames discarded due to Early Packet Discard (EPD), or insufficient frame memory. It also does not include frames discarded at layer 3. These discards are counted in the layer 3 statistics. This attribute is applicable only for connections that reassemble incoming cells into frames. Connections that reassemble cells into frames have the value of the *connectionPointType* attribute displayed as ***connectionEndPoint***. AAL1 connections are an exception to this rule; even though they have the value of the *connectionPointType* attribute displayed as ***connectionEndPoint***, they do not do adaptation at this point. The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The

counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib — AtmCore

Values — Long Integer

Default — No default

ATTRIBUTE AtmIf rxFrameDiscardClp

Access — Read only

Description — This attribute counts frames received from the ATM interface which have been discarded and which have at least one cell with the CLP bit set to 1. This count is included in the *rxFrameDiscard* attribute. It is independent of the *rxCellDiscardClp* attribute.

This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

This count includes frames discarded due to AAL5 frame reassembly error, Early Packet Discard (EPD), processor (CPU) congestion, and insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, this count does not include frames discarded due to Early Packet Discard (EPD), or insufficient frame memory. It also does not include frames discarded at layer 3. These discards are counted in the layer 3 statistics.

This attribute is applicable only for connections that reassemble incoming cells into frames. Connections that reassemble cells into frames have the value of the *connectionPointType* attribute displayed as ***connectionEndPoint***. AAL1 connections are an exception to this rule; even though they have the value of the *connectionPointType* attribute displayed as ***connectionEndPoint***,

they do not do adaptation at this point.

The counter is reset to zero when the component is activated, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

Mib — AtmCore

Values — Long Integer

Default — No default

ATTRIBUTE AtmIf droppedRxCells (drRxCells)

Access — Read only

Description — This attribute counts cells received from the interface that were dropped because they contained a VPI.VCI value that did not translate to any connection on the *AtmIf* component. The VPI and VCI of the last dropped cell are indicated in the *lastDroppedRxCellConnection* attribute. Idle cells and unassigned cells are ignored without being counted as dropped cells.

This attribute is not supported and is not displayed on ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, this count is included in the *rxCell* attribute for the interface.

The counter is reset to zero when the component is created, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**64)-1***.

For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm***

cards, if only user traffic is transmitted, this count will not be increased when either a PVC or PVP connection is down, while be increased when either a SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will not be increased when either a PVC or PVP connection is down, while be increased when either a SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, this count will not be increased when either a PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, if only user traffic is transmitted, this count will be increased when either a PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this attribute value will not be increased when either a PVC or PVP connection is down while be increased when either a SPVC or SPVP connection is down.

For ***1pOC48ChSmIrAtm*** cards, it is possible that this count may not reset to zero. This is a known occurrence during FP resets that cannot be fixed for this FP. Any additional readings should subtract this initial value to obtain the correct cell dropped value.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf lastDroppedRxCellConnection (lastDropped)

Access	Read only
Description	This attribute indicates the VPI and VCI of the last cell that was dropped. Cells are dropped if they contain a VPI.VCI value that does not translate to any connection on the *AtmIf* component. Dropped cells are counted in the *droppedRxCells* attribute. This attribute is not supported and is not displayed on ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***

cards.

For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will not be increased when either a PVC or PVP connection is down, while be increased when either a SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this attribute will not be increased when either a PVC or PVP connection is down, and is increased when either a SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, this count will not be increased when either a PVC, PVP, SPVC or SPVP connection is down regardless of whether only the user traffic or the F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, if only user traffic is transmitted, this count will be increased when either a PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this attribute value will not be increased when either a PVC or PVP connection is down, and is increased when either a SPVC or SPVP connection is down.

For ***1pOC48ChSmIrAtm*** cards, this attribute may not reset to 0.0 during card resets or when any critical attribute of the component is changed. It may initially indicate a connection that does not exist.

Mib	AtmCore
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf aal5RxErrors (aal5Errors)

Access	Read only
Description	This attribute counts AAL5 frame reassembly errors that have occurred on the interface. These errors are either CRC errors, or

length errors, possibly caused by discarded cells. This attribute includes the count of AAL5 aborted frames which are also counted in the *aal5RxAborts* attribute. The VPI and VCI of the last connection that exhibited AAL5 reassembly errors are indicated in the *lastAal5ErrorConnection* attribute. This count is included in the *rxFrameDiscard* attribute.

The counter is reset to zero when the component is created, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**32)-1***.

Mib: AtmCore

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE AtmIf lastAal5RxErrorConnection (lastAal5)

Access: Read only

Description: This attribute indicates the VPI and VCI of the last connection that exhibited AAL5 reassembly errors. These errors are counted in the *aal5RxErrors* attribute.

Mib: AtmCore

Values: Integer Sequence (0..4095; 0..65535)

Default: No default

ATTRIBUTE AtmIf lrcFrameErrors (lrcErrs)

Access: Read only

Description: This attribute counts egress LRC frame errors on frames received across the bus. The likely cause of these errors is a hardware fault on either the sending or receiving card. The VPI and VCI of the last connection that exhibited LRC errors are indicated in the *lastLrcFrameErrorConnection* attribute.

The counter is reset to zero when the component is created, or when any critical attribute of the component is changed. The

	counter wraps to zero when it exceeds its maximum value of ***(2**32)-1***.
Mib	AtmCore
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf lastLrcFrameErrorConnection (lastLrc)

Access	Read only
Description	This attribute indicates the VPI and VCI of the last connection that had LRC frame errors on frames received across the bus. These errors are counted in the *lrcFrameErrors* attribute.
Mib	AtmCore
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf aal5RxAborts

Access	Read only
Description	This attribute counts AAL5 frame aborts that have occurred on the interface. An AAL5 aborted frame is one in which the AAL5 frame length is zero. The VPI and VCI of the last connection which exhibited AAL5 abort errors are indicated in the *lastAal5RxAbortConnection* attribute. This count is included in *aal5RxErrors* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards. The counter is reset to zero when the component is created, or when any critical attribute of the component is changed. The counter wraps to zero when it exceeds its maximum value of ***(2**32)-1***.
Mib	AtmCore

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf lastAal5RxAbortConnection

Access	Read only
Description	This attribute indicates the VPI and VCI of the last connection that exhibited AAL5 aborts. These aborts are counted in the *aal5RxAborts* attribute. This attribute is not supported and is not displayed on ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards.
Mib	AtmCore
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf txLinkUtilization (txLink)

Access	Read only
Description	This attribute indicates the current transmit traffic rate over the most recent minute expressed as a percentage of the ATM link bandwidth. This attribute is not supported and is not displayed for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized.
Mib	AtmCore
Values	Decimal (0..65535)
Units	%
Default	No default

ATTRIBUTE AtmIf rxLinkUtilization (rxLink)

Access	Read only

Description	This attribute indicates the current receive traffic rate during the most recent minute expressed as a percentage of the ATM link bandwidth. This attribute does not consider cells that are counted by the droppedRxCells attribute, nor idle cells, nor unassigned cells. This attribute is not supported and is not displayed for ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards when channelized.
Mib	AtmCore
Values	Decimal (0..65535)
Units	%
Default	No default

COLLECTED STATS AtmInterface

Description	The statistics record generated by the AtmInterface component.

ATTRIBUTE AtmIf remoteInstance

Description	This attribute indicates the remote ATM interface, as provisioned in the *remoteAtmInterfaceLabel*.
Values	String (0..60, ASCII)

ATTRIBUTE AtmIf provRate

Description	This attribute indicates the provisioned bandwidth for this ATM interface.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf actualRate

Description	This attribute indicates the actual bandwidth for this ATM interface. When no errors occur it has a value equal to *provRate*. When the link (or IMA group) is down for the entire collection interval it has a value of zero. When the link goes down during

the collection interval it has a value representing the average bandwidth during the collection interval.

Values Decimal (0..4294967295)

Units cell/s

ATTRIBUTE AtmIf txUtilization

Description This attribute indicates the average transmit traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth.

On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%.

If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.

Values Decimal (0..65535)

Units %

ATTRIBUTE AtmIf rxUtilization

Description This attribute indicates the average receive traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth.

On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the

actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%.

If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.

Values: Decimal (0..65535)

Units: %

ATTRIBUTE AtmIf txMaxCellRate

Description: This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval.

Values: Decimal (0..4294967295)

Units: cell/s

ATTRIBUTE AtmIf txMaxCellRateByServiceCat

Description: This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.

Vector of: Decimal (0..4294967295)

Index:
cbr
rtvbr
nrtvbr
abr
ubr

ATTRIBUTE AtmIf txMinCellRate

Description: This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval.

Values: Decimal (0..4294967295)

Units: cell/s

ATTRIBUTE AtmIf txMinCellRateByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txAvgCellRate

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf txAvgCellRateByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxMaxCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf rxMaxCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxMinCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf rxMinCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxAvgCellRate

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf rxAvgCellRateByServiceCat

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txMaxCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf txMaxCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txMinCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf txMinCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txAvgCellRateClp

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf txAvgCellRateClpByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxMaxCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf rxMaxCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxMinCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf rxMinCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxAvgCellRateClp

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf rxAvgCellRateClpByServiceCat

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txCellDiscards

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf txCellDiscardsByServiceCat

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxCellDiscards

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf rxCellDiscardsByServiceCat

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf txFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf rxFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf txCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf rxCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf txFrameDiscardsClpByServiceCat

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf rxFrameDiscardsClpByServiceCat

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

COMPONENT AtmIf ConnectionMapping (ConnMap)

Groups	"GROUP AtmIf ConnMap Operational (Oper)"
Scope	Device
Description	*AtmIf/n ConnectionMapping* The *ConnectionMapping* component is used to view the VCC space supported by an ATM interface on card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***. Only VPI and VCI values that lie within the VCC space may be used for VCC connections. Any VPI values not assigned to the VCC space are, by implication, consigned to the VPC space. Only VPI values that lie within the VPC space may be used to support VPC connections.
Mib	AtmCore
Subcomponents	"COMPONENT AtmIf ConnMap Override (Ov)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf ConnMap Operational (Oper)

Properties: Operational

Description: This group contains operational attributes that indicate the VCC space supported by an ATM interface. The VCC space consists of an optional VPI Zero VCC Space and an optional Programmable VCC Space. Only VPI and VCI values that lie within the VCC space may be used for VCC connections.

The VPI Zero VCC Space is used for VCCs with a VPI of zero. The VCI values in this space range from ***0*** to an optionally provisioned maximum of (*numVccsForVpiZero* - 1).

The Programmable VCC Space is used for VCCs with a VPI other than zero. The VPI values in this space lie in a single contiguous range from *firstNonZeroVpiForVccs* to (*firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1). The VCI values in this space range from ***0*** to an optionally provisioned maximum of (*numVccsPerNonZeroVpi* - 1).

Any VPI values not assigned to the VCC space are, by implication, assigned to the VPC space. Only VPI values that lie within the VPC space may be used for VPC connections.

The number of connection resources in the VCC and VPC space (not all of which are available for user connections) must not exceed the maximum value supported by the card.

Mib: AtmCore

ATTRIBUTE AtmIf ConnMap numVccsForVpiZero (nZVccs)

Access: Read only

Description: This attribute indicates the number of VCCs supported for the VPI Zero VCC Space. The VCI values of these VCCs range from ***0*** to *(numVccsForVpiZero* - 1).

For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the maximum value of this attribute is ***16128.***

For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***16384.***

To override the system default, see the *AtmIf ConnMap Ov* attribute *numVccsForVpiZero.*

Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf ConnMap numNonZeroVpisForVccs (nVpis)

Access	Read only
Description	This attribute indicates the number of contiguous VPIs supported in the optional Programmable VCC Space. If the value of the *numNonZeroVpisForVccs* attribute is ***0***, then the Programmable VCC Space does not exist. If the value of the *numNonZeroVpisForVccs* attribute is greater than ***0***, then the Programmable VCC Space exists and covers the VPI values ranging from *firstNonZeroVpiForVccs* to *(firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1). For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the maximum value of this attribute is ***255.*** For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***255*** for UNI applications and ***4095*** for NNI applications. To override the system default, see the *AtmIf ConnMap Ov* attribute *numNonZeroVpisForVccs.*
Mib	AtmCore
Values	Decimal (0..4095)
Default	No default

ATTRIBUTE AtmIf ConnMap firstNonZeroVpiForVccs (firstVpi)

Access	Read only
Description	This attribute indicates the initial VPI of the optional Programmable VCC Space. If the value of the *numNonZeroVpisForVccs* attribute is ***0***, then the Programmable VCC Space does not exist and the value of this attribute is ignored. If the value of the *numNonZeroVpisForVccs* attribute is greater than ***0***, then the Programmable VCC Space exists and covers the VPI values ranging from *firstNonZeroVpiForVccs* to *(firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1). For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the maximum value of this attribute is ***240***. For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***255*** for UNI applications and ***4095*** for NNI applications. To override the system default, see the *AtmIf ConnMap Ov* attribute *firstNonZeroVpiForVccs*.
Mib	AtmCore
Values	Decimal (1..4095)
Default	No default

ATTRIBUTE AtmIf ConnMap numVccsPerNonZeroVpi (nVccs)

Access	Read only
Description	This attribute indicates the number of VCCs supported for each VPI in the Programmable VCC Space. The VCI values of these VCCs range from ***0*** to *(numVccsPerNonZeroVpi* - 1) for each VPI in this space. For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the

maximum value of this attribute is ***2048***.

For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***16384***.

To override the system default, see the *AtmIf ConnMap Ov* attribute *numVccsPerNonZeroVpi*.

Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256; 512; 1024; 2048; 4096; 8192; 16384)
Default	No default

COMPONENT AtmIf ConnMap Override (Ov)

Groups	"GROUP AtmIf ConnMap Ov Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n ConnMap Override* The *Override* component is used to specify the VCC space to be supported on an ATM interface on card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***. Only VPI and VCI values that lie within the VCC space may be used for VCC connections. Any VPI values not assigned to the VCC space are, by implication, consigned to the VPC space. Only VPI values that lie within the VPC space may be used for VPC connections. This component is used to override the default values used for the parent *ConnectionMapping* component.
Mib	AtmCore
Common Verbs	Help List Display

GROUP AtmIf ConnMap Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes which specify the VCC space to be supported by this ATM interface. The VCC space consists of an optional “VPI Zero VCC Space” and an optional “Programmable VCC Space”. Only VPI and VCI values that lie within the VCC space may be used for VCC connections. Any VPI values not assigned to the VCC space are, by implication, assigned to the VPC space. Only VPI values that lie within the VPC space may be used for VPC connections. In order to allow SVCs to be established within the “Programmable VCC space”, the VPI selection must be within the range defined by the *minAutoSelectedVpi* attribute value and the *maxAutoSelectedVpi* attribute value under *AtmIf CA* component. For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the values of all attributes provisioned in this group must adhere to the following rules: The VPI Zero VCC Space is used for VCCs with a VPI of zero. The VCI values supported in this space range from ***0*** to an optionally provisioned maximum of (*numVccsForVpiZero* - 1).The value of the *numVccsForVpiZero* attribute must either be ***0*** or a multiple of 256 up to a maximum value of ***16128***. A value of ***0*** implies that no programmable VCCs can be used. In this case, the value of the *numNonZeroVpisForVccs* attribute must also be ***0***. The Programmable VCC Space is used for VCCs with a VPI other than zero. The VPI values in this space lie in a single contiguous range from *firstNonZeroVpiForVccs* to (*firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1). The VCI values in this space range from ***0*** to an optionally provisioned maximum of (*numVccsPerNonZeroVpi* - 1). The Programmable VCC Space (should it exist) must adhere to the

following rules:

The value of the *firstNonZeroVpiForVccs* attribute must either be ***1*** or a non-zero multiple of 16, up to a maximum value of ***240***.

If *(firstNonZeroVpiForVccs* = 1) THEN
(*numNonZeroVpisForVccs* + 1) * *numVccsPerNonZeroVpi*
must be a multiple of 256
OTHERWISE
numNonZeroVpisForVccs * *numVccsPerNonZeroVpi*
must be a multiple of 256

The number of connection resources in the VCC and VPC space must not exceed the capacity of the port to which the interface is linked. If the *Lp* component has an *Eng Arc Cqc Ov* component provisioned with a non-zero *connectionPoolCapacity* attribute, then the port's capacity is specified by this attribute. Otherwise the port's capacity is indicated by the value of the *Lp/n Eng Arc connectionPoolAvailable* attribute divided by the number of physical ports on the card.

The number of connection resources in the VCC and VPC space can be determined as follows:

IF (*numNonZeroVpisForVccs* = 0) THEN
number of connection resources =
256 + *numVccsForVpiZero*
OTHERWISE IF (*firstNonZeroVpiForVccs* = 1) THEN
number of connection resources =
256 + *numVccsForVpiZero* +
(*numNonZeroVpisForVccs* + 1) * *numVccsPerNonZeroVpi*
OTHERWISE
number of connection resources =
256 + *numVccsForVpiZero* +
(*numNonZeroVpisForVccs* * *numVccsPerNonZeroVpi*)

For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the values of all attributes provisioned in this group must adhere to the following rules:

The VPI Zero VCC Space is used for VCCs with a VPI of zero.

The VCI values supported in this space range from ***0*** to an optionally provisioned maximum of (*numVccsForVpiZero* - 1).The value of *numVccsForVpiZero* attribute must either be ***1*** or a power of 2.

The Programmable VCC Space is used for VCCs with a VPI other than zero. The VPI values in this space lie in a single contiguous range from *firstNonZeroVpiForVccs* to (*firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1). The VCI values in this space range from ***0*** to an optionally provisioned maximum of (*numVccsPerNonZeroVpi* - 1). The VPI values in this space must not exceed ***255*** for UNI applications and ***4095*** for NNI applications.

For the ***4pOC12SmIrAtm*** and ***4pOC12SmLrAtm*** cards, the number of connection resources in the VCC and VPC space must not exceed the capacity of the port to which the interface is linked. The port's capacity is the physical maximum of 113664 connection resources.

For the ***16pOC3SmIrAtm*** card, the total number of connection resources in the VCC and VPC space must not exceed 113664 for each of the four port groupings on the card. Each port grouping consists of ATM interfaces linked to ports 0-3, 4-7, 8-11, and 12-15.

The number of connection resources in the VCC and VPC space can be determined as follows:

For UNI applications the number of connection resources =
numVccsForVpiZero +
(*numNonZeroVpisForVccs* * *numVccsPerNonZeroVpi*) +
2 * (255 - *numNonZeroVpisForVccs*)

For NNI applications the number of connection resources =
numVccsForVpiZero +
(*numNonZeroVpisForVccs* * *numVccsPerNonZeroVpi*) +
2 * (4095 - *numNonZeroVpisForVccs*)

Mib AtmCore

ATTRIBUTE AtmIf ConnMap Ov numVccsForVpiZero (nZVccs)

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of VCCs supported for the VPI Zero VCC Space. The VCI values of these VCCs range from ***0*** to *(numVccsForVpiZero* - 1). A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the default value of this attribute is ***768*** and the maximum value is ***16128***. For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the default value of this attribute is ***1024*** and the maximum value is ***16384***. The values of all attributes provisioned in this group must adhere to the guidelines laid down in the description of the *Provisioned* group.
Mib	AtmCore
Values	Decimal (0..16384) autoConfigure
Default	autoConfigure

ATTRIBUTE AtmIf ConnMap Ov numNonZeroVpisForVccs (nVpis)

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of contiguous VPIs supported in the optional Programmable VCC Space. If the value of the *numNonZeroVpisForVccs* attribute is ***0***, then the Programmable VCC Space does not exist. If the value of the *numNonZeroVpisForVccs* attribute is greater than ***0***, then the

Programmable VCC Space exists and covers the VPI values ranging from *firstNonZeroVpiForVccs* to *(firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1).

For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the maximum value of this attribute is ***255***.

For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***255*** for UNI applications and ***4095*** for NNI applications.

The values of all attributes provisioned in this group must adhere to the guidelines laid down in the description of the *Provisioned* group.

Mib	AtmCore
Values	Decimal (0..4095)
Default	0

ATTRIBUTE AtmIf ConnMap Ov firstNonZeroVpiForVccs (firstVpi)

Access	Read and write
Criticality	Process
Description	This attribute specifies the initial VPI of the optional Programmable VCC Space. If the value of the *numNonZeroVpisForVccs* attribute is ***0,*** then the Programmable VCC Space does not exist and the value of this attribute is ignored. If the value of the *numNonZeroVpisForVccs* attribute is greater than ***0***, then the Programmable VCC Space exists and covers the VPI values ranging from *firstNonZeroVpiForVccs* to *(firstNonZeroVpiForVccs* + *numNonZeroVpisForVccs* - 1). This range must be within the range defined by *minAutoSelectedVpi* attribute value and the *maxAutoSelectedVpi* attribute value under *AtmIf CA* component. For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the

maximum value of this attribute is ***240***.

For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***255*** for UNI applications and ***4095*** for NNI applications.

The values of all attributes provisioned in this group must adhere to the guidelines laid down in the description of the *Provisioned* group.

Mib	AtmCore
Values	Decimal (1..4095)
Default	1

ATTRIBUTE AtmIf ConnMap Ov numVccsPerNonZeroVpi (nVccs)

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of VCCs supported for each VPI in the Programmable VCC Space. The VCI values of these VCCs range from ***0*** to *(numVccsPerNonZeroVpi* - 1) for each VPI in this space. For card types ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDs1Atm***, and ***2pJ6MAtm***, the maximum value of this attribute is ***2048***. For card types ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***, the maximum value of this attribute is ***16384***. The values of all attributes provisioned in this group must adhere to the guidelines laid down in the description of the *Provisioned* group.
Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256; 512; 1024; 2048; 4096; 8192; 16384)
Default	64

COMPONENT AtmIf ConnectionAdministrator (CA)

Groups	"GROUP AtmIf CA Provisioned (Prov)" "GROUP AtmIf CA Operational (Oper)" "GROUP AtmIf CA PmInfo (Pm)"
Scope	Device
Description	*AtmIf/n ConnectionAdministrator* This component controls connection admission and reports statistics about the ATM connections which have been admitted on this ATM interface.
Mib	AtmCore
Subcomponents	"COMPONENT AtmIf CA ConstantBitRate (Cbr)" "COMPONENT AtmIf CA RealTimeVariableBitRate (RtVbr)" "COMPONENT AtmIf CA NonRealTimeVariableBitRate (NrtVbr)" "COMPONENT AtmIf CA AvailableBitRate (Abr)" "COMPONENT AtmIf CA UnspecifiedBitRate (Ubr)"
Common Verbs	Help List Display

GROUP AtmIf CA Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which specify the behavior of Connection Admission Control (CAC) for the ATM connections configured on an ATM interface. Note that the names of some of the attributes follow the conventions of UNI 4.0 for forward compatibility reasons. This does not imply conformance in general with the UNI 4.0 specification.
Mib	AtmCore

ATTRIBUTE AtmIf CA maxVccs (vccs)

Access	Read and write
Criticality	Process

Description	This attribute specifies the maximum number of VCCs (and *Vpt* VCCs) that can be activated on this *AtmIf* component. For ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, and ***2pJ6MAtm*** cards, the value of this attribute must not exceed the number of *Vcc* identifiers in the *Vcc* space supported by this *AtmIf* component (which is specified by the *AtmIf ConnectionMapping* component). For cards other than ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, and ***2pJ6MAtm***, the sum of (*maxVccs* + *maxVpcs* + (*maxVpts* * 3) + 1) across all spared *AtmIf*s linked to an *Lp* must not exceed the value of the *protectedConnectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component. The sum of (*maxVccs* + *maxVpcs* + (*maxVpts* * 3) + 1) across all unspared *AtmIf*s linked to an *Lp* must not exceed the value of the *connectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component. Note that 3 connections are used for every standard *Vpt* component and 2 for each basic *Vpt* component. If the *Lp Eng Arc Ov* component is not provisioned, the default values of the *connectionPoolCapacity* and *protectedConnectionPoolCapacity* attributes are used as the limit. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***2pSTM1eCh***, and MSA32 cards, the value is ***100***. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm*** cards, and ***4pMRPosAtm*** cards for OC-12 channels the value is ***127***. For all other cards, the value is ***255***.
Mib	AtmCore
Values	Decimal (0..16384) autoConfigure
Default	autoConfigure

ATTRIBUTE AtmIf CA minMulticastBranches (minMcast)

Access	Read and write
Criticality	Process

Description

This attribute specifies the guaranteed number of switched multicast branches that can be activated on this *AtmIf* component, including those activated beneath a *Vpt* component.

For all spared *AtmIfs* linked to an *Lp*, the number of *minMulticastBranches* plus the number of branches consumed by all *Msrcs* plus the number of provisioned branches listed in the *nextHop* attribute of all *Mnrps* must not exceed the value of the *protectedMcstBranchesCapacity* attribute of the *Lp Eng Arc Ov* component. For all unspared *AtmIfs* linked to an *Lp*, the number of *minMulticastBranches* plus the number of branches consumed by all *Msrcs* plus the number of provisioned branches listed in the *nextHop* attribute of all *Mnrps* must not exceed the value of the *multicastBranchesCapacity* attribute of the *Lp Eng Arc Ov* component.

If the value of the *minMulticastBranches* attribute is non zero, the *Lp Eng Arc Ov* component must exist and have a *multicastBranchesCapacity* attribute, or the *protectedMcstBranchesCapacity* attribute set to a value greater than or equal to the *minMulticastBranches* attribute.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value of the attribute can not exceed ***10752***.

Mib

AtmCore

Values

Decimal (0..16384)

Default

0

ATTRIBUTE AtmIf CA maxMulticastBranches (maxMcast)

Access

Read and write

Criticality

Process

Description

This attribute specifies the maximum number of provisionable multicast branches that can be activated on this *AtmIf* component, including those activated beneath a *Vpt* component.

If the value of this attribute is not ***autoConfigure***, it must be

greater than or equal to the value of the *minMulticastBranches* attribute of this *AtmIf* component.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value of this attribute can not exceed ***10752***.

A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value is ***10752***. For all other cards, the value is ***16384***.

Mib	AtmCore
Values	Decimal (1..16384) autoConfigure
Default	autoConfigure

ATTRIBUTE AtmIf CA minAutoSelectedVciForVpiZero (minVciVpiZero)

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum VCI value which is automatically allocated for a switched *Vcc* with VPI value of zero. A VCI number is automatically allocated when a switched *Vcc* does not request a specific VCI number. This value also applies to switched VCCs created beneath *Vpt/0*.
Mib	AtmCore
Values	Decimal (0..65535)
Default	32

ATTRIBUTE AtmIf CA minAutoSelectedVciForNonZeroVpi (minVciNonZeroVpi)

Access	Read and write
Criticality	Process

Description	This attribute specifies the minimum VCI value which is automatically allocated for a switched *Vcc* with a non-zero VPI value. A VCI number is automatically allocated when a switched *Vcc* does not request a specific VCI number. This value also applies to switched VCCs created beneath a *Vpt* component.
Mib	AtmCore
Values	Decimal (5..65535)
Default	32

ATTRIBUTE AtmIf CA maxVpcs (vpcs)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of *VPC* components that can be activated on this *AtmIf* component. For cards other than ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, and ***2pJ6MAtm***, the sum of (*maxVccs* + *maxVpcs* + (*maxVpts* * 3) + 1) across all spared *AtmIf*s linked to an *Lp* must not exceed the value of the *protectedConnectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component. The sum of (*maxVccs* + *maxVpcs* + (*maxVpts* * 3) + 1) across all unspared *AtmIf*s linked to an *Lp* must not exceed the value of the *connectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component. Note that 3 connections are used for every standard *Vpt* component and 2 for each basic *Vpt* component. If the *Lp Eng Arc Ov* component is not provisioned, the default values of the *connectionPoolCapacity* and *protectedConnectionPoolCapacity* attributes are used as the limit. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***2pSTM1eCh***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***4pMRPosAtm*** for OC-12 channels, and MSA32 cards, the value is ***16***. For all other cards, the value is ***128***.
Mib	AtmCore

Values	Decimal (0..4096) autoConfigure
Default	autoConfigure

ATTRIBUTE AtmIf CA maxVpts (vpts)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of *Vpt* components that can be activated on this *AtmIf* component. For cards other than ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, and ***2pJ6MAtm***, the sum of (*maxVccs* + *maxVpcs* + (*maxVpts* * 3) + 1) across all spared *AtmIf*s linked to an *Lp* must not exceed the value of the *protectedConnectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component. The sum of (*maxVccs* + *maxVpcs* + (*maxVpts* * 3) + 1) across all unspared *AtmIf*s linked to an *Lp* must not exceed the value of the *connectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component. Note that 3 connections are used for every standard *Vpt* component and 2 for each basic *Vpt* component. If the *Lp Eng Arc Ov* component is not provisioned, the default values of the *connectionPoolCapacity* and *protectedConnectionPoolCapacity* attributes are used as the limit. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***2pSTM1eCh***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***4pMRPosAtm*** for OC-12 channels, and MSA32 cards, the value is ***16***. For all other cards, the value is ***128***.
Mib	AtmCore
Values	Decimal (0..4096) autoConfigure
Default	autoConfigure

ATTRIBUTE AtmIf CA minAutoSelectedVpi (minVpi)

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum VPI value which will be automatically allocated for a switched *Vpc* or *Vcc* component. A VPI number is automatically allocated when a switched *Vpc* or *Vcc* component does not request a specific VPI number.
Mib	AtmCore
Values	Decimal (1..4095)
Default	1

ATTRIBUTE AtmIf CA permittedAtmServiceCategories (permitCat)

Access	Read and write
Criticality	Process
Description	This attribute specifies which ATM service categories are permitted on this interface for SVPs and SVCs. The value of this attribute does not affect control VCCs, such as signaling and ILMI channels. If the value is empty, no non-control SVPs, or SVCs will use this interface. This attribute is ignored for the admission of provisioned VCCs, VPCs, VPTs, S-PVCs, and S-PVPs. The value of the *permittedAtmServiceCategories* attribute in a *Vpt CA* overrides this attribute value for all the SVCs under the *Vpt* component.
Mib	AtmCore
Set of	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	(unspecifiedBitRate, constantBitRate, rtVariableBitRate, nrtVariableBitRate)

ATTRIBUTE AtmIf CA maxAutoSelectedVpi (maxVpi)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximumVPI value which will be automatically allocated for a switched *Vpc or Vcc*. A VPI number is automatically allocated when a switched *Vpc* or *Vcc* does not request a specific VPI number.
Mib	AtmCore
Values	Decimal (1..4095)
Default	128

ATTRIBUTE AtmIf CA maxAutoSelectedVciForVpiZero (maxVciVpiZero)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum VCI value which is automatically allocated for a switched *Vcc* with VPI value of zero. A VCI number is automatically allocated when a switched *Vcc* does not request a specific VCI number. This value also applies to switched VCCs created beneath *Vpt/0*.
Mib	AtmCore
Values	Decimal (0..65535)
Default	767

ATTRIBUTE AtmIf CA maxAutoSelectedVciForNonZeroVpi (maxVciNonZeroVpi)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum VCI value which is automatically allocated for a switched *Vcc* with a non-zero VPI value. A VCI number is automatically allocated when a switched

	Vcc does not request a specific VCI number. This value also applies to switched VCCs created beneath a *Vpt* component.
Mib	AtmCore
Values	Decimal (5..65535)
Default	63

ATTRIBUTE AtmIf CA bandwidthPool (bwPool)

Access	Read and write
Description	Link capacity is partitioned into five bandwidth pools. This attribute specifies the percentage of link bandwidth that is allowed for each pool. The percentage for each pool ranges from 0% to 12,800%. This allows for both under and over subscription of the link. Under subscription occurs when the sum of the percentages assigned to the five pools is less than 100%. Over subscription occurs when the sum of the percentages for the five pools exceeds 100%.
Mib	AtmCore
Vector of	Decimal (0..12800)
Units	%
Index	Decimal (1..5)
Default	(100, 0, 0, 0, 0)

GROUP AtmIf CA Operational (Oper)

Properties	Operational
Description	This group contains operational attributes giving statistics about the ATM connections of an ATM interface.
Mib	AtmCore

ATTRIBUTE AtmIf CA actualMaxVccs (mVccs)

Access	Read only
Description	This attribute indicates the maximum number of VCCs that can be supported on this interface. The value includes both

	provisioned and dynamic connections. This value is determined from the provisioned attribute *maxVccs*.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf CA permanentVpcs (pVpcs)

Access	Read only
Description	This attribute indicates the number of permanent VPCs that are currently provisioned on this interface. This count includes VPCs with *Src* or *Dst* subcomponents.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE AtmIf CA permanentVpts (pVpts)

Access	Read only
Description	This attribute indicates the number of permanent VPTs that are currently provisioned on this interface.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE AtmIf CA permanentVccs (pVccs)

Access	Read only
Description	This attribute indicates the number of permanent VCCs that are currently provisioned on this interface. This count includes VCCs with *Src* or *Dst* subcomponents, and permanent *Vpt* VCCs.
Mib	AtmCore
Values	Decimal (0..16384)

Default	No default

ATTRIBUTE AtmIf CA switchedVccs (sVccs)

Access	Read only
Description	This attribute indicates the number of switched VCCs that are currently active on this interface. This count includes switched *Vpt* VCCs.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf CA switchedMulticastBranches (sMcastBranches)

Access	Read only
Description	This attribute indicates the number of multicast branches used in switched VCCs, including *Vpt* VCCs, that are currently active on this interface. The sum of this attribute for all *AtmIf* components linked to an *Lp* added to the sum of the *permanentMulticastBranches* attribute for all *AtmIf* components linked to the same *Lp* gives the value of the *multiCastBranchesUsage* attribute in the *Lp Eng Arc* component.
Mib	AtmCore
Values	Decimal (0..10752)
Default	No default

ATTRIBUTE AtmIf CA permanentMulticastBranches (pMcastBranches)

Access	Read only
Description	This attribute indicates the number of multicast branches used in permanent VCCs and VPCs that are currently active on this interface. The sum of this attribute for all *AtmIf* components linked to an *Lp* added to the sum of *switchedMulticastBranches* attribute for all

	AtmIf components linked to the same *Lp* gives the value of the *multiCastBranchesUsage* attribute in the *Lp Eng Arc* component.
Mib	AtmCore
Values	Decimal (0..10752)
Default	No default

ATTRIBUTE AtmIf CA troubledVpcs (trVpcs)

Access	Read only
Description	This attribute indicates the number of troubled VPCs on this interface. A *Vpc* is “troubled” if its operational *troubled* attribute has the value ***yes***.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE AtmIf CA troubledVpts (trVpts)

Access	Read only
Description	This attribute indicates the number of troubled VPTs on this interface. A *Vpt* component is “troubled” if its operational *troubled* attribute has the value ***yes***.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE AtmIf CA troubledVccs (trVccs)

Access	Read only
Description	This attribute indicates the number of troubled VCCs on this interface. A *Vcc* component is “troubled” if its operational *troubled* attribute has the value ***yes***.
Mib	AtmCore

Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf CA connectionPoolUsage (connUsage)

Access	Read only
Description	This attribute indicates the number of allocated VCCs, VPCs, and VPTs for this *AtmIf* component. Each *Vcc*, or *Vpc* component is counted as 1 connection. Each basic *Vpt* component is counted as 2 connections, and each standard *Vpt* component is counted as 3 connections. Each connection appropriately reduces the number of connections indicated in the *Lp Eng Arc connectionPoolAvailable* attribute or *protectedConnectionPoolAvailable* attribute, and increases the number of connections indicated in *Arc connectionPoolUsage* attribute or *protectedConnectionPoolUsage* attribute.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf CA switchedVpcs (sVpcs)

Access	Read only
Description	This attribute indicates the number of switched VPCs that are currently active on this interface.
Mib	AtmCore
Values	Decimal (0..4095)
Default	No default

ATTRIBUTE AtmIf CA actualMaxVpcs (mVpcs)

Access	Read only

Description	This attribute indicates the maximum number of VPCs that can be supported on this interface. The value includes both provisioned and dynamic connections. This value is determined from the provisioned attribute *maxVpcs*.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE AtmIf CA actualMaxVpts (mVpts)

Access	Read only
Description	This attribute indicates the maximum number of VPTs that can be supported on this interface. This value is determined from the provisioned attribute *maxVpts*.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE AtmIf CA poolRequestedBandwidth (poolRequBw)

Access	Read only
Description	This attribute indicates the total requested bandwidth from the bandwidth pool (including ATM networking signaling connections, but excluding connections managed by a *Vpt Ca* component). The value of this attribute is the sum of the equivalent cell rate (ECR) for connections which are admitted, and for connections which are requesting admission but have not yet been admitted.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf CA poolAdmittedBandwidth (poolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted bandwidth from the bandwidth pool (including ATM networking signaling connections, but excluding connections managed by a *Vpt Ca* component). The value of this attribute is the sum of the equivalent cell rate (ECR) of the admitted connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf CA poolProvisionedBandwidth (poolProvBw)

Access	Read only
Description	This attribute indicates the total bandwidth from the bandwidth pool that is specified by provisioned connections (excluding connections managed by a *Vpt Ca* component). The value of this attribute is the sum of the equivalent cell rate (ECR) of the provisioned connections. Provisioned connections include provisioned VCCs, VPCs, VPTs, *Vpt* VCCs, and VCCs, or VPCs with a *Src*, or *Dst* component.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf CA poolWaitAdmitConnections (poolWaitAdmConns)

Access	Read only

Description	This attribute counts the connections that have requested admission in the bandwidth pool but are not yet admitted (excluding ATM networking signaling connections, Soft Permanent Connections, and connections managed by a *Vpt Ca* component).
Mib	AtmCore
Vector of	Decimal (0..16384)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf CA poolAdmittedConnections (poolAdmConns)

Access	Read only
Description	This attribute counts the connections that are currently admitted in the bandwidth pool (including ATM networking signaling connections, but excluding connections managed by a *Vpt Ca* component).
Mib	AtmCore
Vector of	Decimal (0..16384)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf CA poolAvailableBandwidth (poolAvailBw)

Access	Read only
Description	This attribute indicates the total available bandwidth in the bandwidth pool. A positive value indicates that there is still bandwidth available in the pool which has not been allocated. A negative value indicates that some bandwidth-elastic provisioned connections are running in reduced mode, where their allocated bandwidth is below their originally allocated ECR. The negative amount is equal to the sum of the *bwReduction* attribute for all connections (excluding connections managed by a *Vpt Ca* component).

Mib	AtmCore
Vector of	Signed (-2147483648..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

GROUP AtmIf CA PmInfo (Pm)

Properties	Operational
Description	This group contains the operational attributes indicating the total number of connections on the interface with active Cell Loss Ratio (CLR) and Availability Ratio (AR) measurements.
Mib	AtmCore

ATTRIBUTE AtmIf CA oamFPmConnections (oamFPmConns)

Access	Read only
Description	On the local interface, this attribute counts the connections on the interface generating Forward Performance Monitoring (FPM) OAM cells towards a remote interface. On the remote interface, this attribute counts the connections on the interface generating Forward Performance Monitoring (FPM) OAM cells towards a local interface.
Mib	AtmCore
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf CA oamBrPmConnections (oamBrConns)

Access	Read only
Description	On the local interface, this attribute counts the connections receiving Backward Reporting (BR) OAM cells from a remote interface.

	On the remote interface, this attribute counts the connections receiving Forward Reporting (FR) OAM cells and generating Backward Reporting (BR) OAM cells towards a local interface.
Mib	AtmCore
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf CA oamCcConnections (oamCcConns)

Access	Read only
Description	This attribute counts the connections receiving OAM Continuity Check (CC) cells on the interface.
Mib	AtmCore
Values	Decimal (0..255)
Default	No default

COMPONENT AtmIf CA ConstantBitRate (Cbr)

Instance	Decimal (0)
Groups	"GROUP AtmIf CA Cbr Provisioned (Prov)" "GROUP AtmIf CA Cbr Operational (Oper)"
Scope	Device
Description	*AtmIf/n CA ConstantBitRate/n* This component manages the default characteristics of the constant bit rate (CBR) service category.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf CA Cbr Provisioned (Prov)

Properties	Provisioned

Description	This group contains provisioned attributes which control the CBR service category for this interface.
Mib	AtmCore

ATTRIBUTE AtmIf CA Cbr pool

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth pool which is to be used to support the constant bit rate (CBR) service category (excluding connections managed by a *Vpt CA*). The percentage of link capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to CBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *CA* component.
Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

ATTRIBUTE AtmIf CA Cbr cdvt

Access	Read and write
Criticality	Process
Description	This attribute specifies the default cell delay variation tolerance (CDVT) for all connections of the CBR service category (excluding connections managed by a *Vpt CA*). An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required by a given CBR connection. The larger the value of CDVT, the larger is its ECR.

	If Usage Parameter Control (UPC) is enabled for a connection, CDVT is used by the UPC function to decide whether a cell is conforming or non-conforming based on the connection's traffic descriptor type. The larger the CDVT value, the more tolerant is the UPC of bandwidth usage beyond the traffic contract.
Mib	AtmCore
Values	Decimal (1..10000)
Units	microsec
Default	250

ATTRIBUTE AtmIf CA Cbr cdv

Access	Read and write
Description	This attribute specifies the peak-to-peak cell delay variation (CDV) which is contributed to the entire ATM Interface for CBR traffic (excluding connections managed by a *Vpt CA*). The CDV is a measure of the delay jitter introduced mostly by traffic buffering and cell scheduling. The worst case value of this attribute can be computed as the value of the *txQueueLimit* attribute divided by the link rate of this ATM Interface. This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this ATM Interface can meet the CDV requirement for that connection. If so, the value of this attribute is added to the cumulative CDV field of the extended QoS information element.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec
Default	250

ATTRIBUTE AtmIf CA Cbr maxCtd

Access	Read and write
Description	This attribute specifies the maximum cell transfer delay (MaxCTD) which is applied to the entire ATM Interface for CBR traffic (excluding connections managed by a *Vpt CA*). MaxCTD is the sum of the fixed delay and the CDV. The components of the fixed delay include propagation delay through the physical media, delays induced by the transmission system and fixed components of switch processing delay. This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this ATM Interface can meet the ATM connection's MaxCTD requirement.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec
Default	1000

ATTRIBUTE AtmIf CA Cbr cellLossRatio (clr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the tolerable cell loss ratio (CLR) for CBR traffic (excluding connections managed by a *Vpt CA*). The value specified is the negative base 10 logarithm of the CLR. For example, if the target CLR = 1E-10 then the value of the *cellLossRatio* attribute is ***10***. The value of this attribute must be the same as the value of the *RtVbr cellLossRatio* attribute since CBR and rt-VBR traffic have the same discard priority. This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required for CBR connections. There is a trade-off between the service category CLR and the

achievable link utilization. To guarantee an excellent service category, the CLR should be as small as possible (for example, 1E-10). However, a smaller CLR results in a larger equivalent cell rate for a given connection and hence a lower link utilization.

A value of ***anyClrValue*** means that no bandwidth is reserved for CBR connections, and CAC is effectively turned off. All CBR connections are admitted.

Mib: AtmCore

Values: Decimal (1..15)
anyClrValue

Default: 10

ATTRIBUTE AtmIf CA Cbr txQueueLimit (txql)

Access: Read and write

Criticality: Process

Description: This attribute specifies the default maximum queue length for the emission queues used to buffer the traffic of the CBR service category. It is used as the basis for setting both the queue length and the discard thresholds on both common and per-VC queues.

For the common queue, the discard thresholds are set at approximately 35, 75, and 90 percent of the value of this attribute for traffic at discard priority 3 (DP=3), DP=2 and DP=1 respectively. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, common queuing is not available for the CBR service category.

For a per-VC queue, the actual queue length may be reduced depending on the shaping rate of the connection (for standard *Vpt VCCs*, this is the shaping rate of the *Vpt* component). The discard thresholds are set at approximately 35, 75 and 90 percent of the scaled queue limit for traffic at discard priority 3 (DP=3), DP=2 and DP=1 respectively. However, a reduction will never result in a value that is less than the value of the *minPerVcQueueLimit* attribute. The per-VC queue limit may be overridden for a provisioned connection by specifying a value in the *Vcd Tm* or

Vpd Tm txQueueLimit attribute. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, per-VC queues are not available for the CBR service category.

For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the maximum size of the link-class queue for buffering the egress traffic of the CBR service category. This is similar to common queuing, except that each CBR connection maintains a per-VC utilization limit of the common queue specified for a provisioned connection by the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute.

A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***16pOC3SmIrAtm***, and ***16pOC3PosAtm*** cards the value is ***96***. For ***1pOC12SmLrAtm*** cards, the value is ***350***. For ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***384***. For ***4pMRPosAtm*** cards, the value is ***386*** for OC-12 channels. For ***1pOC48ChSmIrAtm*** cards, the value is ***2176.***

The operational value of the maximum length of a queue (common or per-VC) is indicated by the *Vcc Tm, Vpc Tm,* or *Vpt Tm txQueueThresholds* attribute.

For standard VPTs, this attribute only applies when using common queuing. When using per-VC queuing, regardless of the *Vpt's* service category, standard VPTs use the *AtmIf CA NrtVbr txQueueLimit* attribute value as their default.

This attribute does not apply to basic VPTs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards the valid range for this attribute is from ***5*** to ***30000*** inclusive.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***63488*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840) autoConfigure
Units	cells
Default	autoConfigure

ATTRIBUTE AtmIf CA Cbr holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVP and SVC CBR connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs. When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs is released as a unit, according to the *Vpt*'s *holdingPriority*.

Mib	AtmCore
Values	0 1 2 3 4
Default	3

ATTRIBUTE AtmIf CA Cbr svcMpHoldingPriority (svcMpHpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVC CBR point-to-multipoint connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs. When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs is released as a unit, according to the *Vpt*'s *holdingPriority*.
Mib	AtmCore
Values	0 1 2 3 4
Default	3

ATTRIBUTE AtmIf CA Cbr minPerVcQueueLimit (minpervcql)

Access	Read and write
Criticality	Process

Description

This attribute specifies the minimum queue limit for the per-VC queues of connections of the CBR service category.

This attribute is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm***, cards, because they do not support per-VC queues for the CBR service category.

The queue limit of a per-VC queue is obtained by scaling down the *txQueueLimit* attribute based on the shaping rate of that queue (shaping rate for the connection and for standard *Vpt VCCs*, the shaping rate of the *Vpt* component). This produces a constant delay for various queue lengths. The value of the *txQueueLimit* attribute provides an upper bound while the value of the *minPerVcQueueLimit* attribute provides the lower bound.

The value of this attribute must not be greater than the value of the *txQueueLimit* attribute. If this service category is used by Trunks, the value of the *minPerVcQueueLimit* attribute must be at least ***88***.

For VPTs, this attribute does not apply. Regardless of the *Vpt*'s service category, standard VPTs always use the *AtmIf CA NrtVbr minPerVcQueueLimit* value as their default. To determine the queue limit of a standard *Vpt Vcc*, the *txQueueLimit* attribute is scaled down by the *Vpt* shaping rate.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***63488*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***36*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840)
Units	cells
Default	88

ATTRIBUTE AtmIf CA Cbr perVcQueueLimitReferenceRate (refrate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping rate to be used in computing the tolerable delay for per-VC queues of connections of the CBR service category. The delay is computed as the *txQueueLimit* divided by the value of this attribute. This attribute is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, because they do not support traffic shaping for the CBR service category. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***16pOC3SmIrAtm***, and ***16pOC3PosAtm*** cards the value is ***65511***. For ***2pSTM1eCh***, and ***4pDS3ChAtm*** cards, the value is ***3685***. For MSA32 cards, the value is ***65511*** for OC-3 channels, and ***3685*** for DS1, or E1 channels. For ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***262044***. For ***4pMRPosAtm*** cards, the value is ***262044*** for OC-12 channels. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards the maximum value is ***1416905***. For ***16pOC3PosAtm*** cards, the maximum value is ***353207***. For ***4pMRPosAtm*** cards, the maximum value is ***1412830***. For all other cards, the maximum

value is ***943396***.

For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr perVcQueueLimitReferenceRate* attribute value as their default.

Mib	AtmCore
Values	Decimal (1..1416905) autoConfigure
Units	cell/s
Default	autoConfigure

ATTRIBUTE AtmIf CA Cbr emissionPriority (ep)

Access	Read and write
Criticality	Process
Description	This attribute specifies the emission priority (EP) which is used to transmit traffic of the CBR service category. A lower numerical value for this attribute specifies a higher emission priority. 0 is the highest EP and 7 is the lowest. Cells at a higher emission priority receive higher preference for link bandwidth. EP 0 and EP 1 are in the absolute priority range and are unaffected by any minimum bandwidth guarantees. EP 2 through EP 7 are in the guaranteed bandwidth range and may achieve a priority which is different from the strict hierarchical priority, if a minimum bandwidth guarantee is provisioned. A minimum bandwidth guarantee is specified in the *AtmIf*/n *Ep*/m component. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***,

3pDS3Atm2, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC12SmLrAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= ABR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.
3. CBR and rt-VBR may be placed either in the absolute priority range (EP 0 or 1) or in the guaranteed bandwidth range (EP 2 through 7).
4. If both CBR and rt-VBR are shaped, rt-VBR must share the same EP with CBR or ABR. If either one of CBR or rt-VBR are not shaped, then they cannot share the same EP.
5. ABR service category is always deemed to be shaped. If nrt-VBR is shaped, it must share the same EP with ABR. If nrt-VBR is not shaped it must have a higher EP than ABR.
6. If UBR is shaped, it must share the same EP with ABR. If UBR is not shaped, it must have a lower EP than ABR.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.
3. EP 0 must be used if traffic shaping is required.
4. EP 5 and EP 6 are not supported.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.

For ***1pOC48ChSmIrAtm*** cards, only the default value is supported.

Mib AtmCore

Values	Decimal (0..7)
Default	0

ATTRIBUTE AtmIf CA Cbr trafficShaping (trShaping)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default traffic shaping option for connections of the CBR service category. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. A value of ***disabled*** means traffic shaping cannot be enabled for any CBR connections. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled*** since traffic shaping is not supported for CBR connections on these cards. If the *Vcc Tm*, *Vpc Tm*, or *Vpt Tm*, *txTrafficDescType* attribute indicates type 1 or 2, this attribute is ignored and traffic shaping is not applicable for that connection. A value of ***inverseUpc*** means traffic shaping for a connection is enabled according to the value of the *Vcc Tm*, *Vpc Tm*, or *Vpt Tm* *txTrafficDescType* attribute. A value of ***inverseUpc*** when the *txTrafficDescType* is 3, 4, or 5, means linear traffic shaping is enabled. Linear traffic shaping uses a single static traffic shaping rate. A value of ***inverseUpc*** when the *txTrafficDescType* is 6, 7, or 8, means inverse-UPC (also referred to as VBR or dual leaky bucket) traffic shaping is enabled. Inverse-UPC traffic shaping

can burst above the sustained cell rate to the peak cell rate for the duration defined by the maximum burst size. Inverse-UPC traffic shaping exactly conforms to the requirements of a dual leaky bucket UPC enforcer.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***inverseUpc*** is not available.

A value of ***enabled*** when the *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, means linear traffic shaping is enabled.

Enabling or disabling traffic shaping may require a matching change to the *emissionPriority* attribute and the *unshapedTransmitQueueing* attribute for this service category. Refer to those attributes for the complete description of the interactions.

Mib	AtmCore
Values	enabled disabled inverseUpc
Default	disabled

ATTRIBUTE AtmIf CA Cbr shapeRecoupPolicy (recoup)

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping recoup policy for the CBR service category. This is the policy which is used to recoup shaping opportunities which are lost when more than one connection schedules a cell for the same transmit opportunity. In this case, one connection is scheduled and the cell from the other connection is delayed by one cell time. This attribute affects how the transmit time is calculated for the next cell on the delayed connection. This attribute is ignored if this service category is not shaped. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

This attribute is not applicable and is ignored for ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

When the connection which was delayed schedules the next cell to transmit, it may calculate the time as a difference from either the previous actual cell transmit time, or the time when the previous cell should have been transmitted.

A value of ***maximumEfficiency*** results in each connection trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell should originally have been sent. Cell delay variation (CDV) occurs in this case since the cells are sent with less than the shaping delay between them. However, in general the shaper recovers (recoups) lost opportunities and improves efficiency.

A value of ***minimumCdv*** results in connections not trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell was actually transmitted. This minimizes CDV, but results in missed cell opportunities.

Mib	AtmCore
Values	minimumCdv maximumEfficiency
Default	minimumCdv

ATTRIBUTE AtmIf CA Cbr unshapedTransmitQueueing (unshap)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default queuing option for unshaped connections of the CBR service category. This attribute controls whether common or per-VC queuing is used. A value of ***perVc*** means that each connection has its own buffering and queue limits.

A value of ***common*** means that cells are queued in First In First Out order on a common queue for this service category. The common queue has one set of congestion control levels for all cells enqueued on it.

If traffic shaping for this service category is specified, the value of this attribute must be ***perVc***.

This attribute does not apply to basic VPTs and standard *Vpt* VCCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***common*** since these cards do not support per-VC queuing for the CBR service category.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards the value of this attribute must be ***perVc*** since these cards do not support common queuing for the CBR service category.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, no more than 32,000 connections on the FP can use per-VC queuing. The remaining connections must use common queuing. The *Lp Eng Arc perVcQueueUsage* attribute indicates the number per-VC queues that are currently in use.

Mib	AtmCore
Values	perVc common
Default	common

ATTRIBUTE AtmIf CA Cbr weightPolicy

Access	Read and write
Criticality	Process
Description	This attribute specifies the policy which is applied when calculating the fairness weight for unshaped connections of the

CBR service category. The fairness weight for a connection determines the relative amount of bandwidth which that connection obtains, compared to other connections in the same service category. Connections with equal weight get equal transmit opportunities. Connections with higher weights get more transmit opportunities compared with connections that have lower weights. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

The fairness weight for a connection is directly proportional to the value of one of the traffic descriptor parameters for that connection. This attribute specifies which traffic descriptor parameter is used for connections of the CBR service category.

A value of ***scr*** means the fairness weight is proportional to the transmit sustained cell rate (SCR) of a connection. Connections with a higher SCR have a higher fairness weight. For connections with *txTrafficDescType* 3, which have no SCR, the sustained cell rate is assumed to be equal to the peak cell rate.

A value of ***pcr*** means the fairness weight is proportional to the transmit peak cell rate (PCR) of a connection. Connections with a higher PCR have a higher fairness weight. Connections with *txTrafficDescType* 1 or 2 get a minimum weight, which is 1.

A value of ***ecr*** means the fairness weight is proportional to the equivalent cell rate (ECR) of a connection as calculated by connection admission control (CAC). Connections with a higher ECR have a higher fairness weight. Connections with an ECR of 0 get a minimum weight, which is 1.

The weight of a connection is visible in the *Vcc Tm*, *Vpc Tm*, or *Vpt Tm weight* attribute.

This attribute does not apply to basic VPTs and standard *Vpt* VCCs.

This attribute is ignored if the value of the *unshapedTransmitQueueing* attribute is ***common***.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***,

3pOC3SmAtm, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards.

Mib: AtmCore

Values:
scr
pcr
ecr

Default: ecr

ATTRIBUTE AtmIf CA Cbr forceTagging (tag)

Access: Read and write

Criticality: Process

Description: This attribute specifies the default force tagging (CLP=1) value of all cells for CBR permanent connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

A value of ***enabled*** means CLP is set to 1 for all cells.

A value of ***disabled*** means CLP is unchanged for all cells.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction.

This attribute does not apply to any type of *Vpt* component.

This attribute does not apply to switched CBR connections.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards.

Mib: AtmCore

Values	enabled disabled
Default	disabled

ATTRIBUTE AtmIf CA Cbr usageParameterControl (upc)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default usage parameter control (UPC) option for connections of the CBR service category. This attribute is ignored if the *rxTrafficDescriptorType* indicates 1 or 2. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. A value of ***enforced*** means UPC is enforced for each connection. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*. A value of ***monitored*** means UPC conformance checking is performed, except, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged. A value of ***disabled*** means UPC is disabled on the receive path for all CBR connections. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported. This value has the same effect as ***disabled***. For ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled***.
Mib	AtmCore

Values	enforced disabled monitored
Default	disabled

GROUP AtmIf CA Cbr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the CBR service category.
Mib	AtmCore

ATTRIBUTE AtmIf CA Cbr epdOffset (epdO)

Access	Read only
Description	This attribute indicates the Early Packet Discard (EPD) offset which is currently in use for this service category. The EPD offset is used to derive the EPD thresholds for each CC level. Any connection under this service category which requires the transmit Packet Wise Discard feature must specify a transmit queue limit which is at least 5.71 times this offset. This ensures that the derived Epd threshold will never be less than 17.5% of the transmit queue limit. If this is not done, txPacketWiseDiscard for the connection will be automatically disabled. The value of this EPD offset is specified in the *Lp Eng Arc Aqm Ov* component. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards, this attribute is not available and is filtered from the display.
Mib	AtmCore
Values	Decimal (0; 5..1024)

Units	cells
Default	No default

COMPONENT AtmIf CA RealTimeVariableBitRate (RtVbr)

Instance	Decimal (0)
Groups	"GROUP AtmIf CA RtVbr Provisioned (Prov)" "GROUP AtmIf CA RtVbr Operational (Oper)"
Scope	Device
Description	*AtmIf/n CA RealTimeVariableBitRate/n* This component manages the default characteristics of the real-time variable bit rate (rt-VBR) service category.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf CA RtVbr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control the rt-VBR service category for this interface.
Mib	AtmCore

ATTRIBUTE AtmIf CA RtVbr pool

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth pool which is to be used to support the real-time variable bit rate (rt-VBR) service category (excluding connections managed by a *Vpt CA*). The percentage of link capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to rt-VBR traffic. The

	percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *CA* component.
Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

ATTRIBUTE AtmIf CA RtVbr cdvt

Access	Read and write
Criticality	Process
Description	This attribute specifies the default cell delay variation tolerance (CDVT) for all connections of the rt-VBR service category (including connections managed by a *Vpt CA*). An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. If Usage Parameter Control (UPC) is enabled for a connection, CDVT is used by the UPC function to decide whether a cell is conforming or non-conforming based on the connection's traffic descriptor type. The larger the CDVT value, the more tolerant is the UPC of bandwidth usage beyond the traffic contract.
Mib	AtmCore
Values	Decimal (1..1200000)
Units	microsec
Default	250

ATTRIBUTE AtmIf CA RtVbr cdv

Access	Read and write
Description	This attribute specifies the peak-to-peak cell delay variation (CDV) which is contributed to the entire ATM Interface for rt-

VBR traffic (excluding connections managed by a *Vpt CA*).

The CDV is a measure of the delay jitter introduced mostly by traffic buffering and cell scheduling. The worst case value of this attribute can be computed as the *txQueueLimit* attribute divided by the link rate of this ATM Interface.

This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this ATM Interface can meet the CDV requirement for that connection. If so, the value of this attribute is added to the cumulative CDV field of the extended QoS information element.

Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec
Default	1268

ATTRIBUTE AtmIf CA RtVbr maxCtd

Access	Read and write
Description	This attribute specifies the maximum cell transfer delay (MaxCTD) which is applied to the entire ATM Interface for rt-VBR traffic (excluding connections managed by a *Vpt CA*). MaxCTD is the sum of the fixed delay and the CDV. The components of the fixed delay include propagation delay through the physical media, delays induced by the transmission system and fixed components of switch processing delay. This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this ATM Interface can meet the ATM connection's MaxCTD requirement.
Mib	AtmCore
Values	Decimal (0..16777215)

Units	microsec
Default	2000

ATTRIBUTE AtmIf CA RtVbr cellLossRatio (clr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the tolerable cell loss ratio (CLR) for rt-VBR traffic (excluding connections managed by a *Vpt CA*). The value specified is the negative base 10 logarithm of the CLR. For example, if the target CLR = 1E-10 then the value of the *cellLossRatio* attribute is ***10***. The value of this attribute must be the same as the value of the *Cbr cellLossRatio* attribute since CBR and rt-VBR traffic have the same discard priority. The value if this attribute must also be greater than or equal to the value of the *NrtVbr cellLossRatio* attribute since rt-VBR traffic has a higher discard priority. This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required for rt-VBR connections. There is a trade-off between the service category CLR and the achievable link utilization. To guarantee an excellent service category, the CLR should be as small as possible (for example, 1E-10). However, a smaller CLR results in a larger equivalent cell rate for a given connection and hence a lower link utilization. A value of ***anyClrValue*** means that no bandwidth is reserved for rt-VBR connections, and CAC is effectively turned off. All rt-VBR connections are admitted.
Mib	AtmCore
Values	Decimal (1..15) anyClrValue
Default	10

ATTRIBUTE AtmIf CA RtVbr txQueueLimit (txql)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default maximum queue length for the emission queues used to buffer the traffic of the rt-VBR service category. It is used as the basis for setting both the queue length and the discard thresholds on both common and per-VC queues. For the common queue, the discard thresholds are set at approximately 35, 75, and 90 percent of the value of this attribute for traffic at discard priority 3 (DP=3), DP=2, and DP=1 respectively. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, common queuing is not available for the rt-VBR service category. For a per-VC queue, the actual queue length may be reduced depending on the shaping rate of the connection (for standard *Vpt* VCCs, this is the shaping rate of the *Vpt* component). The discard thresholds are set at approximately 35, 75, and 90 percent of the scaled queue limit for traffic at discard priority 3 (DP=3), DP=2, and DP=1, respectively. However, a reduction will never result in a value that is less than the value of the *minPerVcQueueLimit* attribute. The per-VC queue limit may be overridden for a provisioned connection by specifying a value in the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, per-VC queues are not available for the rt-VBR service category. For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the maximum size of the link-class queue for buffering the egress traffic of the rt-VBR service category. This is similar to common queuing, except that each rt-VBR connection maintains a per-VC utilization limit of the common queue specified for a provisioned connection by the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, and ***16pOC3SmIrAtm*** cards,

the value is ***480***. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, and ***4pDS3ChAtm*** cards, the value is ***288***. For MSA32 cards, the value is ***480*** for OC-3 channels, and ***288*** for DS1, or E1 channels. For ***16pOC3PosAtm*** cards, the value is ***1280***. For ***1pOC12SmLrAtm*** cards, the value is ***2048***. For ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***1920***. For ***4pMRPosAtm*** cards, the value is ***5120*** for OC-12 channels. For ***1pOC48ChSmIrAtm*** cards, the value is ***12288.***

The operational value of the maximum length of a queue (common or per-VC) is indicated by the *Vcc Tm*, *Vpc Tm*, or *Vpt Tm txQueueThresholds* attribute.

For standard VPTs, this attribute only applies when using common queuing. When using per-VC queuing, regardless of the *Vpt's* service category, standard VPTs use the *AtmIf CA NrtVbr txQueueLimit* attribute value as their default.

This attribute does not apply to basic VPTs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards the valid range for this attribute is from ***5*** to ***30000*** inclusive.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***160000*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840) autoConfigure
Units	cells
Default	autoConfigure

ATTRIBUTE AtmIf CA RtVbr minPerVcQueueLimit (minpervcql)

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum queue limit for the per-VC queues of connections of the rt-VBR service category. This attribute is ignored for ***1pOC12SmLrAtm*** cards, because they do not support per-VC queues for the rt-VBR service category. The queue limit of a per-VC queue is obtained by scaling down the *txQueueLimit* attribute based on the shaping rate of that queue (shaping rate for the connection and for standard *Vpt* VCCs, the shaping rate of the *Vpt* component). This produces a constant delay for various queue lengths. The value of the *txQueueLimit* attribute provides an upper bound while the value of the *minPerVcQueueLimit* attribute provides the lower bound. The value of this attribute must not be greater than the value of the *txQueueLimit* attribute. If this service category is used by Trunks, the value of the *minPerVcQueueLimit* attribute must be at least ***88***. For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr minPerVcQueueLimit* value as their default. To determine the queue limit of a standard *Vpt Vcc*, the *txQueueLimit* attribute is scaled down by the *Vpt* shaping rate. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***,

3pDS3Atm2, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***160000*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***36*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840)
Units	cells
Default	88

ATTRIBUTE AtmIf CA RtVbr perVcQueueLimitReferenceRate (refrate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping rate to be used in computing the tolerable delay for per-VC queues of connections of the rt-VBR service category. The delay is computed as the *txQueueLimit* divided by the value of this attribute. This attribute is ignored for ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, because they do not support traffic shaping for the rt-VBR service category. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, and ***4pOC3SmIrAtm*** cards, the value is ***14740***. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***,

2pSTM1eCh, and ***4pDS3ChAtm*** cards, the value is ***3685***. For MSA32 cards, the value is ***14740*** for OC-3 channels, and ***3685*** for DS1, or E1 channels. For ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***262044***. For ***4pMRPosAtm*** cards, the value is ***157228*** for OC-12 channels. For ***16pOC3SmIrAtm*** cards, the value is ***65511***. For ***16pOC3PosAtm*** cards, the value is ***39307***.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards the maximum value is ***1416905***. For ***16pOC3PosAtm*** cards, the maximum value is ***353207***. For ***4pMRPosAtm*** cards, the maximum value is ***1412830.*** For all other cards, the maximum value is ***943396***.

For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr perVcQueueLimitReferenceRate* attribute value as their default.

Mib	AtmCore
Values	Decimal (1..1416905) autoConfigure
Units	cell/s
Default	autoConfigure

ATTRIBUTE AtmIf CA RtVbr holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVP and SVC rt-VBR connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs. When bandwidth

fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs, is released as a unit, according to the *Vpt*'s *holdingPriority*.

Mib: AtmCore

Values:
0
1
2
3
4

Default: 3

ATTRIBUTE AtmIf CA RtVbr svcMpHoldingPriority (svcMpHpri)

Access: Read and write

Criticality: Process

Description: This attribute specifies the holding priority which applies to SVC rt-VBR point-to-multipoint connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released.

This attribute does not apply to *Vpt* VCCs, When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs, is released as a unit, according to the *Vpt*'s *holdingPriority*.

Mib: AtmCore

Values:
0
1
2
3
4

Default: 3

ATTRIBUTE AtmIf CA RtVbr emissionPriority (ep)

Access	Read and write
Criticality	Process
Description	This attribute specifies the emission priority (EP) which is used to transmit traffic of the rt-VBR service category. A lower numerical value for this attribute specifies a higher emission priority. 0 is the highest EP and 7 is the lowest. Cells at a higher emission priority receive higher preference for link bandwidth. EP 0 and EP 1 are in the absolute priority range and are unaffected by any minimum bandwidth guarantees. EP 2 through EP 7 are in the guaranteed bandwidth range and may achieve a priority which is different from the strict hierarchical priority, if a minimum bandwidth guarantee is provisioned. A minimum bandwidth guarantee is specified in the *AtmIf*/n *Ep*/m component. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC12SmLrAtm*** cards, emission priority setting must comply with all of the following constraints: 1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= ABR <= UBR 2. Two different ATM service categories may share the same EP only if they are both shaped. 3. CBR and rt-VBR may be placed either in the absolute priority range (EP 0 or 1) or in the guaranteed bandwidth range (EP 2 through 7). 4. If both CBR and rt-VBR are shaped, rt-VBR must share the same EP with CBR or ABR. If either one of CBR or rt-VBR are not shaped, then they cannot share the same EP. 5. ABR service category is always deemed to be shaped. If nrt-VBR is shaped, it must share the same EP with ABR. If nrt-VBR

is not shaped it must have a higher EP than ABR.
6. If UBR is shaped, it must share the same EP with ABR. If UBR is not shaped, it must have a lower EP than ABR.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.
3. EP 0 must be used if traffic shaping is required.
4. EP 5 and EP 6 are not supported.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.

For ***1pOC48ChSmIrAtm*** cards, only the default value is supported. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm,*** and ***16pOC3SmIrAtm*** cards the default value is ***2***.

Mib	AtmCore
Values	Decimal (0..7)
Default	1

ATTRIBUTE AtmIf CA RtVbr trafficShaping (trShaping)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default traffic shaping option for connections of the rt-VBR service category. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. This attribute does not apply to basic VPTs, or standard *Vpt*

VCCs.

A value of ***disabled*** means traffic shaping cannot be enabled for any rt-VBR connections.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled*** since traffic shaping is not supported for rt-VBR connections on these cards.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value of this attribute may be ***enabled*** only if the interface supports shaping, as defined by the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component. If that component does not exist, the value of this attribute must be ***disabled***.

If the *Vcc Tm, Vpc Tm,* or *Vpt Tm, txTrafficDescType* attribute indicates type 1 or 2, this attribute is ignored and traffic shaping is not applicable for that connection.

A value of ***inverseUpc*** means traffic shaping for a connection is enabled according to the value of the *Vcc Tm, Vpc Tm,* or *Vpt Tm txTrafficDescType* attribute.

A value of ***inverseUpc*** when the *txTrafficDescType* is 3, 4, or 5, means linear traffic shaping is enabled. Linear traffic shaping uses a single static traffic shaping rate.

A value of ***inverseUpc*** when the *txTrafficDescType* is 6, 7, or 8, means inverse-UPC (also referred to as VBR or dual leaky bucket) traffic shaping is enabled. Inverse-UPC traffic shaping can burst above the sustained cell rate to the peak cell rate for the duration defined by the maximum burst size. Inverse-UPC traffic shaping exactly conforms to the requirements of a dual leaky bucket UPC enforcer.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***inverseUpc*** is not available.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***,

3pE1Atm, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***inverseUpc*** is not supported and is equivalent to the value ***enabled***.

A value of ***enabled*** when the *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, means traffic shaping for a connection is enabled using linear shaping.

Enabling or disabling traffic shaping may require a matching change to the *emissionPriority* attribute, and the *unshapedTransmitQueueing* attribute for this service category. Refer to those attributes for the complete description of the interactions.

Mib	AtmCore
Values	enabled disabled inverseUpc
Default	disabled

ATTRIBUTE AtmIf CA RtVbr shapeRecoupPolicy (recoup)

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping recoup policy for the rt-VBR service category. This is the policy which is used to recoup shaping opportunities which are lost when more than one connection schedules a cell for the same transmit opportunity. In this case, one connection is scheduled and the cell from the other connection is delayed by one cell time. This attribute affects how the transmit time is calculated for the next cell on the delayed connection. This attribute is ignored if this service category is not shaped. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. This attribute is not applicable and is ignored for ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***

cards.

When the connection which was delayed schedules the next cell to transmit, it may calculate the time as a difference from either the previous actual cell transmit time, or the time when the previous cell should have been transmitted.

A value of ***maximumEfficiency*** results in each connection trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell should originally have been sent. Cell delay variation (CDV) occurs in this case since the cells are sent with less than the shaping delay between them. However, in general the shaper recovers (recoups) lost opportunities and improves efficiency.

A value of ***minimumCdv*** results in connections not trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell was actually transmitted. This minimizes CDV, but results in missed cell opportunities.

Mib	AtmCore
Values	minimumCdv maximumEfficiency
Default	minimumCdv

ATTRIBUTE AtmIf CA RtVbr unshapedTransmitQueueing (unshap)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default queuing option for unshaped connections of the rt-VBR service category. This attribute controls whether common or per-VC queuing is used. A value of ***perVc*** means that each connection has its own buffering and queue limits. A value of ***common*** means that cells are queued in First In First Out order on a common queue for this service category. The

common queue has one set of congestion control levels for all cells enqueued on it.

This attribute does not apply to basic VPTs and standard *Vpt* VCCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, if the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component permits shaping for this interface, then this attribute may take any of the three values. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing. If the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component does not permit shaping for this interface, then this attribute may take the values ***common***, or ***autoConfigure***. In this case, the value ***autoConfigure*** is interpreted to mean common queuing. An override to this default may be specified for a provisioned connection under the *Vcd Tm*, or *Vpd Tm* component.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value ***perVc*** is not supported since these cards do not support per-VC queuing. The value ***autoConfigure*** is interpreted to mean common queuing.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***common*** is not supported since these cards do not support common queuing. The value ***autoConfigure*** is interpreted to mean per-VC queuing.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, if traffic shaping for this service category is disabled, this attribute may take any of the three values. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing. If traffic shaping for this service category is not disabled, the only permitted values are ***perVc*** and ***autoConfigure***. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, no more than

32,000 connections on the FP can use per-VC queuing. The remaining connections must use common queuing. The *Lp Eng Arc perVcQueueUsage* attribute indicates the number per-VC queues that are currently in use.

The value of the operational *opUnshapedTransmitQueueing* attribute of this component indicates whether the transmit queuing is ***perVc***, or ***common***.

Mib: AtmCore

Values: perVc
common
autoConfigure

Default: autoConfigure

ATTRIBUTE AtmIf CA RtVbr usageParameterControl (upc)

Access: Read and write

Criticality: Process

Description: This attribute specifies the default usage parameter control (UPC) option for connections of the rt-VBR service category. This attribute is ignored if the *rxTrafficDescriptorType* indicates 1 or 2. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

A value of ***enforced*** means UPC is enforced for each connection. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*.

A value of ***monitored*** means UPC conformance checking is performed, except, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged.

A value of ***disabled*** means UPC is disabled on the receive path for all rt-VBR connections.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported. This value has the same effect as ***disabled***.

For ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled***.

Mib: AtmCore

Values: enforced
disabled
monitored

Default: disabled

ATTRIBUTE AtmIf CA RtVbr weightPolicy

Access: Read and write

Criticality: Process

Description: This attribute specifies the policy which is applied when calculating the fairness weight for unshaped connections of the rt-VBR service category. The fairness weight for a connection determines the relative amount of bandwidth which that connection obtains, compared to other connections in the same service category. Connections with equal weight get equal transmit opportunities. Connections with higher weights get more transmit opportunities compared with connections that have lower weights. An override to this default may be specified for a provisioned connection under the *Vcd Tm*, or *Vpd Tm* component.

The fairness weight for a connection is directly proportional to the value of one of the traffic descriptor parameters for that connection. This attribute specifies which traffic descriptor parameter is used for connections of the rt-VBR service category.

A value of ***scr*** means the fairness weight is proportional to the transmit sustained cell rate (SCR) of a connection. Connections with a higher SCR have a higher fairness weight. For connections with *txTrafficDescType* 3, which have no SCR, the sustained cell

rate is assumed to be equal to the peak cell rate.

A value of ***pcr*** means the fairness weight is proportional to the transmit peak cell rate (PCR) of a connection. Connections with a higher PCR have a higher fairness weight. Connections with *txTrafficDescType* 1 or 2 get a minimum weight, which is 1.

A value of ***ecr*** means the fairness weight is proportional to the equivalent cell rate (ECR) of a connection as calculated by connection admission control (CAC). Connections with a higher ECR have a higher fairness weight. Connections with an ECR of 0 get a minimum weight, which is 1.

The weight of a connection is visible in the *Vcc Tm*, *Vpc Tm*, or *Vpt Tm weight* attribute.

This attribute does not apply to basic VPTs and standard *Vpt* VCCs.

This attribute is ignored if the value of the *unshapedTransmitQueueing* attribute is ***common***.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards.

Mib	AtmCore
Values	scr pcr ecr
Default	ecr

ATTRIBUTE AtmIf CA RtVbr forceTagging (tag)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default force tagging (CLP=1) value of all cells for rt-VBR permanent connections. An override to this

default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

A value of ***enabled*** means CLP is set to 1 for all cells.

A value of ***disabled*** means CLP is unchanged for all cells.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction.

This attribute does not apply to any type of *Vpt* component.

This attribute does not apply to switched rt-VBR connections.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards.

Mib	AtmCore
Values	enabled disabled
Default	disabled

GROUP AtmIf CA RtVbr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the rt-VBR service category.
Mib	AtmCore

ATTRIBUTE AtmIf CA RtVbr opUnshapedTransmitQueueing (opUnshap)

Access	Read only
Description	This attribute indicates the type of transmit queuing for unshaped rt-VBR connections.

A value of ***perVc*** indicates that unshaped connections use per-VC queuing. A value of ***common*** indicates unshaped connections use the common queue for this service category.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value ***common*** is always indicated since these cards do not support per-VC queuing.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***perVc*** is always indicated since these cards do not support common queuing.

Mib: AtmCore

Values: perVc
common

Default: No default

ATTRIBUTE AtmIf CA RtVbr epdOffset (epdO)

Access: Read only

Description: This attribute indicates the Early Packet Discard (EPD) offset which is currently in use for this service category. The EPD offset is used to derive the EPD thresholds for each CC level.

Any connection under this service category which requires the transmit Packet Wise Discard feature must specify a transmit queue limit which is at least 5.71 times this offset. This ensures that the derived Epd threshold will never be less than 17.5% of the transmit queue limit. If this is not done, txPacketWiseDiscard for the connection will be automatically disabled.

The value of this EPD offset is specified in the *Lp Eng Arc Aqm Ov* component.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards, this attribute is not available and is filtered from the display.

Mib	AtmCore
Values	Decimal (0; 5..1024)
Units	cells
Default	No default

COMPONENT AtmIf CA NonRealTimeVariableBitRate (NrtVbr)

Instance	Decimal (0)
Groups	"GROUP AtmIf CA NrtVbr Provisioned (Prov)" "GROUP AtmIf CA NrtVbr Operational (Oper)"
Scope	Device
Description	*AtmIf/n CA NonRealTimeVariableBitRate/n* This component manages the default characteristics of the non-real-time variable bit rate (nrt-VBR) service category.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf CA NrtVbr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control the nrt-VBR service category for this interface.
Mib	AtmCore

ATTRIBUTE AtmIf CA NrtVbr pool

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth pool which is to be used to support the non-real-time variable bit rate (nrt-VBR) service category (excluding connections managed by a *Vpt CA*). The

	percentage of link capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to nrt-VBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *CA* component.
Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

ATTRIBUTE AtmIf CA NrtVbr cdvt

Access	Read and write
Criticality	Process
Description	This attribute specifies the default cell delay variation tolerance (CDVT) for all connections of the nrt-VBR service category (including connections managed by a *Vpt CA*). An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. If Usage Parameter Control (UPC) is enabled for a connection, CDVT is used by the UPC function to decide whether a cell is conforming or non-conforming based on the connection's traffic descriptor type. The larger the CDVT value, the more tolerant is the UPC of bandwidth usage beyond the traffic contract.
Mib	AtmCore
Values	Decimal (1..1200000)
Units	microsec
Default	250

ATTRIBUTE AtmIf CA NrtVbr txQueueLimit (txql)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default maximum queue length for the emission queues used to buffer the traffic of the nrt-VBR service category. It is used as the basis for setting both the queue length and the discard thresholds on both common and per-VC queues. For the common queue, the discard thresholds are set at approximately 35, 75, and 90 percent of the value of this attribute for traffic at discard priority 3 (DP=3), DP=2, and DP=1 respectively. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, common queuing is not available for the nrt-VBR service category. For a per-VC queue, the actual queue length may be reduced depending on the shaping rate of the connection (for standard *Vpt* VCCs, this is the shaping rate of the *Vpt*). The discard thresholds are set at approximately 35, 75, and 90 percent of the scaled queue limit for traffic at discard priority 3 (DP=3), DP=2, and DP=1 respectively. However, a reduction will never result in a value that is less than the value of the *minPerVcQueueLimit* attribute. The per-VC queue limit may be overridden for a permanent connection by specifying a value in the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, per-VC queues are not available for the nrt-VBR service category. For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the maximum size of the link-class queue for buffering the egress traffic of the nrt-VBR service category. This is similar to common queuing, except that each nrt-VBR connection maintains a per-VC utilization limit of the common queue specified for a provisioned connection by the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, and ***4pDS3ChAtm*** cards, the value is ***1792***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***,

and ***3pDS3Atm*** cards, the value is ***2304***. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***16pOC3PosAtm*** cards, the value is ***10240***. For MSA32 cards, the value is ***10240*** for OC-3 channels, and ***1792*** for DS1, or E1 channels. For ***4pMRPosAtm*** cards, the value is ***40960*** for OC-12 channels. For ***1pOC12SmLrAtm*** cards, the value is ***7680***. For ***1pOC48ChSmIrAtm*** cards, the value is ***118784.***

The operational value of the maximum length of a queue (common or per-VC) is indicated by the *Vcc Tm*, *Vpc Tm*, or *Vpt Tm txQueueThresholds* attribute.

When using per-VC queuing, this attribute is used as the default *txQueueLimit* for all standard VPTs, regardless of the *Vpt's* service category.

This attribute does not apply to basic VPTs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr* and *Ubr* components and the valid range is from ***5*** to ***30000*** inclusive.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***160000*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840) autoConfigure
Units	cells
Default	autoConfigure

ATTRIBUTE AtmIf CA NrtVbr minPerVcQueueLimit (minpervcql)

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum queue limit for the per-VC queues of connections of the nrt-VBR service category. This attribute is ignored for ***1pOC12SmLrAtm*** cards, because they do not support per-VC queues for the nrt-VBR service category. The queue limit of a per-VC queue is obtained by scaling down the *txQueueLimit* attribute based on the shaping rate of that queue (shaping rate for the connection and for standard *Vpt* VCCs, the shaping rate of the *Vpt*). This produces a constant delay for various queue lengths. The value of the *txQueueLimit* attribute provides an upper bound while the value of the *minPerVcQueueLimit* attribute provides the lower bound. The value of this attribute must not be greater than the value of the *txQueueLimit* attribute. If this service category is used by Trunks, the value of the *minPerVcQueueLimit* attribute must be at least ***88***. This attribute is used as the default *minPerVcQueueLimit* for all standard VPTs, regardless of the *Vpt's* service category. This attribute does not apply to basic VPTs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr* and *Ubr* components.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***160000*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***43*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840)
Units	cells
Default	88

ATTRIBUTE AtmIf CA NrtVbr perVcQueueLimitReferenceRate (refrate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping rate to be used in computing the tolerable delay for per-VC queues of connections of the nrt-VBR service category. The delay is computed as the *txQueueLimit* divided by the value of this attribute. This attribute is ignored for ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, because they do not support traffic shaping for the nrt-VBR service category.

A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, and ***4pDS3ChAtm*** cards, the value is ***3685***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, and ***3pDS3Atm*** cards, the value is ***14740***. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***16pOC3SmIrAtm***, and ***16pOC3PosAtm*** cards, the value is ***65511***. For MSA32 cards, the value is ***65511*** for OC-3 channels, and ***3685*** for DS1, or E1 channels. For ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***262044***. For ***4pMRPosAtm*** cards, the value is ***262044*** for OC-12 channels.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr*, and *Ubr* components.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards the maximum value is ***1416905***. For ***16pOC3PosAtm*** cards, the maximum value is ***353207***. For ***4pMRPosAtm*** cards, the maximum value is ***1412830***. For all other cards, the maximum value is ***943396***.

This attribute is used as the default *perVcQueueLimitReferenceRate* for all standard VPTs, regardless of the *Vpt's* service category.

This attribute does not apply to basic VPTs.

Mib	AtmCore
Values	Decimal (1..1416905) autoConfigure
Units	cell/s
Default	autoConfigure

ATTRIBUTE AtmIf CA NrtVbr svcMpHoldingPriority (svcMpHpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVC nrt-VBR point-to-multipoint connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs. When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs, is released as a unit, according to the *Vpt*'s *holdingPriority*.
Mib	AtmCore
Values	0 1 2 3 4
Default	3

ATTRIBUTE AtmIf CA NrtVbr holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVP and SVC nrt-VBR connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs. When bandwidth

fluctuates, the entire *Vpt*, along with all *Vpt* VCCs, is released as a unit, according to the *Vpt*'s *holdingPriority*.

Mib: AtmCore

Values:
0
1
2
3
4

Default: 3

ATTRIBUTE AtmIf CA NrtVbr emissionPriority (ep)

Access: Read and write

Criticality: Process

Description: This attribute specifies the emission priority (EP) which is used to transmit traffic of the nrt-VBR service category. A lower numerical value for this attribute specifies a higher emission priority. 0 is the highest EP and 7 is the lowest. Cells at a higher emission priority receive higher preference for link bandwidth.

EP 0 and EP 1 are in the absolute priority range and are unaffected by any minimum bandwidth guarantees. EP 2 through EP 7 are in the guaranteed bandwidth range and may achieve a priority which is different from the strict hierarchical priority, if a minimum bandwidth guarantee is provisioned. A minimum bandwidth guarantee is specified in the *AtmIf*/n *Ep*/m component.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC12SmLrAtm*** cards, emission priority setting must comply

with all of the following constraints:
1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= ABR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.
3. CBR and rt-VBR may be placed either in the absolute priority range (EP 0 or 1) or in the guaranteed bandwidth range (EP 2 through 7).
4. If both CBR and rt-VBR are shaped, rt-VBR must share the same EP with CBR or ABR. If either one of CBR or rt-VBR are not shaped, then they cannot share the same EP.
5. ABR service category is always deemed to be shaped. If nrt-VBR is shaped, it must share the same EP with ABR. If nrt-VBR is not shaped it must have a higher EP than ABR.
6. If UBR is shaped, it must share the same EP with ABR. If UBR is not shaped, it must have a lower EP than ABR.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.
3. EP 0 must be used if traffic shaping is required.
4. EP 5 and EP 6 are not supported.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.

For ***1pOC48ChSmIrAtm*** cards, only the default value is supported.

Mib	AtmCore
Values	Decimal (0..7)
Default	4

ATTRIBUTE AtmIf CA NrtVbr trafficShaping (trShaping)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default traffic shaping option for connections of the nrt-VBR service category. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. A value of ***disabled*** means traffic shaping cannot be enabled for any nrt-VBR connections. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled*** since traffic shaping is not supported for nrt-VBR connections on these cards. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value of this attribute may be ***enabled*** only if the interface supports shaping, as defined by the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component. If that component does not exist, the value of this attribute must be ***disabled***. If the *Vcc Tm, Vpc Tm,* or *Vpt Tm txTrafficDescType* attribute indicates type 1 or 2, this attribute is ignored and traffic shaping is not applicable for that connection. A value of ***inverseUpc*** means traffic shaping for a connection is enabled according to the value of the *Vcc Tm, Vpc Tm,* or *Vpt Tm txTrafficDescType* attribute. A value of ***inverseUpc*** when the *txTrafficDescType* is 3, 4, or 5, means linear traffic shaping is enabled. Linear traffic shaping uses a single static traffic shaping rate. A value of ***inverseUpc*** when the *txTrafficDescType* is 6, 7, or 8,

means inverse-UPC (also referred to as VBR or dual leaky bucket) traffic shaping is enabled. Inverse-UPC traffic shaping can burst above the sustained cell rate to the peak cell rate for the duration defined by the maximum burst size. Inverse-UPC traffic shaping exactly conforms to the requirements of a dual leaky bucket UPC enforcer.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***inverseUpc*** is not available.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***inverseUpc*** is not supported and is equivalent to the value ***enabled***.

A value of ***enabled*** when the *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, means traffic shaping for a connection is enabled using linear shaping.

Enabling or disabling traffic shaping may require a matching change to the *emissionPriority* attribute, and the *unshapedTransmitQueueing* attribute for this service category. Refer to those attributes for the complete description of the interactions.

Mib	AtmCore
Values	enabled disabled inverseUpc
Default	disabled

ATTRIBUTE AtmIf CA NrtVbr shapeRecoupPolicy (recoup)

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping recoup policy for the nrt-VBR service category. This is the policy which is used to recoup shaping opportunities which are lost when more than one connection schedules a cell for the same transmit opportunity. In

this case, one connection is scheduled and the cell from the other connection is delayed by one cell time. This attribute affects how the transmit time is calculated for the next cell on the delayed connection. This attribute is ignored if this service category is not shaped.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

This attribute is not applicable and is ignored for ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

When the connection which was delayed schedules the next cell to transmit, it may calculate the time as a difference from either the previous actual cell transmit time, or the time when the previous cell should have been transmitted.

A value of ***maximumEfficiency*** results in each connection trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell should originally have been sent. Cell delay variation (CDV) occurs in this case since the cells are sent with less than the shaping delay between them. However, in general the shaper recovers (recoups) lost opportunities and improves efficiency.

A value of ***minimumCdv*** results in connections not trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell was actually transmitted. This minimizes CDV, but results in missed cell opportunities.

Mib	AtmCore
Values	minimumCdv maximumEfficiency
Default	maximumEfficiency

ATTRIBUTE AtmIf CA NrtVbr unshapedTransmitQueueing (unshap)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default queuing option for unshaped connections of the nrt-VBR service category. This attribute controls whether common or per-VC queuing is used. A value of ***perVc*** means that each connection has its own buffering and queue limits. A value of ***common*** means that cells are queued in First In First Out order on a common queue for this service category. The common queue has one set of congestion control levels for all cells enqueued on it. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, if the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component permits shaping for this interface, then this attribute may take any of the three values. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing. If the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component does not permit shaping for this interface, then this attribute may take the values ***common***, or ***autoConfigure***. In this case, the value ***autoConfigure*** is interpreted to mean common queuing. An override to this default may be specified for a provisioned connection under the *Vcd Tm*, or *Vpd Tm* component. There is one common queue which is shared by the nrt-VBR, ABR, and UBR service categories. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value ***perVc*** is not supported since these cards do not support per-VC queuing. The value ***autoConfigure*** is interpreted to mean common queuing. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***common*** is not supported since these cards do

not support common queuing. The value ***autoConfigure*** is interpreted to mean per-VC queuing.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards, if traffic shaping for this service category is disabled, this attribute may take any of the three values. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing. If traffic shaping for this service category is not disabled, the only permitted values are ***perVc*** and ***autoConfigure***. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, no more than 32,000 connections on the FP can use per-VC queuing. The remaining connections must use common queuing. The *Lp Eng Arc perVcQueueUsage* attribute indicates the number per-VC queues that are currently in use.

The value of the operational *opUnshapedTransmitQueueing* attribute of this component indicates whether the transmit queuing is ***perVc*** or ***common***.

Mib	AtmCore
Values	perVc common autoConfigure
Default	autoConfigure

ATTRIBUTE AtmIf CA NrtVbr usageParameterControl (upc)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default usage parameter control (UPC) option for connections of the nrt-VBR service category. This attribute is ignored if the *rxTrafficDescriptorType* indicates 1 or 2. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

A value of ***enforced*** means UPC is enforced for each connection. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*.

A value of ***monitored*** means UPC conformance checking is performed, except, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged.

A value of ***disabled*** means UPC is disabled on the receive path for all rt-VBR connections.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported. This value has the same effect as ***disabled***.

For ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled***.

Mib	AtmCore
Values	enforced disabled monitored
Default	disabled

ATTRIBUTE AtmIf CA NrtVbr weightPolicy

Access	Read and write
Criticality	Process
Description	This attribute specifies the policy which is applied when calculating the fairness weight for unshaped connections of the nrt-VBR service category. The fairness weight for a connection determines the relative amount of bandwidth which that connection obtains, compared to other connections in the same

service category. Connections with equal weight get equal transmit opportunities. Connections with higher weights get more transmit opportunities compared with connections that have lower weights. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

The fairness weight for a connection is directly proportional to the value of one of the traffic descriptor parameters for that connection. This attribute specifies which traffic descriptor parameter is used for connections of the nrt-VBR service category.

A value of ***scr*** means the fairness weight is proportional to the transmit sustained cell rate (SCR) of a connection. Connections with a higher SCR have a higher fairness weight. For connections with *txTrafficDescType* 3, which have no SCR, the sustained cell rate is assumed to be equal to the peak cell rate.

A value of ***pcr*** means the fairness weight is proportional to the transmit peak cell rate (PCR) of a connection. Connections with a higher PCR have a higher fairness weight. Connections with *txTrafficDescType* 1 or 2 get a minimum weight, which is 1.

A value of ***ecr*** means the fairness weight is proportional to the equivalent cell rate (ECR) of a connection as calculated by connection admission control (CAC). Connections with a higher ECR have a higher fairness weight. Connections with an ECR of 0 get a minimum weight, which is 1.

The weight of a connection is visible in the *Vcc Tm*, *Vpc Tm*, or *Vpt Tm weight* attribute.

This attribute does not apply to basic VPTs and standard *Vpt* VCCs.

This attribute is ignored if the value of the *unshapedTransmitQueueing* attribute is ***common***.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***,

8pE1Atm, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards.

Mib: AtmCore

Values:
scr
pcr
ecr

Default: ecr

ATTRIBUTE AtmIf CA NrtVbr forceTagging (tag)

Access: Read and write

Criticality: Process

Description: This attribute specifies the default force tagging (CLP=1) value of all cells for nrt-VBR permanent connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

A value of ***enabled*** means CLP is set to 1 for all cells.

A value of ***disabled*** means CLP is unchanged for all cells.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction.

This attribute does not apply to any type of *Vpt* component.

This attribute does not apply to switched nrt-VBR connections.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards.

Mib: AtmCore

Values:
enabled
disabled

Default	disabled

ATTRIBUTE AtmIf CA NrtVbr cellLossRatio (clr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the tolerable cell loss ratio (CLR) for nrt-VBR traffic (excluding connections managed by a *Vpt CA*). The value specified is the negative base 10 logarithm of the CLR. For example, if the target CLR = 1E-10 then the value of the *cellLossRatio* attribute is ***10***. The value if this attribute must be less than or equal to the value of the *RtVbr cellLossRatio* attribute since rt-VBR traffic has a higher discard priority. This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required for nrt-VBR connections. There is a trade-off between the service category CLR and the achievable link utilization. To guarantee an excellent service category, the CLR should be as small as possible (for example, 1E-10). However, a smaller CLR results in a larger equivalent cell rate for a given connection and hence a lower link utilization. A value of ***anyClrValue*** means that no bandwidth is reserved for nrt-VBR connections and CAC is effectively turned off. All nrt-VBR connections are admitted.
Mib	AtmCore
Values	Decimal (1..15) anyClrValue
Default	7

GROUP AtmIf CA NrtVbr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the nrt-VBR service category.

Mib	AtmCore

ATTRIBUTE AtmIf CA NrtVbr opUnshapedTransmitQueueing (opUnshap)

Access	Read only
Description	This attribute indicates the type of transmit queuing for unshaped nrt-VBR connections. A value of ***perVc*** indicates that unshaped connections use per-VC queuing. A value of ***common*** indicates that unshaped connections use the common queue for this service category. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value ***common*** is always indicated since these cards do not support per-VC queuing. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***perVc*** is always indicated since these cards do not support common queuing.
Mib	AtmCore
Values	perVc common
Default	No default

ATTRIBUTE AtmIf CA NrtVbr epdOffset (epdO)

Access	Read only
Description	This attribute indicates the Early Packet Discard (EPD) offset which is currently in use for this service category. The EPD offset is used to derive the EPD thresholds for each CC level. Any connection under this service category which requires the transmit Packet Wise Discard feature must specify a transmit queue limit which is at least 5.71 times this offset. This ensures that the derived Epd threshold will never be less than 17.5% of the transmit queue limit. If this is not done, txPacketWiseDiscard for the connection will be automatically disabled. The value of this EPD offset is specified in the *Lp Eng Arc Aqm*

Ov component.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards, this attribute is not available and is filtered from the display.

Mib	AtmCore
Values	Decimal (0; 5..1024)
Units	cells
Default	No default

COMPONENT AtmIf CA AvailableBitRate (Abr)

Instance	Decimal (0)
Groups	"GROUP AtmIf CA Abr Provisioned (Prov)" "GROUP AtmIf CA Abr Operational (Oper)"
Scope	Device
Description	*AtmIf/n CA AvailableBitRate/n* This component manages the default characteristics of the available bit rate (ABR) service category. There is no support for ABR connections on any ATM cards at this time. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards only the default values of all attributes are supported.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf CA Abr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control the ABR service category for this interface.
Mib	AtmCore

ATTRIBUTE AtmIf CA Abr pool

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth pool which is to be used to support the available bit rate (ABR) service category (excluding connections managed by a *Vpt CA*). The percentage of link capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to ABR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *CA* component.
Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

ATTRIBUTE AtmIf CA Abr cdvt

Access	Read and write
Criticality	Process
Description	This attribute specifies the default cell delay variation tolerance (CDVT) for all connections of the ABR service category (including connections managed by a *Vpt CA*). An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

This attribute is used by the dynamic generic cell rate algorithm (DGCRA) policer on ATM cards which support this feature. On cards that do not support this feature, ABR UPC is enforced using PCR and CDVT.

Mib	AtmCore
Values	Decimal (1..1200000)
Units	microsec
Default	250

ATTRIBUTE AtmIf CA Abr txQueueLimit (txql)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default maximum queue length for the emission queues used to buffer the traffic of the ABR service category. It is used as the basis for setting the discard thresholds on ABR per-VC queues. For a per-VC queue, the actual queue length may be reduced depending on the peak cell rate. The discard thresholds are set at approximately 35, 75 and 90 percent of the scaled queue limit for traffic at discard priority 3 (DP=3), DP=2 and DP=1 respectively. However, a reduction will never result in a value that is less than the value of the *minPerVcQueueLimit* attribute. The per-VC queue limit may be overridden for a permanent connection by specifying a value in the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, and ***4pDS3ChAtm*** cards, the value is ***1792***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, and ***3pDS3Atm*** cards, the value is ***2304***. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm***

cards, the value is ***10240***. For ***4pMRPosAtm*** cards, the value is ***40960*** for OC-12 channels. For MSA32 cards, the value is ***10240*** for OC-3 channels, and ***1792*** for DS1, or E1 channels. For ***1pOC12SmLrAtm*** cards, the value is ***6144***.

The operational value of the maximum length of a queue (common or per-VC) is indicated by the *Vcc Tm*, *Vpc Tm*, or *Vpt Tm txQueueThresholds* attribute.

For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr txQueueLimit* value as their default.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr* and *Ubr* components and the valid range is from ***5*** to ***30000*** inclusive.

Mib	AtmCore
Values	Decimal (5..63488) autoConfigure
Units	cells
Default	autoConfigure

ATTRIBUTE AtmIf CA Abr minPerVcQueueLimit (minpervcql)

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum queue limit for the per-VC queues of connections of the ABR service category. This attribute is ignored for ***1pOC12SmLrAtm*** cards, because they do not support per-VC queues for the ABR service category. The queue limit of a per-VC queue is obtained by scaling down the *txQueueLimit* attribute based on the peak cell rate of that queue (for standard *Vpt* VCCs, the shaping rate of the *Vpt*). This

produces a constant delay for various queue lengths. The value of the *txQueueLimit* attribute provides an upper bound while the value of the *minPerVcQueueLimit* attribute provides the lower bound.

The value of this attribute must not be greater than the value of the *txQueueLimit* attribute. If this service category is used by Trunks, the value of the *minPerVcQueueLimit* attribute must be at least ***88***.

For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr minPerVcQueueLimit* value as their default.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr* and *Ubr* components.

Mib	AtmCore
Values	Decimal (5..63488)
Units	cells
Default	88

ATTRIBUTE AtmIf CA Abr perVcQueueLimitReferenceRate (refrate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping rate to be used in computing the tolerable delay for per-VC queues of connections of the ABR service category. The delay is computed as the *txQueueLimit* divided by the value of this attribute. This attribute is ignored for ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, because they do not support traffic shaping for the ABR service category. A value of ***autoConfigure*** means an appropriate value is selected

based on the card type. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, and ***4pDS3ChAtm*** cards, the value is ***3685***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, and ***3pDS3Atm*** cards, the value is ***14740***. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***16pOC3SmIrAtm***, and ***16pOC3PosAtm*** cards, the value is ***65511***. For ***4pMRPosAtm*** cards, the value is ***262044*** for OC-12 channels. For MSA32 cards, the value is ***65511*** for OC-3 channels, and ***3685*** for DS1, or E1 channels. For ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***262044***.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr*, and *Ubr* components.

For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr perVcQueueLimitReferenceRate* value as their default.

Mib	AtmCore
Values	Decimal (1..943396) autoConfigure
Units	cell/s
Default	autoConfigure

ATTRIBUTE AtmIf CA Abr emissionPriority (ep)

Access	Read and write
Criticality	Process
Description	This attribute specifies the emission priority (EP) which is used to transmit traffic of the ABR service category. A lower numerical value for this attribute specifies a higher emission priority. 0 is the highest EP and 7 is the lowest. Cells at a higher emission priority receive higher preference for link bandwidth.

EP 0 and EP 1 are in the absolute priority range and are unaffected by any minimum bandwidth guarantees. EP 2 through EP 7 are in the guaranteed bandwidth range and may achieve a priority which is different from the strict hierarchical priority, if a minimum bandwidth guarantee is provisioned. A minimum bandwidth guarantee is specified in the *AtmIf*/n *Ep*/m component.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC12SmLrAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= ABR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.
3. CBR and rt-VBR may be placed either in the absolute priority range (EP 0 or 1) or in the guaranteed bandwidth range (EP 2 through 7).
4. If both CBR and rt-VBR are shaped, rt-VBR must share the same EP with CBR or ABR. If either one of CBR or rt-VBR are not shaped, then they cannot share the same EP.
5. ABR service category is always deemed to be shaped. If nrt-VBR is shaped, it must share the same EP with ABR. If nrt-VBR is not shaped it must have a higher EP than ABR.
6. If UBR is shaped, it must share the same EP with ABR. If UBR is not shaped, it must have a lower EP than ABR.

Mib	AtmCore
Values	Decimal (0..7)
Default	6

ATTRIBUTE AtmIf CA Abr fairnessPolicy

Access	Read and write
Criticality	Process
Description	This attribute specifies the fairness policy which is applied to available bandwidth when performing the ER calculation in the ABR service category. This applies to any connection point performing explicit rate calculations. Each ABR connection is assigned a weight. Connections with a higher weight get a greater proportion of the available ABR bandwidth compared with connections that have lower weights. A value of ***mcr*** means the congestion fairness weight is based on the Minimum Cell Rate (MCR) of the connection. A value of ***pcr*** means the congestion fairness weight is based on the Peak Cell Rate (PCR) of the connection. A value of ***pcrMinusMcr*** means the congestion fairness weight is based on the difference between the Peak Cell Rate and the Minimum Cell Rate (PCR - MCR) of the connection. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards.
Mib	AtmCore
Values	mcr pcr pcrMinusMcr
Default	pcrMinusMcr

ATTRIBUTE AtmIf CA Abr frttPortion

Access	Read and write
Criticality	Process
Description	This attribute specifies the portion of the Fixed Round Trip Time (FRTT) which is added to each ABR call setup which traverses this interface. The FRTT for the entire call is the sum of the FRTT portions for each interface traversed by the call. FRTT is

used by the ABR Source or Virtual Source to adjust the value of ICR according to the rules specified in the ATM Forum TM Version 4.0 specification.

The *frttPortion* attribute includes propagation delay through the physical media, plus delays included by the transmission system, plus fixed components of switch processing delay.

This attribute is used by ATM Networking at call set-up time for ABR connections directed over this interface.

Mib	AtmCore
Values	Decimal (0..10000)
Units	msec
Default	5

ATTRIBUTE AtmIf CA Abr abrConnectionType (abrType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default type for ABR connections. It may be overridden for a permanent connection by specifying a value in the *abrConnectionType* attribute of the *Vcd Tm* or *Vpd Tm* component, or by other configuration options. For example, for ABR end point connections originating at this switch, the *Vcc Tm abrConnectionType* will show ***sourceDest*** regardless of the setting of this attribute. If the value is ***abrSwitch***, traversing ABR connections default to type ***abrSwitchEr*** or ***abrSwitchEfci***, depending on the card type. If the interface to which traffic is directed across the backplane is configured as type ***virtualSourceDest*** and this is a ATM IP FP, then connection points under this *AtmIf* are activated as type ***virtualSourceDest***. If the value is ***virtualSourceDest***, traversing ABR connections may be instantiated as one of the following types: ***abrSwitchEr***, ***abrSwitchEfci***, or ***virtualSourceDest***. A Virtual Source-Virtual

Destination (VS/VD) boundary forms a break in the end to end flow of RM cells as defined in the ATM Forum Specification for Traffic Management Version 4.0. On ATM IP cards, a VS/VD boundary can be configured for a connection providing all of the following conditions are met:
1. the ABR connection is traversing (not terminating at) this interface;
2. both this interface and next hop interface to which traffic is directed across the backplane are located on ATM IP cards;
3. one or both connecting points are configured as ***virtualSourceDest***,
4. the next hop interface to which traffic is directed across the backplane is not configured as ***nonAbrInterworking***.

If this attribute is set to ***nonAbrInterworking***, this interface is defined as a point of interworking between an ABR and a non-ABR connection. In this case the next hop interface to which traffic is directed across the backplane is activated as type ***sourceDest***.

The *Vcc Tm* or *Vpc Tm abrConnectionType* operational attribute indicates what type of ABR connection was activated.

Mib	AtmCore
Values	abrSwitch virtualSourceDest nonAbrInterworking
Default	abrSwitch

ATTRIBUTE AtmIf CA Abr usageParameterControl (upc)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default usage parameter control (UPC) option for connections of the ABR service category. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. A value of ***enforced*** means UPC is enforced for each connection.

When UPC is enforced on an ABR connection, non-conforming cells are discarded.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, a value of ***enforced*** means UPC for ABR connection is enforced as a Dynamic Generic Cell Rate Algorithm (DGCRA) based on the connection traffic descriptor.

For all other cards, a value of ***enforced*** means the connection enforces a single GCRA policer at the defined PCR and CDVT for this connection.

A value of ***monitored*** means UPC conformance checking is performed, except, instead of the non-conforming cells being discarded, they are merely counted in the UPC violations counts and passed on unchanged.

A value of ***disabled*** means UPC is disabled on the receive path for all ABR connections.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported. This value has the same effect as ***disabled***.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

Mib	AtmCore
Values	enforced disabled monitored
Default	disabled

ATTRIBUTE AtmIf CA Abr initialCellRate (icr)

Access	Read and write
Criticality	Process

Description	This attribute specifies the default Initial Cell Rate (ICR) parameter for ABR connections. ICR is the rate at which a source should send initially and after an idle period. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component, or signaled in the ABR Setup Parameters Information Element. A value of ***useMcr*** means ICR is set to the same value as the Minimum Cell Rate (MCR) for the connection. A value of ***usePcr*** means ICR is set to the same value as the Peak Cell Rate (PCR) for the connection. When the value is an explicit number, that number is used as the ICR, provided it is between MCR and PCR. If the value is below MCR, then MCR is used as ICR. If the value is above PCR, then PCR is used as ICR.
Mib	AtmCore
Values	Decimal (0..16777215) useMcr usePcr
Units	cell/s
Default	usePcr

ATTRIBUTE AtmIf CA Abr rateDecreaseFactor (rdf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default Rate Decrease Factor (RDF) for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component, or signaled in the ABR Setup Parameters Information Element. The RDF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is ***8***, RDF is 2E-8 = 1/256.

RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (B-RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

Mib: AtmCore

Values: Decimal (0..15)

Default: 15

ATTRIBUTE AtmIf CA Abr rateIncreaseFactor (rif)

Access: Read and write

Criticality: Process

Description: This attribute specifies the default Rate Increase Factor (RIF) for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component, or signaled in the ABR Setup Parameters Information Element.

The RIF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is ***6***, RIF is 2E-6 = 1/64.

RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (B-RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR.

Mib: AtmCore

Values: Decimal (0..15)

Default	0

ATTRIBUTE AtmIf CA Abr maxCellPerRmCell (nrm)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default number of user cells per Resource Management cell (NRM) for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component, or signaled as the NRM parameter in the ABR Additional Parameters Information Element. NRM is the maximum number of cells an ABR source may transmit for each forward Resource Management (F-RM) cell. The count of the cells transmitted includes user cells, OAM cells, backward RM cells and the forward RM cell. Note that a value of 2 is not recommended even though it is permitted according to the ATM Forum standard. When this attribute is set to a value of 2, it is possible that only one forward and one backward RM cell are repeatedly transmitted and all data traffic is queued up indefinitely. This attribute is ignored under all conditions where the *Vcc Tm* or *Vpc Tm* operational attribute *abrConnectionType* indicates ***explicitRateMarking***.
Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256)
Units	cells
Default	256

ATTRIBUTE AtmIf CA Abr maxTimeBetweenRmCell (trm)

Access	Read and write
Criticality	Process

Description	This attribute specifies the default time between Resource Management cells (TRM) for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component, or signaled in the ABR Additional Parameters Information Element. TRM provides an upper bound on the time interval between forward Resource Management (F-RM) cells for an ABR source. Since the last F-RM cell was sent, if at least TRM time has elapsed and at least 2 other cells have been sent, the next cell to be transmitted would be a forward RM cell. This attribute is ignored under all conditions where the *Vcc Tm* or *Vcd Tm* operational attribute *abrConnectionType* is displayed as ***explicitRateMarking***. The provisioned value of 781 is signaled in the ABR Additional Parameters Information Element as 0. 1563 is signaled as 1. 3125 is signaled as 2. 6250 is signaled as 3. 12500 is signaled as 4. 25000 is signaled as 5. 50000 is signaled as 6. 100000 is signaled as 7.
Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000)
Units	microsec
Default	100000

ATTRIBUTE AtmIf CA Abr cutoffDecreaseFactor (cdf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default Cutoff Decrease Factor (CDF) parameter for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr*

or *Vpd Tm Abr* component, or signaled in the ABR Additional Parameters Information Element.

When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero.

CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the CRM parameter. CRM is the limit of the number of forward Resource Management (F-RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the MCR, in which case the ACR is set to MCR.

Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64)
Default	16

ATTRIBUTE AtmIf CA Abr acrDecreaseTimeFactor (adtf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default Allowed Cell Rate Decrease Time Factor (ADTF) parameter for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component, or signaled in the ABR Additional Parameters Information Element. ADTF is the time interval permitted between sending forward Resource Management (F-RM) cells before the Allowed Cell Rate (ACR) is decreased to the Initial Cell Rate (ICR). In other words, if the source does not transmit a forward RM cell for a period of ADTF centi-seconds (hundredths of a second), it will reduce its ACR to the value of its ICR. If ACR is already at or below ICR, further rate reductions are defined by the CRM ABR parameter.

Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	50

ATTRIBUTE AtmIf CA Abr dgcraMaximumDelay (dgcraMaxDelay)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default maximum delay for Dynamic General Cell Rate Algorithm (DGCRA) rate changes for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component. This attribute specifies an upper bound on the delay after which the rate change induced by a backward Resource Management (B-RM) cell departing from this interface (in the backward direction) is expected to be observed at the interface (in the forward connection). This upper bound may be approximated as the round trip sum of the fixed and propagation delays and the maximum queuing delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the DGCRA. A larger value for this attribute implies a more lenient policer. When there is a decrease in the Allowed Cell Rate (ACR), the policer waits a correspondingly longer period of time before it enforces the new cell rate. The value of this attribute must be greater than or equal to *dgcraMinimumDelay*, since the maximum delay must be greater than or equal to the minimum delay.
Mib	AtmCore
Values	Decimal (1..16700000)

Units	microsec
Default	10000

ATTRIBUTE AtmIf CA Abr dgcraMinimumDelay (dgcraMinDelay)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default minimum delay for Dynamic General Cell Rate Algorithm (DGCRA) rate changes for ABR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm Abr* or *Vpd Tm Abr* component. This attribute specifies a lower bound on the delay after which the rate change induced by a backward Resource Management (B-RM) cell departing from this interface (in the backward direction) is expected to be observed at the interface (in the forward connection). This lower bound may be approximated as the round trip sum of the fixed and propagation delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the DGCRA. A smaller value for this attribute implies a more lenient policer. When there is an increase in the Allowed Cell Rate (ACR), the policer waits for a correspondingly shorter period of time before it enforces the new cell rate. The value of this attribute must be less than or equal to *dgcraMaximumDelay*, since the maximum delay must be greater than or equal to the minimum delay.
Mib	AtmCore
Values	Decimal (1..16700000)
Units	microsec
Default	1

ATTRIBUTE AtmIf CA Abr holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVP and SVC ABR connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs. When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs is released as a unit, according to the *Vpt*'s *holdingPriority*.
Mib	AtmCore
Values	0 1 2 3 4
Default	3

GROUP AtmIf CA Abr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the ABR service category. There is no support for ABR connections on any ATM cards at this time.
Mib	AtmCore

ATTRIBUTE AtmIf CA Abr epdOffset (epdO)

Access	Read only

Description	This attribute indicates the Early Packet Discard (EPD) offset which is currently in use for this service category. The EPD offset is used to derive the EPD thresholds for each CC level. Any connection under this service category which requires the transmit Packet Wise Discard feature must specify a transmit queue limit which is at least 5.71 times this offset. This ensures that the derived Epd threshold will never be less than 17.5% of the transmit queue limit. If this is not done, txPacketWiseDiscard for the connection will be automatically disabled. The value of this EPD offset is specified in the *Lp Eng Arc Aqm Ov* component. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards, this attribute is not available and is filtered from the display.
Mib	AtmCore
Values	Decimal (0; 5..1024)
Units	cells
Default	No default

COMPONENT AtmIf CA UnspecifiedBitRate (Ubr)

Instance	Decimal (0)
Groups	"GROUP AtmIf CA Ubr Provisioned (Prov)" "GROUP AtmIf CA Ubr Operational (Oper)"
Scope	Device

Description	*AtmIf/n CA UnspecifiedBitRate/n* This component manages the default characteristics of the unspecified bit rate (UBR) service category.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf CA Ubr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes for the UBR service category.
Mib	AtmCore

ATTRIBUTE AtmIf CA Ubr maxVpcs (vpcs)

Access	Read and write
Description	This attribute specifies the maximum number of UBR VPCs that can be activated on this *AtmIf* component. The value of this attribute must not exceed the *maxVpcs* attribute of the parent *CA* component. A value of ***sameAsCa*** means the maximum number of VPCs is defined by the *AtmIf*/n *CA maxVpcs* attribute. Changes to this attribute do not affect existing VPCs. If the value is changed to a number smaller than the current number of active UBR VPCs, no new UBR VPCs are admitted until the number of active UBR VPCs drops below the value of this attribute. The current number of active UBR VPCs is indicated by the *Ubr/0 vpcUsage* operational attribute.
Mib	AtmCore
Values	Decimal (0..4096) sameAsCa

Default	sameAsCa

ATTRIBUTE AtmIf CA Ubr maxVccs (vccs)

Access	Read and write
Description	This attribute specifies the maximum number of UBR VCCs that can be activated on this *AtmIf* component, including UBR *Vpt* VCCs. The value of this attribute must not exceed the *maxVccs* attribute of the parent *CA* component. A value of ***sameAsCa*** means the maximum number of VCCs is defined by the *AtmIf*/n *CA maxVccs* attribute. Changes to this attribute do not affect existing VCCs. If the value is changed to a number smaller than the current number of active UBR VCCs, no new UBR VCCs are admitted until the number of active UBR VCCs drops below the value of this attribute. The current number of active UBR VCCs is indicated by the *Ubr/0 vccUsage* operational attribute.
Mib	AtmCore
Values	Decimal (0..16384) sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf CA Ubr maxVpts (vpts)

Access	Read and write
Description	This attribute specifies the maximum number of UBR VPTs that can be activated on this *AtmIf* component. The value of this attribute must not exceed the *maxVpts* attribute of the parent *CA* component. A value of ***sameAsCa*** means the maximum number of VPTs is defined by the *AtmIf*/n *CA maxVpts* attribute. Changes to this attribute do not affect existing VPTs. If the value is changed to a number smaller than the current number of active UBR VPTs, no new UBR VPTs are admitted until the number of active UBR VPTs drops below the value of this attribute. The

current number of active UBR VPTs is indicated by the *Ubr/0 vptUsage* operational attribute.

Mib: AtmCore

Values: Decimal (0..4096)
sameAsCa

Default: sameAsCa

ATTRIBUTE AtmIf CA Ubr pool

Access: Read and write

Criticality: Process

Description: This attribute specifies the bandwidth pool which is to be used to support the unspecified bit rate (UBR) service category (excluding connections managed by a *Vpt CA*). The percentage of link capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to UBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *CA* component.

The amount of bandwidth reserved for each UBR connection is specified in the *minimumCellRate* attribute.

Mib: AtmCore

Values: pool1
pool2
pool3
pool4
pool5

Default: pool1

ATTRIBUTE AtmIf CA Ubr minimumCellRate (mcr)

Access: Read and write

Description: This attribute specifies the minimum cell rate (MCR) which is allocated from the UBR bandwidth pool for each UBR connection which is admitted using Connection Admission Control (CAC) (excluding connections managed by a *Vpt CA*).

	UBR connections normally are serviced on a best effort basis, but this attribute allows allocation of a default minimum bandwidth for each connection.
Mib	AtmCore
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE AtmIf CA Ubr txQueueLimit (txql)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default maximum queue length for the emission queues used to buffer the traffic of the UBR service category. It is used as the basis for setting both the queue length and the discard thresholds on both common and per-VC queues. For the common queue, the discard thresholds are set at approximately 35, 75, and 90 percent of the value of this attribute for traffic at discard priority 3 (DP=3), DP=2, and DP=1 respectively. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, common queuing is not available for the UBR service category. For a per-VC queue, the actual queue length may be reduced depending on the shaping rate of the connection (for standard *Vpt* VCCs, this is the shaping rate of the *Vpt*). The discard thresholds are set at approximately 35, 75, and 90 percent of the scaled queue limit for traffic at discard priority 3 (DP=3), DP=2, and DP=1 respectively. However, a reduction will never result in a value that is less than the value of the *minPerVcQueueLimit* attribute. The per-VC queue limit may be overridden for a provisioned connection by specifying a value in the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, per-VC queues are not available for the UBR service category.

For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the maximum size of the link-class queue for buffering the egress traffic of the UBR service category. This is similar to common queuing, except that each UBR connection maintains a per-VC utilization limit of the common queue specified for a provisioned connection by the *Vcd Tm* or *Vpd Tm txQueueLimit* attribute.

A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, and ***4pDS3ChAtm*** cards, the value is ***1792***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, and ***3pDS3Atm*** cards, the value is ***2304***. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***10240***. For MSA32 cards, the value is ***10240*** for OC-3 channels, and ***1792*** for DS1, or E1 channels. For ***4pMRPosAtm*** cards, the value is ***40960*** for OC-12 channels. For ***1pOC12SmLrAtm*** cards, the value is ***4096***. For ***1pOC48ChSmIrAtm*** cards, the value is ***20480.***

The operational value of the maximum length of a queue (common or per-VC) is indicated by the *Vcc Tm, Vpc Tm,* or *Vpt Tm txQueueThresholds* attribute.

For standard VPTs, this attribute only applies when using common queuing. When using per-VC queuing, regardless of the *Vpt's* service category, standard VPTs use the *AtmIf CA NrtVbr txQueueLimit* attribute value as their default.

This attribute does not apply to basic VPTs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr* and *Ubr* components and the valid range is from ***5*** to ***30000*** inclusive.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***,

3pDS3Atm2, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***63488*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840) autoConfigure
Units	cells
Default	autoConfigure

ATTRIBUTE AtmIf CA Ubr minPerVcQueueLimit (minpervcql)

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum queue limit for the per-VC queues of connections of the UBR service category. This attribute is ignored for ***1pOC12SmLrAtm*** cards, because they do not support per-VC queues for the UBR service category. The queue limit of a per-VC queue is obtained by scaling down the *txQueueLimit* attribute based on the shaping rate of that queue (shaping rate for the connection and for standard *Vpt* VCCs, the shaping rate of the *Vpt*). This produces a constant delay for various queue lengths. The value of the *txQueueLimit* attribute provides an upper bound while the value of the *minPerVcQueueLimit* attribute provides the lower bound.

The value of this attribute must not be greater than the value of the *txQueueLimit* attribute. If this service category is used by Trunks the value of the *minPerVcQueueLimit* attribute must be at least ***88***.

For VPTs, this attribute does not apply. Regardless of *Vpt*'s service category, standard VPTs always use the *AtmIf CA NrtVbr minPerVcQueueLimit* value as their default. To determine the queue limit of a standard *Vpt Vcc*, the *txQueueLimit* attribute is scaled down by the *Vpt* shaping rate.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr*, and *Ubr* components.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC48ChSmIrAtm*** cards, the valid range for this attribute is from ***5*** to ***160000*** inclusive.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from ***92*** to ***512000*** inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

Mib	AtmCore
Values	Decimal (5..1011840)
Units	cells
Default	88

ATTRIBUTE AtmIf CA Ubr perVcQueueLimitReferenceRate (refrate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping rate to be used in computing the tolerable delay for per-VC queues of connections of the UBR service category. The delay is computed as the *txQueueLimit* divided by the value of this attribute. This attribute is ignored for ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, because they do not support traffic shaping for the UBR service category. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***2pSTM1eCh***, and ***4pDS3ChAtm*** cards, the value is ***3685***. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, and ***3pDS3Atm*** cards, the value is ***14740***. For ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***16pOC3SmIrAtm***, and ***16pOC3PosAtm*** cards, the value is ***65511***. For MSA32 cards, the value is ***65511*** for OC-3 channels, and ***3685*** for DS1, or E1 channels. For ***4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards, the value is ***262044***. For ***4pMRPosAtm*** cards, the value is ***262044*** for OC-12 channels. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute must be set to the same value for *CA NrtVbr*, *Abr*, and *Ubr* components. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards the maximum value is ***1416905***. For ***16pOC3PosAtm*** cards, the maximum value is ***353207***. For ***4pMRPosAtm*** cards, the maximum value is ***1412830***. For all other cards, the maximum value is ***943396***. For VPTs, this attribute does not apply. Regardless of the *Vpt's* service category, standard VPTs always use the *AtmIf CA NrtVbr perVcQueueLimitReferenceRate* value as their default.

Mib	AtmCore
Values	Decimal (1..1416905) autoConfigure
Units	cell/s
Default	autoConfigure

ATTRIBUTE AtmIf CA Ubr emissionPriority (ep)

Access	Read and write
Criticality	Process
Description	This attribute specifies the emission priority (EP) which is used to transmit traffic of the UBR service category. A lower numerical value for this attribute specifies a higher emission priority. 0 is the highest EP and 7 is the lowest. Cells at a higher emission priority receive higher preference for link bandwidth. EP 0 and EP 1 are in the absolute priority range and are unaffected by any minimum bandwidth guarantees. EP 2 through EP 7 are in the guaranteed bandwidth range and may achieve a priority which is different from the strict hierarchical priority, if a minimum bandwidth guarantee is provisioned. A minimum bandwidth guarantee is specified in the *AtmIf*/n *Ep*/m component. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC12SmLrAtm*** cards, emission priority setting must comply with all of the following constraints: 1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= ABR <= UBR 2. Two different ATM service categories may share the same EP

only if they are both shaped.
3. CBR and rt-VBR may be placed either in the absolute priority range (EP 0 or 1) or in the guaranteed bandwidth range (EP 2 through 7).
4. If both CBR and rt-VBR are shaped, rt-VBR must share the same EP with CBR or ABR. If either one of CBR or rt-VBR are not shaped, then they cannot share the same EP.
5. ABR service category is always deemed to be shaped. If nrt-VBR is shaped, it must share the same EP with ABR. If nrt-VBR is not shaped it must have a higher EP than ABR.
6. If UBR is shaped, it must share the same EP with ABR. If UBR is not shaped, it must have a lower EP than ABR.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.
3. EP 0 must be used if traffic shaping is required.
4. EP 5 and EP 6 are not supported.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, emission priority setting must comply with all of the following constraints:
1. The emission priority numbers must be in the following order: CBR <= rt-VBR <= nrt-VBR <= UBR
2. Two different ATM service categories may share the same EP only if they are both shaped.

For ***1pOC48ChSmIrAtm*** cards, only the default value is supported.

Mib	AtmCore
Values	Decimal (0..7)
Default	7

ATTRIBUTE AtmIf CA Ubr trafficShaping (trShaping)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default traffic shaping option for connections of the UBR service category. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. This attribute does not apply to basic VPTs, or standard *Vpt VCCs*. A value of ***disabled*** means traffic shaping cannot be enabled for any UBR connections. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled*** since traffic shaping is not supported for UBR connections on these cards. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value of this attribute may be ***enabled*** only if the interface supports shaping, as defined by the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component. If that component does not exist, the value of this attribute must be ***disabled***. If the *Vcc Tm, Vpc Tm,* or *Vpt Tm txTrafficDescType* attribute indicates type 1 or 2, this attribute is ignored and traffic shaping is not applicable for that connection. A value of ***inverseUpc*** means traffic shaping for a connection is enabled according to the value of the *Vcc Tm, Vpc Tm,* or *Vpt Tm txTrafficDescType*. A value of ***inverseUpc*** when the *txTrafficDescType* is 3, 4, 5, or 9 (for UBR with MDCR connections), means linear traffic shaping is enabled. Linear traffic shaping uses a single static traffic shaping rate. A value of ***inverseUpc*** when the *txTrafficDescType* is 6, 7, or 8,

means inverse-UPC (also referred to as VBR or dual leaky bucket) traffic shaping is enabled. Inverse-UPC traffic shaping can burst above the sustained cell rate to the peak cell rate for the duration defined by maximum burst size. Inverse-UPC traffic shaping exactly conforms to the requirements of a dual leaky bucket UPC enforcer.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***inverseUpc*** is not available.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***inverseUpc*** is not supported and is equivalent to the value ***enabled***.

A value of ***enabled*** when the *txTrafficDescType* is 3, 4, 5, 6, 7, 8, or 9 (for UBR with MDCR connections), means traffic shaping for a connection is enabled using linear shaping.

Enabling or disabling traffic shaping may require a matching change to the *emissionPriority* attribute, and the *unshapedTransmitQueueing* attribute for this service category. Refer to those attributes for the complete description of the interactions.

Mib	AtmCore
Values	enabled disabled inverseUpc
Default	disabled

ATTRIBUTE AtmIf CA Ubr shapeRecoupPolicy (recoup)

Access	Read and write
Criticality	Process
Description	This attribute specifies the shaping recoup policy for the UBR service category. This is the policy which is used to recoup shaping opportunities which are lost when more than one connection schedules a cell for the same transmit opportunity. In

this case, one connection is scheduled and the cell from the other connection is delayed by one cell time. This attribute affects how the transmit time is calculated for the next cell on the delayed connection. This attribute is ignored if this service category is not shaped.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

This attribute is not applicable and is ignored for ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards.

When the connection which was delayed schedules the next cell to transmit, it may calculate the time as a difference from either the previous actual cell transmit time, or the time when the previous cell should have been transmitted.

A value of ***maximumEfficiency*** results in each connection trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell should originally have been sent. Cell delay variation (CDV) occurs in this case since the cells are sent with less than the shaping delay between them. However, in general the shaper recovers (recoups) lost opportunities and improves efficiency.

A value of ***minimumCdv*** results in connections not trying to recoup or regain any delays in scheduling. The transmit time for the next cell is calculated from the time when the previous cell was actually transmitted. This minimizes CDV, but results in missed cell opportunities.

Mib	AtmCore
Values	minimumCdv maximumEfficiency
Default	maximumEfficiency

ATTRIBUTE AtmIf CA Ubr unshapedTransmitQueueing (unshap)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default queuing option for unshaped connections of the UBR service category. This attribute controls whether common or per-VC queuing is used. A value of ***perVc*** means that each connection has its own buffering and queue limits. A value of ***common*** means that cells are queued in First In First Out order on a common queue for this service category. The common queue has one set of congestion control levels for all cells enqueued on it. This attribute does not apply to basic VPTs, or standard *Vpt* VCCs. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, if the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component permits shaping for this interface, then this attribute may take any of the three values. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing. If the *perVcQueueInterfaces* attribute of the *Lp Eng Arc Cqc Ov* component does not permit shaping for this interface, then this attribute may take the values ***common***, or ***autoConfigure***. In this case, the value ***autoConfigure*** is interpreted to mean common queuing. An override to this default may be specified for a provisioned connection under the *Vcd Tm*, or *Vpd Tm* component. There is one common queue which is shared by the nrt-VBR, ABR, and UBR service categories. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value ***perVc*** is not supported since these cards do not support per-VC queuing. The value ***autoConfigure*** is interpreted to mean common queuing. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***common*** is not supported since these cards do

not support common queuing. The value ***autoConfigure*** is interpreted to mean per-VC queuing.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, if traffic shaping for this service category is disabled, this attribute may take any of the three values. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing. If traffic shaping for this service category is not disabled, the only permitted values are ***perVc*** and ***autoConfigure***. In this case, the value ***autoConfigure*** is interpreted to mean per-VC queuing.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, no more than 32,000 connections on the FP can use per-VC queuing. The remaining connections must use common queuing. The *Lp Eng Arc perVcQueueUsage* attribute indicates the number per-VC queues that are currently in use.

The value of the operational *opUnshapedTransmitQueueing* attribute of this component indicates whether the transmit queuing is ***perVc*** or ***common***.

Mib	AtmCore
Values	perVc common autoConfigure
Default	autoConfigure

ATTRIBUTE AtmIf CA Ubr usageParameterControl (upc)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default usage parameter control (UPC) option for connections of the UBR service category. This attribute is ignored if the *rxTrafficDescriptorType* indicates 1 or 2. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

A value of ***enforced*** means UPC is enforced for each connection. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*.

A value of ***monitored*** means UPC conformance checking is performed, except, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged.

A value of ***disabled*** means UPC is disabled on the receive path for all UBR connections.

This attribute does not apply to basic VPTs, or standard *Vpt* VCCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported. This value has the same effect as ***disabled***.

For ***1pOC48ChSmIrAtm*** cards, the value of this attribute must be ***disabled***.

Mib	AtmCore
Values	enforced disabled monitored
Default	disabled

ATTRIBUTE AtmIf CA Ubr weightPolicy

Access	Read and write
Criticality	Process
Description	This attribute specifies the policy which is applied when calculating the fairness weight for unshaped connections of the UBR service category. The fairness weight for a connection determines the relative amount of bandwidth which that connection obtains, compared to other connections in the same

service category. Connections with equal weight get equal transmit opportunities. Connections with higher weights get more transmit opportunities compared with connections that have lower weights. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component.

The fairness weight for a connection is directly proportional to the value of one of the traffic descriptor parameters for that connection. This attribute specifies which traffic descriptor parameter is used for connections of the UBR service category.

A value of ***mcr*** means the fairness weight is proportional to the default minimum cell rate (MCR) for UBR connections. If the default minimum cell rate is 0, all UBR connections get a minimum weight, which is 1.

A value of ***pcr*** means the fairness weight is proportional to the transmit peak cell rate (PCR) of a connection. Connections with a higher PCR have a higher fairness weight. Connections with *txTrafficDescType* 1 or 2 get a minimum weight, which is 1.

A value of ***ecr*** means the fairness weight is proportional to the equivalent cell rate (ECR) of a connection as calculated by connection admission control (CAC). Connections with a higher ECR have a higher fairness weight. Connections with an ECR of 0 get a minimum weight, which is 1.

The weight of a connection is visible in the *Vcc Tm, Vpc Tm,* or *Vpt Tm weight* attribute.

This attribute does not apply to basic VPTs and standard *Vpt* VCCs.

This attribute is ignored if the value of the *unshapedTransmitQueueing* attribute is ***common***.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards.

Mib	AtmCore
Values	mcr pcr ecr
Default	ecr

ATTRIBUTE AtmIf CA Ubr forceTagging (tag)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default force tagging (CLP=1) value of all cells for all UBR connections. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. A value of ***enabled*** means CLP is set to 1 for all cells. This is in conformance with the ATM Forum TM4.0 UBR.2 service definition. A value of ***disabled*** means CLP is unchanged for all cells. This is in conformance with the ATM Forum TM4.0 UBR.1 service definition. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction. This attribute does not apply to any type of *Vpt*. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards.
Mib	AtmCore
Values	enabled disabled

Default	disabled

ATTRIBUTE AtmIf CA Ubr cdvt

Access	Read and write
Criticality	Process
Description	This attribute specifies the default cell delay variation tolerance (CDVT) for all connections of the UBR service category (including connections managed by a *Vpt CA*). An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. If Usage Parameter Control (UPC) is enabled for a connection, CDVT is used by the UPC function to decide whether a cell is conforming or non-conforming based on the connection's traffic descriptor type. The larger the CDVT value, the more tolerant is the UPC of bandwidth usage beyond the traffic contract.
Mib	AtmCore
Values	Decimal (1..1200000)
Units	microsec
Default	250

ATTRIBUTE AtmIf CA Ubr holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the default holding priority which applies to SVP and SVC UBR connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. This attribute does not apply to *Vpt* VCCs. When bandwidth

fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs is released as a unit, according to the *Vpt*'s *holdingPriority*.

Mib: AtmCore

Values:
0
1
2
3
4

Default: 3

ATTRIBUTE AtmIf CA Ubr svcMpHoldingPriority (svcMpHpri)

Access: Read and write

Criticality: Process

Description: This attribute specifies the default holding priority which applies to SVC UBR point-to-multipoint connections. It takes a value from 0 (highest priority) to 4 (lowest priority). In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released.

This attribute does not apply to *Vpt* VCCs. When bandwidth fluctuates, the entire *Vpt* component, along with all *Vpt* VCCs is released as a unit, according to the *Vpt*'s *holdingPriority*.

Mib: AtmCore

Values:
0
1
2
3
4

Default: 3

GROUP AtmIf CA Ubr Operational (Oper)

Properties: Operational

Description	This group contains operational attributes for the UBR service category.
Mib	AtmCore

ATTRIBUTE AtmIf CA Ubr opUnshapedTransmitQueueing (opUnshap)

Access	Read only
Description	This attribute indicates the type of transmit queuing for unshaped UBR connections. A value of ***perVc*** indicates that unshaped connections use per-VC queuing. A value of ***common*** indicates that unshaped connections use the common queue for this service category. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, the value ***common*** is always indicated since these cards do not support per-VC queuing. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the value ***perVc*** is always indicated since these cards do not support common queuing.
Mib	AtmCore
Values	perVc common
Default	No default

ATTRIBUTE AtmIf CA Ubr vpcUsage

Access	Read only
Description	This attribute indicates the number of active UBR VPCs under this interface. It includes switched and permanent connections.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE AtmIf CA Ubr vccUsage

Access	Read only
Description	This attribute indicates the number of active UBR VCCs under this interface. It includes switched and permanent connections and *Vpt* VCCs.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf CA Ubr vptUsage

Access	Read only
Description	This attribute indicates the number of active UBR VPTs under this interface.
Mib	AtmCore
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE AtmIf CA Ubr epdOffset (epdO)

Access	Read only
Description	This attribute indicates the Early Packet Discard (EPD) offset which is currently in use for this service category. The EPD offset is used to derive the EPD thresholds for each CC level. Any connection under this service category which requires the transmit Packet Wise Discard feature must specify a transmit queue limit which is at least 5.71 times this offset. This ensures that the derived Epd threshold will never be less than 17.5% of the transmit queue limit. If this is not done, txPacketWiseDiscard for the connection will be automatically disabled. The value of this EPD offset is specified in the *Lp Eng Arc Aqm Ov* component. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***,

	1pOC12SmLrAtm, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***1pOC48ChSmIrAtm***, ***16pOC3PosAtm***, and ***4pMRPosAtm*** cards, this attribute is not available and is filtered from the display.
Mib	AtmCore
Values	Decimal (0; 5..1024)
Units	cells
Default	No default

COMPONENT AtmIf VirtualPathConnection (Vpc)

Instance	Decimal (0..4095)
Groups	"GROUP AtmIf Vpc OsiState (State)" "GROUP AtmIf Vpc Operational (Oper)" "GROUP AtmIf Vpc ConnectionInfo (ConnInfo)" "GROUP AtmIf Vpc Status" "GROUP AtmIf Vpc Statistics (Stats)" "GROUP AtmIf Vpc Performance (Perf)"
Scope	Device
Description	*AtmIf/n VirtualPathConnection/vpi* This component represents a virtual path connection (VPC). The instance value defines the VPI value for this connection—for example, *Vpc/120* defines a path with a VPI of 120.

	A *VPC* is always a relay point. and as such can only have a either a *NRP* or a *Loop* subcomponent.
Mib	AtmCore
Subcomponents	"COMPONENT AtmIf Vpc VirtualPathDescriptor (Vpd)"
Opt. Subcomp.	"COMPONENT AtmIf Vpc Loop (Loop)" "COMPONENT AtmIf Vpc NailedUpRelayPoint (Nrp)" "COMPONENT AtmIf Vpc SourcePvp (Src)" "COMPONENT AtmIf Vpc MulticastNailedUpRelayPoint (Mnrp)" "COMPONENT AtmIf Vpc MplsConnection (MplsCon)"
Dyn. Subcomp.	"COMPONENT AtmIf Vpc RelayPoint (Rp)" "COMPONENT AtmIf Vpc TrafficManagement (Tm)" "COMPONENT AtmIf Vpc PerformanceMonitoring (Pm)" "COMPONENT AtmIf Vpc PathTraceRecord (PTRecord)" "COMPONENT AtmIf Vpc RerouteInfo (RerInfo)"
Dyn. Subcomp.	"COMPONENT AtmIf Vpc DestinationPvp (Dst)"
Common Verbs	Help List Display Add DELete

VERB TRACE AtmIf Vpc

Impact: Service

Description:

TRACE AtmIf/n Vpc/vpi
TRACE -s -v -a -e AtmIf/n Vpc/vpi
TRACE -p AtmIf/n Vpc/vpi

This command traces the path of an intra-network segment of a connection. It displays the names of interface and connection components found along this segment of a connection path. The trace output also includes the *Virtual Path Terminator (VPT)* at the end of the path, should one exist.

The option for the OAM trace is as follows:

-*p*: Selects the Nortel Networks proprietary OAM Connection Management Trace instead of the proprietary OAM Legacy Loopback Trace. If no options are provided, the default configuration uses the Legacy Loopback Trace.

The options for the signaling trace are as follows:

-*s*: Selects the PNNI signaling call trace instead of the Nortel Networks proprietary OAM-based trace procedure. Option -*s* must be present if any one of options -*v*, -*a*, and -*e* are present. Otherwise, it defaults to the OAM-based trace procedure.

-*v*: Requests that vpi value should be collected along the trace. This option is only valid when the -*s* option is present.

-*a*: Requests that the call reference/end point reference values be collected along the trace. This option is only valid when the -*s* option is present.

-*e*: Used on point-to-multipoint connections to specify the end

point reference value that indicates which party to trace. If no *-e* option is used for a point-to-multipoint connection, the default traces the path with the endpoint reference 0, which is the first party. This option is only valid when the *-s* option is present.

Only one connection trace is supported at a time. An error message is returned if a response from the network is not received within 30 seconds.

If the verb is issued with the *-s* option for the *Vpc/vpi* values that are not active or were not created by signaling (for example, control channels), the command is refused.

VERB CLEAR AtmIf Vpc

Impact	Service
Description	*CLEAR AtmIf/n Vpc/vpi* The *Clear* command applies to a dynamic *AtmIf/n Vpc/vpi* created for an SVP, or for the SVP segments of an SPVP. It does not apply to a provisioned *AtmIf/n Vpc/vpi*. This means that an SPVP can be cleared from its destination end or at any intermediate point, but not from the source end.

GROUP AtmIf Vpc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	AtmCore
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Vpc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmCore
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf Vpc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmCore
Values	idle active (activ) busy
Default	idle

GROUP AtmIf Vpc Operational (Oper)

Properties	Operational
Description	This group contains operational information for a *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc connectionPointType (cpt)

Access	Read only
Description	This attribute reflects the role of the connection component at this interface. A value of ***connectionEndPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are processed by the connection component. A value of ***segmentEndPoint*** indicates that user cells and end-to-end OAM cells are relayed by the connection component, while

segment OAM cells are processed by the connection component.

A value of ***connectingPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are relayed by the connection component.

A value of ***unknown*** indicates that the connection component is inactive.

Mib: AtmCore

Values:
connectionEndPoint
segmentEndPoint
connectingPoint
unknown

Default: No default

GROUP AtmIf Vpc ConnectionInfo (ConnInfo)

Properties: Operational

Description: This group contains operational connection characteristics information for a *Vcc* component.

Mib: AtmCore

ATTRIBUTE AtmIf Vpc distributionType (distrbt)

Access: Read only

Description: This attribute indicates the way data is distributed in the connection.

A value of ***pointToPoint*** indicates this connection point is part of a point-to-point connection.

A value of ***pointToMultipoint*** indicates this connection point is part of a point-to-multipoint connection.

Mib: AtmCore

Values:
pointToPoint
pointToMultipoint

Default	pointToPoint

ATTRIBUTE AtmIf Vpc numLeaves (nlvs)

Access	Read only
Description	This attribute indicates the number of destination leaves of the connection. If the *distributionType* is ***pointToPoint*** the value of this attribute is 0.
Mib	AtmCore
Values	Decimal (0..2147483647)
Default	0

ATTRIBUTE AtmIf Vpc callDirection (cdir)

Access	Read only
Description	This attribute indicates the direction of the call setup request for an SVC. A value of ***fromLink*** means that the call setup originated from the link. A value of ***toLink*** means that the call setup was directed to the link. For PVC connections, the value of this attribute is ***notApplicable.*** For SPVC connections, the value of this attribute is ***notApplicable*** for *Vccs* with the *SourcePVC* and *DestinationPVC* subcomponents. For Signaling channels, the value of this attribute is ***notApplicable***.
Mib	AtmCore
Values	fromLink toLink notApplicable
Default	notApplicable

GROUP AtmIf Vpc Status

Properties	Operational
Description	This group contains operational status information for a *Vcc*, *Vpc* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc operStatus (opStat)

Access	Read only
Description	This attribute indicates the present operational status of the *Vcc*, *Vpc* or *Vpt* component. Its value is dependent upon the current state of the *segLinkSideLoopbackState* and *endToEndLoopbackState* attributes. The value is ***end2endUp*** when the *endToEndLoopbackState* is ***good*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***end2endDown*** when the *endToEndLoopbackState* is ***bad*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***unknown*** and the *segLinkSideLoopbackState* is ***good***. The value is ***localDown*** when *segLinkSideLoopbackState* is ***bad***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***notApplicable*** and the *segLinkSideLoopbackState* is ***good***. The value is ***unknown*** when the *endToEndLoopbackState* is either ***unknown*** or ***notApplicable*** and the *segLinkSideLoopbackState* is ***unknown***.
Mib	AtmCore

Values	unknown end2endUp end2endDown localUpEnd2endUnknown localDown
Default	No default

ATTRIBUTE AtmIf Vpc localFailureCause

Access	Read only
Description	This attribute indicates the failure cause of the *Vcc*, *Vpc* or *Vpt* component. A value of ***noFailure*** indicates that there is currently no bandwidth related failure for this connection. A value of ***portDown*** indicates that the interface corresponding to the parent *AtmIf* is down. A value of ***localBwLoss*** indicates that the *AtmIf* has lost some, but not all bandwidth, and as a result, this connection has been released. A value of ***notAdmitted*** indicates that this connection has failed to be admitted by the Connection Admission Control (CAC) algorithm. A value of ***appNotRegistered*** indicates that there is no application registered to use this connection. This may be the case, for example when there is a *Vcc Test* application, but the test has not been started. Check the status of the application to determine why it is not functional. A value of ***disabledByApp*** indicates that the application using this connection has requested that the connection be disabled. An example is a connection used by a trunk application where the trunk has timed out on an attempt to stage. Check the application to determine why it is not fully functional. A value of ***bwReduced*** indicates that this connection is operating in a reduced bandwidth state. It is a bandwidth elastic connection which currently has been allocated less than the requested

(equivalent) bandwidth.

A value of ***vpDown*** indicates that this connection has been notified of a fault detected at the associated VP-layer. A value of ***vpDown*** is applicable for *Vpt Vcc*s only.

Mib: AtmCore

Values:
noFailure
localBwLoss
portDown
notAdmitted
appNotRegistered
disabledByApp
bwReduced
vpDown

Default: No default

ATTRIBUTE AtmIf Vpc troubled

Access: Read only

Description: This attribute indicates whether or not the connection is in a troubled state. Connections become troubled because of OAM failures; when one of the attributes *segLinkSideLoopbackState*, *segSwitchSideLoopbackState*, *endToEndLoopbackState*, *aisState* (when receiving AIS cells only) or *rdiState* go bad, this attribute is set to ***yes***; otherwise it is set to ***no***.

Mib: AtmCore

Values:
no
yes

Default: no

ATTRIBUTE AtmIf Vpc segLinkSideLoopbackState (segLkLbkState)

Access: Read only

Description: This attribute contains the current state of the link-side segment loopback for this connection. Link-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the link (port). The value of this attribute is

dependent upon the current setting of the *segLinkSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable).

The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint***.

The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***.

The value is ***good*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the segment link side loopback is working.

The value is ***bad*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the link side segment loopback is not working.

The value is ***unknown*** when the *segLinkSideLoopback* is ***off***.

The value is ***unknown*** when the value of the *segLinkSideLoopback* attribute is ***on***, the *connectionPointType* attribute is set to ***segmentEndPoint*** or ***connectionEndPoint***, and the segment link side loopback has not yet been determined.

The state of this attribute determines, in part, the value of the *operStatus* attribute**.**

Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vpc segSwitchSideLoopbackState (segSwLbkState)

Access	Read only
Description	This attribute contains the current state of the switch-side segment loopback for this connection. Switch-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the bus. The value of this attribute is dependent upon the current setting of the *segSwitchSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable). The value is only applicable when the *connectionPointType* is a ***segmentEndPoint***. The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or ***connectionEndPoint***. The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***. The value is ***good*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback is working. The value is ***bad*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the switch side segment loopback is not working. The value is ***unknown*** when the *segSwitchSideLoopback* is ***off***. The value is ***unknown*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback has not been determined.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vpc endToEndLoopbackState (eeLbkState)

Access	Read only
Description	This attribute contains the current state of the end-to-end loopback for this connection. Its value is dependent upon the current setting of the *endToEndLoopback* provisionable attribute and the connection point type as specified by the *connectionPointType* attribute. The value is only applicable when the *connectionPointType* is a ***connectionEndPoint***. The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or s***egmentEndPoint***. The value is ***notApplicable*** when the *distributionType* is a ***pointToMultipoint***. The value is ***good*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is working. The value is ***bad*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is not working. The value is ***unknown*** when the *endToEndLoopback* is ***off***. The value is ***unknown*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback status has not been determined. The state of this attribute determines, in part, the value of the *operStatus* attribute.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vpc rxOamCellCongestionState (rxOamCongState)

Access	Read only
Description	This attribute contains the current state of the receive side OAM cell congestion for this connection. Its value reflects whether the rate of received OAM cells for this connection is below a specified threshold. The connection maintains a count of the number of OAM cells which are terminated per second. Once that count exceeds the specified threshold, extraction of all OAM cells for this connection is disabled for a period of one minute. This is a congestion management mechanism to prevent the processor from being overloaded with handling OAM cells for a particular connection. This mechanism ensures that tasks, such as trunks obtain enough processor cycles to remain in service, and are not adversely affected by excessive rate of OAM cells on a particular connection. The value is ***good*** when the rate of received OAM cells is less than the allowed threshold. The value is ***bad*** when the arrival rate has exceeded the allowed threshold. It remains ***bad*** for one minute, before returning to ***good*** again. During this timeout, extraction of all OAM cells is disabled for this connection. As a result, other loopback failure conditions may occur. The value is ***unknown*** when the application has not yet begun to use this connection. An example is the *Test* component before a test has been started. Each type of OAM cell is counted separately. The threshold for AIS cells is three cells per second. If more than three AIS cells are received within a one second interval, this attribute is set to ***bad***. The threshold for RDI cells and each loopback type is also three, but the threshold for trace cells is 250 per second. The state of this attribute has no direct effect on the value of the *operStatus* attribute or on the number of troubled connections.
Mib	AtmCore

Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vpc aisState

Access	Read only
Description	This attribute contains the current state of the Alarm Indication Signal for this connection. A value of ***good*** indicates that the connection's application is active and no alarm has occurred. A value of ***bad*** indicates that the connection's application is active and an alarm has occurred. A value of ***unknown*** indicates that the connection's application is inactive. A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vpc rdiState

Access	Read only
Description	This attribute indicates the current state of the Remote Defect Indication for this connection. A value of ***good*** indicates that the connection's application is

active and no alarm has occurred.

A value of ***bad*** indicates that the connection's application is active and an alarm has occurred.

A value of ***unknown*** indicates that the connection's application is inactive.

A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.

Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

GROUP AtmIf Vpc Statistics (Stats)

Properties	Operational
Description	This group contains traffic statistics for a *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc txCell

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpc txCellClp (txClp)

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection with the CLP=1. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpc txCellDiscard (txcd)

Access	Read only
Description	This attribute counts the number of cells received from the backplane on this connection that have been discarded. Discarded cells are not counted in the *txCell* attribute. Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscard* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpc txCellDiscardClp (txcdClp)

Access: Read only

Description: This attribute counts the number of cells received from the backplane on this connection with CLP=1 that have been discarded.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

This count is included in the *txCellDiscard* attribute. Discarded cells are not counted in the *txCellClp* attribute.

Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscardClp* values for all connections associated with the *Vpt*.

When both ingress and egress of a port is down, txcells are silently discarded.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpc txFrameDiscard (txfd)

Access: Read only

Description: This attribute counts the number of frames received from the backplane on this connection that have been discarded.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled.

This count is independent of the *txCell* or *txCellDiscard* attribute.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscard* values for all connections associated with the *Vpt*.

Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscard* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpc txFrameDiscardClp (txfdClp)

Access: Read only

Description: This attribute counts the number of discarded frames on this connection that were received from the backplane and composed of one or more CLP=1 cells.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled.

This count is included in the *txFrameDiscard* attribute.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscardClp* values for all connections associated with the *Vpt*.

Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in

the *Vcc*'s parent *Vpt txFrameDiscardClp* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpc rxCell

Access: Read only

Description: This attribute counts the number of cells that have been received from the interface on this connection.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells that have been discarded by the interface due to non-conformance with UPC.

For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2,*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when the PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down and is increased when either the SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP,

SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpc rxCellClp (rxClp)

Access: Read only

Description: This attribute counts the number of cells that have been received from the interface on this connection with the CLP=1.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpc rxCellDiscard (rxcd)

Access: Read only

Description: This attribute counts the number of cells received from the interface on this connection that have been discarded. This count is included in the *rxCell* attribute.

This count includes cells discarded due to non-conformance with

UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells discarded due to non-conformance with UPC.

For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscard* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc*, are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscard* attribute.

For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will

be increased when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down, regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, this count will be reset to 0 when either PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or only F4 and F5 OAM cells are transmitted.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib — AtmCore

Values — Long Integer

Default — No default

ATTRIBUTE AtmIf Vpc rxCellDiscardClp (rxcdClp)

Access — Read only

Description — This attribute counts the number of cells received from the interface on this connection with CLP=1 that have been discarded. This count is included in the *rxCell* and *rxCellDiscard* attributes.

This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscardClp* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc*, are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscardClp* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpc rxFrameDiscard (rxfd)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have been discarded. This count is independent of the *rxCellDiscard* attribute.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and

frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscard* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpc rxFrameDiscardClp (rxfdClp)

Access: Read only

Description: This attribute counts the number of discarded frames on this connection that were received from the interface and composed of one or more CLP1 cells. This count is included in the *rxFrameDiscard* attribute. It is independent of the *rxCellDiscard* attribute.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscardClp* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpc rxUpcViolationOnEnforcer1 (rxEnforcer1)

Access: Read only

Description: This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 1. This attribute is only applicable if UPC is enforced or monitored on the connection.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed.

When the value of the *rxTrafficDescType* attribute for this connection is 3, 4, 5, 6, 7, 8, or 9 (for UBR with MDCR connections) Enforcer 1 enforces conformance of traffic received from the interface to PCR CLP0+1.

When the value of the *rxTrafficDescType* attribute for this connection is 9 (for ABR connections), Enforcer 1 performs the

Dynamic Generic Cell Rate Algorithm (DGCRA) used for the Available Bit Rate (ABR) service category.

If UPC is enforced all non-conforming cells are discarded by this enforcer. These discarded cells are included in the *rxCellDiscard* attribute.

For basic *Vpt*s, this attribute provides an aggregated total of all *rxUpcViolationOnEnforcer1* values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib — AtmCore

Values — Long Integer

Units — cells

Default — No default

ATTRIBUTE AtmIf Vpc rxUpcViolationOnEnforcer2 (rxEnforcer2)

Access — Read only

Description — This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 2. This attribute is only applicable if UPC is enforced or monitored on the connection.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed.

This attribute is only applicable if the value of the *rxTrafficDescType* attribute for this connection is 4, 5, 6, 7, or 8.

When the value of the *rxTrafficDescType* attribute is 4, or 5**,** Enforcer 2 enforces conformance of traffic received from the interface to PCR CLP0.

When the value of the *rxTrafficDescType* attribute is 6**,** Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0+1.

When the value of the *rxTrafficDescType* attribute is 7, or 8, Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0.

If UPC is enforced, Enforcer 2 discards non-conforming cells for *rxTrafficDescType* values of 4, 6, and 7. It tags non-conforming cells for *rxTrafficDescType* values of 5, and 8. Discarded cells are counted in the rxCellDiscard attribute.

For basic *Vpt*s, this attribute provides an aggregated total of all *rxUpcViolationOnEnforcer2* values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc rxAal5FrameError (rxfer)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have AAL5 length errors or AAL5 CRC errors.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed.

AAL5 length or CRC errors typically occur because of cell discards due to congestion, UPC, or due to corruption of data

between the AAL5 segmentation and reassembly end points.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameError* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib — AtmCore

Values — Long Integer

Default — No default

ATTRIBUTE AtmIf Vpc rxAal5FrameAbort (rxfa)

Access — Read only

Description — This attribute counts the number of frames received from the interface on this connection that have the AAL5 length field set to zero.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed.

An AAL5 length of zero is an indication by the far end segmentation point, to this reassembly point, that the frame is to be discarded without reassembly. This mechanism is typically used by a segmentation point if it detects an error in a frame after some of the cells belonging to that frame have already been transmitted.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a

connectionPointType of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameAbort* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

GROUP AtmIf Vpc Performance (Perf)

Properties	Operational
Description	This group contains operational attributes which keep performance statistics about the behavior of the connection.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc lastMinimumCtd (lastminctd)

Access	Read only
Description	This attribute indicates the minimum calculated cell transfer delay value for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason.

The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection.

The value is ***noMeasurement*** when the switch-side loopback is not working.

The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.

Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

ATTRIBUTE AtmIf Vpc lastMaximumCtd (lastmaxctd)

Access	Read only
Description	This attribute indicates the maximum calculated cell transfer delay value for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working.

The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.

Mib: AtmCore

Values: Decimal (1..2147483647)
noMeasurement

Units: microsec

Default: No default

ATTRIBUTE AtmIf Vpc lastAverageCtd (lastavectd)

Access: Read only

Description: This attribute indicates the average of all calculated cell transfer delay values for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell.

The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***.

The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason.

The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection.

The value is ***noMeasurement*** when the switch-side loopback is not working.

The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.

Mib: AtmCore

Values: Decimal (1..2147483647)
noMeasurement

Units	microsec
Default	No default

ATTRIBUTE AtmIf Vpc currentCtd (currctd)

Access	Read only
Description	This attribute indicates the most recent cell transfer delay value calculated for this connection. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working. The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.
Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

ATTRIBUTE AtmIf Vpc lastCtdSampleSize (lastsamplectd)

Access	Read only
Description	This attribute indicates the number of loopback cells sampled for cell transfer delay calculations during the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval of TODA is disabled.
Mib	AtmCore
Values	Decimal (0..16384)

Default	No default

COMPONENT AtmIf Vpc VirtualPathDescriptor (Vpd)

Groups	"GROUP AtmIf Vpc Vpd Loopback (Lbk)" "GROUP AtmIf Vpc Vpd Accounting (Acct)"
Scope	Device
Description	*AtmIf/n Vpc/vpi VirtualPathDescriptor* The *Vpd* component contains provisioning information about its parent *Vpc* component.
Mib	AtmCore
Subcomponents	"COMPONENT AtmIf Vpc Vpd TrafficManagement (Tm)"
Opt. Subcomp.	"COMPONENT AtmIf Vpc Vpd PerformanceMonitoring (Pm)"
Common Verbs	Help List Display

GROUP AtmIf Vpc Vpd Loopback (Lbk)

Properties	Provisioned
Description	This group contains the provisionable loopback attributes for a *Vcc, Vpc,* or *Vpt* component. Note that certain loopback requests may not be possible on a given connection. In such cases, the corresponding operational loopback attribute in the *Status* group of the *Vcc, Vpc,* or *Vpt* component indicates ***notApplicable*** and the requested loopback is not performed. If loopbacks are provisioned to be on, and for any reason the segment or end-to-end OAM loopback cells are not relayed, the connection component becomes troubled, and user cell traffic may be discarded. If loopbacks are provisioned to be on, all of the nodes in the segment, and external networks which are in the end-to-end connection must relay the OAM loopback cells.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc Vpd segLinkSideLoopback (segLkLbk)

Access	Read and write
Description	This attribute specifies whether link-side segment loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the link-side segment loopback insertion for the connection is based on the *segLinkSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has link-side segment loopback insertion turned on, then link-side segment loopback insertion is also on for the connection. A value of ***on***, or ***off*** means link-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component. Note that link-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***. Link-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *segLinkSideLoopbackState* attribute indicates ***notApplicable*** and link-side segment loopback insertion is not performed. Link-side segment loopback insertion is always possible on a *Vpt*.
Mib	AtmCore
Values	on off sameAsInterface
Default	sameAsInterface

ATTRIBUTE AtmIf Vpc Vpd segSwitchSideLoopback (segSwLbk)

Access	Read and write
Description	This attribute specifies whether switch-side segment loopback insertion should be performed on this connection.

A value of ***sameAsInterface*** means the switch-side segment loopback insertion for the connection is based on the *segSwitchSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has switch-side segment loopback insertion turned on, then switch-side segment loopback insertion is also on for the connection.

A value of ***on***, or ***off*** means switch-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component.

Note that switch-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint*** or ***connectionEndPoint***. Switch-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint*** In such cases, the operational *segSwitchSideLoopbackState* attribute indicates ***notApplicable*** and switch-side segment loopback insertion is not performed.

Switch-side segment loopback is never possible on a *Vpt*.

Mib: AtmCore

Values:
on
off
sameAsInterface

Default: sameAsInterface

ATTRIBUTE AtmIf Vpc Vpd endToEndLoopback (eeLbk)

Access: Read and write

Description: This attribute specifies whether end-to-end loopback insertion should be performed on this connection.

A value of ***sameAsInterface*** means the end-to-end loopback insertion for the connection is based on the *endToEndLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has end-to-end loopback insertion turned on, then end-to-end loopback insertion is also on for the connection.

A value of ***on***, or ***off*** means end-to-end loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component.

Note that end-to-end loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***, or ***segmentEndPoint***. End-to-end loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *endToEndLoopbackState* attribute indicates ***notApplicable*** and end-to-end loopback insertion is not performed.

End-to-end loopback insertion is always possible on a *Vpt*.

Mib	AtmCore
Values	on off sameAsInterface
Default	sameAsInterface

ATTRIBUTE AtmIf Vpc Vpd mCastConnectionType (connType)

Access	Read and write
Criticality	Component
Description	This attribute specifies if this *Vcc* or *Vpc* is part of point-to-point or point-to-multiPoint connection. A value of ***pointToMultiPointRoot*** must be set when this *Vcc* has an *Msrc* or an *Mnrp* subcomponent, or this *Vpc* has an *Mnrp* subcomponent. A value of ***pointToMultiPointLeaf*** must be set when this *Vcc* or *Vpc* has a *Nrp* subcomponent and its *nextHop* attribute is linked to a *Mnrp* component. Otherwise a value of ***pointToPoint*** must be set.

Mib	AtmCore
Values	pointToPoint (ptp) pointToMultipointRoot (pmpRoot) pointToMultipointLeaf (pmpLeaf)
Default	pointToPoint

GROUP AtmIf Vpc Vpd Accounting (Acct)

Properties	Provisioned
Description	This group contains the provisionable ATM accounting attributes for a *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc Vpd correlationTag (tag)

Access	Read and write
Description	This attribute specifies a unique identifier for each end of a PVC. It that may be used by downstream processing systems to correlate accounting records issued at different nodes in the network. The attribute can be up to 64 bytes long. If it is less than 64 bytes, it is zero filled on the right to create a 64 byte value. The resulting value is recorded in the attribute *callConnId* for this PVC's ATM accounting records. If the value is a null string then this PVC does not have any accounting records generated for it.
Mib	AtmCore
Values	String (0..64, ASCII)
Default	""

COMPONENT AtmIf Vpc Vpd TrafficManagement (Tm)

Groups	"GROUP AtmIf Vpc Vpd Tm Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Vcd TrafficManagement,* *AtmIf/n Vpc/vci Vpd TrafficManagement,*

	AtmIf/n Vpt/vpi Vpd TrafficManagement, *AtmIf/n Vpt/vpi Vcc/vci Vcd TrafficManagement* This component contains provisioned traffic management attributes of a connection. It is added automatically when a *Vcc*, *Vpc*, or *Vpt* is added in provisioning mode. It is a mandatory subcomponent of the *Vcd* or *Vpd* component.
Mib	AtmCore
Opt. Subcomp.	"COMPONENT AtmIf Vpc Vpd Tm AvailableBitRate (Abr)"
Common Verbs	Help List Display

GROUP AtmIf Vpc Vpd Tm Provisioned (Prov)

Properties	Provisioned
Description	This group contains traffic related provisionable attributes for the *Vcc*, *Vpc*, and *Vpt* components. Changing any of the attributes in this group causes a service interruption on the *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc Vpd Tm txTrafficDescType (txTdt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3

	4 5 6 7 8 9
Default	1

ATTRIBUTE AtmIf Vpc Vpd Tm fwdQosClass (fwdQos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. This attribute is only used for SPVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmCore
Values	0 1 2 3 4
Default	0

ATTRIBUTE AtmIf Vpc Vpd Tm txQueueLimit (txQlim)

Access	Read and write
Criticality	Component
Description	This attribute specifies an override to the default transmit queue limit for this connection. A value of ***sameAsCa*** means that the default common or per-VC transmit queue limit, as defined by the CA service category, is used for this connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***sameAsCa*** must be specified. A value from 5 to 512,000 means that the connection transmit queue limit differs from the default common or per-VC transmit queue limit, as defined by the CA service category. A value other than ***sameAsCa*** is ignored for connections where common queuing is specified for the service category. For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the per-VC utilization limit of the service category common queue. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from 5 to 512000 inclusive. For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive. For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive. On all other cards, the valid range for this attribute is from 5 to 63488 inclusive. The actual transmit queue limit for a connection is visible in the *Vcc Tm*, *Vpc Tm* or *Vpt txQueueThresholds* attribute. This attribute is not applicable for basic *Vpt*s.

Mib	AtmCore
Values	Decimal (5..1011840) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm holdingPriority (hpri)

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. The default holding priority for a provisioned connection is higher then default holding priorities for dynamic (SVC) connections. The value of this attribute may be overridden by certain applications, for example *Vcc Test*, which use this connection. This attribute is not applicable for *Vpt Vcc*s.
Mib	AtmCore
Values	0 1 2 3 4
Default	2

ATTRIBUTE AtmIf Vpc Vpd Tm rxTrafficDescType (rxTdt)

Access	Read and write
Criticality	Component

Description

This attribute specifies the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute.

The value ***sameAsTx*** means the *rxTrafficDescType* as well as the *rxTrafficDescParm* attribute values are taken from the values of the *txTrafficDescType* and *txTrafficDescParm* attributes.

Mib

AtmCore

Values

1
2
3
4
5
6
7
8
9
sameAsTx

Default

sameAsTx

ATTRIBUTE AtmIf Vpc Vpd Tm bwdQosClass (bwdQos)

Access

Read and write

Criticality

Component

Description

This attribute specifies the quality of service for the backward direction for this connection. This attribute is only used for SPVC connections.

Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video).

Class 2 supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video).

Class 3 supports a QOS that meets Service Class C performance

requirements (Connection-Oriented Data Transfer).

Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.

Mib: AtmCore

Values:
0
1
2
3
4
sameAsFwd

Default: sameAsFwd

ATTRIBUTE AtmIf Vpc Vpd Tm atmServiceCategory (service)

Access: Read and write

Criticality: Component

Description: This attribute specifies the ATM service category for both directions of the connection.

The value ***derivedFromBBC*** may only be used if the *Src* or *Dst* component is provisioned under this connection. Otherwise a specific ATM service category must be specified.

A value of ***derivedFromBBC*** means the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

A value other than ***derivedFromBBC*** means the value of this attribute is used to override the provisioned BBC Information Element parameters. In this case, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application.

The ***rtVariableBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real-time VBR service may support statistical multiplexing of real-time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non real-time VBR service may support statistical multiplexing of connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

The ***unspecifiedBitRate*** service is intended for non real-time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to

the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib: AtmCore

Values:
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
availableBitRate (abr)
derivedFromBBC (derived)

Default: unspecifiedBitRate

ATTRIBUTE AtmIf Vpc Vpd Tm trafficShaping (trShaping)

Access: Read and write

Criticality: Component

Description: This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface.

This attribute is ignored if the *atmServiceCategory* is ***availableBitRate***.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is ignored.

A value of ***sameAsCa*** means traffic shaping for the connection is based on the value of the *trafficShaping* attribute of the connection's service category component under the *CA*. If the service category has *trafficShaping* set to ***enabled*** or ***inverseUpc***, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm*, *Vpc Tm*, or *Vpt Tm* components.

A value of ***disabled*** means traffic shaping for this connection is disabled regardless of the provisioning of the connection's service category component.

Mib: AtmCore

Values	disabled sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm unshapedTransmitQueueing (unshap)

Access	Read and write
Criticality	Component
Description	This attribute specifies the transmit queuing method for this connection if it is unshaped. The two possible methods are per-VC queuing and common queuing. This attribute does not apply if the connection is shaped. A value of ***sameAsCa*** means the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *CA*. A value of ***common*** means transmit traffic on this unshaped connection is destined for the common queue. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***1pOC48ChSmIrAtm***, and ***4pMRPosAtm*** cards, this attribute must have the value ***sameAsCa***. This attribute is ignored in the following situations: - if the connection has *trafficShaping* ***enabled*** or ***inverseUpc***, or - if the *atmServiceCategory* is ***availableBitRate***, or - if the *atmServiceCategory* is ***constantBitRate***, or - for basic *Vpt*s and standard *Vpt Vcc*s.
Mib	AtmCore
Values	common sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm weight

Access	Read and write
Criticality	Component
Description	This attribute specifies an override for the weight of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, and basic *Vpt*s. A value of ***sameAsCa*** means the weight is determined by the *weightPolicy* attribute under the *CA* service category component for all but standard *Vpt Vcc*s. For standard *Vpt Vcc*s, the weight is determined by the *Vcc*'s service category, when the value is set to ***sameAsCa***. A value from 1 to 4095 means that value is used for the fairness weight of this connection relative to other connections. For all but standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the *Vpt*. A value of ***upToQueueLimit*** means the fairness weight is limited only by the *txQueueLimit*. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, the value ***upToQueueLimit*** is not permitted.
Mib	AtmCore
Values	Decimal (1..4095) sameAsCa upToQueueLimit

Default	sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm forceTagging (tagging)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether force tagging of the CLP bit is enforced for cells of this connection. Force tagging can be enabled for permanent connections of any service category and on switched connections of UBR service category. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards, and for *Vpt*s, this attribute is not applicable and is ignored. A value of ***sameAsCa*** means the force tagging functionality is determined by the *forceTagging* attribute under the *CA* service category component. A value of ***enabled*** means force tagging is enabled. When this option is selected, the CLP bit is set to 1 for all cells on the connection. A value of ***disabled*** means force tagging is disabled. When this option is selected, the CLP bit is unchanged for cells on the connection. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction. In this case, cells which are tagged are counted in the *txCellClp* attribute.
Mib	AtmCore
Values	sameAsCa enabled disabled
Default	sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm usageParameterControl (upc)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enables usage parameter control (UPC) when receiving traffic from the ATM interface. The value ***sameAsCa*** means UPC for the connection is based on the value of the *usageParameterControl* attribute of the service category component under the *AtmIf CA*. If the service category has UPC ***enforced*** or ***monitored***, then UPC is enabled on the connection. The value ***disabled*** means UPC for this connection is disabled regardless of the provisioning of the service category. The value ***enforced*** means UPC for this connection is enforced regardless of the provisioning of the service category. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*. The value ***monitored*** means UPC for this connection is monitored regardless of the provisioning of the service category. When UPC is monitored, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged. Note that setting UPC to ***enforced*** or ***monitored*** may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc*, *Vpc*, and *Vpt* components. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported. For ***1pOC48ChSmIrAtm*** cards, the values ***enforced***, and ***monitored***, are not supported.

Mib	AtmCore
Values	enforced disabled sameAsCa monitored
Default	sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm bearerClassBbc (bcBbc)

Access	Read and write
Criticality	Component
Description	This attribute specifies the bearer capability. This attribute is only used for SPVC and SPVP connections. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it. Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***) and timing requirements are user defined (that is, transparent to the network).When ***x*** is set

the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.

Class **vp** service is used to specify a transparent VP service. When the value of this attribute is vp, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except or VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP connections.

Mib: AtmCore

Values:
a
c
x
vp
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpc Vpd Tm transferCapabilityBbc (tcBbc)

Access: Read and write

Criticality: Component

Description: This attribute specifies the transfer capability for this connection. Uni 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

The value ***notApplicable*** specifies that the user does not want to specify the transfer capability.

The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation.
The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data.

The value no indication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing.

The value yes for end-to-end timing indicates that end-to-end timing is required.

The value no for end-to-end timing indicates that end-to-end timing is not required.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmCore

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpc Vpd Tm txWredThreshold

Access: Read and write

Criticality: Component

Description

This attribute specifies the threshold for weighted random early detection (WRED). This threshold is calculated as a percentage

of the early packet discard (EPD) threshold, which is 85% of the transmit queue length. When the value is ***25%***, WRED starts as soon as the queue is 25% of the way to the EPD threshold. When the value is ***50%***, WRED starts later, after the queue is 50% of the way to the EPD threshold. When the value is ***75%***, WRED starts only when the queue is 75% of the way to the EPD threshold.

This attribute is ignored if the value of the *txWredMode* or *txPacketWiseDiscard* attributes is ***disabled.***

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

Mib	AtmCore
Values	Decimal (25; 50; 75)
Units	%
Default	25

ATTRIBUTE AtmIf Vpc Vpd Tm clippingBbc (cBbc)

Access	Read and write
Criticality	Component
Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.
Mib	AtmCore
Values	no yes

Default	no

ATTRIBUTE AtmIf Vpc Vpd Tm bestEffort

Access	Read and write
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmCore
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Vpc Vpd Tm txPacketWiseDiscard (txpd)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the transmit data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s. For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is

ignored.

Packet-wise functions increase the “goodput” of the link. The transmit packet-wise functions are Early Packet Discard (EPD) and Partial Packet Discard (PPD).

EPD allows the connection to discard an entire frame once the transmit queue has reached the EPD threshold. EPD increases the “goodput” of a link, since discarding an entire frame means that some queue capacity is guarded for some other frame which is already partially transmitted. All cells of the frame are discarded from the Beginning of Message (BOM) cell up to and including the End of Message (EOM) cell.

PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the packet-wise discard functions are PPD and EPD. PPD is applicable at cell-transfer points. PPD is not applicable at frame-to-cell conversion points, and is not applicable for *Vpc*s. PPD is configured by this attribute. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded. EPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***16pOC3PosAtm***, ***1pOC48ChSmIrAtm,*** and ***4pMRPosAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Both PPD and EPD are controlled by this attribute. This attribute may safely

be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

A value of ***enabled*** means packet-wise discard functions are applied to transmit traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to transmit traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the backward direction. When this attribute is set to ***disabled***, backward frame discard is not requested in the SPVC call setup.

The transmit packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute.

Mib	AtmCore
Values	disabled enabled
Default	disabled

ATTRIBUTE AtmIf Vpc Vpd Tm rxPacketWiseDiscard (rxpd)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the receive data direction for this connection. Packet-wise discard functions apply to AAL5 frame

traffic. This attribute is not applicable for *Vpt*s.

For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

Packet-wise functions increase the “goodput” of the link. The receive packet-wise function is Partial Packet Discard (PPD).

PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded, for example due to UPC. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD is available at all VCC connection points where UPC may be activated. PPD is not applicable for *Vpcs*. Packet-wise discards should only be enabled for connections carrying AAL5 segmentation traffic. Setting the value to ***enabled*** for any other traffic type may result in traffic being discarded. PPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC48ChSmIrAtm*** cards, this attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

A value of ***enabled*** means packet-wise discard functions are applied to receive traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to receive traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the forward direction. When this attribute is set to ***disabled***, forward frame discard is not requested in the SPVC call setup.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. A value of ***enabled*** for the *rxPacketWiseDiscard* attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in enabling packet-wise discard functions on these cards. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

The receive packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm rxPacketWiseDiscard* operational attribute.

Mib	AtmCore
Values	disabled enabled
Default	disabled

ATTRIBUTE AtmIf Vpc Vpd Tm txWredMode

Access	Read and write
Criticality	Component
Description	This attribute specifies the activation of weighted random early detection (WRED) functionality. WRED is considered a packet-wise discard function and as such applies only to AAL5 frame traffic. WRED is applied in the transmit direction for this connection.

WRED function should be enabled only for connections which are transferring TCP/IP traffic. WRED acts to prevent synchronization of multiple TCP/IP sources by randomly discarding a small percentage of frames when transmit queue congestion reaches the designated level. WRED may also be used to differentiate service on VCC's by preferentially discarding one VCC before another. Discards start at 0% of cells, when the queue is part-way to the Early Packet Discard (EPD) threshold, and rise to 100% of cells discarded at the EPD threshold. WRED discards all the cells in a frame.

A value of ***enabled*** means WRED is enabled for all applications linked to the given *Vcc*.

A value of ***perFlow*** means each TCP application has individual control over whether to enable or disable WRED.

If the value of the *txPacketWiseDiscard* attribute is ***disabled***, or if the value of this attribute is ***disabled***, WRED functionality is disabled.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, the value of this attribute must be ***disabled***.

If WRED is active, it is visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute.

This attribute is not applicable for *Vpt*s or *Vpt Vcc*s.

Mib	AtmCore
Values	disabled enabled perFlow
Default	disabled

ATTRIBUTE AtmIf Vpc Vpd Tm abrConnectionType (abrType)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of ABR behavior which is to be enforced at this connection. This attribute is only applicable if the value of the *atmServiceCategory* attribute is ***availableBitRate***. If the value of the *atmServicecategory* attribute is not ***availableBitRate***, this attribute is ignored. The value ***sameAsCa*** is used to request the default behavior as specified in the *CA Abr* component for this *Vcc*. Otherwise, this attribute overrides the default behavior. The value ***virtualSourceDest*** is used to request that this connection point function as a virtual source/virtual destination. The value ***sourceDest*** requires that this connection point function as a S/D for RM cells. S/D mode is automatically invoked at this connection point either if this is a connection end point, or if the next hop connection point is configured as ***nonAbrInterworking***. The value ***nonAbrInterworking*** is used to request that this connection point function as an interworking between ABR and non-ABR service categories. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***. The value ***abrSwitch*** is used to request ABR switch behavior for this connection point. The ABR switch behavior is first, to conform to ***virtualSourceDest*** or ***nonAbrInterworking*** setting on the next hop, and otherwise to implement ABR ER switch behavior. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the only allowable values are ***sameAsCa***, ***nonAbrInterworking*** or ***abrSwitch***. If ***abrSwitch*** is selected, EFCI marking behavior is implemented. For ***1pOC12SmLrAtm*** cards, the only allowable values are

sameAsCa or ***abrSwitch.*** If ***abrSwitch*** is selected, EFCI marking behavior is implemented.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the only allowable value is ***sameAsCa***.

The actual ABR functionality which is in effect is visible in the *Vcc/Vpc/Vpt Tm abrConnectionType* operational attribute.

Mib: AtmCore

Values:
abrSwitch
virtualSourceDest
sourceDest
nonAbrInterworking
sameAsCa

Default: sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm txTrafficDescParm (txTdp)

Access: Read and write

Criticality: Component

Description: This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute.

The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR, MCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *txTrafficDescType* is 1 or 2, all of the parameters must be set to zero.

When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero

value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 4 and parameter 5 represent are not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter 3. Parameter 3 may be optionally zero.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate. When the *atmServiceCategory* is ***availableBitRate*** (ABR), the shaping rate is dynamically chosen, based on the ABR flow control mechanism, as a value between the MCR and the PCR or the requested shaping rate if applicable.

For *txTrafficDescType* 3, 4 and 5, the transmit traffic is shaped at the next available shaping rate less than the PCR.

For *txTrafficDescType* 6, 7 and 8 if linear traffic shaping is selected, the transmit traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

For *txTrafficDescType* 6, 7 and 8 if inverse-UPC traffic shaping is selected, the transmit traffic is shaped at a variable rate which conforms to the PCR, SCR and MBS of the connection traffic descriptor.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE AtmIf Vpc Vpd Tm rxTrafficDescParm (rxTdp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. If the value of the *rxTrafficDescType* attribute is ***sameAsTx***, the values provisioned in this attribute are ignored. The traffic parameters for the receive direction are taken from the *txTrafficDescParm* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), and Minimum Cell Rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. The value of CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for usage parameter control (UPC). When *rxTrafficDescType* is 1 or 2, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused). When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero.

Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameter 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

If the value of CDVT either in parameter 2 or in parameter 4 is zero, the CDVT is taken from the *CA* defaults for the particular *atmServiceCategory* of this connection.

Parameter 5 of the *rxTrafficDescParm* is always unused.

When *rxTrafficDescriptorType* is 3 through 8, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware. The *check prov* command detects such cases and generates an error message. If this happens, adjust the parameters until they fall within the supported limits.
To calculate the limits, use the following formulae:
I1 = 1,000,000,000 / PCR
L1 = CDVT * 1000
I2 = 1,000,000,000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is 6 through 8.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, I1 and I2 must be less than or equal to 335,523,840. I1 + L1 must be less than or equal to 1,342,156,800. I2 + L2 must be less than or equal to 1,342,156,800. If the values of I1, L1, I2 or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41,940,480 or
I2 > 41,940,480 or
I1 + L1 > 167,769,600 or
I2 + L2 > 167,769,600
then both I1 and I2 must be greater than 20,480.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, L2 must be less than or equal to 2,674,011,406.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, L2 must be less than or equal to 17,179,869,180.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE AtmIf Vpc Vpd Tm fwdQosParameters (fqp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The *cdv* element specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR the CDV is irrelevant, and its value is forced to the default. The *ctd* specifies the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end to end transit delay information element. For nrt-VBR and UBR the CTD is irrelevant, and its value is forced to the default. The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.
Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Vpc Vpd Tm bwdQosParameters (bqp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of two elements that specify the quality of service parameters for the backward direction for this

connection. This attribute is used for SPVC connections.

The *cdv* specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR, the CDV is irrelevant, and its value is forced to the default.

The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.

Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv clr
Default	(cdv: 16777215, clr: 255)

COMPONENT AtmIf Vpc Vpd Tm AvailableBitRate (Abr)

Groups	"GROUP AtmIf Vpc Vpd Tm Abr Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Vcd Tm AvailableBitRate,* *AtmIf/n Vpc/vci Vpd Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vpd Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vcc/vci Vcd Tm AvailableBitRate* This component contains provisioned ABR-related attributes of a connection. It is an optional subcomponent of the *Vcd Tm* and *Vpd Tm* component. It is used to override DGCRA-related defaults in the *CA Abr* component. It contains the specific configuration for the ABR connection at this connection point. If

this is the source of an SPVC connection, this component also contains the ABR parameters required for the SPVC call request.

Mib: AtmCore

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpc Vpd Tm Abr Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioned attributes for the ABR ATM connections configured on an ATM interface.

Mib: AtmCore

ATTRIBUTE AtmIf Vpc Vpd Tm Abr initialCellRate (icr)

Access: Read and write

Criticality: Component

Description: This attribute specifies the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period.

The value ***sameAsCa*** means the initial cell rate is determined by the *AtmIf CA Abr*/0 *icr* attribute.

The value ***useMcr*** means ICR is set to the same value as the Minimum Cell Rate (MCR) for the connection.

The value ***usePcr*** means ICR is set to the same value as the Peak Cell Rate (PCR) for the connection.

If the value is less than the MCR of the connection, then the MCR is used as the ICR. If the value is more than PCR of the connection, then PCR is used as the ICR.

This attribute is ignored under all conditions where the

operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.

Mib: AtmCore

Values: Decimal (0..16777215)
sameAsCa
useMcr
usePcr

Units: cell/s

Default: sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm Abr transientBufferExposure (tbe)

Access: Read and write

Criticality: Component

Description: This attribute specifies the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the source to send during start-up periods, before the first Resource Management (RM) cell returns.

TBE divided by *fixedRoundTripTime* determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period.

TBE divided by *maxCellsPerRmCell* specifies the operational value of *forwardRmCellLimit*, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* is set to ***erSwitch***.

Mib: AtmCore

Values: Decimal (0..16777215)

Units: cells

Default: 16777215

ATTRIBUTE AtmIf Vpc Vpd Tm Abr fixedRoundTripTime (frtt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. The value of *transientBufferExposure* divided by the value of FRTT (in seconds) determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	5000000

ATTRIBUTE AtmIf Vpc Vpd Tm Abr rateDecreaseFactor (rdf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

Mib: AtmCore

Values: Decimal (0..15)
sameAsCa

Default: sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm Abr rateIncreaseFactor (rif)

Access: Read and write

Criticality: Component

Description: This attribute specifies the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64.

RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

Mib: AtmCore

Values: Decimal (0..15)
sameAsCa

Default: sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm Abr maxCellPerRmCell (nrm)

Access: Read and write

Criticality: Component

Description	This attribute specifies the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell. A value of 2 is not recommended although it is permitted according to the ATM Forum standard. When this attribute is set to a value of 2, it is possible that only one forward and one backward RM cell are repeatedly transmitted, and all data traffic is queued up indefinitely. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.
Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm Abr maxTimeBetweenRmCells (trm)

Access	Read and write
Criticality	Component
Description	This attribute specifies the TRM parameter for this connection. TRM provides an lower bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least two other cells have been sent, then the next cell to be transmitted would be a forward RM cell. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***. The provisioned value of 781 is signaled as TRM = 0, in the ABR Additional Parameters Information Element. 1563 is signaled as TRM = 1. 3125 is signaled as TRM = 2.

6250 is signaled as TRM = 3.
12500 is signaled as TRM = 4
25000 is signaled as TRM = 5.
50000 is signaled as TRM = 6.
100000 is signaled as TRM = 7.

Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm Abr cutoffDecreaseFactor (cdf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero. CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the CRM parameter, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. The value of CRM is indicated by the *forwardRmCellLimit* attribute. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore

Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64) sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm Abr acrDecreaseTimeFactor (adtf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the maximum time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..1023) sameAsCa
Units	centiseconds
Default	sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm Abr dgcraMaximumDelay (dgcraMaxDelay)

Access	Read and write
Criticality	Component
Description	This attribute specifies an upper bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward direction).

This upper bound may be approximated as the sum of the round trip fixed and propagation delays and the maximum queuing delays between the ABR source and this interface.

The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When there is a reduction in the Allowed Cell Rate (ACR), the policer waits for a correspondingly longer period of time before it enforces at the new cell rate.

The value of this attribute must not be less than the *dgcraMinimumDelay* attribute.

Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm Abr dgcraMinimumDelay (dgcraMinDelay)

Access	Read and write
Criticality	Component
Description	This attribute specifies a lower bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward connection). This lower bound may be approximated as the sum of the round trip fixed and propagation delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A smaller value for this attribute implies a more lenient policer. When there is a increase in the Allowed Cell Rate (ACR), the

	policer waits for a correspondingly shorter period of time before it enforces at the new cell rate.
Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE AtmIf Vpc Vpd Tm Abr farEndAcrDecreaseTimeFactor (feAdtf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) of the far end ABR source. The value specified should be the same as the ADTF parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the value of this attribute, the policer begins to limit enforce the incoming traffic at the initial cell rate (ICR) of the far end, as specified by the *farEndInitialCellRate* attribute.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	50

ATTRIBUTE AtmIf Vpc Vpd Tm Abr farEndInitialCellRate (feIcr)

Access	Read and write
Criticality	Component

Description	This attribute specifies the Initial Cell Rate (ICR) of the far end ABR source. The value specified should be the same as the ICR parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the *farEndAcrDecreaseTimeFactor* attribute, the policer begins to enforce the incoming traffic at the value of this attribute. If this attribute is specified less than the MCR of the connection, then the MCR is used as the *feIcr*. If this attribute is more than the PCR of the connection, then PCR is used as the *feIcr*.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cell/s
Default	0

COMPONENT AtmIf Vpc Vpd PerformanceMonitoring (Pm)

Groups	"GROUP AtmIf Vpc Vpd Pm Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vcc/x.y Vcd PerformanceMonitoring* *AtmIf/n Vpc/x Vpd PerformanceMonitoring* This component represents the Performance Monitoring (Pm) function on a provisioned connection. No Performance Monitoring is done unless this component is present. The

attribute values override corresponding values in the *AtmIf Pm* component. There can be a maximum of 255 *Pm*s on one LP.

Mib: AtmCore

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpc Vpd Pm Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioned attributes which specify Performance Monitoring (PM) measurements, namely, Availability Ratio (AR) and Cell Loss Ratio (CLR), and control modes for the connection. The values specified in this group override those specified by the *AtmIf Pm* component.

Mib: AtmCore

ATTRIBUTE AtmIf Vpc Vpd Pm segSwitchSideMeasurement (segSwitchSide)

Access: Read and write

Description: This attribute specifies the set of Performance Monitoring (PM) measurements on the switch side configuration for the connection.

A value of ***sameAsInterface*** means that the measurements specified by the *segSwitchSideMeasurement* attribute of the *AtmIf Pm* component will be performed. No other values may be specified if ***sameAsInterface*** is selected. If the value is empty, no switch side PM measurements are done.

Mib: AtmCore

Set of:
- availabilityRatio (ar)
- cellLossRatio (clr)
- sameAsInterface (sameAsIf)

Default: (sameAsInterface)

ATTRIBUTE AtmIf Vpc Vpd Pm segLinkSideMeasurement (segLinkSide)

Access	Read and write
Description	This attribute specifies the set of Performance Monitoring (PM) measurements on the link side configuration for the connection. A value of ***sameAsInterface*** means that the measurements specified by the *segLinkSideMeasurement* attribute of the *AtmIf Pm* component will be performed. No other values may be specified if ***sameAsInterface*** is selected. If the value is empty, no link side PM measurements are done.
Mib	AtmCore
Set of	availabilityRatio (ar) cellLossRatio (clr) sameAsInterface (sameAsIf)
Default	(sameAsInterface)

ATTRIBUTE AtmIf Vpc Vpd Pm controlMode (mode)

Access	Read and write
Criticality	Component
Description	This attribute specifies the control mode of Performance Monitoring (PM) measurements for the connection. A value of ***autoStart*** means that PM activation procedures will start when the provisioned data is activated. A value of ***onDemand*** means that PM activation procedures will start when the operator issues the *Start* command. The PM measurements in this mode will continue until the operator issues the *Stop* command. A value of ***sameAsInterface*** means that the behavior will be as specified by the *controlMode* attribute of the *AtmIf Pm* component.
Mib	AtmCore

Values	autoStart (auto) onDemand (onDemand) sameAsInterface (sameAsIf)
Default	sameAsInterface

ATTRIBUTE AtmIf Vpc Vpd Pm switchSideClrType (clrType)

Access	Read and write
Description	This attribute specifies how the Cell Loss Ratio (CLR) Performance Monitoring (PM) is measured on a switch-side configuration for the connection. A value of ***complete*** indicates that egress discards at the segment end points are included in the CLR measurement as per ITU standards. A value of ***partial*** indicates that egress discards do not contribute to the CLR measurement. A value of ***sameAsInterface*** means that the behavior is as specified by the *switchSideClrType* attribute of the *AtmIf Pm* component.
Mib	AtmCore
Values	complete partial sameAsInterface (sameAsIf)
Default	sameAsInterface

COMPONENT AtmIf Vpc Loop (Loop)

Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Loop* The *Loop* component configures an ATM connection so that cells received from the ATM interface are retransmitted back to the interface through that connection. The *Loop* component requires

exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Nrp*, and *Test*).

Mib: AtmCore

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Vpc NailedUpRelayPoint (Nrp)

Groups: "GROUP AtmIf Vpc Nrp Provisioned (Prov)"

Scope: Device

Description: *AtmIf/n Vcc/vpi.vci Nrp*
This component is used to establish a single hop of a nailed-up ATM Bearer Service (ABS) connection. By linking together two *Nrp*s within a module, the associated connections are configured to relay ATM cells to one another. The *Nrp* component requires exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Test*, and *Loop*).

Mib: AtmBearerService

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpc Nrp Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the *Nrp* component.

Mib: AtmBearerService

ATTRIBUTE AtmIf Vpc Nrp nextHop (nextHop)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *Nrp* component with which this *Nrp* is associated. A sample value is *AtmIf/31 Vcc/0.32 Nrp*.
Mib	AtmBearerService
Values	Link (Service, nextHop)
Default	No default

ATTRIBUTE AtmIf Vpc Nrp oamSegmentBoundary (sb)

Access	Read and write
Criticality	Component
Description	This attribute specifies the OAM segment boundary desired for a *Nrp* component. It affects the connection point type value visible in the parent component's *connectionPointType* attribute. The desired OAM segment boundary can be specified directly as ***yes***, ***no*** or ***sameAsInterface***. If ***sameAsInterface*** is specified, the OAM segment boundary is same as the *oamSegmentBoundary* attribute of the associated *AtmIf* and the switch will set the *connectionPointType*, choosing ***segmentEndPoint*** for a segment-boundary ATM interface and ***connectingPoint*** for a non-segment-boundary ATM interface.
Mib	AtmBearerService
Values	no yes sameAsInterface
Default	sameAsInterface

ATTRIBUTE AtmIf Vpc Nrp bandwidthElastic (bwElastic)

Access	Read and write
Criticality	Component

Description	This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced will be displayed in the *bandwidthReduction* attribute. A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection will not be released. Currently, this attribute should only be set to ***yes*** for situations where this *Nrp* is functioning as a loopback on one side of an IMA link. There are no other situations where this setting is valid. A value of ***no*** indicates that the bandwidth for this connection will not be reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority.*
Mib	AtmBearerService
Values	no yes
Default	no

ATTRIBUTE AtmIf Vpc Nrp overrideHoldingPriority (ohpri)

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. Holding priority is used when there is an IMA group where some physical links have failed. Holding priority determines the order in which connections are released. 4 is the lowest holding priority and is released first. 0 is a higher priority and is released last. The value specified in this attribute will override whatever *holdingPriority* that has been provisioned at the *Vcd* (or *Vpd*). If

the value is left at the default of ***noOverride***, the *holdingPriority* provisioned at the *Vcd* (or *Vpd*) will be used.

Mib: AtmBearerService

Values:
0
1
2
3
4
noOverride

Default: noOverride

COMPONENT AtmIf Vpc SourcePvp (Src)

Groups:
"GROUP AtmIf Vpc Src Provisioned (Prov)"
"GROUP AtmIf Vpc Src Operational (Oper)"
"GROUP AtmIf Vpc Src OsiState (State)"
"GROUP AtmIf Vpc Src CallRedirectionOper (RedirectOp)"

Scope: Device

Description:
AtmIf/n Vpc/vpi SourcePvp
This component represents the source end of a soft PVP.

Mib: AtmNetworking

Opt. Subcomp.:
"COMPONENT AtmIf Vpc Src CallRedirection (Redirect)"
"COMPONENT AtmIf Vpc Src ManualDtl (Mdtl)"
"COMPONENT AtmIf Vpc Src RerouteOverride (RerOv)"

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP AtmIf Vpc Src Provisioned (Prov)

Properties: Provisioned

Description	This attribute group contains the provisionable attributes of the *AtmIf/n Vpc/vpi SrcPvp* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc Src callingAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the calling address of the soft PVP. If it is a null string, then the calling address is the address of the current interface (that is, where the soft PVC originates).
Mib	AtmNetworking
Values	String (0..20, Hex)
Default	""

ATTRIBUTE AtmIf Vpc Src calledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called (remote) address of the soft PVP.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpc Src calledVpi

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI of the soft PVP.

Mib	AtmNetworking
Values	Decimal (1..4095)
Default	No default

ATTRIBUTE AtmIf Vpc Src adminControl

Access	Read: All Write: All
Description	This attribute specifies the initial state of the connection. If this attribute is set to ***permLocked***, the connection initially remains down following activation. Setting this attribute to ***unlocked*** causes the connection to be established when it is activated.
Mib	AtmNetworking
Values	permLocked unlocked
Default	unlocked

ATTRIBUTE AtmIf Vpc Src aisGeneration (ais)

Access	Read and write
Description	This attribute specifies whether OAM-AIS generation occurs on the connection towards this interface when the SPVP is down. If this attribute is ***enabled***, OAM-AIS cells are generated for this SPVP when the SPVP is not up. The only exception is that when the source SPVP attribute *adminControl* is set to ***permLocked***, OAM-AIS cells are not generated for the source SPVP. If this attribute is set to ***disabled***, OAM-AIS cells are not generated.
Mib	AtmNetworking

Values	enabled disabled
Default	disabled

GROUP AtmIf Vpc Src Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SrcPvp* or *SrcPvc* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc Src retryCount

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed attempts to set up the soft PVP or soft PVC since the last time the connection failed.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpc Src lastFailureCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages. The default value for this attribute is set to 0.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpc Src lastFailureDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

GROUP AtmIf Vpc Src OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc Src adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users

only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: AtmNetworking

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE AtmIf Vpc Src operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmNetworking

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmIf Vpc Src usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in

use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: AtmNetworking

Values:
idle
active (activ)
busy

Default: idle

GROUP AtmIf Vpc Src CallRedirectionOper (RedirectOp)

Properties: Operational

Description: This group contains the operational attributes associated with the *CallRedirection* subcomponent.

Mib: AtmNetworking

ATTRIBUTE AtmIf Vpc Src currentDestination

Access:
Read: All
Write: Illegal

Description: This attribute indicates the current destination of the soft PVC or soft PVP.
A ***notConnected*** status indicates that the connection is not established.
A ***primary*** status indicates that the connection is established to the remote destination specified by *calledAddress* and *calledVpiVci/calledVpi* attributes under *Atmif Vcc Src* or *Atmif Vpc Src* or *Atmif Vpt Vcc Src* Component.
A ***secondary*** status indicates that the connection is established to the remote destination specified by *secondaryCalledAddress* and *secondaryCalledVpiVci/secondaryCalledVpi* attributes under *Atmif Vcc Src CallRedirection* or *Atmif Vpc Src CallRedirection* or *Atmif Vpt Vcc Src CallRedirection* Component.

Mib	AtmNetworking
Values	notConnected primary secondary
Default	No default

ATTRIBUTE AtmIf Vpc Src primaryAdminState

Access	Read: All Write: Illegal
Description	This attribute indicates the OSI Administrative State of the primary destination. The value ***locked*** indicates that the primary destination is precluded from call setup attempts. The value ***unlocked*** indicates that the primary destination is considered in call setup attempts.
Mib	AtmNetworking
Values	locked unlocked
Default	No default

ATTRIBUTE AtmIf Vpc Src secondaryAdminState

Access	Read: All Write: Illegal
Description	This attribute indicates the OSI Administrative State of the secondary destination. The value ***locked*** indicates that the secondary destination is precluded from call setup attempts. The value ***unlocked*** indicates that the secondary destination is considered in call setup attempts.
Mib	AtmNetworking
Values	locked unlocked
Default	No default

ATTRIBUTE AtmIf Vpc Src lastSecondaryFailureCauseCode

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code value of the last signalling message to the secondary destination which contained the CAUSE information element. If there has been no previous failure, the value for this attribute is 0.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpc Src lastSecondaryFailureDiagCode

Access	Read: All Write: Illegal
Description	This attribute indicates the diagnostic code associated with the *lastSecondaryFailureCauseCode* attribute. If the diagnostic code was not provided with that CAUSE information element or if there has been no previous failure, this attribute is empty.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Vpc Src CallRedirection (Redirect)

Groups	"GROUP AtmIf Vpc Src Redirect Provisioned (Prov)"
Scope	Device
Description	*Atmif/n Vpc/vpi SrcPvp CallRedirection* This component represents the secondary destination information for the source end of a soft PVP. The addition of this subcomponent is not critical to the parent SPVP. Deletion of this subcomponent or changes to its attributes

will impact service of the SPVP if it is established to the secondary destination.

Mib AtmNetworking

Common Verbs

Help
List
Display
Add
DELete

VERB LOCK Atmlf Vpc Src Redirect

Impact Service

Description

Lock Atmif Vpc Src CallRedirection
Lock -primary Atmif Vpc Src CallRedirection
Lock -secondary Atmif Vpc Src CallRedirection

This verb selectively precludes a provisioned destination address from consideration during call setup attempts for a Src PVP.

If [-*primary*] option is present, then the primary destination address is precluded from call setup attempts. If the connection is established to the primary destination address at the time of issuing the command, the connection is torn down and an immediate attempt is made to re-establish the connection to the secondary destination address.

If [-*secondary*] option is present, then the secondary destination

address is precluded from call setup attempts. If the connection is established to the secondary destination address at the time of issuing the command, the connection is torn down and an immediate attempt is made to re-establish the connection to the primary destination address.

If no option is present, the secondary destination is locked. This command will have the same effect as providing the *secondary* option.

Only one of the primary or the secondary addresses may be locked at any given time.

VERB UNLOCK Atmlf Vpc Src Redirect

Impact: Service

Description:

Unlock Atmif Vpc Src CallRedirection
Unlock -primary Atmif Vpc Src CallRedirection
Unlock -secondary Atmif Vpc Src CallRedirection
Unlock -primary -secondary Atmif Vpc Src CallRedirection

This verb selectively unlocks a destination address. The indicated address will be considered in subsequent call setup attempts.

If [-*primary*] option is present, then the primary destination address is unlocked and it is considered for subsequent call setup attempts. This action does not have any impact on the established connections.

If [-*secondary*] option is present, then the secondary destination address is unlocked and it is considered in subsequent call setup attempts. This action does not have any impact on the established connections.

If no option is present, the secondary destination address is unlocked. It has the same impact as *secondary* option.

If both options are provided, either of the primary or the secondary address which may have been locked will be unlocked.

GROUP Atmlf Vpc Src Redirect Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Source PVP *CallRedirection* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc Src Redirect secondaryCalledAddress

Access	Read: All Write: All
Description	This attribute specifies the secondary called address of the soft PVP.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpc Src Redirect secondaryCalledVpi

Access	Read: All Write: All
Description	This attribute specifies the secondary called VPI of the soft PVP.
Mib	AtmNetworking
Values	Decimal (1..4095)
Default	No default

COMPONENT AtmIf Vpc Src ManualDtl (Mdtl)

Groups	"GROUP AtmIf Vpc Src Mdtl Provisioned (Prov)" "GROUP AtmIf Vpc Src Mdtl Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc ManualDtl* *AtmIf/n Vpc/vpi SrcPvp ManualDtl* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc ManualDtl* This component represents the ability to specify the PNNI path on a per connection basis for provisioned SPVC and SPVP

connections.

The addition or deletion of this component is critical to the parent SPVC or SPVP. Changes to the attributes contained under this component are not critical.

Mib AtmNetworking

Common Verbs

Help
List
Display
Add
DELete

VERB RECconnect AtmIf Vpc Src Mdtl

Impact Service

Description

REConnect AtmIf/n Vcc/vpi.vci Src Mdtl
REConnect -primary AtmIf/n Vcc/vpi.vci Src Mdtl
REConnect -alternate AtmIf/n Vcc/vpi.vci Src Mdtl
REConnect -automatic AtmIf/n Vcc/vp.vci Src Mdtl

This command is used to trigger a connection to attempt to connect using the requested path. The behavior of this command differs for connections which do and do not subscribe to Path Optimization capabilities provided by rerouting services. To summarize:

1. Non-reroute Subscribed connections
A reconnect comand will result in the connection being taken down and re-establishment attempts being made. By default (if no option is specified), the primary path is attempted first otherwise the path specified by the option is first attempted. In the event of reconnect failure, subsequent re-establishment attempts will be progressed through a sequence of primary, alternate and automatic (traditional PNNI routing) paths.

2. Reroute Subscribed connections
A reconnect comand will utilize make-before-break functionality.

If an option is specified then only that path will be attempted. If a connection can be established, then datapath switching will be used to replace the existing connection minimizing cell loss. If no option is specified, the connection establishment attempts will be progressed through a sequence of primary, alternate and automatic (traditional PNNI routing) paths only until such time that a successfully established connection would be deemed more optimal than the incumbent. For instance, if a reconnect command is issued for a connection which is on it's alternate path and establishment on the primary path fails then the reconnect operation is considered complete and the connection will remain on the alternate path.

GROUP AtmIf Vpc Src Mdtl Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Manual DTL selection paths for provisioned connections. The normal sequence for connection retry is: First try to establish the connection using the *primaryPath*. If the connection is not successful and if the *alternatePath* has been provisioned, try to connect using the *alternatePath*. If the connection is still unsuccessful, use the PNNI routing protocol to generate the path.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc Src Mdtl primaryPath (priPath)

Access	Read and write
Description	This attribute specifies the name of the primary MDTL path. The value must match the instance value of one of the *Mdtl* components under *Artg Pnni*.
Mib	AtmNetworking
Values	String (1..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpc Src Mdtl alternatePath (altPath)

Access	Read and write
Description	This attribute specifies the name of the alternate MDTL path. The value must match the instance value of one of the *Mdtl* components under *Artg Pnni.* An empty string disables the alternate path.
Mib	AtmNetworking
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpc Src Mdtl automaticFallback (auto)

Access	Read and write
Description	This attribute specifies whether PNNI routing is to be used to establish a connection if connection attempts using the primary and alternate paths fail. If the value is ***enable***, PNNI routing will be attempted; if the value is ***disable***, it will not.
Mib	AtmNetworking
Values	disable enable
Default	enable

ATTRIBUTE AtmIf Vpc Src Mdtl mdtlVersion (vers)

Access	Read and write
Description	This attribute indicates a version number for Specified Paths and will ensure that the reroute behaviors (not subscribed) are maintained following a software migration to a software version where global rerouting is supported for Specified Path connections. This is an internal attribute intended for the above purpose only and should not be altered.
Mib	AtmNetworking
Values	notRerouteCapable rerouteCapable
Default	notRerouteCapable

GROUP AtmIf Vpc Src Mdtl Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *atmSrcMdtl* component
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc Src Mdtl currentPath (curPath)

Access	Read: All Write: Illegal
Description	This attribute indicates the current connection status of the Specified Path connection. A ***not connected*** status indicates that the connection is not established. The retry sequence did not succeed. The network operator can issue the *Reconnect* command to restart the retry sequence. A ***primary*** status indicates that the connection is using the path specified by the *primaryPath* attribute. An ***alternate*** status indicates that the connection is using the path specified by the *alternatePath* attribute. An ***automatic*** status indicates that the connection is using the path generated by the PNNI routing protocol. An ***unknown*** status indicates that the provisioning data for the path upon which the connection is established has been altered. A ***waiting connection*** status indicates that the connection is in a retry phase.
Mib	AtmNetworking
Values	not connected primary alternate automatic unknown waiting connection
Default	"not connected"

ATTRIBUTE AtmIf Vpc Src Mdtl primaryPathFailCause (priPathFail)

Access	Read: All Write: Illegal
Description	This attribute indicates the last failure cause code for the primary path. The value is reset to zero when trying to re-establish the connection.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpc Src Mdtl alternatePathFailCause (altPathFail)

Access	Read: All Write: Illegal
Description	This attribute indicates the last failure cause code for the alternate path. The value is reset to zero when trying to re-establish the connection.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

COMPONENT AtmIf Vpc Src RerouteOverride (RerOv)

Groups	"GROUP AtmIf Vpc Src RerOv Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc RerouteOverride* *AtmIf/n Vpc/vpi SrcPvp RerouteOverride* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc RerouteOverride* *FrAtm/n Dlci/x Siwf RerouteOverride* This component represents the ability to override rerouting capability subscription options on a per connection basis for provisioned SPVC and SPVP connections. The addition of this component and changes to the attributes contained in this component are critical to the parent SPVC or SPVP. However, the deletion of this component is not a critical

change for the connection. If this component is deleted, the connection remains active with the last provisioned subscription options. Subscription is lost when the connection goes down and re-establishes.

Mib AtmNetworking

Common Verbs
Help
List
Display
Add
DELete

VERB OPTIMIZE AtmIf Vpc Src RerOv

Impact Service

Description *OPTimize AtmIf/n Vcc/<vpi.vci> Src RerOv*
OPTimize AtmIf/n Vpc/<vpi> Src RerOv
OPTimize AtmIf/n Vpt/<vpi> Vcc/<vci> Src RerOv
OPTimize FrAtm/n Dlci/x Siwf RerOv

This command triggers path optimization for the connection segment. If the interface is already processing a path optimization request, then the *Optimize* command is cancelled.

Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP AtmIf Vpc Src RerOv Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attributes related to rerouting subscription options for provisioned connections.

Mib AtmNetworking

ATTRIBUTE AtmIf Vpc Src RerOv protocol

Access Read and write

Description	This attribute specifies the rerouting protocols that are requested by the connection segment. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsInterface***: The requested rerouting protocols are specified by the *protocol* attribute under the *Reroute Ov* component for the interface. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature. ***ebrOnly***: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.
Mib	AtmNetworking
Values	localGlobal localOnly globalOnly localEbr ebrOnly sameAsInterface (sameAs)
Default	sameAsInterface

ATTRIBUTE AtmIf Vpc Src RerOv localConnectionRecoverySubscr (lRecSub)

Access	Read and write

Description	This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local connection recovery subscription. If the connection segment requests ***localEbr***, this attribute controls the local connection recovery subscription. Only one will be granted. One of the following values can be specified: ***sameAsInterface***: The subscription rule is determined by the *localConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local connection recovery, otherwise the connection segment does not request subscription. ***yes:*** The connection segment requests subscription to local connection recovery. ***no***: The connection segment does not request subscription to local connection recovery.
Mib	AtmNetworking
Values	no yes sameAsInterface (sameAs)
Default	sameAsInterface

ATTRIBUTE AtmIf Vpc Src RerOv localPathOptimizationSubscr (lOptSub)

Access	Read and write
Description	This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local path optimization subscription.

If the connection segment requests ***localEbr***, this attribute controls the local path optimization subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *localPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local path optimization, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to local path optimization.
no: The connection segment does not request subscription to local path optimization.

Mib: AtmNetworking

Values:
no
yes
sameAsInterface (sameAs)

Default: sameAsInterface

ATTRIBUTE AtmIf Vpc Src RerOv globalConnectionRecoverySubscr (gRecSub)

Access: Read and write

Description: This attribute specifies whether the connection segment requests subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

If the connection segment requests ***ebrOnly***, this attribute controls EBR connection recovery subscription.

If the connection segment requests ***localEbr***, this attribute

controls the EBR connection recovery subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR connection recovery, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR connection recovery.
no: The connection segment does not request subscription to global or EBR connection recovery.

Mib — AtmNetworking

Values
no
yes
sameAsInterface (sameAs)

Default — sameAsInterface

ATTRIBUTE AtmIf Vpc Src RerOv globalPathOptimizationSubscr (gOptSub)

Access — Read and write

Description — This attribute specifies whether the connection segment requests subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

If the connection segment requests ***ebrOnly***, this attribute controls EBR path optimization subscription.

If the connection segment requests ***localEbr***, this attribute controls the EBR path optimization subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalPathOptimizationSubscr* attribute under the *Reroute Ov*

component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR path optimization, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR path optimization.
no: The connection segment does not request subscription to global or EBR path optimization.

Mib	AtmNetworking
Values	no yes sameAsInterface (sameAs)
Default	sameAsInterface

COMPONENT AtmIf Vpc RelayPoint (Rp)

Scope	Device
Description	*AtmIf/n Vpc/vpi Rp* *AtmIf/n Vcc/vpi.vci Rp* *AtmIf/n Vpt/vpi Vcc/vci Rp* The *RelayPoint* component is used to establish a single hop of a Switched connection. When linked together, two *Rp*s within a module, the associated connections are configured to relay ATM cells to one another.
Mib	AtmNetworking
Dyn. Subcomp.	"COMPONENT AtmIf Vpc Rp NextHop"
Common Verbs	Help List Display

COMPONENT AtmIf Vpc Rp NextHop

Instance	Decimal (1..300)
Groups	"GROUP AtmIf Vpc Rp NextHop Operational (Oper)"

Scope	Device
Description	*AtmIf/n Vpc/vpi Rp nextHop/n* *AtmIf/n Vcc/vpi.vci Rp nextHop/n* *AtmIf/n Vpt/vpi Vcc/vci Rp nextHop/n* The *RelayPointNextHop* component indicates the hops associated with this Rp component. There can be more than one component listed if the Vcc "*distributionType*" is ***"pointToMultipoint"*** and the "*callDirection*" is ***"fromLink"***.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP AtmIf Vpc Rp NextHop Operational (Oper)

Properties	Operational
Description	This attribute group contains an operational attribute for the AtmRelayPointNextHop component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc Rp NextHop nextHopValue

Access	Read only
Description	This attribute indicates the component name of the Rp component with which this Rp component is associated.
Mib	AtmNetworking
Values	The name of the component
Default	No default

COMPONENT AtmIf Vpc DestinationPvp (Dst)

Groups	"GROUP AtmIf Vpc Dst Operational (Oper)" "GROUP AtmIf Vpc Dst OsiState (State)"
Scope	Device

Description	*AtmIf/n Vpc/vpi DestinationPvp* This component represents the destination end of a soft PVP.
Mib	AtmNetworking
Subcomponents	"COMPONENT AtmIf Vpc Dst Configuration (Config)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpc Dst Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *AtmIf/n Vpc/vpi DstPvp* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc Dst calledAddress

Access	Read only
Description	This attribute indicates the called address of the soft PVP.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpc Dst callingAddress

Access	Read only
Description	This attribute indicates the calling (remote) address of the soft PVP. If the address in not known, then the value of this address is ***Unknown***.
Mib	AtmNetworking
Values	String (7..40, ASCII)

Default	No default

ATTRIBUTE AtmIf Vpc Dst callingVpi

Access	Read only
Description	This attribute represents the calling (remote) VPI of the soft PVP. If the VPI value is not known, the attribute value is set to ***Unknown***.
Mib	AtmNetworking
Values	String (1..7, ASCII)
Default	No default

GROUP AtmIf Vpc Dst OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc Dst adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

	The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Vpc Dst operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf Vpc Dst usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: AtmNetworking

Values:
idle
active (activ)
busy

Default: idle

COMPONENT AtmIf Vpc Dst Configuration (Config)

Groups: "GROUP AtmIf Vpc Dst Config DstProv"

Scope: Device

Description: *Atmif/n Vpc/n Dst Override*
This *Override* component contains provisioned attributes for this destination SPVP.

If this component does not exist, the destination SPVC behaves as if this component had been provisioned with default values for all its attributes.

Mib: AtmNetworking

Common Verbs:
Help
List
Display

GROUP AtmIf Vpc Dst Config DstProv

Properties: Provisioned

Description: This group contains provisionable attributes for destination SPVC/Ps.

Mib: AtmNetworking

ATTRIBUTE AtmIf Vpc Dst Config aisGeneration (ais)

Access	Read and write
Description	This attribute specifies whether OAM-AIS generation occurs on the connection towards this interface when the SPVC or SPVP is down. If this attribute is ***enabled***, OAM-AIS cells are generated for this SPVC or SPVP when the SPVC or SPVP is not up. If this attribute is set to ***disabled***, OAM-AIS cells are not generated.
Mib	AtmNetworking
Values	enabled disabled
Default	disabled

COMPONENT AtmIf Vpc TrafficManagement (Tm)

Groups	"GROUP AtmIf Vpc Tm Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vpc/vpi TrafficManagement,* *AtmIf/n Vcc/vpi.vci TrafficManagement,* *AtmIf/n Vpt/vpi TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci TrafficManagement* The *Tm* subcomponent contains the operational traffic management attributes of a connection. It is created dynamically for each activated *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore
Dyn. Subcomp.	"COMPONENT AtmIf Vpc Tm AvailableBitRate (Abr)"
Common Verbs	Help List Display

GROUP AtmIf Vpc Tm Operational (Oper)

Properties	Operational
Description	This group contains attributes for the *Tm* component to reflect operational traffic attributes.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc Tm txTrafficDescType (txTdt)

Access	Read only
Description	T his attribute indicates the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE AtmIf Vpc Tm txQosClass (txQos)

Access	Read only
Description	This attribute indicates the quality of service for the calling to called direction for this connection. This is only applicable to Soft PVC and SVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance

requirements (Variable bit rate audio and video).

Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer).

Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class 0 is the unspecified QOS class; no objective is specified for the performance parameters.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
0
1
2
3
4
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpc Tm txQueueLength (txQLen)

Access: Read only

Description: This attribute indicates the current number of cells in the transmit queue for this connection.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the length of the common queue which is used for this ATM service category.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***fifo***, this attribute indicates the number of cells for this connection which are enqueued in a first-in-first-out queuing method for this ATM service category. This will only occur for connections on ATM IP cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the length of the per-VC queue.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current number of cells in the link class queue used by this connection to buffer its traffic.

This attribute does not apply to basic *Vpt*s.

Mib	AtmCore
Values	Decimal (0..1011840)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Tm txQueueCongestionState (txQCong)

Access	Read only
Description	This attribute indicates the congestion state of the transmit queue for this connection.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the congestion state of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the congestion state of the per-VC queue.

The congestion state of a queue is indicated by a numeric value ranging from 0 to 3. When a queue is in a congested state x, only traffic with discard priority (DP) 0 to x are enqueued. Traffic with DP > x is discarded.

For example, if the congestion state is 3, there is no congestion and all traffic is enqueued. Likewise, when the congestion state is 0, there is maximum congestion and only traffic with DP=0 is enqueued on that queue.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current

congestion state of the link class queue used by this connection to buffer its traffic.

This attribute does not apply to basic *Vpt*s.

Mib: AtmCore

Values: Decimal (0..3)

Default: No default

ATTRIBUTE AtmIf Vpc Tm holdingPriority (hpri)

Access: Read only

Description: This attribute indicates the actual holding priority in effect for this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. Some applications, for example *Vcc Test*, may override the provisioned holding priority.

A value of ***notApplicable*** is displayed when this is an elastic connection. Holding priority does not apply to bandwidth elastic connections.

Holding priority has no effect if the equivalent cell rate (ECR) for a connection is zero.

This attribute does not apply to *Vpt Vcc*s.

Mib: AtmCore

Values:
0
1
2
3
4
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpc Tm rxTrafficDescType (rxTdt)

Access	Read only
Description	This attribute indicates the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE AtmIf Vpc Tm rxQosClass (rxQos)

Access	Read only
Description	This attribute indicates the quality of service for the called to calling direction for this connection. This is only applicable to Soft PVC and SVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class 0 is the unspecified QOS class; no objective is specified for the performance parameters.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
0
1
2
3
4
notApplicable
sameAsFwd

Default: No default

ATTRIBUTE AtmIf Vpc Tm atmServiceCategory (service)

Access: Read only

Description: This attribute indicates the ATM service category used for traffic in both directions of the connection.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to have significantly reduced value for the application.

The ***rtVariableBitRate*** service category is intended for real time applications; that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application. Real time VBR service may support

statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmCore
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr) availableBitRate (abr)
Default	No default

ATTRIBUTE AtmIf Vpc Tm trafficShaping (trShaping)

Access	Read only
Description	This attribute indicates the traffic shaping state of the connection.

A value of ***notApplicable*** indicates that traffic shaping is not applicable or not supported for this connection. This is the case:
- when the *txTrafficDescType* is 1 or 2.
- for standard *Vpt Vcc*s and basic *Vpt*s.
- for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, when the *atmServiceCategory* is ***constantBitRate***.

In these cases, the value of ***notApplicable*** is indicated regardless of whether traffic shaping is enabled or disabled in the provisioning data.

A value of ***disabled*** indicates that traffic shaping is applicable and supported for the type of connection but has been turned off in the provisioning data.

A value of ***linear*** or ***inverseUpc*** indicates that traffic shaping is applicable and supported for the type of connection and has been turned on in the provisioning data. This is the only case that indicates that traffic shaping is performed on the connection. In this case, the actual shaping rate is reflected in the *txTrafficDescParm* attribute, parameter number 4. A value of ***linear*** indicates that traffic is being shaped at the constant rate indicated in *txTrafficDescParm* 4. A value of ***inverseUpc*** indicates that the shaper strictly conforms to the requirements of a dual leaky bucket UPC enforcer. This value is indicated if traffic shaping is enabled, and the *txTrafficDescType* for this connection is 6, 7 or 8.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is always ***disabled***.

Traffic shaping for connections with *atmServiceCategory* as ***availableBitRate*** (*txTrafficDescType* 9) depends upon the *abrConnectionType* attribute. If *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, the value of this attribute is ***linear***. If *abrConnectionType* is ***erSwitch*** or ***efciSwitch***, this attribute is ***notApplicable***.

Mib AtmCore

Values	disabled linear inverseUpc notApplicable
Default	No default

ATTRIBUTE AtmIf Vpc Tm bearerClassBbc (bcBbc)

Access	Read only
Description	This attribute indicates the bearer capability for this connection. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is displayed, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements.When ***c*** is displayed, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it. Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***cbr*** or ***vbr***), and timing requirements are user defined (that is, transparent to the network). When the value of this attribute is ***x***, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol. Class vp service is used to indicate a transparent VP service when the user is requesting an ATM only service from the network. In this case, the network does not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except for VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP and SVP connections.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
a
c
x
vp
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpc Tm transferCapabilityBbc (tcBbc)

Access: Read only

Description: This attribute indicates the transfer capability for this connection. Uni 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance, or in the case that the transfer capability in the call request was set to NoIndication.

The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data.

The value NoIndication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing.

The value yes for end-to-end timing indicates that end-to-end timing is required for the connection.

The value no for end-to-end timing indicates that end-to-end timing is not required for the connection.

Mib: AtmCore

Values:
0
1
2
5
8
9
10
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpc Tm clippingBbc (cBbc)

Access: Read only

Description: This attribute indicates the value of the clipping susceptibility parameter in the broadband bearer capability (BBC) Information Element.

Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
no
yes
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpc Tm unshapedTransmitQueueing (unshap)

Access	Read only
Description	This attribute indicates the unshaped transmit queuing state of the connection. A value of ***common*** indicates that transmit traffic is being enqueued onto the common transmit queue for this service category. The *txQueueLength* attribute indicates the current length of the common transmit queue. A value of ***fifo*** indicates that transmit traffic is being queued in a first-in-first-out basis for this service category. This is similar to ***common*** queuing, but the *txQueueLength* attribute indicates the number of cells in this connection queue. A value of ***fifo*** will only be indicated for connections on ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***. A value of ***perVc*** indicates that transmit traffic is being enqueued onto a per-VC queue for this connection. A value of ***notApplicable*** indicates that transmit traffic is being shaped for this connection, or that unshaped transmit queuing is not applicable for this type of connection. Transmit traffic for a shaped connection is enqueued onto a per-VC queue, but this attribute is only applicable for unshaped connections. Unshaped transmit queuing is not applicable for basic *Vpt*s.
Mib	AtmCore
Values	perVc common notApplicable fifo
Default	No default

ATTRIBUTE AtmIf Vpc Tm bestEffort

Access	Read only

Description	This attribute indicates value of best effort parameter in the ATM Traffic Descriptor Information Element. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	indicated notIndicated notApplicable
Default	No default

ATTRIBUTE AtmIf Vpc Tm forceTagging (tagging)

Access	Read only
Description	This attribute indicates the state of force tagging option for this connection. Force tagging refers to setting the CLP bit for all cells on a connection. A value of ***enabled*** indicates that the CLP bit is being set to 1 for all cells in the transmit direction on this connection. A value of ***disabled*** indicates that the CLP bit is unchanged for cells in the transmit direction on this connection. The value ***disabled*** is always displayed for *Vpt*s since forced tagging is applied on a per *Vpt Vcc* basis.
Mib	AtmCore
Values	disabled enabled
Default	No default

ATTRIBUTE AtmIf Vpc Tm weight

Access	Read only
Description	This attribute indicates the relative weight of this unshaped connection. Connections with a larger weight get a larger proportion of the link bandwidth or in the case of standard *Vpt Vcc*s, the *Vpt* bandwidth. For all but standard *Vpt Vcc*s, the default connection weight is determined by the weight policy for a service category and the traffic descriptor for a connection. For standard *Vpt Vcc*s, the default connection weight is determined by the *Vcc*'s service category. A value from 1 to 4095 indicates an actual weight. The value ***upToQueueLimit*** indicates that the weight of a connection is up to the transmit queue limit for this connection and is used for connections which have the value of the *unshapedTransmitQueueing* attribute displayed as ***fifo***. This attribute has a displayed value of ***notApplicable*** in the following cases: - This connection has the value of the *trafficShaping* attribute displayed as either ***linear*** or ***inverseUpc***. - This connection has the value of the *trafficShaping* attribute displayed as ***disabled***, but the connection's service category has the *trafficShaping* attribute provisioned as either ***enabled*** or ***inverseUpc***. - This connection has the value of the *unshapedTransmitQueueing* attribute displayed as ***common***. - This is a basic *Vpt* connection. - For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, since per-connection weight is not supported.
Mib	AtmCore
Values	Decimal (1..4095) upToQueueLimit notApplicable
Default	No default

ATTRIBUTE AtmIf Vpc Tm usageParameterControl (upc)

Access Read only

Description This attribute indicates the UPC state of the connection.

A value of ***notApplicable*** indicates that UPC is not applicable or not supported for the connection. This is the case:
- when the connection's *rxTrafficDescType* is 1 or 2.
- for standard *Vpt Vcc*s and basic *Vpt*s.

A value of ***notApplicable*** is set regardless of whether UPC is disabled or enabled in provisioning data.

A value of ***disabled*** indicates that UPC is applicable and supported for the type of connection but has been turned off in the provisioning data.

A value of ***enforced*** indicates that UPC is actively checking conformance for the connection and is discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. On some ATM cards, the counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

A value of ***monitored*** indicates that UPC is actively checking conformance for the connection and counting the violations, but is not discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. The counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt. rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

If the *atmServiceCategory* for this connection is ***availableBitRate***, a value of ***enforced*** indicates that Dynamic Generic Cell Rate Algorithm (DGCRA) is active for the connection. The traffic descriptor parameters used for DGCRA

enforcement are reflected in the *rxTrafficDescParm* of the connection.

Mib: AtmCore

Values:
enforced
disabled
monitored
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpc Tm txPacketWiseDiscard (txpd)

Access: Read only

Description: This attribute indicates the current set of packet-wise discard functions in effect in the transmit data direction at this connection point.

A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point.

A value of ***wred*** indicates that Weighted Random Early Detection is in effect at this connection point. W-RED can be enabled by provisioning for PVCs and SPVCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Packet-wise functions are not applicable to virtual path connections (VPCs) on these cards.

On all other ATM cards, all packet-wise discard functions also apply to virtual path connections (VPCs).

This attribute is not applicable for *Vpt*s.

Mib AtmCore

Set of
ppd
epd
wred

Default No default

ATTRIBUTE AtmIf Vpc Tm rxPacketWiseDiscard (rxpd)

Access Read only

Description This attribute indicates the current set of packet-wise discard functions in effect in the receive data direction at this connection point.

A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, packet-wise functions are not applicable to virtual path connections (VPCs).

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Note that a provisioned value of ***enabled*** for the *Vcc/Vpc Vcd/Vpd Tm rxPacketWiseDiscard* provisionable attribute is used only for signaling SPVC/SPVP setup across the

network, and does not result in actually enabling packet-wise discard functions in the receive data direction of a connection locally on these cards, thus does not affect the operational value displayed.

On all other ATM cards, all packet-wise discard functions also apply to virtual path connections (VPCs).

This attribute is not applicable for *Vpt*s.

Mib: AtmCore

Set of: ppd
epd

Default: No default

ATTRIBUTE AtmIf Vpc Tm bandwidthElastic (bwElastic)

Access: Read only

Description: This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application (for example, *Trunk*) running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced is displayed in the *bandwidthReduction* attribute.

A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection is not released.

A value of ***no*** indicates that the bandwidth for this connection is not reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority.*

Bandwidth elasticity has no effect for connections which have an equivalent cell rate (ECR) of zero.

This attribute is not applicable for *Vpt*s and *Vpt Vcc*s.

Mib	AtmCore
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vpc Tm bandwidthReduction (bwReduction)

Access	Read only
Description	This attribute shows the amount by which the bandwidth has been reduced for this connection. This value is non-zero only for connections which have *bandwidthElastic* displayed as ***yes***, and which are also operating in a reduced bandwidth mode. This is typically the case for selected connections running over an IMA link. This attribute takes a value from 0 (no reduction) up to the ECR. For all connections which are running at their full allocated bandwidth, *bwReduction* has the value 0. Connections which have been reduced in allocated bandwidth have a positive number for this attribute. The *bwReduction* may be subtracted from the ECR (which is displayed as *txTrafficDescParm* 5) to determine the actual bandwidth allocated to this connection.
Mib	AtmCore
Values	Decimal (0..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE AtmIf Vpc Tm abrConnectionType (abrType)

Access	Read only
Description	This attribute indicates the type of ABR behavior which is in effect at this connection. This attribute is only applicable if the *atmServiceCategory* attribute is ***availableBitRate***. If the *atmServiceCategory* attribute is not ***availableBitRate***, this attribute value is set to ***notApplicable***. For ATM cards which do not support ABR connections, the possible values for this attribute are ***notApplicable***, ***efciSwitch***, or ***nonAbrInterworking***. In EFCI marking mode, the Explicit

Forward Congestion Indication (EFCI) field in the data cell headers is used to indicate transmit queue congestion.

For ATM cards which do support ABR connections, if the *connectionPointType* is ***connectionEndPoint***, the value of this attribute is ***sourceDest***. In this mode, the ABR Source and Destination behavior is in effect at this connection. This attribute is also ***sourceDest*** in the case where the next hop connection is specified as ***nonAbrInterworking***. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

If the *connectionPointType* is not ***connectionEndPoint***, the value of this attribute depends upon the *abrConnectionType* provisioning and the card type to which the traffic is forwarded on the backplane. The default *abrConnectionType* is provisioned at the *CA Abr abrConnectionType* attribute, and may be overridden for a provisioned connection in the *Vcd Tm abrConnectionType* or *Vpd Tm abrConnectionType* attribute. If the *CA Abr abrConnectionType* attribute is ***virtualSourceDest*** at either one of the two connection points, and if both the connection points are defined on ATM cards which support ABR connections, virtual source and destination behavior is applied to the connection. In this instance, the attribute displays the value ***virtualSourceDest***.

This attribute has the value ***erSwitch*** if ABR explicit rate functionality is in effect at this connection. In this mode, the switch may modify the Explicit Rate (ER) field of backward Resource Management (RM) cells to indicate the status of congestion at this connection point.

This attribute has the value ***nonAbrInterworking*** in the case where this connection point is functioning as an SPVC origin for an ABR connection where the link side of this connection is configured as a non-ABR ATM service category. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***.

Mib AtmCore

Values	erSwitch efciSwitch virtualSourceDest sourceDest nonAbrInterworking notApplicable
Default	No default

ATTRIBUTE AtmIf Vpc Tm txTrafficDescParm (txTdp)

Access	Read only
Description	This attribute is a vector of five transmit traffic parameters whose mapping is defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR), actual cell rate (ACR), explicit rate (ER), equivalent cell rate (ECR), and actual shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. When *txTrafficDescType* is 1 or 2, parameters 1 through 5 are unused. In this description, PCR is the greater of either the PCR or the requested shaping rate (parameter 1 or parameter 5) specified in the *txTrafficDescParm* attribute under the *Vcd Tm* or *Vpd Tm* component. When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 or 1 traffic; parameters 2 and 3 are unused. When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. When *txTrafficDescType* is 6, parameter 1 represents the PCR for

CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic.

When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, parameter 4 reflects the actual shaping rate in cell/s for this connection. For CQC-based ATM cards, the set of available shaping rates is based on the number of interfaces doing shaping (attribute *perVcQueueInterfaces*), and the *shapingScalingFactor* attribute of the *Arc Cqc Override* component. A rate of zero (0) indicates that shaping is not performed, or that the interface is down.

When *txTrafficDescType* is 9**,** parameter 1 represents the PCR; parameter 2 represents the Cell Delay Variation Toleration (CDVT); parameter 3 represents the Minimum Cell Rate (MCR); the meaning of parameter 4 depends upon the value of the *abrConnectionType* attribute. if *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, parameter 4 represents the Allowed Cell Rate (ACR); If *abrConnectionType* is ***erSwitch***, parameter 4 represents the Explicit Rate (ER); and if *abrConnectionType* is ***efciSwitch***, parameter 4 reflects the actual shaping rate in cell/s for this connection.

When *txTrafficDescType* is 3, 4, 5, 6, 7, 8, or 9, parameter 5 reflects the equivalent cell rate in cell/s for this connection as determined by the Connection Admission Control (CAC) algorithm. The equivalent cell rate is useful in determining the admission characteristics of this connection.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf Vpc Tm txQueueThresholds (txQThresh)

Access	Read only
Description	This attribute indicates the queue limit and the discard thresholds for the transmit queue of this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the thresholds of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the thresholds of the per-VC queue. The first element indicates the queue limit. The provisioned value of the transmit queue limit is derived from the *txQueueLimit* attribute under the service category subcomponents of the *CA* component for the service category of this connection. The second element is the threshold that marks the transition from congestion state 1 to congestion state 0. This is the threshold at which traffic with discard priority (DP) = 1 is discarded. This threshold is set at approximately 90 percent of the first parameter, the operational queue limit. The third element is the threshold that marks the transition from congestion state 2 to congestion state 1. This is the threshold at which traffic with DP = 2 is discarded. This threshold is set at approximately 75 percent of the first parameter, the operational queue limit. The fourth element is the threshold that marks the transition from congestion state 3 to congestion state 2. This is the threshold at which traffic with DP = 3 is discarded. This threshold is set at approximately 35 percent of the first parameter, the operational

queue limit.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the thresholds of the link class queue used by this connection to buffer it traffic.

This attribute does not apply to basic *Vpt*s.

Mib	AtmCore
Vector of	Decimal (0..1011840)
Units	cells
Index	Decimal (0..3)
Default	No default

ATTRIBUTE AtmIf Vpc Tm rxTrafficDescParm (rxTdp)

Access	Read only
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. Cell delay variation tolerance (CDVT) is expressed in microseconds. When *rxTrafficDescType* is 1 or 2, none of the parameters are used. When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT. When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; parameter 4 represents the CDVT. When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; parameter 4 represents

the CDVT.

When *rxTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents CDVT; parameter 3 represents the MCR; parameter 4 is not used.

If *upc* is ***disabled*** for this connection, the values of PCR, SCR, MBS and CDVT are the provisioned parameters.

If *upc* is ***enabled***, the values of PCR, SCR, MBS, and CDVT are exactly the values used by the usage parameter control hardware in policing the arriving traffic. These may vary slightly from the provisioned values due to granularity of the hardware. In the case where the PCR is equal to the SCR, the effective MBS is zero.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE AtmIf Vpc Tm txQosParameters (tqp)

Access	Read only

Description	This attribute is a vector of three elements that indicate the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

ATTRIBUTE AtmIf Vpc Tm rxQosParameters (rqp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

COMPONENT AtmIf Vpc Tm AvailableBitRate (Abr)

Groups	"GROUP AtmIf Vpc Tm Abr Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vpc/vpi Tm AvailableBitRate,* *AtmIf/n Vcc/vpi.vci Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vcc/vci Tm AvailableBitRate* This component contains ABR-related operational attributes of a connection. It is dynamically created for connections where the value of the *atmServiceCategory* attribute is ***availableBitRate***, and where the value of the *abrConnectionType* attribute is ***sourceDest***, or ***virtualSourceDest***.
Mib	AtmCore
Common Verbs	Help List Display

GROUP AtmIf Vpc Tm Abr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for connections using ABR service category.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc Tm Abr initialCellRate (icr)

Access	Read only

Description	This attribute indicates the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period. For nailed-up connections, this attribute is determined by the provisioned value of the *initialCellRate* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element. The ICR for a connection is a value between the MCR and the PCR. Furthermore, ICR has an upper bound determined by the *transientBufferExposure* divided by *fixedRoundTripTime*.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cell/s
Default	No default

ATTRIBUTE AtmIf Vpc Tm Abr transientBufferExposure (tbe)

Access	Read only
Description	This attribute indicates the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the resource to send during start-up periods, before the first Resource Management (RM) cell returns. For nailed-up connections, this attribute is determined by the provisioned value of the *transientBufferExposure* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Tm Abr fixedRoundTripTime (frtt)

Access	Read only
Description	This attribute indicates the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. For nailed-up connections, this attribute is determined by the provisioned value of the *fixedRoundTripTime* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	No default

ATTRIBUTE AtmIf Vpc Tm Abr rateDecreaseFactor (rdf)

Access	Read only
Description	This attribute indicates the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. For nailed-up connections, this attribute is determined by the provisioned value of the *rateDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..15)

Default	No default

ATTRIBUTE AtmIf Vpc Tm Abr rateIncreaseFactor (rif)

Access	Read only
Description	This attribute indicates the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64. RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR. For nailed-up connections, this attribute is determined by the provisioned value of the *rateIncreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..15)
Default	No default

ATTRIBUTE AtmIf Vpc Tm Abr maxCellPerRmCell (nrm)

Access	Read only
Description	This attribute indicates the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell. For nailed-up connections, this attribute is determined by the provisioned value of the *maxCellsPerRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.

Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Tm Abr maxTimeBetweenRmCell (trm)

Access	Read only
Description	This attribute indicates the TRM parameter for this connection. TRM provides an upper bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least 2 other cells have been sent, the next cell to be transmitted would be a forward RM cell. For nailed-up connections, this attribute is determined by the provisioned value of the *maxTimeBetweenRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000)
Units	microsec
Default	No default

ATTRIBUTE AtmIf Vpc Tm Abr cutoffDecreaseFactor (cdf)

Access	Read only
Description	This attribute indicates the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero. CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the *forwardRmCellLimit* attribute, the limit of the

number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

For nailed-up connections, this attribute is determined by the provisioned value of the *cutoffDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.

Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64)
Default	No default

ATTRIBUTE AtmIf Vpc Tm Abr acrDecreaseTimeFactor (adtf)

Access	Read only
Description	This attribute indicates the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. For nailed-up connections, this attribute is determined by the provisioned value of the *acrDecreaseTimeFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	No default

ATTRIBUTE AtmIf Vpc Tm Abr forwardRmCellLimit (crm)

Access	Read only
Description	This attribute indicates the CRM parameter for this connection. CRM is the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor*. The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. The value of CRM is obtained as *transientBufferExposure* divided by *maxCellsPerRmCell*.
Mib	AtmCore
Values	Decimal (1; 3; 7; 15; 31; 63; 127; 255; 511; 1023; 2047; 4095)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Tm Abr txRateChangeInfo (txrci)

Access	Read only
Description	This attribute indicates the rate change information put into the last forward Resource Management (RM) cell turned around as a backward-RM cell. For connections configured as an ABR Source or Destination, the turned around backward-RM cell is sent over the interface. For connections configured as an ABR Virtual Source or Virtual Destination, the turned around backward-RM cell is sent over the backplane.
Mib	AtmCore
Values	congestionIndicated noIncreaseIndicated explicitRateIndicated
Default	No default

ATTRIBUTE AtmIf Vpc Tm Abr acrRateChangeInfo (arci)

Access	Read only
Description	This attribute indicates the type of change in the Allowed Cell Rate (ACR) as a result of the information in the last backward Resource Management (B-RM) cell received from the interface. This attribute value is only applicable when the *Vcc Tm* or *Vpc Tm abrConnectionType* attribute is ***sourceDest*** or ***VirtualSourceDest***. In all other cases, this attribute value is ***notApplicable***. A value of ***noChange*** indicates that the rate did not change as a result of the last backward RM cell received. A value of ***decreasedByRdf*** or ***increasedByRif*** indicates that the ACR was increased or decreased by the corresponding factor. This change is as a result of the CI or NI bit setting in the last backward RM cell, or an ADTF timeout. A value of ***setToExplicitRate*** indicates that the ACR was set to the ER value in the last backward RM cell.
Mib	AtmCore
Values	noChange decreasedByRdf increasedByRif setToExplicitRate notApplicable
Default	No default

ATTRIBUTE AtmIf Vpc Tm Abr txFwdRmCells

Access	Read only
Description	This attribute counts the number of forward Resource Management (RM) cells sent over the interface since the last backward RM-cell was received from the interface. If the value of this attribute is greater than or equal to the value of *forwardRmCellLimit*, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor.*

	This counter is reset to zero each time a backward-RM cell is received. This counter does not wrap to zero if it reaches its maximum value of 4095 in order to indicate that no backward RM cell has been received.
Mib	AtmCore
Values	Decimal (0..4095)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Tm Abr rxEfci

Access	Read only
Description	This attribute indicates the value of the Explicit Forward Congestion Indication (EFCI) bit of the last data cell received from the interface. When a forward Resource Management (RM) cell is turned around as a backward-RM cell, the Congestion Indication (CI) field of the backward-RM cell is set to 1, if the value of this attribute is ***indicated***. This attribute is set to ***notIndicated*** each time a backward-RM cell is transmitted.
Mib	AtmCore
Values	notIndicated indicated
Default	No default

COMPONENT AtmIf Vpc MulticastNailedUpRelayPoint (Mnrp)

Groups	"GROUP AtmIf Vpc Mnrp Provisioned (Prov)"
Scope	Device

Description	*AtmIf/n Vcc/vpi.vci Mnrp* This component is used to establish a root of a multicast nailed-up ATM Bearer Service (ABS) connection. By linking a *Mnrp* to a *Nrp*, the associated connections are configured to relay ATM cells from *Mnrp* to *Nrp*. The *Mnrp* component requires exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Test*, *Nrp* and *Loop*). This component is supported only on 4pOC3SmIrAtm and 4pOC3MmAtm cards.This component is not supported under *Vpt Vcc* and *Vpt Vpc*.
Mib	AtmBearerService
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpc Mnrp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Mnrp* component.
Mib	AtmBearerService

ATTRIBUTE AtmIf Vpc Mnrp oamSegmentBoundary (sb)

Access	Read and write
Criticality	Component
Description	This attribute specifies the OAM segment boundary desired for a *Mnrp* component. It affects the connection point type value visible in the parent component's *connectionPointType* attribute. The desired OAM segment boundary can be specified directly as ***yes***, ***no*** or ***sameAsInterface***. If ***sameAsInterface*** is specified, the OAM segment boundary is same as the *oamSegmentBoundary* attribute of the associated *AtmIf* and the switch will set the *connectionPointType*, choosing ***segmentEndPoint*** for a segment-

boundary ATM interface and ***connectingPoint*** for a non-segment-boundary ATM interface.

Mib: AtmBearerService

Values:
no
yes
sameAsInterface

Default: sameAsInterface

ATTRIBUTE AtmIf Vpc Mnrp bandwidthElastic (bwElastic)

Access: Read and write

Criticality: Component

Description: This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced will be displayed in the *bandwidthReduction* attribute.
A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection will not be released. Currently, this attribute should only be set to ***yes*** for situations where this *Mnrp* is functioning as a loopback on one side of an IMA link. There are no other situations where this setting is valid.
A value of ***no*** indicates that the bandwidth for this connection will not be reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority.*

Mib: AtmBearerService

Values:
no
yes

Default: no

ATTRIBUTE AtmIf Vpc Mnrp overrideHoldingPriority (ohpri)

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. Holding priority is used when there is an IMA group where some physical links have failed. Holding priority determines the order in which connections are released. 4 is the lowest holding priority and is released first. 0 is a higher priority and is released last. The value specified in this attribute will override whatever *holdingPriority* that has been provisioned at the *Vcd* (or *Vpd*). If the value is left at the default of ***noOverride***, the *holdingPriority* provisioned at the *Vcd* (or *Vpd*) will be used.
Mib	AtmBearerService
Values	0 1 2 3 4 noOverride
Default	noOverride

ATTRIBUTE AtmIf Vpc Mnrp nextHop (nextHop)

Access	Read and write
Description	This attribute specifies the list of *Nrp* components with which this *Mnrp* is associated. A sample value is *AtmIf/31 Vcc/0.32 Nrp*. This attribute must be provisioned with at least one Nrp component under a compatible connection type.
Mib	AtmBearerService
List of	Link (Service, nextHop)
Default	No default

COMPONENT AtmIf Vpc PerformanceMonitoring (Pm)

Instance	linkSide switchSide
Groups	"GROUP AtmIf Vpc Pm PmStatus (Status)" "GROUP AtmIf Vpc Pm FwdClrMeasurements (FwdClr)" "GROUP AtmIf Vpc Pm BwdClrMeasurements (BwdClr)" "GROUP AtmIf Vpc Pm ArMeasurements (Ar)"
Scope	Device
Description	*AtmIf/n Vcc/x.y PerformanceMonitoring* *AtmIf/n Vpc/x PerformanceMonitoring* This component contains operational attributes for Performance Monitoring (PM) measurements on the connection. It also allows starting and stopping PM measurements when the *controlMode* attribute in the *AtmIf Pm* or *AtmIf Vcc Vcd Pm* or *AtmIf Vpc Vpd Pm* component is set to ***onDemand***.
Mib	AtmCore
Common Verbs	Help List Display

VERB START AtmIf Vpc Pm

Impact	Service
Description	*Start AtmIf/n Vcc/x.y PerformanceMonitoring* *Start AtmIf/n Vpc/x PerformanceMonitoring* This verb starts Performance Monitoring (PM) activation procedures on the connection for PM measurements indicated in the *segSwitchSide* and *segLinkSide* attributes. This verb produces an error message when the connection is idle, PM has already been started or the *controlMode* attribute for the PM measurements has a value of ***autoStart***. The measurements will continue until the *Stop* verb is issued.

VERB STOP AtmIf Vpc Pm

Impact	Service
Description	*Stop AtmIf/n Vcc/x.y PerformanceMonitoring* *Stop AtmIf/n Vpc/x PerformanceMonitoring* This verb starts Performance Monitoring (PM) deactivation procedures on the connection for PM measurements indicated in the *segSwitchSide* and *segLinkSide* attributes. This verb produces an error message when PM is not running or the *controlMode* attribute for the PM measurements has a value of ***autoStart***.

GROUP AtmIf Vpc Pm PmStatus (Status)

Properties	Operational
Description	This group contains attributes indicating the status of each Performance Monitoring (PM) measurement.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc Pm clrMeasurementStatus (clr)

Access	Read only
Description	This attribute displays the Cell Loss Ratio (CLR) measurement status of the connection. The value ***inactive*** indicates the test is inactive. The value ***activating*** indicates the test is activating. The value ***active*** indicates the test is in progress The value ***activationFailed*** indicates the test failed to be activated. Refer to the *failureCause* attribute for failure cause.
Mib	AtmCore
Values	inactive activating active activationFailed
Default	inactive

ATTRIBUTE AtmIf Vpc Pm arMeasurementStatus (arStatus)

Access	Read only
Description	This attribute indicates the Availability Ratio (AR) measurement status of the connection. The value ***inactive*** indicates the test is inactive. The value ***activating*** indicates the test is activating. The value ***active*** indicates the test is in progress The value ***activationFailed*** indicates the test failed to be activated. Refer to the *failureCause* attribute for the failure cause.
Mib	AtmCore
Values	inactive activating active activationFailed
Default	inactive

ATTRIBUTE AtmIf Vpc Pm failureCause (cause)

Access	Read only
Description	This attribute indicates the failure cause of Performance Monitoring (PM) measurements. The following are possible causes: The value ***noError*** indicates no error. The value ***unknownCause*** indicates unknown failure cause. The value ***softwareResourcesUnavailable*** indicates software resources reserved for a maximum of 255 active PMs on the local FP card have been used up. The value ***hardwareResourcesUnavailable*** indicates hardware resources reserved for a maximum of 512 active PMs CLR card have been used up on the Link Side local card. The value ***remoteEndNoResponse*** indicates no response from remote end during activation.

The value ***activationCollision*** indicates activation collision was detected. Usually this is caused by both ends of the connection being provisioned to request PM. Only one end should be so provisioned.

The value ***remoteEndRejectedActivation*** indicates the remote end has rejected an activation request. Usually this is due to the remote end reaching a resource limit.

The value ***pcrUnsupported*** indicates the Tx or Rx PCR is out of range. The PCR value must be between 0 and 409601.

The value ***nextHopConnectionUnsupported*** indicates the next hop card type or connection type do not allow access to the necessary hardware to support PM measurements.

The value ***upcNotDisabled*** indicates UPC is not disabled on the local next hop card for this connection. PM measurements are not supported when UPC is either enforced or monitored.

Mib: AtmCore

Values:
noError
unknownCause
softwareResourcesUnavailable
hardwareResourcesUnavailable
remoteEndNoResponse
activationCollision
remoteEndRejectedActivation
pcrUnsupported
nextHopConnectionUnsupported
upcNotDisabled

Default: noError

ATTRIBUTE AtmIf Vpc Pm clrEnhancementStatus (enhanced)

Access: Read only

Description: This attribute indicates an enhanced mode of operation for Cell Loss Ratio (CLR) measurements by including cell discards from the remote segment end point which are not covered by the performance measurement (PM) cell.

The value ***inactive*** indicates that CLR enhanced mode of operation has not been activated.

The value ***active*** indicates that discards at the remote segment end point are being included in CLR measurements.

The value ***remoteEndNotProvidingStatistics*** indicates that the remote end is not replying to proprietary requests for additional discard counts. This occurs when the remote end does not have the software necessary to recognize these requests.

Mib	AtmCore
Values	inactive active remoteEndNotProvidingStatistics
Default	inactive

GROUP AtmIf Vpc Pm FwdClrMeasurements (FwdClr)

Properties	Operational
Description	This group contains Cell Loss Ratio (CLR) measurements for the forward direction of the connection. The local end is always the provisioned end which sends the activation request, and the remote end is the end which receives the activation request.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc Pm fwdTotalClrInterval

Access	Read only
Description	This attribute indicates the total time duration over which Cell Loss Ratio (CLR) has been calculated in the forward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE AtmIf Vpc Pm fwdTotalUserCellsRx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 received at the remote end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Pm fwdTotalUserCellsTx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 transmitted from the local end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Pm fwdTotalUserCellsRx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 received at the remote end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Pm fwdTotalUserCellsTx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 transmitted from the local end over the total CLR measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Pm fwdPmCellDiscardCount

Access	Read only
Description	This attribute indicates the total number of Performance Monitoring (PM) cells discarded in the forward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Pm fwdClr0

Access	Read only
Description	This attribute indicates the CLR for CLP=0 traffic calculated for the total measurement interval in the forward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

ATTRIBUTE AtmIf Vpc Pm fwdClr01

Access	Read only

Description	This attribute indicates the CLR for CLP=0+1 traffic calculated for the total measurement interval in the forward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

GROUP AtmIf Vpc Pm BwdClrMeasurements (BwdClr)

Properties	Operational
Description	This group contains Cell Loss Ratio (CLR) measurements for the backward direction of the connection. The local end is always the provisioned end which sends the activation request, and the remote end is the end which receives the activation request.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc Pm bwdTotalClrInterval

Access	Read only
Description	This attribute indicates the total time duration over which Cell Loss Ratio (CLR) measurement has been calculated in the backward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE AtmIf Vpc Pm bwdTotalUserCellsRx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 received at the local end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer

Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Pm bwdTotalUserCellsTx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 transmitted from the remote end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Pm bwdTotalUserCellsRx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 received at the local end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Pm bwdTotalUserCellsTx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 transmitted from the remote end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer

Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Pm bwdPmCellDiscardCount

Access	Read only
Description	This attribute indicates the total number of Performance Monitoring (PM) cells discarded in the backward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpc Pm bwdClr0

Access	Read only
Description	This attribute indicates the CLR for CLP=0 traffic calculated for the total measurement interval in the backward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

ATTRIBUTE AtmIf Vpc Pm bwdClr01

Access	Read only
Description	This attribute displays the CLR for CLP=0+1 traffic calculated for the total measurement interval in the backward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

GROUP AtmIf Vpc Pm ArMeasurements (Ar)

Properties	Operational

Description	This group contains Availability Ratio (AR) measurements of the connection.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc Pm currentAvailabilityStatus

Access	Read only
Description	This attribute indicates the current status of the bidirectional connection for purposes of Availability Ratio (AR) computation. The value ***notApplicable*** means AR measurement was not requested on this connection. The value ***available*** means AR is running and considers the connection available (that is, the *arAvailableTime* attribute is being incremented). The value ***unavailable*** means AR measurement was requested but the connection is currently unavailable.
Mib	AtmCore
Values	notApplicable available unavailable
Default	No default

ATTRIBUTE AtmIf Vpc Pm arTotalTime

Access	Read only
Description	This attribute indicates the total time used for calculating Availability Ratio (AR) of the bi-directional connection.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE AtmIf Vpc Pm arAvailableTime

Access	Read only
Description	This attribute indicates the total time the connection was available.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE AtmIf Vpc Pm arAvailabilityRatio

Access	Read only
Description	This attribute indicates the ratio of network availability representing the ratio of available time to the total time of the connection.
Mib	AtmCore
Values	Decimal (0.0000000..1.0000000)
Default	No default

COMPONENT AtmIf Vpc PathTraceRecord (PTRecord)

Groups	"GROUP AtmIf Vpc PTRecord Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vcc/x.y PTRecord* *AtmIf/n Vpc/n PTRecord* *AtmIf/n Vpt/n Vcc/x.y PTRecord* This component represents the path trace records for this

connection. If the connection is deleted, this component is also deleted.

Mib	AtmNetworking
Dyn. Subcomp.	"COMPONENT AtmIf Vpc PTRecord Hop"
Common Verbs	Help List Display

GROUP AtmIf Vpc PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmNetworking
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations

Default	No default

ATTRIBUTE AtmIf Vpc PTRecord timeStamp

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord srcPortId

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmNetworking
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord srcPortName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmNetworking
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord causeCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord diagCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Vpc PTRecord Hop

Instance	Decimal (0..200)
Groups	"GROUP AtmIf Vpc PTRecord Hop Operational (Oper)"
Scope	Device

Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmNetworking
Dyn. Subcomp.	"COMPONENT AtmIf Vpc PTRecord Hop VendorSpecificInfo (Vsi)"
Common Verbs	Help List Display

GROUP AtmIf Vpc PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop ingressDlci (dlci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop ingressCallReference (callref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message.

	The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmNetworking
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop ingressEndPointReference (epref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmNetworking
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop nodeId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop nodeName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop portId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop portName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking

Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop pnniTraceContRefusalIndPresent (refusal)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpc PTRecord Hop crankbackDestNodeIndPresent (dest)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpc PTRecord Hop pnniCrankbackGapIndPresent (gap)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpc PTRecord Hop crankBackCause (cause)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmNetworking
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop blockedTransitType (type)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmNetworking
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop blockedNodeId (bNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop blockedLinkPrecedingNodeId (pNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked.

	This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop blockedLinkPortId (bPortId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop blockedLinkSucceedingNodeId (sNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmNetworking

Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop dstVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop dstDlci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop dstCallReference (dcr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmNetworking
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop dstEndPointReference (depr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmNetworking
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop specifiedPath

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	no yes
Default	no

COMPONENT AtmIf Vpc PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	"GROUP AtmIf Vpc PTRecord Hop Vsi Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

	All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP AtmIf Vpc PTRecord Hop Vsi Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc PTRecord Hop Vsi length

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmNetworking
Values	Decimal (0..11)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop Vsi organizationUniqueId (oui)

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmNetworking
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE AtmIf Vpc PTRecord Hop Vsi data

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmNetworking
Values	String (1..8, Hex)
Default	No default

COMPONENT AtmIf Vpc RerouteInfo (RerInfo)

Groups	"GROUP AtmIf Vpc RerInfo Operational (Oper)" "GROUP AtmIf Vpc RerInfo EbrOperational (EOper)" "GROUP AtmIf Vpc RerInfo LocalOperational (LOper)" "GROUP AtmIf Vpc RerInfo GlobalOperational (GOper)" "GROUP AtmIf Vpc RerInfo EbrStatistics (EStats)" "GROUP AtmIf Vpc RerInfo LocalStatistics (LStats)" "GROUP AtmIf Vpc RerInfo GlobalStatistics (GStats)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci RerouteInfo* *AtmIf/n Vpc/vpi RerouteInfo* *AtmIf/n Vpt/vpi Vcc/vci RerouteInfo* *Aal1Ces/n RerouteInfo* *Fratm/n Dlci/n Siwf RerouteInfo* This component represents the rerouting capabilities of a connection segment. The component is present at the DTL originator of the connection segment. It is also present at each local domain rerouting node, if the local rerouting protocol has been granted to the connection segment.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP AtmIf Vpc RerInfo Operational (Oper)

Properties	Operational
Description	This group contains the common operational attributes that indicate rerouting activities at the connection level.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc RerInfo lastOptimizationMetric (lOptMet)

Access	Read only
Description	This attribute indicates which optimization metric was last used to select a path for the connection segment.
Mib	AtmNetworking
Values	cdv maxCtd aw specifiedPath
Default	No default

GROUP AtmIf Vpc RerInfo EbrOperational (EOper)

Properties	Operational
Description	This group contains attributes that indicate the EBR rerouting characteristics of a connection segment. This group is only present if the connection segment has been granted the EBR rerouting protocol.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc RerInfo ebrRecoverySubscribed (eRecSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.

Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo ebrOptimizationSubscribed (eOptSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR path optimization. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo ebrOptimizationMetricValue (eOptVal)

Access	Read only
Description	This attribute indicates the EBR optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo ebrOptimalMetricValue (eOptMetVal)

Access	Read only
Description	This attribute indicates the EBR optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo ebrOptimizationState (eOptSt)

Access	Read only
Description	This attribute indicates the current EBR optimization state of the connection segment. One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value. ***optimized:*** This value represents the state when the connection segment has moved to a path that is better than the recovered path

	but not as good as the optimal path. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	optimal recovered optimized
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo ebrTimeOfLastRecovery (eTime)

Access	Read only
Description	This attribute indicates the date and time of the last EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

GROUP AtmIf Vpc RerInfo LocalOperational (LOper)

Properties	Operational
Description	This group contains attributes that indicate the local rerouting characteristics of a connection segment. This group is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc RerInfo localRecoverySubscribed (lRecSub)

Access	Read only

Description	This attribute indicates whether the connection segment is subscribed to local connection recovery. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo localOptimizationSubscribed (lOptSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to local path optimization. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo localOptimizationMetricValue (lOptVal)

Access	Read only
Description	This attribute indicates the local optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. A value of ***undefined*** indicates that the local optimization metric value is undetermined. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking

Values	Decimal (0..4294967294) undefined
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo localOptimalMetricValue (lOptMetVal)

Access	Read only
Description	This attribute indicates the local optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.A value of ***undefined*** indicates that the local optimal optimization metric value is undetermined. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967294) undefined
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo localOptimizationState (lOptSt)

Access	Read only
Description	This attribute indicates the current local optimization state of the connection segment. One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value

specified by the optimal metric value.
optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

This attribute is only present if the connection segment has been granted the local rerouting protocol.

Mib: AtmNetworking

Values:
optimal
recovered
optimized

Default: No default

ATTRIBUTE AtmIf Vpc RerInfo localTimeOfLastRecovery (lTime)

Access: Read only

Description: This attribute indicates the date and time of the last local connection recovery.

This attribute is only present if the connection segment has been granted the local rerouting protocol.

Mib: AtmNetworking

Values: Time (DHMS)

Default: No default

GROUP AtmIf Vpc RerInfo GlobalOperational (GOper)

Properties: Operational

Description: This group contains attributes that indicate the global rerouting characteristics of a connection.

This group is only present if the connection segment has been granted the global rerouting protocol.

Mib: AtmNetworking

ATTRIBUTE AtmIf Vpc RerInfo globalRecoverySubscribed (gRecSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to global connection recovery. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo globalOptimizationSubscribed (gOptSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to global path optimization. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo globalOptimizationMetricValue (gOptVal)

Access	Read only
Description	This attribute indicates the global optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the global rerouting protocol.

Mib	AtmNetworking
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo globalOptimalMetricValue (gOptMetVal)

Access	Read only
Description	This attribute indicates the global optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***globalOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.The ***primary*** and ***alternate*** values are used to denote the optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo globalOptimizationState (gOptSt)

Access	Read only
Description	This attribute indicates the current global optimization state of the connection segment. One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection

segment is equal to the best known value.
recovered: This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value.
optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

This attribute is only present if the connection segment has been granted the global rerouting protocol.

Mib	AtmNetworking
Values	optimal recovered optimized
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo globalTimeOfLastRecovery (gTime)

Access	Read only
Description	This attribute indicates the date and time of the last global connection recovery. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

GROUP AtmIf Vpc RerInfo EbrStatistics (EStats)

Properties	Operational
Description	This group contains statistics related to Ebr rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc RerInfo totalEbrConnectionRecoveries (eConnRec)

Access	Read only
Description	This attribute counts successful EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo totalEbrPathOptimizations (ePathOpt)

Access	Read only
Description	This attributes counts successful EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo totalEbrOptimizationAttempts (eOptAtt)

Access	Read only
Description	This attribute counts the total number of EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking

Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vpc RerInfo LocalStatistics (LStats)

Properties	Operational
Description	This group contains statistics related to local rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc RerInfo totalLocalConnectionRecoveries (lConnRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo totalLocalPathOptimizations (lPathOpt)

Access	Read only
Description	This attributes counts successful local path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo totalLocalOptimizationAttempts (lOptAtt)

Access	Read only
Description	This attribute counts the total number of local path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vpc RerInfo GlobalStatistics (GStats)

Properties	Operational
Description	This group contains statistics related to global rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpc RerInfo totalGlobalConnectionRecoveries (gConnRec)

Access	Read only
Description	This attribute counts successful global connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo totalGlobalPathOptimizations (gPathOpt)

Access	Read only

Description	This attributes counts successful global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpc RerInfo totalGlobalOptimizationAttempts (gOptAtt)

Access	Read only
Description	This attribute counts the total number of global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Vpc MplsConnection (MplsCon)

Groups	"GROUP AtmIf Vpc MplsCon MplsConFec (Mcf)" "GROUP AtmIf Vpc MplsCon MplsConServLabel (Mcsl)" "GROUP AtmIf Vpc MplsCon Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vpc/vpi MplsCon* This component is used to establish an emulated ATM Vpc cell relay service over an MPLS network. By linking together an *MplsCon* component with an *Lsp Fec Ipv4Epa* component using the *transportFec* attribute, the associated connections are configured to relay ATM cells to one another. The *MplsCon* component requires exclusive use of its parent *Vpc* and cannot

co-exist with other ATM service components (such as *Nrp*, *Src*, *Mnrp* and *Loop*). The attributes *transportFec*, *incomingServiceLabel*, and *outgoingServiceLabel* must be provisioned. Also, the *incomingServiceLabel* attribute value must be unique for this node.
If an *MplsCon* component is added under the *Vpc* component, then the *Vr Dsd* component must have an *AtmServiceMap* subcomponent.

Mib: AtmCore

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpc MplsCon MplsConFec (Mcf)

Properties: Provisioned

Description: This group contains the provisionable attributes for the *MplsCon* component.

Mib: AtmCore

ATTRIBUTE AtmIf Vpc MplsCon transportFec (tFec)

Access: Read and write

Criticality: Component

Description: This attribute specifies the underlying transport LSP that carries the service traffic with which this *MplsCon* component is associated. A sample value is ***Vr/0 Mpls LspG Fec Ipv4Epa/ 47.138.152.83,32***. This attribute must be provisioned.

Mib: AtmCore

Values: The name of the component

Default: No default

ATTRIBUTE AtmIf Vpc MplsCon remoteProviderEdge (rPE)

Access	Read and write
Description	This attribute specifies the remote Provider Edge node information of the transport LSP. The operator can store either the name or the Primary IP Address of the remote PE node. This label is not a mandatory field that is required to set up this connection.
Mib	AtmCore
Values	String (0..82, ASCII)
Default	""

GROUP AtmIf Vpc MplsCon MplsConServLabel (Mcsl)

Properties	Provisioned
Description	This group contains the service labels used by an ATM Vpc connection to transmit and receive data for the *MplsCon* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc MplsCon incomingServiceLabel (isl)

Access	Read and write
Criticality	Component
Description	This attribute specifies the incoming service label carried by the transport LSP with which this *MplsCon* component is associated. The incoming service label on this node must match the outgoing service label on the remote Provider Edge node.
Mib	AtmCore
Values	Decimal (262144..264191) undefined
Default	undefined

ATTRIBUTE AtmIf Vpc MplsCon outgoingServiceLabel (osl)

Access	Read and write
Criticality	Component

Description	This attribute specifies the outgoing service label carried by the transport LSP with which this *MplsCon* component is associated. The outgoing service label must match the incoming service label on the remote Provider Edge node.
Mib	AtmCore
Values	Decimal (0..1048575) undefined
Default	undefined

GROUP AtmIf Vpc MplsCon Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes of the *MplsCon* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpc MplsCon operationalStatus (status)

Access	Read only
Description	This attribute indicates the health of the Transport LSP connection. A brief description of the *operationalStatus* attribute values is listed in the following: ***noError***: The transport LSP is Up. ***tLspDown***: The transport LSP cannot be established.
Mib	AtmCore
Values	noError tLspDown
Default	tLspDown

ATTRIBUTE AtmIf Vpc MplsCon clp0ToPhb (clp0)

Access	Read only
Description	This attribute indicates the PerHopBehavior applied to this connection when Clp = 0.

Mib	AtmCore
Values	Decimal (0..63) notApplicable
Default	notApplicable

ATTRIBUTE AtmIf Vpc MplsCon clp1ToPhb (clp1)

Access	Read only
Description	This attribute indicates the PerHopBehavior applied to this connection when Clp = 1.
Mib	AtmCore
Values	Decimal (0..63) notApplicable
Default	notApplicable

COMPONENT AtmIf VirtualChannelConnection (Vcc)

Instance	String (3..10, ASCII)
Groups	"GROUP AtmIf Vcc OsiState (State)" "GROUP AtmIf Vcc Operational (Oper)" "GROUP AtmIf Vcc ConnectionInfo (ConnInfo)" "GROUP AtmIf Vcc Status" "GROUP AtmIf Vcc Statistics (Stats)" "GROUP AtmIf Vcc Performance (Perf)"
Scope	Device
Description	*AtmIf/n VirtualChannelConnection/vpi.vci* This component represents a virtual channel connection (VCC). For *Vccs* directly beneath the *AtmIf*, the instance value defines the VPI and VCI values for this connection—for example, *Vcc/16.32* would define a connection with a VPI of 16 and a VCI of 32. The VPI can be in the range of 0 to 4095 and the VCI can be in

	the range of 0 to 65535. Note that a *Vcc* instance of 0.0 is invalid as defined in the ATM Forum.
Mib	AtmCore
Subcomponents	"COMPONENT AtmIf Vcc VirtualChannelDescriptor (Vcd)"
Opt. Subcomp.	"COMPONENT AtmIf Vcc Loop (Loop)" "COMPONENT AtmIf Vcc NailedUpRelayPoint (Nrp)" "COMPONENT AtmIf Vcc NailedUpEndPoint (Nep)" "COMPONENT AtmIf Vcc Test (Test)" "COMPONENT AtmIf Vcc SourcePvc (Src)" "COMPONENT AtmIf Vcc MulticastNailedUpRelayPoint (Mnrp)" "COMPONENT AtmIf Vcc MulticastSourcePvc (Msrc)"
Dyn. Subcomp.	"COMPONENT AtmIf Vcc TrafficManagement (Tm)" "COMPONENT AtmIf Vcc EndPoint (Ep)" "COMPONENT AtmIf Vcc RelayPoint (Rp)" "COMPONENT AtmIf Vcc PerformanceMonitoring (Pm)" "COMPONENT AtmIf Vcc PathTraceRecord (PTRecord)" "COMPONENT AtmIf Vcc RerouteInfo (RerInfo)"
Dyn. Subcomp.	"COMPONENT AtmIf Vcc DestinationPvc (Dst)"
Common Verbs	Help List Display Add DELete

VERB TRACE AtmIf Vcc

Impact: Service

Description:

TRACE AtmIf/n Vcc/vpi.vci
TRACE -s -v -a -e AtmIf/n Vcc/vpi.vci
TRACE -p AtmIf/n Vcc/vpi.vci

This command traces the path of an intra-network segment of a connection. It displays the names of interface and connection components along this segment of a connection.

The Trace response for a *Vcc* does not show any hops of a VCC which are conveyed on a path connection (VPC). In this case the Trace command only shows the VCC hop points. Note however, that if the connection traverses a *Vcc* which resides beneath a *Vpt*, the *Vpt/vpi Vcc/vci* hierarchy is displayed in the trace results.

The option for the OAM trace is as follows:

-*p*: Selects the Nortel Networks proprietary OAM Connection Management Trace instead of the proprietary OAM Legacy Loopback Trace. If no options are provided, the default configuration uses the Legacy Loopback Trace.

The options for the signaling trace are as follows:

-*s*: Selects the PNNI signaling call trace instead of the Nortel Networks proprietary OAM-based trace. Option -*s* must be present if any one of options -*v*, -*a*, and -*e* are present, otherwise it defaults to the OAM-based trace.

-*v*: Request that the VPI.VCI values be collected along the trace. This option is only valid when the -*s* option is present.

-*a*: Request that the call reference/end point reference values be collected along the trace. This option is only valid when the -*s* option is present.

-*e*: Used on point-to-multipoint connections to specify the end

point reference value indicating which party to trace. If no *-e* option is used for a point-to-multipoint connection, the default traces the path with the endpoint reference 0, which is the first party. This option is only valid when the *-s* option is present.

Only one connection trace is supported at a time. An error message is returned if a response from the network is not received within 30 seconds.

If the verb is issued with the *-s* option for the *vcc/vpi.vci* values that are not active or were not created by signaling (for example, control channels), the command is refused.

VERB CLEAR AtmIf Vcc

Impact	Service
Description	*CLEAR AtmIf/n Vcc/vpi.vci* This command is used to clear a switched connection.

GROUP AtmIf Vcc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmCore

ATTRIBUTE AtmIf Vcc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: AtmCore

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE AtmIf Vcc operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmCore

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmIf Vcc usageState (osiUsage)

Access: Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmCore
Values	idle active (activ) busy
Default	idle

GROUP AtmIf Vcc Operational (Oper)

Properties	Operational
Description	This group contains operational information for a *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vcc connectionPointType (cpt)

Access	Read only
Description	This attribute reflects the role of the connection component at this interface. A value of ***connectionEndPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are processed by the connection component. A value of ***segmentEndPoint*** indicates that user cells and end-to-end OAM cells are relayed by the connection component, while segment OAM cells are processed by the connection component. A value of ***connectingPoint*** indicates that user cells, end-to-end

OAM cells, and segment OAM cells are relayed by the connection component.

A value of ***unknown*** indicates that the connection component is inactive.

Mib: AtmCore

Values:
connectionEndPoint
segmentEndPoint
connectingPoint
unknown

Default: No default

GROUP AtmIf Vcc ConnectionInfo (ConnInfo)

Properties: Operational

Description: This group contains operational connection characteristics information for a *Vcc* component.

Mib: AtmCore

ATTRIBUTE AtmIf Vcc distributionType (distrbt)

Access: Read only

Description: This attribute indicates the way data is distributed in the connection.

A value of ***pointToPoint*** indicates this connection point is part of a point-to-point connection.

A value of ***pointToMultipoint*** indicates this connection point is part of a point-to-multipoint connection.

Mib: AtmCore

Values:
pointToPoint
pointToMultipoint

Default: pointToPoint

ATTRIBUTE AtmIf Vcc numLeaves (nlvs)

Access	Read only
Description	This attribute indicates the number of destination leaves of the connection. If the *distributionType* is ***pointToPoint*** the value of this attribute is 0.
Mib	AtmCore
Values	Decimal (0..2147483647)
Default	0

ATTRIBUTE AtmIf Vcc callDirection (cdir)

Access	Read only
Description	This attribute indicates the direction of the call setup request for an SVC. A value of ***fromLink*** means that the call setup originated from the link. A value of ***toLink*** means that the call setup was directed to the link. For PVC connections, the value of this attribute is ***notApplicable.*** For SPVC connections, the value of this attribute is ***notApplicable*** for *Vccs* with the *SourcePVC* and *DestinationPVC* subcomponents. For Signaling channels, the value of this attribute is ***notApplicable***.
Mib	AtmCore
Values	fromLink toLink notApplicable
Default	notApplicable

GROUP AtmIf Vcc Status

Properties	Operational
Description	This group contains operational status information for a *Vcc*, *Vpc* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vcc operStatus (opStat)

Access	Read only
Description	This attribute indicates the present operational status of the *Vcc*, *Vpc* or *Vpt* component. Its value is dependent upon the current state of the *segLinkSideLoopbackState* and *endToEndLoopbackState* attributes. The value is ***end2endUp*** when the *endToEndLoopbackState* is ***good*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***end2endDown*** when the *endToEndLoopbackState* is ***bad*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***unknown*** and the *segLinkSideLoopbackState* is ***good***. The value is ***localDown*** when *segLinkSideLoopbackState* is ***bad***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***notApplicable*** and the *segLinkSideLoopbackState* is ***good***. The value is ***unknown*** when the *endToEndLoopbackState* is either ***unknown*** or ***notApplicable*** and the *segLinkSideLoopbackState* is ***unknown***.
Mib	AtmCore

Values	unknown end2endUp end2endDown localUpEnd2endUnknown localDown
Default	No default

ATTRIBUTE AtmIf Vcc localFailureCause

Access	Read only
Description	This attribute indicates the failure cause of the *Vcc*, *Vpc* or *Vpt* component. A value of ***noFailure*** indicates that there is currently no bandwidth related failure for this connection. A value of ***portDown*** indicates that the interface corresponding to the parent *AtmIf* is down. A value of ***localBwLoss*** indicates that the *AtmIf* has lost some, but not all bandwidth, and as a result, this connection has been released. A value of ***notAdmitted*** indicates that this connection has failed to be admitted by the Connection Admission Control (CAC) algorithm. A value of ***appNotRegistered*** indicates that there is no application registered to use this connection. This may be the case, for example when there is a *Vcc Test* application, but the test has not been started. Check the status of the application to determine why it is not functional. A value of ***disabledByApp*** indicates that the application using this connection has requested that the connection be disabled. An example is a connection used by a trunk application where the trunk has timed out on an attempt to stage. Check the application to determine why it is not fully functional. A value of ***bwReduced*** indicates that this connection is operating in a reduced bandwidth state. It is a bandwidth elastic connection which currently has been allocated less than the requested

(equivalent) bandwidth.

A value of ***vpDown*** indicates that this connection has been notified of a fault detected at the associated VP-layer. A value of ***vpDown*** is applicable for *Vpt Vcc*s only.

Mib: AtmCore

Values:
noFailure
localBwLoss
portDown
notAdmitted
appNotRegistered
disabledByApp
bwReduced
vpDown

Default: No default

ATTRIBUTE AtmIf Vcc troubled

Access: Read only

Description: This attribute indicates whether or not the connection is in a troubled state. Connections become troubled because of OAM failures; when one of the attributes *segLinkSideLoopbackState*, *segSwitchSideLoopbackState*, *endToEndLoopbackState*, *aisState* (when receiving AIS cells only) or *rdiState* go bad, this attribute is set to ***yes***; otherwise it is set to ***no***.

Mib: AtmCore

Values:
no
yes

Default: no

ATTRIBUTE AtmIf Vcc segLinkSideLoopbackState (segLkLbkState)

Access: Read only

Description: This attribute contains the current state of the link-side segment loopback for this connection. Link-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the link (port). The value of this attribute is

dependent upon the current setting of the *segLinkSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable).

The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint***.

The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***.

The value is ***good*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the segment link side loopback is working.

The value is ***bad*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the link side segment loopback is not working.

The value is ***unknown*** when the *segLinkSideLoopback* is ***off***.

The value is ***unknown*** when the value of the *segLinkSideLoopback* attribute is ***on***, the *connectionPointType* attribute is set to ***segmentEndPoint*** or ***connectionEndPoint***, and the segment link side loopback has not yet been determined.

The state of this attribute determines, in part, the value of the *operStatus* attribute**.**

Mib AtmCore

Values
good
bad
unknown
notApplicable

Default No default

ATTRIBUTE AtmIf Vcc segSwitchSideLoopbackState (segSwLbkState)

Access	Read only
Description	This attribute contains the current state of the switch-side segment loopback for this connection. Switch-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the bus. The value of this attribute is dependent upon the current setting of the *segSwitchSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable). The value is only applicable when the *connectionPointType* is a ***segmentEndPoint***. The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or ***connectionEndPoint***. The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***. The value is ***good*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback is working. The value is ***bad*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the switch side segment loopback is not working. The value is ***unknown*** when the *segSwitchSideLoopback* is ***off***. The value is ***unknown*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback has not been determined.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vcc endToEndLoopbackState (eeLbkState)

Access	Read only
Description	This attribute contains the current state of the end-to-end loopback for this connection. Its value is dependent upon the current setting of the *endToEndLoopback* provisionable attribute and the connection point type as specified by the *connectionPointType* attribute. The value is only applicable when the *connectionPointType* is a ***connectionEndPoint***. The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or s***egmentEndPoint***. The value is ***notApplicable*** when the *distributionType* is a ***pointToMultipoint***. The value is ***good*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is working. The value is ***bad*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is not working. The value is ***unknown*** when the *endToEndLoopback* is ***off***. The value is ***unknown*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback status has not been determined. The state of this attribute determines, in part, the value of the *operStatus* attribute.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vcc rxOamCellCongestionState (rxOamCongState)

Access	Read only
Description	This attribute contains the current state of the receive side OAM cell congestion for this connection. Its value reflects whether the rate of received OAM cells for this connection is below a specified threshold. The connection maintains a count of the number of OAM cells which are terminated per second. Once that count exceeds the specified threshold, extraction of all OAM cells for this connection is disabled for a period of one minute. This is a congestion management mechanism to prevent the processor from being overloaded with handling OAM cells for a particular connection. This mechanism ensures that tasks, such as trunks obtain enough processor cycles to remain in service, and are not adversely affected by excessive rate of OAM cells on a particular connection. The value is ***good*** when the rate of received OAM cells is less than the allowed threshold. The value is ***bad*** when the arrival rate has exceeded the allowed threshold. It remains ***bad*** for one minute, before returning to ***good*** again. During this timeout, extraction of all OAM cells is disabled for this connection. As a result, other loopback failure conditions may occur. The value is ***unknown*** when the application has not yet begun to use this connection. An example is the *Test* component before a test has been started. Each type of OAM cell is counted separately. The threshold for AIS cells is three cells per second. If more than three AIS cells are received within a one second interval, this attribute is set to ***bad***. The threshold for RDI cells and each loopback type is also three, but the threshold for trace cells is 250 per second. The state of this attribute has no direct effect on the value of the *operStatus* attribute or on the number of troubled connections.
Mib	AtmCore

Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vcc aisState

Access	Read only
Description	This attribute contains the current state of the Alarm Indication Signal for this connection. A value of ***good*** indicates that the connection's application is active and no alarm has occurred. A value of ***bad*** indicates that the connection's application is active and an alarm has occurred. A value of ***unknown*** indicates that the connection's application is inactive. A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vcc rdiState

Access	Read only
Description	This attribute indicates the current state of the Remote Defect Indication for this connection. A value of ***good*** indicates that the connection's application is

active and no alarm has occurred.

A value of ***bad*** indicates that the connection's application is active and an alarm has occurred.

A value of ***unknown*** indicates that the connection's application is inactive.

A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.

Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

GROUP AtmIf Vcc Statistics (Stats)

Properties	Operational
Description	This group contains traffic statistics for a *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vcc txCell

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc txCellClp (txClp)

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection with the CLP=1. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc txCellDiscard (txcd)

Access	Read only
Description	This attribute counts the number of cells received from the backplane on this connection that have been discarded. Discarded cells are not counted in the *txCell* attribute. Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscard* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vcc txCellDiscardClp (txcdClp)

Access: Read only

Description: This attribute counts the number of cells received from the backplane on this connection with CLP=1 that have been discarded.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

This count is included in the *txCellDiscard* attribute. Discarded cells are not counted in the *txCellClp* attribute.

Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscardClp* values for all connections associated with the *Vpt*.

When both ingress and egress of a port is down, txcells are silently discarded.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vcc txFrameDiscard (txfd)

Access: Read only

Description: This attribute counts the number of frames received from the backplane on this connection that have been discarded.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled.

This count is independent of the *txCell* or *txCellDiscard* attribute.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscard* values for all connections associated with the *Vpt*.

Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscard* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vcc txFrameDiscardClp (txfdClp)

Access: Read only

Description: This attribute counts the number of discarded frames on this connection that were received from the backplane and composed of one or more CLP=1 cells.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled.

This count is included in the *txFrameDiscard* attribute.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscardClp* values for all connections associated with the *Vpt*.

Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in

the *Vcc*'s parent *Vpt txFrameDiscardClp* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib AtmCore

Values Long Integer

Default No default

ATTRIBUTE AtmIf Vcc rxCell

Access Read only

Description This attribute counts the number of cells that have been received from the interface on this connection.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells that have been discarded by the interface due to non-conformance with UPC.

For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2,*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when the PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down and is increased when either the SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP,

SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vcc rxCellClp (rxClp)

Access: Read only

Description: This attribute counts the number of cells that have been received from the interface on this connection with the CLP=1.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vcc rxCellDiscard (rxcd)

Access: Read only

Description: This attribute counts the number of cells received from the interface on this connection that have been discarded. This count is included in the *rxCell* attribute.

This count includes cells discarded due to non-conformance with

UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells discarded due to non-conformance with UPC.

For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscard* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc*, are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscard* attribute.

For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will

be increased when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down, regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, this count will be reset to 0 when either PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or only F4 and F5 OAM cells are transmitted.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc rxCellDiscardClp (rxcdClp)

Access	Read only
Description	This attribute counts the number of cells received from the interface on this connection with CLP=1 that have been discarded. This count is included in the *rxCell* and *rxCellDiscard* attributes. This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscardClp* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc*, are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscardClp* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc rxFrameDiscard (rxfd)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have been discarded. This count is independent of the *rxCellDiscard* attribute.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and

frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscard* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vcc rxFrameDiscardClp (rxfdClp)

Access: Read only

Description: This attribute counts the number of discarded frames on this connection that were received from the interface and composed of one or more CLP1 cells. This count is included in the *rxFrameDiscard* attribute. It is independent of the *rxCellDiscard* attribute.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscardClp* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib — AtmCore

Values — Long Integer

Default — No default

ATTRIBUTE AtmIf Vcc rxUpcViolationOnEnforcer1 (rxEnforcer1)

Access — Read only

Description — This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 1. This attribute is only applicable if UPC is enforced or monitored on the connection.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed.

When the value of the *rxTrafficDescType* attribute for this connection is 3, 4, 5, 6, 7, 8, or 9 (for UBR with MDCR connections) Enforcer 1 enforces conformance of traffic received from the interface to PCR CLP0+1.

When the value of the *rxTrafficDescType* attribute for this connection is 9 (for ABR connections), Enforcer 1 performs the

Dynamic Generic Cell Rate Algorithm (DGCRA) used for the Available Bit Rate (ABR) service category.

If UPC is enforced all non-conforming cells are discarded by this enforcer. These discarded cells are included in the *rxCellDiscard* attribute.

For basic *Vpt*s, this attribute provides an aggregated total of all *rxUpcViolationOnEnforcer1* values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc rxUpcViolationOnEnforcer2 (rxEnforcer2)

Access	Read only
Description	This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 2. This attribute is only applicable if UPC is enforced or monitored on the connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed. This attribute is only applicable if the value of the *rxTrafficDescType* attribute for this connection is 4, 5, 6, 7, or 8. When the value of the *rxTrafficDescType* attribute is 4, or 5**,** Enforcer 2 enforces conformance of traffic received from the interface to PCR CLP0.

When the value of the *rxTrafficDescType* attribute is 6**,** Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0+1.

When the value of the *rxTrafficDescType* attribute is 7, or 8, Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0.

If UPC is enforced, Enforcer 2 discards non-conforming cells for *rxTrafficDescType* values of 4, 6, and 7. It tags non-conforming cells for *rxTrafficDescType* values of 5, and 8. Discarded cells are counted in the rxCellDiscard attribute.

For basic *Vpt*s, this attribute provides an aggregated total of all *rxUpcViolationOnEnforcer2* values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib — AtmCore

Values — Long Integer

Units — cells

Default — No default

ATTRIBUTE AtmIf Vcc rxAal5FrameError (rxfer)

Access — Read only

Description — This attribute counts the number of frames received from the interface on this connection that have AAL5 length errors or AAL5 CRC errors.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed.

AAL5 length or CRC errors typically occur because of cell discards due to congestion, UPC, or due to corruption of data

between the AAL5 segmentation and reassembly end points.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameError* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc rxAal5FrameAbort (rxfa)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have the AAL5 length field set to zero. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed. An AAL5 length of zero is an indication by the far end segmentation point, to this reassembly point, that the frame is to be discarded without reassembly. This mechanism is typically used by a segmentation point if it detects an error in a frame after some of the cells belonging to that frame have already been transmitted. This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a

connectionPointType of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameAbort* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

GROUP AtmIf Vcc Performance (Perf)

Properties	Operational
Description	This group contains operational attributes which keep performance statistics about the behavior of the connection.
Mib	AtmCore

ATTRIBUTE AtmIf Vcc lastMinimumCtd (lastminctd)

Access	Read only
Description	This attribute indicates the minimum calculated cell transfer delay value for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason.

The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection.

The value is ***noMeasurement*** when the switch-side loopback is not working.

The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.

Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

ATTRIBUTE AtmIf Vcc lastMaximumCtd (lastmaxctd)

Access	Read only
Description	This attribute indicates the maximum calculated cell transfer delay value for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working.

The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.

Mib: AtmCore

Values: Decimal (1..2147483647)
noMeasurement

Units: microsec

Default: No default

ATTRIBUTE AtmIf Vcc lastAverageCtd (lastavectd)

Access: Read only

Description: This attribute indicates the average of all calculated cell transfer delay values for this connection from the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval if TODA is disabled. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell.

The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***.

The value is ***noMeasurement*** when the *accountCollection* attribute of the *AtmIf Uni* or *AtmIf Iisp* component has a non-empty reason.

The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection.

The value is ***noMeasurement*** when the switch-side loopback is not working.

The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.

Mib: AtmCore

Values: Decimal (1..2147483647)
noMeasurement

Units	microsec
Default	No default

ATTRIBUTE AtmIf Vcc currentCtd (currctd)

Access	Read only
Description	This attribute indicates the most recent cell transfer delay value calculated for this connection. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell. The value is ***noMeasurement*** when the *ctdCalculation* attribute of the *AtmIf* component is ***off***. The value is ***noMeasurement*** when the *segSwitchSideLoopback* attribute value is ***off*** for the connection. The value is ***noMeasurement*** when the switch-side loopback is not working. The value is ***noMeasurement*** when the switch-side loopback status cannot be determined.
Mib	AtmCore
Values	Decimal (1..2147483647) noMeasurement
Units	microsec
Default	No default

ATTRIBUTE AtmIf Vcc lastCtdSampleSize (lastsamplectd)

Access	Read only
Description	This attribute indicates the number of loopback cells sampled for cell transfer delay calculations during the previous TODA (time of day accounting) interval if TODA is enabled; or for the previous 12 hour interval of TODA is disabled.
Mib	AtmCore
Values	Decimal (0..16384)

Default	No default

COMPONENT AtmIf Vcc VirtualChannelDescriptor (Vcd)

Groups	"GROUP AtmIf Vcc Vcd Loopback (Lbk)" "GROUP AtmIf Vcc Vcd Accounting (Acct)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci VirtualChannelDescriptor*, *AtmIf/n Vpt/vpi Vcc/vci VirtualChannelDescriptor* The *Vcd* component contains provisioning information about its parent *Vcc* component.
Mib	AtmCore
Subcomponents	"COMPONENT AtmIf Vcc Vcd TrafficManagement (Tm)"
Opt. Subcomp.	"COMPONENT AtmIf Vcc Vcd PerformanceMonitoring (Pm)"
Common Verbs	Help List Display

GROUP AtmIf Vcc Vcd Loopback (Lbk)

Properties	Provisioned
Description	This group contains the provisionable loopback attributes for a *Vcc, Vpc,* or *Vpt* component. Note that certain loopback requests may not be possible on a given connection. In such cases, the corresponding operational loopback attribute in the *Status* group of the *Vcc, Vpc,* or *Vpt* component indicates ***notApplicable*** and the requested loopback is not performed. If loopbacks are provisioned to be on, and for any reason the segment or end-to-end OAM loopback cells are not relayed, the connection component becomes troubled, and user cell traffic may be discarded. If loopbacks are provisioned to be on, all of the nodes in the segment, and external networks which are in the end-to-end connection must relay the OAM loopback cells.

Mib	AtmCore

ATTRIBUTE AtmIf Vcc Vcd segLinkSideLoopback (segLkLbk)

Access	Read and write
Description	This attribute specifies whether link-side segment loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the link-side segment loopback insertion for the connection is based on the *segLinkSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has link-side segment loopback insertion turned on, then link-side segment loopback insertion is also on for the connection. A value of ***on***, or ***off*** means link-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component. Note that link-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***. Link-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *segLinkSideLoopbackState* attribute indicates ***notApplicable*** and link-side segment loopback insertion is not performed. Link-side segment loopback insertion is always possible on a *Vpt*.
Mib	AtmCore
Values	on off sameAsInterface
Default	sameAsInterface

ATTRIBUTE AtmIf Vcc Vcd segSwitchSideLoopback (segSwLbk)

Access	Read and write

Description

This attribute specifies whether switch-side segment loopback insertion should be performed on this connection.

A value of ***sameAsInterface*** means the switch-side segment loopback insertion for the connection is based on the *segSwitchSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has switch-side segment loopback insertion turned on, then switch-side segment loopback insertion is also on for the connection.

A value of ***on***, or ***off*** means switch-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component.

Note that switch-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint*** or ***connectionEndPoint***. Switch-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint*** In such cases, the operational *segSwitchSideLoopbackState* attribute indicates ***notApplicable*** and switch-side segment loopback insertion is not performed.

Switch-side segment loopback is never possible on a *Vpt*.

Mib

AtmCore

Values

on
off
sameAsInterface

Default

sameAsInterface

ATTRIBUTE AtmIf Vcc Vcd endToEndLoopback (eeLbk)

Access

Read and write

Description

This attribute specifies whether end-to-end loopback insertion should be performed on this connection.

A value of ***sameAsInterface*** means the end-to-end loopback insertion for the connection is based on the *endToEndLoopback* attribute of the connection's parent *AtmIf* component—if the

ATM interface has end-to-end loopback insertion turned on, then end-to-end loopback insertion is also on for the connection.

A value of ***on***, or ***off*** means end-to-end loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component.

Note that end-to-end loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***, or ***segmentEndPoint***. End-to-end loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *endToEndLoopbackState* attribute indicates ***notApplicable*** and end-to-end loopback insertion is not performed.

End-to-end loopback insertion is always possible on a *Vpt*.

Mib	AtmCore
Values	on off sameAsInterface
Default	sameAsInterface

ATTRIBUTE AtmIf Vcc Vcd mCastConnectionType (connType)

Access	Read and write
Criticality	Component
Description	This attribute specifies if this *Vcc* or *Vpc* is part of point-to-point or point-to-multiPoint connection. A value of ***pointToMultiPointRoot*** must be set when this *Vcc* has an *Msrc* or an *Mnrp* subcomponent, or this *Vpc* has an *Mnrp* subcomponent. A value of ***pointToMultiPointLeaf*** must be set when this *Vcc* or *Vpc* has a *Nrp* subcomponent and its *nextHop* attribute is linked to a *Mnrp* component.

	Otherwise a value of ***pointToPoint*** must be set.
Mib	AtmCore
Values	pointToPoint (ptp) pointToMultipointRoot (pmpRoot) pointToMultipointLeaf (pmpLeaf)
Default	pointToPoint

GROUP AtmIf Vcc Vcd Accounting (Acct)

Properties	Provisioned
Description	This group contains the provisionable ATM accounting attributes for a *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vcc Vcd correlationTag (tag)

Access	Read and write
Description	This attribute specifies a unique identifier for each end of a PVC. It that may be used by downstream processing systems to correlate accounting records issued at different nodes in the network. The attribute can be up to 64 bytes long. If it is less than 64 bytes, it is zero filled on the right to create a 64 byte value. The resulting value is recorded in the attribute *callConnId* for this PVC's ATM accounting records. If the value is a null string then this PVC does not have any accounting records generated for it.
Mib	AtmCore
Values	String (0..64, ASCII)
Default	""

COMPONENT AtmIf Vcc Vcd TrafficManagement (Tm)

Groups	"GROUP AtmIf Vcc Vcd Tm Provisioned (Prov)"
Scope	Device

Description	*AtmIf/n Vcc/vpi.vci Vcd TrafficManagement,* *AtmIf/n Vpc/vci Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci Vcd TrafficManagement* This component contains provisioned traffic management attributes of a connection. It is added automatically when a *Vcc, Vpc,* or *Vpt* is added in provisioning mode. It is a mandatory subcomponent of the *Vcd* or *Vpd* component.
Mib	AtmCore
Opt. Subcomp.	"COMPONENT AtmIf Vcc Vcd Tm AvailableBitRate (Abr)"
Common Verbs	Help List Display

GROUP AtmIf Vcc Vcd Tm Provisioned (Prov)

Properties	Provisioned
Description	This group contains traffic related provisionable attributes for the *Vcc, Vpc,* and *Vpt* components. Changing any of the attributes in this group causes a service interruption on the *Vcc, Vpc,* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vcc Vcd Tm txTrafficDescType (txTdt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore

Values	1 2 3 4 5 6 7 8 9
Default	1

ATTRIBUTE AtmIf Vcc Vcd Tm fwdQosClass (fwdQos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. This attribute is only used for SPVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmCore
Values	0 1 2

	3 4
Default	0

ATTRIBUTE AtmIf Vcc Vcd Tm txQueueLimit (txQlim)

Access	Read and write
Criticality	Component
Description	This attribute specifies an override to the default transmit queue limit for this connection. A value of ***sameAsCa*** means that the default common or per-VC transmit queue limit, as defined by the CA service category, is used for this connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***sameAsCa*** must be specified. A value from 5 to 512,000 means that the connection transmit queue limit differs from the default common or per-VC transmit queue limit, as defined by the CA service category. A value other than ***sameAsCa*** is ignored for connections where common queuing is specified for the service category. For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the per-VC utilization limit of the service category common queue. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from 5 to 512000 inclusive. For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive. For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive. On all other cards, the valid range for this attribute is from 5 to 63488 inclusive.

The actual transmit queue limit for a connection is visible in the *Vcc Tm*, *Vpc Tm* or *Vpt txQueueThresholds* attribute.

This attribute is not applicable for basic *Vpt*s.

Mib: AtmCore

Values: Decimal (5..1011840)
sameAsCa

Units: cells

Default: sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm holdingPriority (hpri)

Access: Read and write

Criticality: Component

Description: This attribute specifies the holding priority of this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. The default holding priority for a provisioned connection is higher then default holding priorities for dynamic (SVC) connections.

The value of this attribute may be overridden by certain applications, for example *Vcc Test*, which use this connection.

This attribute is not applicable for *Vpt Vcc*s.

Mib: AtmCore

Values:
0
1
2
3
4

Default: 2

ATTRIBUTE AtmIf Vcc Vcd Tm rxTrafficDescType (rxTdt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute. The value ***sameAsTx*** means the *rxTrafficDescType* as well as the *rxTrafficDescParm* attribute values are taken from the values of the *txTrafficDescType* and *txTrafficDescParm* attributes.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE AtmIf Vcc Vcd Tm bwdQosClass (bwdQos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. This attribute is only used for SPVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance

requirements (Variable bit rate audio and video).

Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer).

Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.

Mib: AtmCore

Values:
0
1
2
3
4
sameAsFwd

Default: sameAsFwd

ATTRIBUTE AtmIf Vcc Vcd Tm atmServiceCategory (service)

Access: Read and write

Criticality: Component

Description: This attribute specifies the ATM service category for both directions of the connection.

The value ***derivedFromBBC*** may only be used if the *Src* or *Dst* component is provisioned under this connection. Otherwise a specific ATM service category must be specified.

A value of ***derivedFromBBC*** means the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

A value other than ***derivedFromBBC*** means the value of this

attribute is used to override the provisioned BBC Information Element parameters. In this case, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application.

The ***rtVariableBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real-time VBR service may support statistical multiplexing of real-time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non real-time VBR service may support statistical multiplexing of connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

The ***unspecifiedBitRate*** service is intended for non real-time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR

service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib: AtmCore

Values:
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
availableBitRate (abr)
derivedFromBBC (derived)

Default: unspecifiedBitRate

ATTRIBUTE AtmIf Vcc Vcd Tm trafficShaping (trShaping)

Access: Read and write

Criticality: Component

Description: This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface.

This attribute is ignored if the *atmServiceCategory* is ***availableBitRate***.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is ignored.

A value of ***sameAsCa*** means traffic shaping for the connection is based on the value of the *trafficShaping* attribute of the connection's service category component under the *CA*. If the service category has *trafficShaping* set to ***enabled*** or ***inverseUpc***, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm*, *Vpc Tm*, or *Vpt Tm* components.

A value of ***disabled*** means traffic shaping for this connection is

disabled regardless of the provisioning of the connection's service category component.

Mib: AtmCore

Values: disabled
sameAsCa

Default: sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm unshapedTransmitQueueing (unshap)

Access: Read and write

Criticality: Component

Description: This attribute specifies the transmit queuing method for this connection if it is unshaped. The two possible methods are per-VC queuing and common queuing. This attribute does not apply if the connection is shaped.

A value of ***sameAsCa*** means the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *CA*.

A value of ***common*** means transmit traffic on this unshaped connection is destined for the common queue.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***1pOC48ChSmIrAtm***, and ***4pMRPosAtm*** cards, this attribute must have the value ***sameAsCa***.

This attribute is ignored in the following situations:
- if the connection has *trafficShaping* ***enabled*** or ***inverseUpc***, or
- if the *atmServiceCategory* is ***availableBitRate***, or
- if the *atmServiceCategory* is ***constantBitRate***, or
- for basic *Vpt*s and standard *Vpt Vcc*s.

Mib: AtmCore

Values	common sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm weight

Access	Read and write
Criticality	Component
Description	This attribute specifies an override for the weight of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, and basic *Vpt*s. A value of ***sameAsCa*** means the weight is determined by the *weightPolicy* attribute under the *CA* service category component for all but standard *Vpt Vcc*s. For standard *Vpt Vcc*s, the weight is determined by the *Vcc*'s service category, when the value is set to ***sameAsCa***. A value from 1 to 4095 means that value is used for the fairness weight of this connection relative to other connections. For all but standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the *Vpt*. A value of ***upToQueueLimit*** means the fairness weight is limited only by the *txQueueLimit*. This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, the value ***upToQueueLimit*** is not permitted.
Mib	AtmCore

Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm forceTagging (tagging)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether force tagging of the CLP bit is enforced for cells of this connection. Force tagging can be enabled for permanent connections of any service category and on switched connections of UBR service category. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards, and for *Vpt*s, this attribute is not applicable and is ignored. A value of ***sameAsCa*** means the force tagging functionality is determined by the *forceTagging* attribute under the *CA* service category component. A value of ***enabled*** means force tagging is enabled. When this option is selected, the CLP bit is set to 1 for all cells on the connection. A value of ***disabled*** means force tagging is disabled. When this option is selected, the CLP bit is unchanged for cells on the connection. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction. In this case, cells which are tagged are counted in the *txCellClp* attribute.
Mib	AtmCore

Values	sameAsCa enabled disabled
Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm usageParameterControl (upc)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enables usage parameter control (UPC) when receiving traffic from the ATM interface. The value ***sameAsCa*** means UPC for the connection is based on the value of the *usageParameterControl* attribute of the service category component under the *AtmIf CA*. If the service category has UPC ***enforced*** or ***monitored***, then UPC is enabled on the connection. The value ***disabled*** means UPC for this connection is disabled regardless of the provisioning of the service category. The value ***enforced*** means UPC for this connection is enforced regardless of the provisioning of the service category. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*. The value ***monitored*** means UPC for this connection is monitored regardless of the provisioning of the service category. When UPC is monitored, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged. Note that setting UPC to ***enforced*** or ***monitored*** may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc*, *Vpc*, and *Vpt* components. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm***

cards, the value ***monitored*** is not supported.

For ***1pOC48ChSmIrAtm*** cards, the values ***enforced***, and ***monitored***, are not supported.

Mib: AtmCore

Values:
enforced
disabled
sameAsCa
monitored

Default: sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm bearerClassBbc (bcBbc)

Access: Read and write

Criticality: Component

Description: This attribute specifies the bearer capability. This attribute is only used for SPVC and SPVP connections. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network interworking function may look

at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***) and timing requirements are user defined (that is, transparent to the network).When ***x*** is set the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.

Class **vp** service is used to specify a transparent VP service. When the value of this attribute is vp, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except or VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP connections.

Mib: AtmCore

Values:
a
c
x
vp
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vcc Vcd Tm transferCapabilityBbc (tcBbc)

Access: Read and write

Criticality: Component

Description: This attribute specifies the transfer capability for this connection. Uni 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes

10: VBR, no

The value ***notApplicable*** specifies that the user does not want to specify the transfer capability.

The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation.
The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data.

The value no indication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing.

The value yes for end-to-end timing indicates that end-to-end timing is required.

The value no for end-to-end timing indicates that end-to-end timing is not required.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib	AtmCore
Values	0 1 2 5 8 9 10 notApplicable derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Vcc Vcd Tm txWredThreshold

Access	Read and write
Criticality	Component
Description	This attribute specifies the threshold for weighted random early detection (WRED). This threshold is calculated as a percentage of the early packet discard (EPD) threshold, which is 85% of the transmit queue length. When the value is ***25%***, WRED starts as soon as the queue is 25% of the way to the EPD threshold. When the value is ***50%***, WRED starts later, after the queue is 50% of the way to the EPD threshold. When the value is ***75%***, WRED starts only when the queue is 75% of the way to the EPD threshold. This attribute is ignored if the value of the *txWredMode* or *txPacketWiseDiscard* attributes is ***disabled.*** For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.
Mib	AtmCore
Values	Decimal (25; 50; 75)
Units	%
Default	25

ATTRIBUTE AtmIf Vcc Vcd Tm clippingBbc (cBbc)

Access	Read and write
Criticality	Component
Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is

	answered and before an associated connection is switched through.
Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE AtmIf Vcc Vcd Tm bestEffort

Access	Read and write
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmCore
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Vcc Vcd Tm txPacketWiseDiscard (txpd)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the transmit data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s. For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored. Packet-wise functions increase the “goodput” of the link. The transmit packet-wise functions are Early Packet Discard (EPD) and Partial Packet Discard (PPD). EPD allows the connection to discard an entire frame once the transmit queue has reached the EPD threshold. EPD increases the “goodput” of a link, since discarding an entire frame means that some queue capacity is guarded for some other frame which is already partially transmitted. All cells of the frame are discarded from the Beginning of Message (BOM) cell up to and including the End of Message (EOM) cell. PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the packet-wise discard functions are PPD and EPD. PPD is applicable at cell-transfer points. PPD is not applicable at frame-to-cell conversion points, and is not applicable for *Vpc*s. PPD is configured by this attribute. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded. EPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the

setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***16pOC3PosAtm***, ***1pOC48ChSmIrAtm,*** and ***4pMRPosAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Both PPD and EPD are controlled by this attribute. This attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

A value of ***enabled*** means packet-wise discard functions are applied to transmit traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to transmit traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the backward direction. When this attribute is set to ***disabled***, backward frame discard is not requested in the SPVC call setup.

The transmit packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute.

Mib: AtmCore

Values: disabled
enabled

Default disabled

ATTRIBUTE AtmIf Vcc Vcd Tm rxPacketWiseDiscard (rxpd)

Access Read and write

Criticality Component

Description This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the receive data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s.

For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

Packet-wise functions increase the “goodput” of the link. The receive packet-wise function is Partial Packet Discard (PPD).

PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded, for example due to UPC. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD is available at all VCC connection points where UPC may be activated. PPD is not applicable for *Vpcs*. Packet-wise discards should only be enabled for connections carrying AAL5 segmentation traffic. Setting the value to ***enabled*** for any other traffic type may result in traffic being discarded. PPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC48ChSmIrAtm*** cards, this attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a

connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

A value of ***enabled*** means packet-wise discard functions are applied to receive traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to receive traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the forward direction. When this attribute is set to ***disabled***, forward frame discard is not requested in the SPVC call setup.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. A value of ***enabled*** for the *rxPacketWiseDiscard* attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in enabling packet-wise discard functions on these cards. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

The receive packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm rxPacketWiseDiscard* operational attribute.

Mib	AtmCore
Values	disabled enabled
Default	disabled

ATTRIBUTE AtmIf Vcc Vcd Tm txWredMode

Access	Read and write
Criticality	Component
Description	This attribute specifies the activation of weighted random early detection (WRED) functionality. WRED is considered a packet-wise discard function and as such applies only to AAL5 frame traffic. WRED is applied in the transmit direction for this connection. WRED function should be enabled only for connections which are transferring TCP/IP traffic. WRED acts to prevent synchronization of multiple TCP/IP sources by randomly discarding a small percentage of frames when transmit queue congestion reaches the designated level. WRED may also be used to differentiate service on VCC's by preferentially discarding one VCC before another. Discards start at 0% of cells, when the queue is part-way to the Early Packet Discard (EPD) threshold, and rise to 100% of cells discarded at the EPD threshold. WRED discards all the cells in a frame. A value of ***enabled*** means WRED is enabled for all applications linked to the given *Vcc*. A value of ***perFlow*** means each TCP application has individual control over whether to enable or disable WRED. If the value of the *txPacketWiseDiscard* attribute is ***disabled***, or if the value of this attribute is ***disabled***, WRED functionality is disabled. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, the value of this attribute must be ***disabled***. If WRED is active, it is visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute. This attribute is not applicable for *Vpt*s or *Vpt Vcc*s.
Mib	AtmCore

Values	disabled enabled perFlow
Default	disabled

ATTRIBUTE AtmIf Vcc Vcd Tm abrConnectionType (abrType)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of ABR behavior which is to be enforced at this connection. This attribute is only applicable if the value of the *atmServiceCategory* attribute is ***availableBitRate***. If the value of the *atmServicecategory* attribute is not ***availableBitRate***, this attribute is ignored. The value ***sameAsCa*** is used to request the default behavior as specified in the *CA Abr* component for this *Vcc*. Otherwise, this attribute overrides the default behavior. The value ***virtualSourceDest*** is used to request that this connection point function as a virtual source/virtual destination. The value ***sourceDest*** requires that this connection point function as a S/D for RM cells. S/D mode is automatically invoked at this connection point either if this is a connection end point, or if the next hop connection point is configured as ***nonAbrInterworking***. The value ***nonAbrInterworking*** is used to request that this connection point function as an interworking between ABR and non-ABR service categories. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***. The value ***abrSwitch*** is used to request ABR switch behavior for this connection point. The ABR switch behavior is first, to conform to ***virtualSourceDest*** or ***nonAbrInterworking*** setting on the next hop, and otherwise to implement ABR ER switch behavior. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***,

3pE1Atm, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the only allowable values are ***sameAsCa***, ***nonAbrInterworking*** or ***abrSwitch***. If ***abrSwitch*** is selected, EFCI marking behavior is implemented.

For ***1pOC12SmLrAtm*** cards, the only allowable values are ***sameAsCa*** or ***abrSwitch.*** If ***abrSwitch*** is selected, EFCI marking behavior is implemented.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the only allowable value is ***sameAsCa***.

The actual ABR functionality which is in effect is visible in the *Vcc/Vpc/Vpt Tm abrConnectionType* operational attribute.

Mib: AtmCore

Values:
abrSwitch
virtualSourceDest
sourceDest
nonAbrInterworking
sameAsCa

Default: sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm txTrafficDescParm (txTdp)

Access: Read and write

Criticality: Component

Description: This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute.

The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR, MCR and requested shaping rate are used to

determine the actual shaping rate where traffic shaping is enabled.

When *txTrafficDescType* is 1 or 2, all of the parameters must be set to zero.

When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 4 and parameter 5 represent are not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter 3. Parameter 3 may be optionally zero.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate. When the *atmServiceCategory* is ***availableBitRate*** (ABR), the shaping rate is dynamically chosen, based on the ABR flow control mechanism, as a value between the MCR and the PCR or the requested shaping rate if applicable.

For *txTrafficDescType* 3, 4 and 5, the transmit traffic is shaped at the next available shaping rate less than the PCR.

For *txTrafficDescType* 6, 7 and 8 if linear traffic shaping is selected, the transmit traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

For *txTrafficDescType* 6, 7 and 8 if inverse-UPC traffic shaping is selected, the transmit traffic is shaped at a variable rate which conforms to the PCR, SCR and MBS of the connection traffic descriptor.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE AtmIf Vcc Vcd Tm rxTrafficDescParm (rxTdp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. If the value of the *rxTrafficDescType* attribute is ***sameAsTx***, the values provisioned in this attribute are ignored. The traffic parameters for the receive direction are taken from the *txTrafficDescParm* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), and Minimum Cell Rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. The value of CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for usage parameter control (UPC). When *rxTrafficDescType* is 1 or 2, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameter 1 must be non-zero. Parameters 2 and 3 must

be set to zero (unused).

When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameter 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter

3. Parameter 3 may optionally be zero.

If the value of CDVT either in parameter 2 or in parameter 4 is zero, the CDVT is taken from the *CA* defaults for the particular *atmServiceCategory* of this connection.

Parameter 5 of the *rxTrafficDescParm* is always unused.

When *rxTrafficDescriptorType* is 3 through 8, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware. The *check prov* command detects such cases and generates an error message. If this happens, adjust the parameters until they fall within the supported limits.
To calculate the limits, use the following formulae:
I1 = 1,000,000,000 / PCR
L1 = CDVT * 1000
I2 = 1,000,000,000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is 6 through 8.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, I1 and I2 must be less than or equal to 335,523,840. I1 + L1 must be less than or equal to 1,342,156,800. I2 + L2 must be less than or equal to 1,342,156,800. If the values of I1, L1, I2 or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41,940,480 or
I2 > 41,940,480 or
I1 + L1 > 167,769,600 or
I2 + L2 > 167,769,600
then both I1 and I2 must be greater than 20,480.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, L2 must be less than or equal to 2,674,011,406.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, L2 must be less than or equal to 17,179,869,180.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE AtmIf Vcc Vcd Tm fwdQosParameters (fqp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The *cdv* element specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR the CDV is irrelevant, and its value is forced to the default. The *ctd* specifies the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end to end transit delay information element. For nrt-VBR and UBR the CTD is irrelevant, and its value is forced to the default. The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.
Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Vcc Vcd Tm bwdQosParameters (bqp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of two elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The *cdv* specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR, the CDV is irrelevant, and its value is forced to the default. The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.
Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv clr
Default	(cdv: 16777215, clr: 255)

COMPONENT AtmIf Vcc Vcd Tm AvailableBitRate (Abr)

Groups	"GROUP AtmIf Vcc Vcd Tm Abr Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Vcd Tm AvailableBitRate,* *AtmIf/n Vpc/vci Vpd Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vpd Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vcc/vci Vcd Tm AvailableBitRate* This component contains provisioned ABR-related attributes of a connection. It is an optional subcomponent of the *Vcd Tm* and *Vpd Tm* component. It is used to override DGCRA-related defaults in the *CA Abr* component. It contains the specific configuration for the ABR connection at this connection point. If

this is the source of an SPVC connection, this component also contains the ABR parameters required for the SPVC call request.

Mib AtmCore

Common Verbs
Help
List
Display
Add
DELete

GROUP AtmIf Vcc Vcd Tm Abr Provisioned (Prov)

Properties Provisioned

Description This group contains provisioned attributes for the ABR ATM connections configured on an ATM interface.

Mib AtmCore

ATTRIBUTE AtmIf Vcc Vcd Tm Abr initialCellRate (icr)

Access Read and write

Criticality Component

Description This attribute specifies the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period.

The value ***sameAsCa*** means the initial cell rate is determined by the *AtmIf CA Abr*/0 *icr* attribute.

The value ***useMcr*** means ICR is set to the same value as the Minimum Cell Rate (MCR) for the connection.

The value ***usePcr*** means ICR is set to the same value as the Peak Cell Rate (PCR) for the connection.

If the value is less than the MCR of the connection, then the MCR is used as the ICR. If the value is more than PCR of the connection, then PCR is used as the ICR.

This attribute is ignored under all conditions where the

	operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..16777215) sameAsCa useMcr usePcr
Units	cell/s
Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm Abr transientBufferExposure (tbe)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the source to send during start-up periods, before the first Resource Management (RM) cell returns. TBE divided by *fixedRoundTripTime* determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. TBE divided by *maxCellsPerRmCell* specifies the operational value of *forwardRmCellLimit*, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* is set to ***erSwitch***.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	16777215

ATTRIBUTE AtmIf Vcc Vcd Tm Abr fixedRoundTripTime (frtt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. The value of *transientBufferExposure* divided by the value of FRTT (in seconds) determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	5000000

ATTRIBUTE AtmIf Vcc Vcd Tm Abr rateDecreaseFactor (rdf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

	This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.
Mib	AtmCore
Values	Decimal (0..15) sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm Abr rateIncreaseFactor (rif)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64. RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.
Mib	AtmCore
Values	Decimal (0..15) sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm Abr maxCellPerRmCell (nrm)

Access	Read and write
Criticality	Component

Description	This attribute specifies the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell. A value of 2 is not recommended although it is permitted according to the ATM Forum standard. When this attribute is set to a value of 2, it is possible that only one forward and one backward RM cell are repeatedly transmitted, and all data traffic is queued up indefinitely. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.
Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm Abr maxTimeBetweenRmCells (trm)

Access	Read and write
Criticality	Component
Description	This attribute specifies the TRM parameter for this connection. TRM provides an lower bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least two other cells have been sent, then the next cell to be transmitted would be a forward RM cell. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***. The provisioned value of 781 is signaled as TRM = 0, in the ABR Additional Parameters Information Element. 1563 is signaled as TRM = 1. 3125 is signaled as TRM = 2.

6250 is signaled as TRM = 3.
12500 is signaled as TRM = 4
25000 is signaled as TRM = 5.
50000 is signaled as TRM = 6.
100000 is signaled as TRM = 7.

Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm Abr cutoffDecreaseFactor (cdf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero. CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the CRM parameter, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. The value of CRM is indicated by the *forwardRmCellLimit* attribute. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore

Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64) sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm Abr acrDecreaseTimeFactor (adtf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the maximum time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..1023) sameAsCa
Units	centiseconds
Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm Abr dgcraMaximumDelay (dgcraMaxDelay)

Access	Read and write
Criticality	Component
Description	This attribute specifies an upper bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward direction).

This upper bound may be approximated as the sum of the round trip fixed and propagation delays and the maximum queuing delays between the ABR source and this interface.

The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When there is a reduction in the Allowed Cell Rate (ACR), the policer waits for a correspondingly longer period of time before it enforces at the new cell rate.

The value of this attribute must not be less than the *dgcraMinimumDelay* attribute.

Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm Abr dgcraMinimumDelay (dgcraMinDelay)

Access	Read and write
Criticality	Component
Description	This attribute specifies a lower bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward connection). This lower bound may be approximated as the sum of the round trip fixed and propagation delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A smaller value for this attribute implies a more lenient policer. When there is a increase in the Allowed Cell Rate (ACR), the

policer waits for a correspondingly shorter period of time before it enforces at the new cell rate.

Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE AtmIf Vcc Vcd Tm Abr farEndAcrDecreaseTimeFactor (feAdtf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) of the far end ABR source. The value specified should be the same as the ADTF parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the value of this attribute, the policer begins to limit enforce the incoming traffic at the initial cell rate (ICR) of the far end, as specified by the *farEndInitialCellRate* attribute.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	50

ATTRIBUTE AtmIf Vcc Vcd Tm Abr farEndInitialCellRate (feIcr)

Access	Read and write
Criticality	Component

Description	This attribute specifies the Initial Cell Rate (ICR) of the far end ABR source. The value specified should be the same as the ICR parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the *farEndAcrDecreaseTimeFactor* attribute, the policer begins to enforce the incoming traffic at the value of this attribute. If this attribute is specified less than the MCR of the connection, then the MCR is used as the *feIcr*. If this attribute is more than the PCR of the connection, then PCR is used as the *feIcr*.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cell/s
Default	0

COMPONENT AtmIf Vcc Vcd PerformanceMonitoring (Pm)

Groups	"GROUP AtmIf Vcc Vcd Pm Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vcc/x.y Vcd PerformanceMonitoring* *AtmIf/n Vpc/x Vpd PerformanceMonitoring* This component represents the Performance Monitoring (Pm) function on a provisioned connection. No Performance Monitoring is done unless this component is present. The

attribute values override corresponding values in the *AtmIf Pm* component. There can be a maximum of 255 *Pm*s on one LP.

Mib: AtmCore

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vcc Vcd Pm Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioned attributes which specify Performance Monitoring (PM) measurements, namely, Availability Ratio (AR) and Cell Loss Ratio (CLR), and control modes for the connection. The values specified in this group override those specified by the *AtmIf Pm* component.

Mib: AtmCore

ATTRIBUTE AtmIf Vcc Vcd Pm segSwitchSideMeasurement (segSwitchSide)

Access: Read and write

Description: This attribute specifies the set of Performance Monitoring (PM) measurements on the switch side configuration for the connection.

A value of ***sameAsInterface*** means that the measurements specified by the *segSwitchSideMeasurement* attribute of the *AtmIf Pm* component will be performed. No other values may be specified if ***sameAsInterface*** is selected. If the value is empty, no switch side PM measurements are done.

Mib: AtmCore

Set of:
- availabilityRatio (ar)
- cellLossRatio (clr)
- sameAsInterface (sameAsIf)

Default: (sameAsInterface)

ATTRIBUTE AtmIf Vcc Vcd Pm segLinkSideMeasurement (segLinkSide)

Access	Read and write
Description	This attribute specifies the set of Performance Monitoring (PM) measurements on the link side configuration for the connection. A value of ***sameAsInterface*** means that the measurements specified by the *segLinkSideMeasurement* attribute of the *AtmIf Pm* component will be performed. No other values may be specified if ***sameAsInterface*** is selected. If the value is empty, no link side PM measurements are done.
Mib	AtmCore
Set of	availabilityRatio (ar) cellLossRatio (clr) sameAsInterface (sameAsIf)
Default	(sameAsInterface)

ATTRIBUTE AtmIf Vcc Vcd Pm controlMode (mode)

Access	Read and write
Criticality	Component
Description	This attribute specifies the control mode of Performance Monitoring (PM) measurements for the connection. A value of ***autoStart*** means that PM activation procedures will start when the provisioned data is activated. A value of ***onDemand*** means that PM activation procedures will start when the operator issues the *Start* command. The PM measurements in this mode will continue until the operator issues the *Stop* command. A value of ***sameAsInterface*** means that the behavior will be as specified by the *controlMode* attribute of the *AtmIf Pm* component.
Mib	AtmCore

Values	autoStart (auto) onDemand (onDemand) sameAsInterface (sameAsIf)
Default	sameAsInterface

ATTRIBUTE AtmIf Vcc Vcd Pm switchSideClrType (clrType)

Access	Read and write
Description	This attribute specifies how the Cell Loss Ratio (CLR) Performance Monitoring (PM) is measured on a switch-side configuration for the connection. A value of ***complete*** indicates that egress discards at the segment end points are included in the CLR measurement as per ITU standards. A value of ***partial*** indicates that egress discards do not contribute to the CLR measurement. A value of ***sameAsInterface*** means that the behavior is as specified by the *switchSideClrType* attribute of the *AtmIf Pm* component.
Mib	AtmCore
Values	complete partial sameAsInterface (sameAsIf)
Default	sameAsInterface

COMPONENT AtmIf Vcc Loop (Loop)

Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Loop* The *Loop* component configures an ATM connection so that cells received from the ATM interface are retransmitted back to the interface through that connection. The *Loop* component requires

exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Nrp*, and *Test*).

Mib: AtmCore

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Vcc NailedUpRelayPoint (Nrp)

Groups: "GROUP AtmIf Vcc Nrp Provisioned (Prov)"

Scope: Device

Description: *AtmIf/n Vcc/vpi.vci Nrp*
This component is used to establish a single hop of a nailed-up ATM Bearer Service (ABS) connection. By linking together two *Nrp*s within a module, the associated connections are configured to relay ATM cells to one another. The *Nrp* component requires exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Test*, and *Loop*).

Mib: AtmBearerService

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vcc Nrp Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the *Nrp* component.

Mib: AtmBearerService

ATTRIBUTE AtmIf Vcc Nrp nextHop (nextHop)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *Nrp* component with which this *Nrp* is associated. A sample value is *AtmIf/31 Vcc/0.32 Nrp*.
Mib	AtmBearerService
Values	Link (Service, nextHop)
Default	No default

ATTRIBUTE AtmIf Vcc Nrp oamSegmentBoundary (sb)

Access	Read and write
Criticality	Component
Description	This attribute specifies the OAM segment boundary desired for a *Nrp* component. It affects the connection point type value visible in the parent component's *connectionPointType* attribute. The desired OAM segment boundary can be specified directly as ***yes***, ***no*** or ***sameAsInterface***. If ***sameAsInterface*** is specified, the OAM segment boundary is same as the *oamSegmentBoundary* attribute of the associated *AtmIf* and the switch will set the *connectionPointType*, choosing ***segmentEndPoint*** for a segment-boundary ATM interface and ***connectingPoint*** for a non-segment-boundary ATM interface.
Mib	AtmBearerService
Values	no yes sameAsInterface
Default	sameAsInterface

ATTRIBUTE AtmIf Vcc Nrp bandwidthElastic (bwElastic)

Access	Read and write
Criticality	Component

Description	This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced will be displayed in the *bandwidthReduction* attribute. A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection will not be released. Currently, this attribute should only be set to ***yes*** for situations where this *Nrp* is functioning as a loopback on one side of an IMA link. There are no other situations where this setting is valid. A value of ***no*** indicates that the bandwidth for this connection will not be reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority.*
Mib	AtmBearerService
Values	no yes
Default	no

ATTRIBUTE AtmIf Vcc Nrp overrideHoldingPriority (ohpri)

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. Holding priority is used when there is an IMA group where some physical links have failed. Holding priority determines the order in which connections are released. 4 is the lowest holding priority and is released first. 0 is a higher priority and is released last. The value specified in this attribute will override whatever *holdingPriority* that has been provisioned at the *Vcd* (or *Vpd*). If

the value is left at the default of ***noOverride***, the *holdingPriority* provisioned at the *Vcd* (or *Vpd*) will be used.

Mib: AtmBearerService

Values:
0
1
2
3
4
noOverride

Default: noOverride

COMPONENT AtmIf Vcc NailedUpEndPoint (Nep)

Groups: "GROUP AtmIf Vcc Nep Provisioned (Prov)"

Scope: Device

Description: *AtmIf/n Vcc/vpi.vci Nep*
The *NailedUpEndPoint* component is used to link a VCC to an application that sends and receives frames using the connection. The *Nep* component requires exclusive use of its parent *Vcc* and cannot co-exist with other ATM service components (such as *Nrp*, *Test*, and *Loop*).

Mib: AtmCore

Common Verbs:
Help
List
Display
Add
DELete

GROUP AtmIf Vcc Nep Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisionable attributes for the *Nep* component.

Mib: AtmCore

ATTRIBUTE AtmIf Vcc Nep applicationName (appName)

Access	Read only
Description	This attribute specifies the application that sends and receives frames using the VCC. This attribute is set, for example, by provisioning the *Trunk AtmAccess AtmConnection* attribute. If it is properly configured, this attribute will show a value such as “Trk/22 AtmAccess”.
Mib	AtmCore
Values	Link (Service, atmConnection)
Default	No default

COMPONENT AtmIf Vcc Test (Test)

Groups	"GROUP AtmIf Vcc Test OsiState (State)" "GROUP AtmIf Vcc Test Setup (Setup)" "GROUP AtmIf Vcc Test Results (Results)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Test* The *Test* component allows test traffic to be sent over an ATM connection. It is used to verify the integrity of hardware carrying ATM traffic, and provides test capabilities similar to those provided by non-ATM port and line tests. The *Test* component requires exclusive use of its parent *Vcc* and cannot co-exist with other ATM service components (such as *Nep*, *Nrp*, and *Loop*). An ATM connection test circulates traffic through a VCC having a *Test* component at one end and the other end configured to loop back ATM cells. The *Test* component generates test frames, transforms them into ATM cells using AAL5 segmentation, and transmits them through the VCC; the returned cells are received by the *Test* component, reassembled back into frames, and the frames are consumed. The test frames generated by the test are grouped into two independent streams. 1) The loading frame stream circulates a set of “loading frames” through the connection as rapidly as possible. The intent of this

stream is to verify the operation of the connection under a controlled load.
2) The verification stream transmits a series of “verification frames” through the connection; as each frame is returned, the *Test* component verifies its contents and the next verification frame in the series is transmitted. The intent of this stream is to verify that frames are not being corrupted.
The test can be configured to send frames from either or both streams. The size and content of the test frames can also be controlled.

Mib: AtmCore

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB START AtmIf Vcc Test

Impact: Service

Description: *START AtmIf/n Vcc/vpi.vci Test*
This verb invokes an ATM connection test. It has no effect when the test is already running.

VERB STOP AtmIf Vcc Test

Impact: Service

Description: *STOP AtmIf/n Vcc/vpi.vci Test*
This verb stops an ATM connection test. It has no effect when the test is not running.

GROUP AtmIf Vcc Test OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib AtmCore

ATTRIBUTE AtmIf Vcc Test adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib AtmCore

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE AtmIf Vcc Test operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmCore

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmIf Vcc Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: AtmCore

Values: idle
active (activ)
busy

Default: idle

GROUP AtmIf Vcc Test Setup (Setup)

Properties: Operational

Description: This group contains attributes that govern the operation of an ATM connection test. These attributes cannot be changed while the test is running.

Mib: AtmCore

ATTRIBUTE AtmIf Vcc Test frmTypes (types)

Access	Read and write
Description	This attribute specifies the types of the test frames to be transmitted during the ATM connection test. It must contain at least one of the following: ***loading***: A set of “loading frames” is circulated over the link as rapidly as possible. This frame type should be selected when the test is intended to verify the operation of the connection under a specified load. These frames are not checked for bit errors. ***verification***: A single “verification frame” is transmitted over the link; when the frame is returned, its contents are verified and the next verification frame in the series is transmitted. This frame type should be selected when the test is intended to verify that frames are not being corrupted as they pass over the connection.
Mib	AtmCore
Set of	loading verification
Default	(loading, verification)

ATTRIBUTE AtmIf Vcc Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test frames used in an ATM connection test.
Mib	AtmCore
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE AtmIf Vcc Test frmPatternType (fpt)

Access	Read and write
Description	This attribute specifies the bit sequence used to fill the frames used in the ATM connection test. It must contain one of the following values:

	ccitt32kBitPattern: a pseudo-random sequence of 32 Kbit is used ***ccitt8MBitPattern***: a pseudo-random sequence of 8Mbit is used ***customizedPattern***: the pattern defined in the *customizedPattern* attribute is used
Mib	AtmCore
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE AtmIf Vcc Test customizedPattern (cp)

Access	Read and write
Description	This attribute specifies a 32 bit sequence to be used to fill frames when the *framePatternType* attribute is set to ***customizedPattern***. The default value gives a pattern of alternating 0 and 1 bits.
Mib	AtmCore
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE AtmIf Vcc Test duration

Access	Read and write
Description	This attribute specifies the maximum number of minutes that the ATM connection test is allowed to run. The maximum allowed value permits the test to be run for up to 21 days.
Mib	AtmCore
Values	Decimal (1..30240)
Units	minutes
Default	1

ATTRIBUTE AtmIf Vcc Test bandwidthElastic (bwElastic)

Access	Read and write
Description	This attribute specifies whether the connection (*VCC*) should be configured with elastic bandwidth or not. Elastic bandwidth is of importance in conjunction with IMA links, where some links fail and the resulting bandwidth is less than the requested bandwidth for all connections. In that case, some connections may be reduced in bandwidth based on the setting of the *bwElastic* attribute. If this attribute is set to ***yes***, the Test application signals to the connection that the bandwidth for this connection is elastic, and may be reduced in the case of IMA link failures. If the bandwidth is reduced, the rate of test cells which can be handled by the connection will also be reduced. If this attribute is set to ***no***, the Test application signals to the connection that the bandwidth for this connection must be maintained at the requested level. If the connection cannot maintain the full bandwidth, the connection may be released (cleared) based on the holding priority of the connection.
Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE AtmIf Vcc Test overrideHoldingPriority (ohpri)

Access	Read and write
Description	This attribute specifies the override holding priority which should be signaled to the *VCC* connection at the start of the test. Holding priority is of importance in conjunction with IMA links, where some links fail and the resulting bandwidth is less than the requested bandwidth for all connections. In that case, some connections may be released based on the connection's holding priority. ***Zero*** (0) is the highest holding priority, and ***four*** (4) is the lowest priority. A setting of ***zero*** to ***four*** overrides whatever holding

priority that has been configured at the connection (*VCC*). A setting of ***noOverride*** means that the connection should use its internally configured holding priority.

Mib AtmCore

Values
0
1
2
3
4
noOverride

Default noOverride

GROUP AtmIf Vcc Test Results (Results)

Properties Operational

Description This group contains attributes that show the result of an ATM connection test; if no test is running, the attribute group contains the results of the most recently completed test. The attributes of the *Results* group are reset to their initial values whenever a test is started or any attribute of the *Setup* group is set.

Mib AtmCore

ATTRIBUTE AtmIf Vcc Test elapsedTime

Access Read only

Description This attribute displays the number of minutes that the test has been running.

Mib AtmCore

Values Decimal (0..30240)

Units minutes

Default 0

ATTRIBUTE AtmIf Vcc Test timeRemaining

Access Read only

Description	This attribute displays the number of minutes that the test will continue to run before stopping automatically.
Mib	AtmCore
Values	Decimal (0..30240)
Units	minutes
Default	0

ATTRIBUTE AtmIf Vcc Test causeOfTermination

Access	Read only
Description	This attribute displays the reason the test ended. It contains one of the following values. ***testTimeExpired***: the test ran for the specified duration ***stoppedByOperator***: a *STOP* command was issued ***neverStarted***: the test has not been started ***testRunning***: the test is currently running
Mib	AtmCore
Values	testTimeExpired stoppedByOperator neverStarted testRunning
Default	neverStarted

ATTRIBUTE AtmIf Vcc Test bytesTx

Access	Read only
Description	This attribute displays the number of bytes sent during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc Test bytesRx

Access	Read only
Description	This attribute displays the number of bytes received during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc Test loadingFrmTx

Access	Read only
Description	This attribute displays the number of loading frames sent during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc Test loadingFrmRx

Access	Read only
Description	This attribute displays the number of loading frames received during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc Test loadingFrmLost

Access	Read only
Description	This attribute displays the number of loading frames that were lost during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc Test verificationFrmTx

Access	Read only
Description	This attribute displays the number of verification frames sent during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc Test verificationFrmRx

Access	Read only
Description	This attribute displays the number of verification frames received during the test (including errored verification frames). The counter wraps to zero if it exceeds its maximum value of (2**64)-1. Note that the number of verification frames lost during the test can be computed by the expression *verificationFrmTx - verificationFrmRx*.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc Test verificationFrmBad

Access	Read only
Description	This attribute displays the number of errored verification frames received during the test. A verification frame is considered to be errored if it contains a recognizable verification frame header, but

does not match the transmitted frame bit for bit. (Thus, a verification frame that returns after the succeeding verification frame has been transmitted is considered to be errored.) The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Note that the number of correct verification frames received during the test can be computed by the expression *verificationFrmRx - verificationFrmBad*.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vcc Test unrecognizableFrmRx

Access	Read only
Description	This attribute displays the number of frames received during the test which do not contain a valid loading frame header or verification frame header. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

COMPONENT AtmIf Vcc TrafficManagement (Tm)

Groups	"GROUP AtmIf Vcc Tm Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vpc/vpi TrafficManagement,* *AtmIf/n Vcc/vpi.vci TrafficManagement,* *AtmIf/n Vpt/vpi TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci TrafficManagement* The *Tm* subcomponent contains the operational traffic

	management attributes of a connection. It is created dynamically for each activated *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore
Dyn. Subcomp.	"COMPONENT AtmIf Vcc Tm AvailableBitRate (Abr)"
Common Verbs	Help List Display

GROUP AtmIf Vcc Tm Operational (Oper)

Properties	Operational
Description	This group contains attributes for the *Tm* component to reflect operational traffic attributes.
Mib	AtmCore

ATTRIBUTE AtmIf Vcc Tm txTrafficDescType (txTdt)

Access	Read only
Description	T his attribute indicates the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE AtmIf Vcc Tm txQosClass (txQos)

Access	Read only
Description	This attribute indicates the quality of service for the calling to called direction for this connection. This is only applicable to Soft PVC and SVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified QOS class; no objective is specified for the performance parameters. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	0 1 2 3 4 notApplicable
Default	No default

ATTRIBUTE AtmIf Vcc Tm txQueueLength (txQLen)

Access	Read only
Description	This attribute indicates the current number of cells in the transmit queue for this connection.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the length of the common queue which is used for this ATM service category.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***fifo***, this attribute indicates the number of cells for this connection which are enqueued in a first-in-first-out queuing method for this ATM service category. This will only occur for connections on ATM IP cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the length of the per-VC queue.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current number of cells in the link class queue used by this connection to buffer its traffic.

This attribute does not apply to basic *Vpt*s.

Mib	AtmCore
Values	Decimal (0..1011840)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc Tm txQueueCongestionState (txQCong)

Access	Read only
Description	This attribute indicates the congestion state of the transmit queue for this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the congestion state of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the congestion state of the per-VC queue.

The congestion state of a queue is indicated by a numeric value ranging from 0 to 3. When a queue is in a congested state x, only traffic with discard priority (DP) 0 to x are enqueued. Traffic with DP > x is discarded.

For example, if the congestion state is 3, there is no congestion and all traffic is enqueued. Likewise, when the congestion state is 0, there is maximum congestion and only traffic with DP=0 is enqueued on that queue.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current congestion state of the link class queue used by this connection to buffer its traffic.

This attribute does not apply to basic *Vpt*s.

Mib	AtmCore
Values	Decimal (0..3)
Default	No default

ATTRIBUTE AtmIf Vcc Tm holdingPriority (hpri)

Access	Read only
Description	This attribute indicates the actual holding priority in effect for this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. Some applications, for example *Vcc Test*, may override the provisioned holding priority. A value of ***notApplicable*** is displayed when this is an elastic connection. Holding priority does not apply to bandwidth elastic connections. Holding priority has no effect if the equivalent cell rate (ECR) for a connection is zero.

This attribute does not apply to *Vpt Vcc*s.

Mib AtmCore

Values
0
1
2
3
4
notApplicable

Default No default

ATTRIBUTE AtmIf Vcc Tm rxTrafficDescType (rxTdt)

Access Read only

Description This attribute indicates the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute.

Mib AtmCore

Values
1
2
3
4
5
6
7
8
9

Default No default

ATTRIBUTE AtmIf Vcc Tm rxQosClass (rxQos)

Access Read only

Description This attribute indicates the quality of service for the called to calling direction for this connection. This is only applicable to Soft PVC and SVC connections.

Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video).

Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video).

Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer).

Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class 0 is the unspecified QOS class; no objective is specified for the performance parameters.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
0
1
2
3
4
notApplicable
sameAsFwd

Default: No default

ATTRIBUTE AtmIf Vcc Tm atmServiceCategory (service)

Access: Read only

Description: This attribute indicates the ATM service category used for traffic in both directions of the connection.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells

which are delayed beyond the value specified by Cell Transfer Delay are assumed to have significantly reduced value for the application.

The ***rtVariableBitRate*** service category is intended for real time applications; that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib — AtmCore

Values
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtVbr)
nrtVariableBitRate (nrtVbr)
availableBitRate (abr)

Default
No default

ATTRIBUTE AtmIf Vcc Tm trafficShaping (trShaping)

Access
Read only

Description
This attribute indicates the traffic shaping state of the connection.

A value of ***notApplicable*** indicates that traffic shaping is not applicable or not supported for this connection. This is the case:
- when the *txTrafficDescType* is 1 or 2.
- for standard *Vpt Vcc*s and basic *Vpt*s.
- for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, when the *atmServiceCategory* is ***constantBitRate***.

In these cases, the value of ***notApplicable*** is indicated regardless of whether traffic shaping is enabled or disabled in the provisioning data.

A value of ***disabled*** indicates that traffic shaping is applicable and supported for the type of connection but has been turned off in the provisioning data.

A value of ***linear*** or ***inverseUpc*** indicates that traffic shaping is applicable and supported for the type of connection and has been turned on in the provisioning data. This is the only case that indicates that traffic shaping is performed on the connection. In this case, the actual shaping rate is reflected in the *txTrafficDescParm* attribute, parameter number 4. A value of ***linear*** indicates that traffic is being shaped at the constant rate indicated in *txTrafficDescParm* 4. A value of ***inverseUpc*** indicates that the shaper strictly conforms to the requirements of a dual leaky bucket UPC enforcer. This value is indicated if traffic shaping is enabled, and the *txTrafficDescType* for this connection is 6, 7 or 8.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is always ***disabled***.

Traffic shaping for connections with *atmServiceCategory* as ***availableBitRate*** (*txTrafficDescType* 9) depends upon the *abrConnectionType* attribute. If *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, the value of this attribute is ***linear***. If *abrConnectionType* is ***erSwitch*** or ***efciSwitch***, this attribute is ***notApplicable***.

Mib: AtmCore

Values:
disabled
linear
inverseUpc
notApplicable

Default: No default

ATTRIBUTE AtmIf Vcc Tm bearerClassBbc (bcBbc)

Access: Read only

Description: This attribute indicates the bearer capability for this connection.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is displayed, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements.When ***c*** is displayed, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***cbr*** or ***vbr***), and timing requirements are user defined (that is, transparent to the network). When the

value of this attribute is ***x***, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.

Class vp service is used to indicate a transparent VP service when the user is requesting an ATM only service from the network. In this case, the network does not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except for VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP and SVP connections.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
a
c
x
vp
notApplicable

Default: No default

ATTRIBUTE AtmIf Vcc Tm transferCapabilityBbc (tcBbc)

Access: Read only

Description: This attribute indicates the transfer capability for this connection. Uni 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

A value of ***notApplicable*** is displayed in the case of nailed-up

PVCs for which this attribute has no significance, or in the case that the transfer capability in the call request was set to NoIndication.

The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data.

The value NoIndication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing.

The value yes for end-to-end timing indicates that end-to-end timing is required for the connection.

The value no for end-to-end timing indicates that end-to-end timing is not required for the connection.

Mib: AtmCore

Values:
0
1
2
5
8
9
10
notApplicable

Default: No default

ATTRIBUTE AtmIf Vcc Tm clippingBbc (cBbc)

Access: Read only

Description: This attribute indicates the value of the clipping susceptibility parameter in the broadband bearer capability (BBC) Information Element.

Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched

through.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
no
yes
notApplicable

Default: No default

ATTRIBUTE AtmIf Vcc Tm unshapedTransmitQueueing (unshap)

Access: Read only

Description: This attribute indicates the unshaped transmit queuing state of the connection.

A value of ***common*** indicates that transmit traffic is being enqueued onto the common transmit queue for this service category.
The *txQueueLength* attribute indicates the current length of the common transmit queue.

A value of ***fifo*** indicates that transmit traffic is being queued in a first-in-first-out basis for this service category. This is similar to ***common*** queuing, but the *txQueueLength* attribute indicates the number of cells in this connection queue. A value of ***fifo*** will only be indicated for connections on ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***.

A value of ***perVc*** indicates that transmit traffic is being enqueued onto a per-VC queue for this connection.

A value of ***notApplicable*** indicates that transmit traffic is being shaped for this connection, or that unshaped transmit queuing is not applicable for this type of connection. Transmit traffic for a shaped connection is enqueued onto a per-VC queue, but this

attribute is only applicable for unshaped connections. Unshaped transmit queuing is not applicable for basic *Vpt*s.

Mib: AtmCore

Values:
perVc
common
notApplicable
fifo

Default: No default

ATTRIBUTE AtmIf Vcc Tm bestEffort

Access: Read only

Description: This attribute indicates value of best effort parameter in the ATM Traffic Descriptor Information Element.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
indicated
notIndicated
notApplicable

Default: No default

ATTRIBUTE AtmIf Vcc Tm forceTagging (tagging)

Access: Read only

Description: This attribute indicates the state of force tagging option for this connection. Force tagging refers to setting the CLP bit for all cells on a connection.

A value of ***enabled*** indicates that the CLP bit is being set to 1 for

all cells in the transmit direction on this connection.

A value of ***disabled*** indicates that the CLP bit is unchanged for cells in the transmit direction on this connection. The value ***disabled*** is always displayed for *Vpt*s since forced tagging is applied on a per *Vpt Vcc* basis.

Mib: AtmCore

Values: disabled
enabled

Default: No default

ATTRIBUTE AtmIf Vcc Tm weight

Access: Read only

Description: This attribute indicates the relative weight of this unshaped connection. Connections with a larger weight get a larger proportion of the link bandwidth or in the case of standard *Vpt Vcc*s, the *Vpt* bandwidth.

For all but standard *Vpt Vcc*s, the default connection weight is determined by the weight policy for a service category and the traffic descriptor for a connection. For standard *Vpt Vcc*s, the default connection weight is determined by the *Vcc*'s service category.

A value from 1 to 4095 indicates an actual weight. The value ***upToQueueLimit*** indicates that the weight of a connection is up to the transmit queue limit for this connection and is used for connections which have the value of the *unshapedTransmitQueueing* attribute displayed as ***fifo***.

This attribute has a displayed value of ***notApplicable*** in the following cases:
- This connection has the value of the *trafficShaping* attribute displayed as either ***linear*** or ***inverseUpc***.
- This connection has the value of the *trafficShaping* attribute displayed as ***disabled***, but the connection's service category has the *trafficShaping* attribute provisioned as either ***enabled*** or ***inverseUpc***.

- This connection has the value of the *unshapedTransmitQueueing* attribute displayed as ***common***.
- This is a basic *Vpt* connection.
- For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, since per-connection weight is not supported.

Mib: AtmCore

Values:
Decimal (1..4095)
upToQueueLimit
notApplicable

Default: No default

ATTRIBUTE AtmIf Vcc Tm usageParameterControl (upc)

Access: Read only

Description: This attribute indicates the UPC state of the connection.

A value of ***notApplicable*** indicates that UPC is not applicable or not supported for the connection. This is the case:
- when the connection's *rxTrafficDescType* is 1 or 2.
- for standard *Vpt Vcc*s and basic *Vpt*s.

A value of ***notApplicable*** is set regardless of whether UPC is disabled or enabled in provisioning data.

A value of ***disabled*** indicates that UPC is applicable and supported for the type of connection but has been turned off in the provisioning data.

A value of ***enforced*** indicates that UPC is actively checking conformance for the connection and is discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. On some ATM cards, the counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

A value of ***monitored*** indicates that UPC is actively checking

conformance for the connection and counting the violations, but is not discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. The counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt*. *rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

If the *atmServiceCategory* for this connection is ***availableBitRate***, a value of ***enforced*** indicates that Dynamic Generic Cell Rate Algorithm (DGCRA) is active for the connection. The traffic descriptor parameters used for DGCRA enforcement are reflected in the *rxTrafficDescParm* of the connection.

Mib — AtmCore

Values — enforced
disabled
monitored
notApplicable

Default — No default

ATTRIBUTE AtmIf Vcc Tm txPacketWiseDiscard (txpd)

Access — Read only

Description — This attribute indicates the current set of packet-wise discard functions in effect in the transmit data direction at this connection point.

A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point.

A value of ***wred*** indicates that Weighted Random Early Detection

is in effect at this connection point. W-RED can be enabled by provisioning for PVCs and SPVCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Packet-wise functions are not applicable to virtual path connections (VPCs) on these cards.

On all other ATM cards, all packet-wise discard functions also apply to virtual path connections (VPCs).

This attribute is not applicable for *Vpt*s.

Mib: AtmCore

Set of: ppd
epd
wred

Default: No default

ATTRIBUTE AtmIf Vcc Tm rxPacketWiseDiscard (rxpd)

Access: Read only

Description: This attribute indicates the current set of packet-wise discard functions in effect in the receive data direction at this connection point.

A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, packet-wise functions are not applicable to virtual path connections (VPCs).

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Note that a provisioned value of ***enabled*** for the *Vcc/Vpc Vcd/Vpd Tm rxPacketWiseDiscard* provisionable attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in actually enabling packet-wise discard functions in the receive data direction of a connection locally on these cards, thus does not affect the operational value displayed.

On all other ATM cards, all packet-wise discard functions also apply to virtual path connections (VPCs).

This attribute is not applicable for *Vpt*s.

Mib	AtmCore
Set of	ppd epd
Default	No default

ATTRIBUTE AtmIf Vcc Tm bandwidthElastic (bwElastic)

Access	Read only
Description	This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application (for example, *Trunk*) running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced is displayed in the *bandwidthReduction* attribute.

A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection is not released.

A value of ***no*** indicates that the bandwidth for this connection is not reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority.*

Bandwidth elasticity has no effect for connections which have an equivalent cell rate (ECR) of zero.

This attribute is not applicable for *Vpt*s and *Vpt Vcc*s.

Mib: AtmCore

Values: no
yes

Default: No default

ATTRIBUTE AtmIf Vcc Tm bandwidthReduction (bwReduction)

Access: Read only

Description: This attribute shows the amount by which the bandwidth has been reduced for this connection. This value is non-zero only for connections which have *bandwidthElastic* displayed as ***yes***, and which are also operating in a reduced bandwidth mode. This is typically the case for selected connections running over an IMA link. This attribute takes a value from 0 (no reduction) up to the ECR. For all connections which are running at their full allocated bandwidth, *bwReduction* has the value 0. Connections which have been reduced in allocated bandwidth have a positive number for this attribute. The *bwReduction* may be subtracted from the ECR (which is displayed as *txTrafficDescParm* 5) to determine the actual bandwidth allocated to this connection.

Mib: AtmCore

Values: Decimal (0..2147483647)

Units: cell/s

Default: No default

ATTRIBUTE AtmIf Vcc Tm abrConnectionType (abrType)

Access — Read only

Description — This attribute indicates the type of ABR behavior which is in effect at this connection. This attribute is only applicable if the *atmServiceCategory* attribute is ***availableBitRate***. If the *atmServiceCategory* attribute is not ***availableBitRate***, this attribute value is set to ***notApplicable***.

For ATM cards which do not support ABR connections, the possible values for this attribute are ***notApplicable***, ***efciSwitch***, or ***nonAbrInterworking***. In EFCI marking mode, the Explicit Forward Congestion Indication (EFCI) field in the data cell headers is used to indicate transmit queue congestion.

For ATM cards which do support ABR connections, if the *connectionPointType* is ***connectionEndPoint***, the value of this attribute is ***sourceDest***. In this mode, the ABR Source and Destination behavior is in effect at this connection. This attribute is also ***sourceDest*** in the case where the next hop connection is specified as ***nonAbrInterworking***. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

If the *connectionPointType* is not ***connectionEndPoint***, the value of this attribute depends upon the *abrConnectionType* provisioning and the card type to which the traffic is forwarded on the backplane. The default *abrConnectionType* is provisioned at the *CA Abr abrConnectionType* attribute, and may be overridden for a provisioned connection in the *Vcd Tm abrConnectionType* or *Vpd Tm abrConnectionType* attribute. If the *CA Abr abrConnectionType* attribute is ***virtualSourceDest*** at either one of the two connection points, and if both the connection points are defined on ATM cards which support ABR connections, virtual source and destination behavior is applied to the connection. In this instance, the attribute displays the value ***virtualSourceDest***.

This attribute has the value ***erSwitch*** if ABR explicit rate functionality is in effect at this connection. In this mode, the

switch may modify the Explicit Rate (ER) field of backward Resource Management (RM) cells to indicate the status of congestion at this connection point.

This attribute has the value ***nonAbrInterworking*** in the case where this connection point is functioning as an SPVC origin for an ABR connection where the link side of this connection is configured as a non-ABR ATM service category. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***.

Mib: AtmCore

Values:
erSwitch
efciSwitch
virtualSourceDest
sourceDest
nonAbrInterworking
notApplicable

Default: No default

ATTRIBUTE AtmIf Vcc Tm txTrafficDescParm (txTdp)

Access: Read only

Description: This attribute is a vector of five transmit traffic parameters whose mapping is defined by the *txTrafficDescType* attribute.

The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR), actual cell rate (ACR), explicit rate (ER), equivalent cell rate (ECR), and actual shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds.

When *txTrafficDescType* is 1 or 2, parameters 1 through 5 are unused.

In this description, PCR is the greater of either the PCR or the requested shaping rate (parameter 1 or parameter 5) specified in the *txTrafficDescParm* attribute under the *Vcd Tm* or *Vpd Tm* component.

When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 or 1 traffic; parameters 2 and 3 are unused.

When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard.

When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging.

When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic.

When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, parameter 4 reflects the actual shaping rate in cell/s for this connection. For CQC-based ATM cards, the set of available shaping rates is based on the number of interfaces doing shaping (attribute *perVcQueueInterfaces*), and the *shapingScalingFactor* attribute of the *Arc Cqc Override* component. A rate of zero (0) indicates that shaping is not performed, or that the interface is down.

When *txTrafficDescType* is 9**,** parameter 1 represents the PCR; parameter 2 represents the Cell Delay Variation Toleration (CDVT); parameter 3 represents the Minimum Cell Rate (MCR); the meaning of parameter 4 depends upon the value of the *abrConnectionType* attribute. if *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, parameter 4 represents the

Allowed Cell Rate (ACR); If *abrConnectionType* is ***erSwitch***, parameter 4 represents the Explicit Rate (ER); and if *abrConnectionType* is ***efciSwitch***, parameter 4 reflects the actual shaping rate in cell/s for this connection.

When *txTrafficDescType* is 3, 4, 5, 6, 7, 8, or 9, parameter 5 reflects the equivalent cell rate in cell/s for this connection as determined by the Connection Admission Control (CAC) algorithm. The equivalent cell rate is useful in determining the admission characteristics of this connection.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf Vcc Tm txQueueThresholds (txQThresh)

Access	Read only
Description	This attribute indicates the queue limit and the discard thresholds for the transmit queue of this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the thresholds of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the thresholds of the per-VC queue. The first element indicates the queue limit. The provisioned value of the transmit queue limit is derived from the *txQueueLimit* attribute under the service category subcomponents of the *CA* component for the service category of this connection. The second element is the threshold that marks the transition from congestion state 1 to congestion state 0. This is the threshold at which traffic with discard priority (DP) = 1 is discarded. This threshold is set at approximately 90 percent of the first parameter, the operational queue limit.

The third element is the threshold that marks the transition from congestion state 2 to congestion state 1. This is the threshold at which traffic with DP = 2 is discarded. This threshold is set at approximately 75 percent of the first parameter, the operational queue limit.

The fourth element is the threshold that marks the transition from congestion state 3 to congestion state 2. This is the threshold at which traffic with DP = 3 is discarded. This threshold is set at approximately 35 percent of the first parameter, the operational queue limit.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the thresholds of the link class queue used by this connection to buffer it traffic.

This attribute does not apply to basic *Vpt*s.

Mib	AtmCore
Vector of	Decimal (0..1011840)
Units	cells
Index	Decimal (0..3)
Default	No default

ATTRIBUTE AtmIf Vcc Tm rxTrafficDescParm (rxTdp)

Access	Read only
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. Cell delay variation tolerance (CDVT) is expressed in microseconds. When *rxTrafficDescType* is 1 or 2, none of the parameters are used.

When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents CDVT; parameter 3 represents the MCR; parameter 4 is not used.

If *upc* is ***disabled*** for this connection, the values of PCR, SCR, MBS and CDVT are the provisioned parameters.

If *upc* is ***enabled***, the values of PCR, SCR, MBS, and CDVT are exactly the values used by the usage parameter control hardware in policing the arriving traffic. These may vary slightly from the

provisioned values due to granularity of the hardware. In the case where the PCR is equal to the SCR, the effective MBS is zero.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE AtmIf Vcc Tm txQosParameters (tqp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

ATTRIBUTE AtmIf Vcc Tm rxQosParameters (rqp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the backward direction for this

connection. This attribute is used for SPVC and SVC connections on a PNNI interface.

The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR).

The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR).

The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

COMPONENT AtmIf Vcc Tm AvailableBitRate (Abr)

Groups	"GROUP AtmIf Vcc Tm Abr Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vpc/vpi Tm AvailableBitRate,* *AtmIf/n Vcc/vpi.vci Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vcc/vci Tm AvailableBitRate* This component contains ABR-related operational attributes of a connection. It is dynamically created for connections where the value of the *atmServiceCategory* attribute is ***availableBitRate***,

and where the value of the *abrConnectionType* attribute is ***sourceDest***, or ***virtualSourceDest***.

Mib AtmCore

Common Verbs
Help
List
Display

GROUP AtmIf Vcc Tm Abr Operational (Oper)

Properties Operational

Description This group contains operational attributes for connections using ABR service category.

Mib AtmCore

ATTRIBUTE AtmIf Vcc Tm Abr initialCellRate (icr)

Access Read only

Description This attribute indicates the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period.

For nailed-up connections, this attribute is determined by the provisioned value of the *initialCellRate* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.

The ICR for a connection is a value between the MCR and the PCR. Furthermore, ICR has an upper bound determined by the *transientBufferExposure* divided by *fixedRoundTripTime*.

Mib AtmCore

Values Decimal (0..16777215)

Units cell/s

Default No default

ATTRIBUTE AtmIf Vcc Tm Abr transientBufferExposure (tbe)

Access	Read only
Description	This attribute indicates the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the resource to send during start-up periods, before the first Resource Management (RM) cell returns. For nailed-up connections, this attribute is determined by the provisioned value of the *transientBufferExposure* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc Tm Abr fixedRoundTripTime (frtt)

Access	Read only
Description	This attribute indicates the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. For nailed-up connections, this attribute is determined by the provisioned value of the *fixedRoundTripTime* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	No default

ATTRIBUTE AtmIf Vcc Tm Abr rateDecreaseFactor (rdf)

Access	Read only

Description	This attribute indicates the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. For nailed-up connections, this attribute is determined by the provisioned value of the *rateDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..15)
Default	No default

ATTRIBUTE AtmIf Vcc Tm Abr rateIncreaseFactor (rif)

Access	Read only
Description	This attribute indicates the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64. RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR. For nailed-up connections, this attribute is determined by the provisioned value of the *rateIncreaseFactor* attribute. For

signaled connections, it is indicated in the ABR Setup Parameters Information Element.

Mib: AtmCore

Values: Decimal (0..15)

Default: No default

ATTRIBUTE AtmIf Vcc Tm Abr maxCellPerRmCell (nrm)

Access: Read only

Description: This attribute indicates the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell.

For nailed-up connections, this attribute is determined by the provisioned value of the *maxCellsPerRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.

Mib: AtmCore

Values: Decimal (2; 4; 8; 16; 32; 64; 128; 256)

Units: cells

Default: No default

ATTRIBUTE AtmIf Vcc Tm Abr maxTimeBetweenRmCell (trm)

Access: Read only

Description: This attribute indicates the TRM parameter for this connection.

TRM provides an upper bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least 2 other cells have been sent, the next cell to be transmitted would be a forward RM cell.

For nailed-up connections, this attribute is determined by the provisioned value of the *maxTimeBetweenRmCell* attribute. For

signaled connections, it is indicated in the ABR Additional Parameters Information Element.

Mib AtmCore

Values Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000)

Units microsec

Default No default

ATTRIBUTE AtmIf Vcc Tm Abr cutoffDecreaseFactor (cdf)

Access Read only

Description This attribute indicates the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero.

CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the *forwardRmCellLimit* attribute, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

For nailed-up connections, this attribute is determined by the provisioned value of the *cutoffDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.

Mib AtmCore

Values Decimal (0; 1; 2; 4; 8; 16; 32; 64)

Default No default

ATTRIBUTE AtmIf Vcc Tm Abr acrDecreaseTimeFactor (adtf)

Access Read only

Description	This attribute indicates the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. For nailed-up connections, this attribute is determined by the provisioned value of the *acrDecreaseTimeFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	No default

ATTRIBUTE AtmIf Vcc Tm Abr forwardRmCellLimit (crm)

Access	Read only
Description	This attribute indicates the CRM parameter for this connection. CRM is the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor*. The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. The value of CRM is obtained as *transientBufferExposure* divided by *maxCellsPerRmCell*.
Mib	AtmCore
Values	Decimal (1; 3; 7; 15; 31; 63; 127; 255; 511; 1023; 2047; 4095)

Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc Tm Abr txRateChangeInfo (txrci)

Access	Read only
Description	This attribute indicates the rate change information put into the last forward Resource Management (RM) cell turned around as a backward-RM cell. For connections configured as an ABR Source or Destination, the turned around backward-RM cell is sent over the interface. For connections configured as an ABR Virtual Source or Virtual Destination, the turned around backward-RM cell is sent over the backplane.
Mib	AtmCore
Values	congestionIndicated noIncreaseIndicated explicitRateIndicated
Default	No default

ATTRIBUTE AtmIf Vcc Tm Abr acrRateChangeInfo (arci)

Access	Read only
Description	This attribute indicates the type of change in the Allowed Cell Rate (ACR) as a result of the information in the last backward Resource Management (B-RM) cell received from the interface. This attribute value is only applicable when the *Vcc Tm* or *Vpc Tm abrConnectionType* attribute is ***sourceDest*** or ***VirtualSourceDest***. In all other cases, this attribute value is ***notApplicable***. A value of ***noChange*** indicates that the rate did not change as a result of the last backward RM cell received. A value of ***decreasedByRdf*** or ***increasedByRif*** indicates that the ACR was increased or decreased by the corresponding factor. This change is as a result of the CI or NI bit setting in the last backward RM cell, or an ADTF timeout.

A value of ***setToExplicitRate*** indicates that the ACR was set to the ER value in the last backward RM cell.

Mib: AtmCore

Values:
noChange
decreasedByRdf
increasedByRif
setToExplicitRate
notApplicable

Default: No default

ATTRIBUTE AtmIf Vcc Tm Abr txFwdRmCells

Access: Read only

Description: This attribute counts the number of forward Resource Management (RM) cells sent over the interface since the last backward RM-cell was received from the interface. If the value of this attribute is greater than or equal to the value of *forwardRmCellLimit*, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor.*

This counter is reset to zero each time a backward-RM cell is received.

This counter does not wrap to zero if it reaches its maximum value of 4095 in order to indicate that no backward RM cell has been received.

Mib: AtmCore

Values: Decimal (0..4095)

Units: cells

Default: No default

ATTRIBUTE AtmIf Vcc Tm Abr rxEfci

Access: Read only

Description	This attribute indicates the value of the Explicit Forward Congestion Indication (EFCI) bit of the last data cell received from the interface. When a forward Resource Management (RM) cell is turned around as a backward-RM cell, the Congestion Indication (CI) field of the backward-RM cell is set to 1, if the value of this attribute is ***indicated***. This attribute is set to ***notIndicated*** each time a backward-RM cell is transmitted.
Mib	AtmCore
Values	notIndicated indicated
Default	No default

COMPONENT AtmIf Vcc SourcePvc (Src)

Groups	"GROUP AtmIf Vcc Src Provisioned (Prov)" "GROUP AtmIf Vcc Src Operational (Oper)" "GROUP AtmIf Vcc Src OsiState (State)" "GROUP AtmIf Vcc Src CallRedirectionOper (RedirectOp)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc*

	This component represents the source end of a soft PVC.
Mib	AtmNetworking
Opt. Subcomp.	"COMPONENT AtmIf Vcc Src CallRedirection (Redirect)" "COMPONENT AtmIf Vcc Src ManualDtl (Mdtl)" "COMPONENT AtmIf Vcc Src RerouteOverride (RerOv)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP AtmIf Vcc Src Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *SourcePvc* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Src callingAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the calling address of the soft PVC. If it is a null string, then the calling address is the address of the current interface (that is, where the soft PVC originates).
Mib	AtmNetworking
Values	String (0..20, Hex)
Default	""

ATTRIBUTE AtmIf Vcc Src calledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the called (remote) address of the soft PVC.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Vcc Src calledVpiVci

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the remote VPI and VCI of the soft PVC.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 1..65535)
Default	No default

ATTRIBUTE AtmIf Vcc Src adminControl

Access	Read: All Write: All
Description	This attribute specifies the initial state of the connection. If this attribute is set to ***permLocked***, the connection initially remains down following activation. Setting this attribute to ***unlocked*** causes the connection to be established when it is activated.
Mib	AtmNetworking
Values	permLocked unlocked

Default	unlocked

ATTRIBUTE AtmIf Vcc Src aisGeneration (ais)

Access	Read and write
Description	This attribute specifies whether OAM-AIS generation occurs on the connection towards this interface when the SPVC is down. If this attribute is ***enabled***, OAM-AIS cells are generated for this SPVC when the SPVC is not up. The only exception is that when the source SPVC attribute *adminControl* is set to ***permLocked***, OAM-AIS cells are not generated for the source SPVC. If this attribute is set to ***disabled***, OAM-AIS cells are not generated.
Mib	AtmNetworking
Values	enabled disabled
Default	disabled

GROUP AtmIf Vcc Src Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SrcPvp* or *SrcPvc* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Src retryCount

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed attempts to set up the soft PVP or soft PVC since the last time the connection failed.
Mib	AtmNetworking
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE AtmIf Vcc Src lastFailureCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages. The default value for this attribute is set to 0.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vcc Src lastFailureDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

GROUP AtmIf Vcc Src OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib AtmNetworking

ATTRIBUTE AtmIf Vcc Src adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib AtmNetworking

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE AtmIf Vcc Src operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmNetworking

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmIf Vcc Src usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: AtmNetworking

Values: idle
active (activ)
busy

Default: idle

GROUP AtmIf Vcc Src CallRedirectionOper (RedirectOp)

Properties: Operational

Description: This group contains the operational attributes associated with the *CallRedirection* subcomponent.

Mib: AtmNetworking

ATTRIBUTE AtmIf Vcc Src currentDestination

Access	Read: All Write: Illegal
Description	This attribute indicates the current destination of the soft PVC or soft PVP. A ***notConnected*** status indicates that the connection is not established. A ***primary*** status indicates that the connection is established to the remote destination specified by *calledAddress* and *calledVpiVci/calledVpi* attributes under *Atmif Vcc Src* or *Atmif Vpc Src* or *Atmif Vpt Vcc Src* Component. A ***secondary*** status indicates that the connection is established to the remote destination specified by *secondaryCalledAddress* and *secondaryCalledVpiVci/secondaryCalledVpi* attributes under *Atmif Vcc Src CallRedirection* or *Atmif Vpc Src CallRedirection* or *Atmif Vpt Vcc Src CallRedirection* Component.
Mib	AtmNetworking
Values	notConnected primary secondary
Default	No default

ATTRIBUTE AtmIf Vcc Src primaryAdminState

Access	Read: All Write: Illegal
Description	This attribute indicates the OSI Administrative State of the primary destination. The value ***locked*** indicates that the primary destination is precluded from call setup attempts. The value ***unlocked*** indicates that the primary destination is considered in call setup attempts.
Mib	AtmNetworking
Values	locked unlocked

Default	No default

ATTRIBUTE AtmIf Vcc Src secondaryAdminState

Access	Read: All Write: Illegal
Description	This attribute indicates the OSI Administrative State of the secondary destination. The value ***locked*** indicates that the secondary destination is precluded from call setup attempts. The value ***unlocked*** indicates that the secondary destination is considered in call setup attempts.
Mib	AtmNetworking
Values	locked unlocked
Default	No default

ATTRIBUTE AtmIf Vcc Src lastSecondaryFailureCauseCode

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code value of the last signalling message to the secondary destination which contained the CAUSE information element. If there has been no previous failure, the value for this attribute is 0.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vcc Src lastSecondaryFailureDiagCode

Access	Read: All Write: Illegal
Description	This attribute indicates the diagnostic code associated with the *lastSecondaryFailureCauseCode* attribute. If the diagnostic code was not provided with that CAUSE information element or if there has been no previous failure, this attribute is empty.

Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Vcc Src CallRedirection (Redirect)

Groups	"GROUP AtmIf Vcc Src Redirect Provisioned (Prov)"
Scope	Device
Description	*Atmif/n Vcc/vpi.vci SrcPvc CallRedirection* *Atmif/n Vpt/vpi Vcc/vci SrcPvc CallRedirection* This component represents the secondary destination information for the source end of a soft PVC. The addition of this subcomponent is not critical to the parent SPVC. Deletion of this subcomponent or changes to its attributes will impact service of the SPVC if it is established to the secondary destination.
Mib	AtmNetworking
Common Verbs	Help List Display Add DELete

VERB LOCK AtmIf Vcc Src Redirect

Impact: Service

Description:

Lock Atmif Vcc Src CallRedirection
Lock -primary Atmif Vcc Src CallRedirection
Lock -secondary Atmif Vcc Src CallRedirection

Lock Atmif Vpt Vcc Src CallRedirection
Lock -primary Atmif Vpt Vcc Src CallRedirection
Lock -secondary Atmif Vpt Vcc Src CallRedirection

This verb selectively precludes a provisioned destination address from consideration during call setup attempts for a Src PVC.

If [-*primary*] option is present, then the primary destination address is precluded from call setup attempts. If the connection is established to the primary destination address at the time of issuing the command, the connection is torn down and an immediate attempt is made to re-establish the connection to the secondary destination address.

If [-*secondary*] option is present, then the secondary destination address is precluded from call setup attempts. If the connection is established to the secondary destination address at the time of issuing the command, the connection is torn down and an immediate attempt is made to re-establish the connection to the primary destination address.

If no option is present, the secondary destination is locked. This command will have the same effect as providing the *secondary* option.

Only one of the primary or the secondary addresses may be locked at any given time.

VERB UNLOCK AtmIf Vcc Src Redirect

Impact	Service
Description	*Unlock Atmif Vcc Src CallRedirection* *Unlock -primary Atmif Vcc Src CallRedirection* *Unlock -secondary Atmif Vcc Src CallRedirection* *Unlock -primary -secondary Atmif Vcc Src CallRedirection* *Unlock Atmif Vpt Vcc Src CallRedirection* *Unlock -primary Atmif Vpt Vcc Src CallRedirection* *Unlock -secondary Atmif Vpt Vcc Src CallRedirection* *Unlock -primary -secondary Atmif Vpt Vcc Src CallRedirection* This verb selectively unlocks a destination address. The indicated address will be considered in subsequent call setup attempts. If [-*primary*] option is present, then the primary destination address is unlocked and it is considered for subsequent call setup attempts. This action does not have any impact on established connections. If [-*secondary*] option is present, then the secondary destination address is unlocked and it is considered in subsequent call setup attempts. This action does not have any impact on established connections. If no option is present the secondary destination address is unlocked. This command will have the same effect as providing the *secondary* option. If both options are provided, either of the primary or the secondary address which may have been locked will be unlocked.

GROUP AtmIf Vcc Src Redirect Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Source PVC *CallRedirection* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Src Redirect secondaryCalledAddress

Access	Read: All Write: All
Description	This attribute specifies the secondary called address of the soft PVC.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Vcc Src Redirect secondaryCalledVpiVci

Access	Read: All Write: All
Description	This attribute specifies the secondary called VPI and VCI of the soft PVC.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 1..65535)
Default	No default

COMPONENT AtmIf Vcc Src ManualDtl (Mdtl)

Groups	"GROUP AtmIf Vcc Src Mdtl Provisioned (Prov)" "GROUP AtmIf Vcc Src Mdtl Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc ManualDtl* *AtmIf/n Vpc/vpi SrcPvp ManualDtl* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc ManualDtl* This component represents the ability to specify the PNNI path on a per connection basis for provisioned SPVC and SPVP connections. The addition or deletion of this component is critical to the parent

SPVC or SPVP. Changes to the attributes contained under this component are not critical.

Mib AtmNetworking

Common Verbs

Help
List
Display
Add
DELete

VERB REConnect AtmIf Vcc Src Mdtl

Impact Service

Description

REConnect AtmIf/n Vcc/vpi.vci Src Mdtl
REConnect -primary AtmIf/n Vcc/vpi.vci Src Mdtl
REConnect -alternate AtmIf/n Vcc/vpi.vci Src Mdtl
REConnect -automatic AtmIf/n Vcc/vp.vci Src Mdtl

This command is used to trigger a connection to attempt to connect using the requested path. The behavior of this command differs for connections which do and do not subscribe to Path Optimization capabilities provided by rerouting services. To summarize:

1. Non-reroute Subscribed connections
A reconnect comand will result in the connection being taken down and re-establishment attempts being made. By default (if no option is specified), the primary path is attempted first otherwise the path specified by the option is first attempted. In the event of reconnect failure, subsequent re-establishment attempts will be progressed through a sequence of primary, alternate and automatic (traditional PNNI routing) paths.

2. Reroute Subscribed connections
A reconnect comand will utilize make-before-break functionality.

If an option is specified then only that path will be attempted. If a connection can be established, then datapath switching will be used to replace the existing connection minimizing cell loss. If no option is specified, the connection establishment attempts will be progressed through a sequence of primary, alternate and automatic (traditional PNNI routing) paths only until such time that a successfully established connection would be deemed more optimal than the incumbent. For instance, if a reconnect command is issued for a connection which is on it's alternate path and establishment on the primary path fails then the reconnect operation is considered complete and the connection will remain on the alternate path.

GROUP AtmIf Vcc Src Mdtl Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Manual DTL selection paths for provisioned connections. The normal sequence for connection retry is: First try to establish the connection using the *primaryPath*. If the connection is not successful and if the *alternatePath* has been provisioned, try to connect using the *alternatePath*. If the connection is still unsuccessful, use the PNNI routing protocol to generate the path.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Src Mdtl primaryPath (priPath)

Access	Read and write
Description	This attribute specifies the name of the primary MDTL path. The value must match the instance value of one of the *Mdtl* components under *Artg Pnni*.
Mib	AtmNetworking
Values	String (1..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Vcc Src Mdtl alternatePath (altPath)

Access	Read and write
Description	This attribute specifies the name of the alternate MDTL path. The value must match the instance value of one of the *Mdtl* components under *Artg Pnni.* An empty string disables the alternate path.
Mib	AtmNetworking
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Vcc Src Mdtl automaticFallback (auto)

Access	Read and write
Description	This attribute specifies whether PNNI routing is to be used to establish a connection if connection attempts using the primary and alternate paths fail. If the value is ***enable***, PNNI routing will be attempted; if the value is ***disable***, it will not.
Mib	AtmNetworking
Values	disable enable
Default	enable

ATTRIBUTE AtmIf Vcc Src Mdtl mdtlVersion (vers)

Access	Read and write
Description	This attribute indicates a version number for Specified Paths and will ensure that the reroute behaviors (not subscribed) are maintained following a software migration to a software version where global rerouting is supported for Specified Path connections. This is an internal attribute intended for the above purpose only and should not be altered.
Mib	AtmNetworking
Values	notRerouteCapable rerouteCapable
Default	notRerouteCapable

GROUP AtmIf Vcc Src Mdtl Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *atmSrcMdtl* component
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Src Mdtl currentPath (curPath)

Access	Read: All Write: Illegal
Description	This attribute indicates the current connection status of the Specified Path connection. A ***not connected*** status indicates that the connection is not established. The retry sequence did not succeed. The network operator can issue the *Reconnect* command to restart the retry sequence. A ***primary*** status indicates that the connection is using the path specified by the *primaryPath* attribute. An ***alternate*** status indicates that the connection is using the path specified by the *alternatePath* attribute. An ***automatic*** status indicates that the connection is using the path generated by the PNNI routing protocol. An ***unknown*** status indicates that the provisioning data for the path upon which the connection is established has been altered. A ***waiting connection*** status indicates that the connection is in a retry phase.
Mib	AtmNetworking
Values	not connected primary alternate automatic unknown waiting connection
Default	"not connected"

ATTRIBUTE AtmIf Vcc Src Mdtl primaryPathFailCause (priPathFail)

Access	Read: All Write: Illegal
Description	This attribute indicates the last failure cause code for the primary path. The value is reset to zero when trying to re-establish the connection.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vcc Src Mdtl alternatePathFailCause (altPathFail)

Access	Read: All Write: Illegal
Description	This attribute indicates the last failure cause code for the alternate path. The value is reset to zero when trying to re-establish the connection.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

COMPONENT AtmIf Vcc Src RerouteOverride (RerOv)

Groups	"GROUP AtmIf Vcc Src RerOv Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc RerouteOverride* *AtmIf/n Vpc/vpi SrcPvp RerouteOverride* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc RerouteOverride* *FrAtm/n Dlci/x Siwf RerouteOverride* This component represents the ability to override rerouting capability subscription options on a per connection basis for provisioned SPVC and SPVP connections. The addition of this component and changes to the attributes contained in this component are critical to the parent SPVC or SPVP. However, the deletion of this component is not a critical

change for the connection. If this component is deleted, the connection remains active with the last provisioned subscription options. Subscription is lost when the connection goes down and re-establishes.

Mib: AtmNetworking

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB OPTIMIZE AtmIf Vcc Src RerOv

Impact: Service

Description:

OPTimize AtmIf/n Vcc/<vpi.vci> Src RerOv
OPTimize AtmIf/n Vpc/<vpi> Src RerOv
OPTimize AtmIf/n Vpt/<vpi> Vcc/<vci> Src RerOv
OPTimize FrAtm/n Dlci/x Siwf RerOv

This command triggers path optimization for the connection segment. If the interface is already processing a path optimization request, then the *Optimize* command is cancelled.

Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP AtmIf Vcc Src RerOv Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes related to rerouting subscription options for provisioned connections.

Mib: AtmNetworking

ATTRIBUTE AtmIf Vcc Src RerOv protocol

Access: Read and write

Description	This attribute specifies the rerouting protocols that are requested by the connection segment. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsInterface***: The requested rerouting protocols are specified by the *protocol* attribute under the *Reroute Ov* component for the interface. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature. ***ebrOnly***: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.
Mib	AtmNetworking
Values	localGlobal localOnly globalOnly localEbr ebrOnly sameAsInterface (sameAs)
Default	sameAsInterface

ATTRIBUTE AtmIf Vcc Src RerOv localConnectionRecoverySubscr (lRecSub)

Access	Read and write

Description	This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local connection recovery subscription. If the connection segment requests ***localEbr***, this attribute controls the local connection recovery subscription. Only one will be granted. One of the following values can be specified: ***sameAsInterface***: The subscription rule is determined by the *localConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local connection recovery, otherwise the connection segment does not request subscription. ***yes:*** The connection segment requests subscription to local connection recovery. ***no***: The connection segment does not request subscription to local connection recovery.
Mib	AtmNetworking
Values	no yes sameAsInterface (sameAs)
Default	sameAsInterface

ATTRIBUTE AtmIf Vcc Src RerOv localPathOptimizationSubscr (lOptSub)

Access	Read and write
Description	This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local path optimization subscription.

If the connection segment requests ***localEbr***, this attribute controls the local path optimization subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *localPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local path optimization, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to local path optimization.
no: The connection segment does not request subscription to local path optimization.

Mib: AtmNetworking

Values:
no
yes
sameAsInterface (sameAs)

Default: sameAsInterface

ATTRIBUTE AtmIf Vcc Src RerOv globalConnectionRecoverySubscr (gRecSub)

Access: Read and write

Description: This attribute specifies whether the connection segment requests subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

If the connection segment requests ***ebrOnly***, this attribute controls EBR connection recovery subscription.

If the connection segment requests ***localEbr***, this attribute

controls the EBR connection recovery subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR connection recovery, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR connection recovery.
no: The connection segment does not request subscription to global or EBR connection recovery.

Mib — AtmNetworking

Values
no
yes
sameAsInterface (sameAs)

Default — sameAsInterface

ATTRIBUTE AtmIf Vcc Src RerOv globalPathOptimizationSubscr (gOptSub)

Access — Read and write

Description — This attribute specifies whether the connection segment requests subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

If the connection segment requests ***ebrOnly***, this attribute controls EBR path optimization subscription.

If the connection segment requests ***localEbr***, this attribute controls the EBR path optimization subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalPathOptimizationSubscr* attribute under the *Reroute Ov*

component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR path optimization, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR path optimization.
no: The connection segment does not request subscription to global or EBR path optimization.

Mib: AtmNetworking

Values:
no
yes
sameAsInterface (sameAs)

Default: sameAsInterface

COMPONENT AtmIf Vcc EndPoint (Ep)

Groups: "GROUP AtmIf Vcc Ep Operational (Oper)"

Scope: Device

Description:
AtmIf/n Vcc/vpi.vci Ep
AtmIf/n Vpt/vpi Vcc/vci Ep

The *EndPoint* component of the application associated with the VCC is used to link a switched VCC to an application that sends and receives frames using the connection.

Mib: AtmNetworking

Common Verbs:
Help
List
Display

GROUP AtmIf Vcc Ep Operational (Oper)

Properties: Operational

Description: This attribute group contains the operational attributes for the AtmEndPoint component.

Mib: AtmNetworking

ATTRIBUTE AtmIf Vcc Ep applicationName

Access	Read only
Description	This attribute indicates the component name associated with the application associated with the switched VCC.
Mib	AtmNetworking
Values	The name of the component
Default	No default

COMPONENT AtmIf Vcc RelayPoint (Rp)

Scope	Device
Description	*AtmIf/n Vpc/vpi Rp* *AtmIf/n Vcc/vpi.vci Rp* *AtmIf/n Vpt/vpi Vcc/vci Rp* The *RelayPoint* component is used to establish a single hop of a Switched connection. When linked together, two *Rp*s within a module, the associated connections are configured to relay ATM cells to one another.
Mib	AtmNetworking
Dyn. Subcomp.	"COMPONENT AtmIf Vcc Rp NextHop"
Common Verbs	Help List Display

COMPONENT AtmIf Vcc Rp NextHop

Instance	Decimal (1..300)
Groups	"GROUP AtmIf Vcc Rp NextHop Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vpc/vpi Rp nextHop/n* *AtmIf/n Vcc/vpi.vci Rp nextHop/n* *AtmIf/n Vpt/vpi Vcc/vci Rp nextHop/n*

The *RelayPointNextHop* component indicates the hops associated with this Rp component. There can be more than one component listed if the Vcc *"distributionType"* is ***"pointToMultipoint"*** and the *"callDirection"* is ***"fromLink"***.

Mib: AtmNetworking

Common Verbs:
Help
List
Display

GROUP AtmIf Vcc Rp NextHop Operational (Oper)

Properties: Operational

Description: This attribute group contains an operational attribute for the AtmRelayPointNextHop component.

Mib: AtmNetworking

ATTRIBUTE AtmIf Vcc Rp NextHop nextHopValue

Access: Read only

Description: This attribute indicates the component name of the Rp component with which this Rp component is associated.

Mib: AtmNetworking

Values: The name of the component

Default: No default

COMPONENT AtmIf Vcc DestinationPvc (Dst)

Groups: "GROUP AtmIf Vcc Dst Operational (Oper)"
"GROUP AtmIf Vcc Dst OsiState (State)"

Scope: Device

Description: *AtmIf/n Vcc/vpi.vci DstPvc*
AtmIf/n Vpt/vpi Vcc/vci DstPvc

This component represents the destination end of a soft PVC.

This component can be dynamically created or provisioned.

When this component is dynamically created, it implicitly indicates that a connection has been established. This dynamically created component does not exist when there is no connection.

When this component is provisioned, it does not imply that a connection has been established. The existence of a provisioned *destinationPVC* component allows the possibility of generating OAM-AIS cells when the SPVC is down. The attribute *aisGeneration* under component *Configuration* is used to specify AIS generation at the destination end of a soft PVC.

Mib	AtmNetworking
Subcomponents	"COMPONENT AtmIf Vcc Dst Configuration (Config)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vcc Dst Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *DestinationPvc* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Dst calledAddress

Access	Read: All Write: Illegal
Description	This attribute represents the called address of the soft PVC.
Mib	AtmNetworking
Values	String (20, Hex)

Default	No default

ATTRIBUTE AtmIf Vcc Dst callingAddress

Access	Read: All Write: Illegal
Description	This attribute represents the remote address of the soft PVC. If the address in not known, then the value of this address is ***Unknown***.
Mib	AtmNetworking
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vcc Dst callingVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute represents the remote VPI and VCI of the soft PVC. If the VPI and VCI values are not known, this attribute is set to ***Unknown***.
Mib	AtmNetworking
Values	String (7..9, ASCII)
Default	No default

GROUP AtmIf Vcc Dst OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Dst adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Vcc Dst operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmNetworking

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmIf Vcc Dst usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: AtmNetworking

Values: idle
active (activ)
busy

Default: idle

COMPONENT AtmIf Vcc Dst Configuration (Config)

Groups: "GROUP AtmIf Vcc Dst Config DstProv"

Scope: Device

Description: *Atmif/n Vcc/x.y Dst Override*
This *Override* component contains provisioned attributes for this destination SPVC.

If this component does not exist, the destination SPVC behaves

	as if this component had been provisioned with default values for all its attributes.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP AtmIf Vcc Dst Config DstProv

Properties	Provisioned
Description	This group contains provisionable attributes for destination SPVC/Ps.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Dst Config aisGeneration (ais)

Access	Read and write
Description	This attribute specifies whether OAM-AIS generation occurs on the connection towards this interface when the SPVC or SPVP is down. If this attribute is ***enabled***, OAM-AIS cells are generated for this SPVC or SPVP when the SPVC or SPVP is not up. If this attribute is set to ***disabled***, OAM-AIS cells are not generated.
Mib	AtmNetworking
Values	enabled disabled
Default	disabled

COMPONENT AtmIf Vcc MulticastNailedUpRelayPoint (Mnrp)

Groups	"GROUP AtmIf Vcc Mnrp Provisioned (Prov)"
Scope	Device

Description	*AtmIf/n Vcc/vpi.vci Mnrp* This component is used to establish a root of a multicast nailed-up ATM Bearer Service (ABS) connection. By linking a *Mnrp* to a *Nrp*, the associated connections are configured to relay ATM cells from *Mnrp* to *Nrp*. The *Mnrp* component requires exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Test*, *Nrp* and *Loop*). This component is supported only on 4pOC3SmIrAtm and 4pOC3MmAtm cards.This component is not supported under *Vpt Vcc* and *Vpt Vpc*.
Mib	AtmBearerService
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vcc Mnrp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Mnrp* component.
Mib	AtmBearerService

ATTRIBUTE AtmIf Vcc Mnrp oamSegmentBoundary (sb)

Access	Read and write
Criticality	Component
Description	This attribute specifies the OAM segment boundary desired for a *Mnrp* component. It affects the connection point type value visible in the parent component's *connectionPointType* attribute. The desired OAM segment boundary can be specified directly as ***yes***, ***no*** or ***sameAsInterface***. If ***sameAsInterface*** is specified, the OAM segment boundary is same as the *oamSegmentBoundary* attribute of the associated *AtmIf* and the switch will set the *connectionPointType*, choosing ***segmentEndPoint*** for a segment-

boundary ATM interface and ***connectingPoint*** for a non-segment-boundary ATM interface.

Mib: AtmBearerService

Values:
no
yes
sameAsInterface

Default: sameAsInterface

ATTRIBUTE AtmIf Vcc Mnrp bandwidthElastic (bwElastic)

Access: Read and write

Criticality: Component

Description: This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced will be displayed in the *bandwidthReduction* attribute.
A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection will not be released. Currently, this attribute should only be set to ***yes*** for situations where this *Mnrp* is functioning as a loopback on one side of an IMA link. There are no other situations where this setting is valid.
A value of ***no*** indicates that the bandwidth for this connection will not be reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority.*

Mib: AtmBearerService

Values:
no
yes

Default: no

ATTRIBUTE AtmIf Vcc Mnrp overrideHoldingPriority (ohpri)

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. Holding priority is used when there is an IMA group where some physical links have failed. Holding priority determines the order in which connections are released. 4 is the lowest holding priority and is released first. 0 is a higher priority and is released last. The value specified in this attribute will override whatever *holdingPriority* that has been provisioned at the *Vcd* (or *Vpd*). If the value is left at the default of ***noOverride***, the *holdingPriority* provisioned at the *Vcd* (or *Vpd*) will be used.
Mib	AtmBearerService
Values	0 1 2 3 4 noOverride
Default	noOverride

ATTRIBUTE AtmIf Vcc Mnrp nextHop (nextHop)

Access	Read and write
Description	This attribute specifies the list of *Nrp* components with which this *Mnrp* is associated. A sample value is *AtmIf/31 Vcc/0.32 Nrp*. This attribute must be provisioned with at least one Nrp component under a compatible connection type.
Mib	AtmBearerService
List of	Link (Service, nextHop)
Default	No default

COMPONENT AtmIf Vcc PerformanceMonitoring (Pm)

Instance	linkSide switchSide
Groups	"GROUP AtmIf Vcc Pm PmStatus (Status)" "GROUP AtmIf Vcc Pm FwdClrMeasurements (FwdClr)" "GROUP AtmIf Vcc Pm BwdClrMeasurements (BwdClr)" "GROUP AtmIf Vcc Pm ArMeasurements (Ar)"
Scope	Device
Description	*AtmIf/n Vcc/x.y PerformanceMonitoring* *AtmIf/n Vpc/x PerformanceMonitoring* This component contains operational attributes for Performance Monitoring (PM) measurements on the connection. It also allows starting and stopping PM measurements when the *controlMode* attribute in the *AtmIf Pm* or *AtmIf Vcc Vcd Pm* or *AtmIf Vpc Vpd Pm* component is set to ***onDemand***.
Mib	AtmCore
Common Verbs	Help List Display

VERB START AtmIf Vcc Pm

Impact	Service
Description	*Start AtmIf/n Vcc/x.y PerformanceMonitoring* *Start AtmIf/n Vpc/x PerformanceMonitoring* This verb starts Performance Monitoring (PM) activation procedures on the connection for PM measurements indicated in the *segSwitchSide* and *segLinkSide* attributes. This verb produces an error message when the connection is idle, PM has already been started or the *controlMode* attribute for the PM measurements has a value of ***autoStart***. The measurements will continue until the *Stop* verb is issued.

VERB STOP AtmIf Vcc Pm

Impact	Service
Description	*Stop AtmIf/n Vcc/x.y PerformanceMonitoring* *Stop AtmIf/n Vpc/x PerformanceMonitoring* This verb starts Performance Monitoring (PM) deactivation procedures on the connection for PM measurements indicated in the *segSwitchSide* and *segLinkSide* attributes. This verb produces an error message when PM is not running or the *controlMode* attribute for the PM measurements has a value of ***autoStart***.

GROUP AtmIf Vcc Pm PmStatus (Status)

Properties	Operational
Description	This group contains attributes indicating the status of each Performance Monitoring (PM) measurement.
Mib	AtmCore

ATTRIBUTE AtmIf Vcc Pm clrMeasurementStatus (clr)

Access	Read only
Description	This attribute displays the Cell Loss Ratio (CLR) measurement status of the connection. The value ***inactive*** indicates the test is inactive. The value ***activating*** indicates the test is activating. The value ***active*** indicates the test is in progress The value ***activationFailed*** indicates the test failed to be activated. Refer to the *failureCause* attribute for failure cause.
Mib	AtmCore
Values	inactive activating active activationFailed
Default	inactive

ATTRIBUTE AtmIf Vcc Pm arMeasurementStatus (arStatus)

Access	Read only
Description	This attribute indicates the Availability Ratio (AR) measurement status of the connection. The value ***inactive*** indicates the test is inactive. The value ***activating*** indicates the test is activating. The value ***active*** indicates the test is in progress The value ***activationFailed*** indicates the test failed to be activated. Refer to the *failureCause* attribute for the failure cause.
Mib	AtmCore
Values	inactive activating active activationFailed
Default	inactive

ATTRIBUTE AtmIf Vcc Pm failureCause (cause)

Access	Read only
Description	This attribute indicates the failure cause of Performance Monitoring (PM) measurements. The following are possible causes: The value ***noError*** indicates no error. The value ***unknownCause*** indicates unknown failure cause. The value ***softwareResourcesUnavailable*** indicates software resources reserved for a maximum of 255 active PMs on the local FP card have been used up. The value ***hardwareResourcesUnavailable*** indicates hardware resources reserved for a maximum of 512 active PMs CLR card have been used up on the Link Side local card. The value ***remoteEndNoResponse*** indicates no response from remote end during activation.

The value ***activationCollision*** indicates activation collision was detected. Usually this is caused by both ends of the connection being provisioned to request PM. Only one end should be so provisioned.

The value ***remoteEndRejectedActivation*** indicates the remote end has rejected an activation request. Usually this is due to the remote end reaching a resource limit.

The value ***pcrUnsupported*** indicates the Tx or Rx PCR is out of range. The PCR value must be between 0 and 409601.

The value ***nextHopConnectionUnsupported*** indicates the next hop card type or connection type do not allow access to the necessary hardware to support PM measurements.

The value ***upcNotDisabled*** indicates UPC is not disabled on the local next hop card for this connection. PM measurements are not supported when UPC is either enforced or monitored.

Mib: AtmCore

Values:
noError
unknownCause
softwareResourcesUnavailable
hardwareResourcesUnavailable
remoteEndNoResponse
activationCollision
remoteEndRejectedActivation
pcrUnsupported
nextHopConnectionUnsupported
upcNotDisabled

Default: noError

ATTRIBUTE AtmIf Vcc Pm clrEnhancementStatus (enhanced)

Access: Read only

Description: This attribute indicates an enhanced mode of operation for Cell Loss Ratio (CLR) measurements by including cell discards from the remote segment end point which are not covered by the performance measurement (PM) cell.

The value ***inactive*** indicates that CLR enhanced mode of operation has not been activated.

The value ***active*** indicates that discards at the remote segment end point are being included in CLR measurements.

The value ***remoteEndNotProvidingStatistics*** indicates that the remote end is not replying to proprietary requests for additional discard counts. This occurs when the remote end does not have the software necessary to recognize these requests.

Mib	AtmCore
Values	inactive active remoteEndNotProvidingStatistics
Default	inactive

GROUP AtmIf Vcc Pm FwdClrMeasurements (FwdClr)

Properties	Operational
Description	This group contains Cell Loss Ratio (CLR) measurements for the forward direction of the connection. The local end is always the provisioned end which sends the activation request, and the remote end is the end which receives the activation request.
Mib	AtmCore

ATTRIBUTE AtmIf Vcc Pm fwdTotalClrInterval

Access	Read only
Description	This attribute indicates the total time duration over which Cell Loss Ratio (CLR) has been calculated in the forward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE AtmIf Vcc Pm fwdTotalUserCellsRx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 received at the remote end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc Pm fwdTotalUserCellsTx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 transmitted from the local end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc Pm fwdTotalUserCellsRx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 received at the remote end over the total Cell Loss Ratio (CLR) measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc Pm fwdTotalUserCellsTx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 transmitted from the local end over the total CLR measurement interval in the forward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc Pm fwdPmCellDiscardCount

Access	Read only
Description	This attribute indicates the total number of Performance Monitoring (PM) cells discarded in the forward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc Pm fwdClr0

Access	Read only
Description	This attribute indicates the CLR for CLP=0 traffic calculated for the total measurement interval in the forward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

ATTRIBUTE AtmIf Vcc Pm fwdClr01

Access	Read only

Description	This attribute indicates the CLR for CLP=0+1 traffic calculated for the total measurement interval in the forward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

GROUP AtmIf Vcc Pm BwdClrMeasurements (BwdClr)

Properties	Operational
Description	This group contains Cell Loss Ratio (CLR) measurements for the backward direction of the connection. The local end is always the provisioned end which sends the activation request, and the remote end is the end which receives the activation request.
Mib	AtmCore

ATTRIBUTE AtmIf Vcc Pm bwdTotalClrInterval

Access	Read only
Description	This attribute indicates the total time duration over which Cell Loss Ratio (CLR) measurement has been calculated in the backward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE AtmIf Vcc Pm bwdTotalUserCellsRx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 received at the local end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer

Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc Pm bwdTotalUserCellsTx0

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 transmitted from the remote end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc Pm bwdTotalUserCellsRx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0 received at the local end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc Pm bwdTotalUserCellsTx01

Access	Read only
Description	This attribute indicates the number of cells with CLP=0+1 transmitted from the remote end over the total Cell Loss Ratio (CLR) measurement interval in the backward direction.
Mib	AtmCore
Values	Long Integer

Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc Pm bwdPmCellDiscardCount

Access	Read only
Description	This attribute indicates the total number of Performance Monitoring (PM) cells discarded in the backward direction.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vcc Pm bwdClr0

Access	Read only
Description	This attribute indicates the CLR for CLP=0 traffic calculated for the total measurement interval in the backward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

ATTRIBUTE AtmIf Vcc Pm bwdClr01

Access	Read only
Description	This attribute displays the CLR for CLP=0+1 traffic calculated for the total measurement interval in the backward direction.
Mib	AtmCore
Values	Decimal (0.000000000..1.000000000)
Default	No default

GROUP AtmIf Vcc Pm ArMeasurements (Ar)

Properties	Operational

Description	This group contains Availability Ratio (AR) measurements of the connection.
Mib	AtmCore

ATTRIBUTE AtmIf Vcc Pm currentAvailabilityStatus

Access	Read only
Description	This attribute indicates the current status of the bidirectional connection for purposes of Availability Ratio (AR) computation. The value ***notApplicable*** means AR measurement was not requested on this connection. The value ***available*** means AR is running and considers the connection available (that is, the *arAvailableTime* attribute is being incremented). The value ***unavailable*** means AR measurement was requested but the connection is currently unavailable.
Mib	AtmCore
Values	notApplicable available unavailable
Default	No default

ATTRIBUTE AtmIf Vcc Pm arTotalTime

Access	Read only
Description	This attribute indicates the total time used for calculating Availability Ratio (AR) of the bi-directional connection.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE AtmIf Vcc Pm arAvailableTime

Access	Read only
Description	This attribute indicates the total time the connection was available.
Mib	AtmCore
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE AtmIf Vcc Pm arAvailabilityRatio

Access	Read only
Description	This attribute indicates the ratio of network availability representing the ratio of available time to the total time of the connection.
Mib	AtmCore
Values	Decimal (0.0000000..1.0000000)
Default	No default

COMPONENT AtmIf Vcc PathTraceRecord (PTRecord)

Groups	"GROUP AtmIf Vcc PTRecord Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vcc/x.y PTRecord* *AtmIf/n Vpc/n PTRecord* *AtmIf/n Vpt/n Vcc/x.y PTRecord* This component represents the path trace records for this

connection. If the connection is deleted, this component is also deleted.

Mib	AtmNetworking
Dyn. Subcomp.	"COMPONENT AtmIf Vcc PTRecord Hop"
Common Verbs	Help List Display

GROUP AtmIf Vcc PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmNetworking
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations

Default	No default

ATTRIBUTE AtmIf Vcc PTRecord timeStamp

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord srcPortId

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmNetworking
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord srcPortName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmNetworking
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord causeCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord diagCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Vcc PTRecord Hop

Instance	Decimal (0..200)
Groups	"GROUP AtmIf Vcc PTRecord Hop Operational (Oper)"
Scope	Device

Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmNetworking
Dyn. Subcomp.	"COMPONENT AtmIf Vcc PTRecord Hop VendorSpecificInfo (Vsi)"
Common Verbs	Help List Display

GROUP AtmIf Vcc PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop ingressDlci (dlci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop ingressCallReference (callref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message.

	The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmNetworking
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop ingressEndPointReference (epref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmNetworking
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop nodeId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop nodeName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop portId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop portName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking

Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop pnniTraceContRefusalIndPresent (refusal)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vcc PTRecord Hop crankbackDestNodeIndPresent (dest)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vcc PTRecord Hop pnniCrankbackGapIndPresent (gap)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vcc PTRecord Hop crankBackCause (cause)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmNetworking
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop blockedTransitType (type)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmNetworking
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop blockedNodeId (bNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop blockedLinkPrecedingNodeId (pNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked.

	This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop blockedLinkPortId (bPortId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop blockedLinkSucceedingNodeId (sNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmNetworking

Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop dstVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop dstDlci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop dstCallReference (dcr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmNetworking
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop dstEndPointReference (depr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmNetworking
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop specifiedPath

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	no yes
Default	no

COMPONENT AtmIf Vcc PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	"GROUP AtmIf Vcc PTRecord Hop Vsi Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

	All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP AtmIf Vcc PTRecord Hop Vsi Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc PTRecord Hop Vsi length

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmNetworking
Values	Decimal (0..11)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop Vsi organizationUniqueId (oui)

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmNetworking
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE AtmIf Vcc PTRecord Hop Vsi data

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmNetworking
Values	String (1..8, Hex)
Default	No default

COMPONENT AtmIf Vcc RerouteInfo (RerInfo)

Groups	"GROUP AtmIf Vcc RerInfo Operational (Oper)" "GROUP AtmIf Vcc RerInfo EbrOperational (EOper)" "GROUP AtmIf Vcc RerInfo LocalOperational (LOper)" "GROUP AtmIf Vcc RerInfo GlobalOperational (GOper)" "GROUP AtmIf Vcc RerInfo EbrStatistics (EStats)" "GROUP AtmIf Vcc RerInfo LocalStatistics (LStats)" "GROUP AtmIf Vcc RerInfo GlobalStatistics (GStats)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci RerouteInfo* *AtmIf/n Vpc/vpi RerouteInfo* *AtmIf/n Vpt/vpi Vcc/vci RerouteInfo* *Aal1Ces/n RerouteInfo* *Fratm/n Dlci/n Siwf RerouteInfo* This component represents the rerouting capabilities of a connection segment. The component is present at the DTL originator of the connection segment. It is also present at each local domain rerouting node, if the local rerouting protocol has been granted to the connection segment.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP AtmIf Vcc RerInfo Operational (Oper)

Properties	Operational
Description	This group contains the common operational attributes that indicate rerouting activities at the connection level.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc RerInfo lastOptimizationMetric (lOptMet)

Access	Read only
Description	This attribute indicates which optimization metric was last used to select a path for the connection segment.
Mib	AtmNetworking
Values	cdv maxCtd aw specifiedPath
Default	No default

GROUP AtmIf Vcc RerInfo EbrOperational (EOper)

Properties	Operational
Description	This group contains attributes that indicate the EBR rerouting characteristics of a connection segment. This group is only present if the connection segment has been granted the EBR rerouting protocol.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc RerInfo ebrRecoverySubscribed (eRecSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.

Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo ebrOptimizationSubscribed (eOptSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR path optimization. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo ebrOptimizationMetricValue (eOptVal)

Access	Read only
Description	This attribute indicates the EBR optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo ebrOptimalMetricValue (eOptMetVal)

Access	Read only
Description	This attribute indicates the EBR optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo ebrOptimizationState (eOptSt)

Access	Read only
Description	This attribute indicates the current EBR optimization state of the connection segment. One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value. ***optimized:*** This value represents the state when the connection segment has moved to a path that is better than the recovered path

	but not as good as the optimal path. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	optimal recovered optimized
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo ebrTimeOfLastRecovery (eTime)

Access	Read only
Description	This attribute indicates the date and time of the last EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

GROUP AtmIf Vcc RerInfo LocalOperational (LOper)

Properties	Operational
Description	This group contains attributes that indicate the local rerouting characteristics of a connection segment. This group is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc RerInfo localRecoverySubscribed (lRecSub)

Access	Read only

Description	This attribute indicates whether the connection segment is subscribed to local connection recovery. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo localOptimizationSubscribed (lOptSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to local path optimization. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo localOptimizationMetricValue (lOptVal)

Access	Read only
Description	This attribute indicates the local optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. A value of ***undefined*** indicates that the local optimization metric value is undetermined. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking

Values	Decimal (0..4294967294) undefined
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo localOptimalMetricValue (lOptMetVal)

Access	Read only
Description	This attribute indicates the local optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.A value of ***undefined*** indicates that the local optimal optimization metric value is undetermined. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967294) undefined
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo localOptimizationState (lOptSt)

Access	Read only
Description	This attribute indicates the current local optimization state of the connection segment. One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value

specified by the optimal metric value.
optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

This attribute is only present if the connection segment has been granted the local rerouting protocol.

Mib: AtmNetworking

Values:
optimal
recovered
optimized

Default: No default

ATTRIBUTE AtmIf Vcc RerInfo localTimeOfLastRecovery (lTime)

Access: Read only

Description: This attribute indicates the date and time of the last local connection recovery.

This attribute is only present if the connection segment has been granted the local rerouting protocol.

Mib: AtmNetworking

Values: Time (DHMS)

Default: No default

GROUP AtmIf Vcc RerInfo GlobalOperational (GOper)

Properties: Operational

Description: This group contains attributes that indicate the global rerouting characteristics of a connection.

This group is only present if the connection segment has been granted the global rerouting protocol.

Mib: AtmNetworking

ATTRIBUTE AtmIf Vcc RerInfo globalRecoverySubscribed (gRecSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to global connection recovery. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo globalOptimizationSubscribed (gOptSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to global path optimization. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo globalOptimizationMetricValue (gOptVal)

Access	Read only
Description	This attribute indicates the global optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the global rerouting protocol.

Mib	AtmNetworking
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo globalOptimalMetricValue (gOptMetVal)

Access	Read only
Description	This attribute indicates the global optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***globalOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.The ***primary*** and ***alternate*** values are used to denote the optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo globalOptimizationState (gOptSt)

Access	Read only
Description	This attribute indicates the current global optimization state of the connection segment. One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection

segment is equal to the best known value.
recovered: This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value.
optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

This attribute is only present if the connection segment has been granted the global rerouting protocol.

Mib	AtmNetworking
Values	optimal recovered optimized
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo globalTimeOfLastRecovery (gTime)

Access	Read only
Description	This attribute indicates the date and time of the last global connection recovery. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

GROUP AtmIf Vcc RerInfo EbrStatistics (EStats)

Properties	Operational
Description	This group contains statistics related to Ebr rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc RerInfo totalEbrConnectionRecoveries (eConnRec)

Access	Read only
Description	This attribute counts successful EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo totalEbrPathOptimizations (ePathOpt)

Access	Read only
Description	This attributes counts successful EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo totalEbrOptimizationAttempts (eOptAtt)

Access	Read only
Description	This attribute counts the total number of EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking

Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vcc RerInfo LocalStatistics (LStats)

Properties	Operational
Description	This group contains statistics related to local rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc RerInfo totalLocalConnectionRecoveries (lConnRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo totalLocalPathOptimizations (lPathOpt)

Access	Read only
Description	This attributes counts successful local path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo totalLocalOptimizationAttempts (lOptAtt)

Access	Read only
Description	This attribute counts the total number of local path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vcc RerInfo GlobalStatistics (GStats)

Properties	Operational
Description	This group contains statistics related to global rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc RerInfo totalGlobalConnectionRecoveries (gConnRec)

Access	Read only
Description	This attribute counts successful global connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo totalGlobalPathOptimizations (gPathOpt)

Access	Read only

Description	This attributes counts successful global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vcc RerInfo totalGlobalOptimizationAttempts (gOptAtt)

Access	Read only
Description	This attribute counts the total number of global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Vcc MulticastSourcePvc (Msrc)

Groups	"GROUP AtmIf Vcc Msrc Provisioned (Prov)" "GROUP AtmIf Vcc Msrc Operational (Oper)" "GROUP AtmIf Vcc Msrc OsiState (State)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci MulticastSourcePvc*

	This component represents the source end of a multicast soft PVC.
Mib	AtmNetworking
Opt. Subcomp.	"COMPONENT AtmIf Vcc Msrc MulticastSpvcParty (Party)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vcc Msrc Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *MulticastSourcePvc* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Msrc callingAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the calling address of the multicast soft PVC. If it is a null string, then the calling address is the address of the current interface (that is, where the multicast soft PVC originates).
Mib	AtmNetworking
Values	String (0..20, Hex)
Default	""

GROUP AtmIf Vcc Msrc Operational (Oper)

Properties	Operational

Description	This attribute group contains the operational attributes associated with the *MulticastSourcePvc* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Msrc totalParties

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of parties provisioned on the *MulticastSourcePvc* component.
Mib	AtmNetworking
Values	Decimal (1..300)
Default	No default

ATTRIBUTE AtmIf Vcc Msrc establishedParties

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of parties provisioned on the *MulticastSourcePvc* component which are currently up.
Mib	AtmNetworking
Values	Decimal (1..300)
Default	No default

ATTRIBUTE AtmIf Vcc Msrc expectedParties

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of parties provisioned on the *MulticastSourcePvc* component which are expected to be up (not locked).
Mib	AtmNetworking
Values	Decimal (1..300)
Default	No default

GROUP AtmIf Vcc Msrc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Msrc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Vcc Msrc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf Vcc Msrc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmNetworking
Values	idle active (activ) busy
Default	idle

COMPONENT AtmIf Vcc Msrc MulticastSpvcParty (Party)

Instance	Decimal (1..300)
Groups	"GROUP AtmIf Vcc Msrc Party Provisioned (Prov)" "GROUP AtmIf Vcc Msrc Party Operational (Oper)" "GROUP AtmIf Vcc Msrc Party OsiState (State)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci MulticastSourcePvc MulticastSourcePvcParty/n* This component represents a party of a multicast soft PVC.
Mib	AtmNetworking
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vcc Msrc Party Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *AtmMsrcPvcParty* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Msrc Party calledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the called (remote) address of the multicast soft PVC party.
Mib	AtmNetworking
Values	String (20, Hex)

Default	No default

ATTRIBUTE AtmIf Vcc Msrc Party calledVpiVci

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the called (remote) VPI and VCI of the multicast soft PVC party.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 1..65535)
Default	No default

GROUP AtmIf Vcc Msrc Party Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *AtmMsrcPvcParty* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Msrc Party retryCount

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed attempts to set up the multicast soft PVC party since the last time the connection failed.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vcc Msrc Party lastFailureCauseCode

Access	Read: All Write: Illegal

Description	This attribute indicates the cause code value of the last signalling message which contained the CAUSE information element. If there has been no previous failure, the value for this attribute is 0.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vcc Msrc Party lastFailureDiagCode

Access	Read: All Write: Illegal
Description	This attribute indicates the diagnostic code associated with the *lastFailureCauseCode* attribute. If the diagnostic code was not provided with that CAUSE information element, or if there has been no previous failure, this attribute is empty.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

GROUP AtmIf Vcc Msrc Party OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vcc Msrc Party adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	AtmNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Vcc Msrc Party operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf Vcc Msrc Party usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmNetworking
Values	idle active (activ) busy
Default	idle

COMPONENT AtmIf UserNetworkInterface (Uni)

Groups	"GROUP AtmIf Uni Provisioned (Prov)" "GROUP AtmIf Uni Operational (Oper)" "GROUP AtmIf Uni AccountingOptions (AcctOpt)"
Scope	Device
Description	*AtmIf/n Uni* This component represents an ATM UNI interface. If this component is provisioned the *Aini*, *Iisp*, or *Pnni* component can not be provisioned under that *AtmIf* component. If this

	component is deleted, then all associated *Vcc* components are deleted.
Mib	AtmUni
Subcomponents	"COMPONENT AtmIf Uni Ilmi" "COMPONENT AtmIf Uni Signalling (Sig)"
Opt. Subcomp.	"COMPONENT AtmIf Uni CallingAddressScreening (CallingAScr)" "COMPONENT AtmIf Uni CalledAddressScreening (CalledAScr)" "COMPONENT AtmIf Uni PathTraceFilter (Ptf)" "COMPONENT AtmIf Uni ServiceTrace (SrvTrace)" "COMPONENT AtmIf Uni Reroute"
Dyn. Subcomp.	"COMPONENT AtmIf Uni PathTraceTestConnection (Ptt)"
Dyn. Subcomp.	"COMPONENT AtmIf Uni Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Uni Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Uni* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni version

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies which specification the UNI complies with. The options are ATM FORUM 3.0, ATM FORUM 3.1 or

	ATM FORUM 4.0. If this attribute is changed then all switched *Vcc* components in this interface are cleared due to the fact that the two versions are incompatible.
Mib	AtmUni
Values	atmForum30 atmForum31 atmForum40
Default	atmForum40

ATTRIBUTE AtmIf Uni side

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which side the interface is, user or network.
Mib	AtmUni
Values	network user
Default	network

ATTRIBUTE AtmIf Uni softPvpAndPvcRetryPeriod

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	AtmUni
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE AtmIf Uni softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmUni
Values	Decimal (0; 50..20000)
Units	msec
Default	0

ATTRIBUTE AtmIf Uni loopPrevention

Access	Read: All Write: Configuration
Description	This attribute specifies whether loop prevention is in effect on this interface. When the value is ***enabled***, incoming calls on this interface cannot be routed back out the same interface. When the value is ***disabled***, routing of incoming calls back out the same interface is permitted. The recommended value is ***enabled***. The value ***disabled*** should only be used if routing of incoming calls back out over this interface is actually required. As an example, the value ***disabled*** might be needed if the interface is connected to an end-user multiplexing device which has no routing capability. Note that setting the value to ***enabled*** prevents only routing loops which involve two network nodes.
Mib	AtmUni

Values	disabled enabled
Default	enabled

ATTRIBUTE AtmIf Uni interfaceType

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the *Type* of the interface, ***private*** or ***public***.
Mib	AtmUni
Values	public private
Default	private

GROUP AtmIf Uni Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *Uni* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni macAddress

Access	Read only
Description	This attribute indicates the MAC address of the port, which is used for address registration of the user side as the default ESI.
Mib	AtmUni
Values	String (12, ASCII)
Default	No default

GROUP AtmIf Uni AccountingOptions (AcctOpt)

Properties	Provisioned

Description	This group contains the provisionable attributes for accounting.
Mib	AtmUni

ATTRIBUTE AtmIf Uni accountCollection (aco)

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit*** or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts). If none of the reasons is present, then accounting will be suppressed. The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.
Mib	AtmUni
Set of	bill test study audit force
Default	No default

ATTRIBUTE AtmIf Uni accountConnectionType (act)

Access	Read: All Write: All
Description	This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of

the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records.

If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***.

If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.

Mib: AtmUni

Values: origTerm
intermediate

Default: origTerm

ATTRIBUTE AtmIf Uni accountClass (acl)

Access: Read: All
Write: All

Description: This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator.

Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.

Mib: AtmUni

Values: Decimal (0..255)

Default: 0

ATTRIBUTE AtmIf Uni serviceExchange (sre)

Access: Read: All
Write: All

Description: This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator.

Its value is simply recorded in the accounting records generated

	by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	AtmUni
Values	Decimal (0..255)
Default	0

COMPONENT AtmIf Uni Ilmi

Groups	"GROUP AtmIf Uni Ilmi OsiState (State)" "GROUP AtmIf Uni Ilmi Provisioned (Prov)" "GROUP AtmIf Uni Ilmi Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Uni Ilmi* This component represents the Interim Local Management Interface (ILMI) protocol on the interface.
Mib	AtmUni
Opt. Subcomp.	"COMPONENT AtmIf Uni Ilmi Esi"
Common Verbs	Help List Display

GROUP AtmIf Uni Ilmi OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Ilmi adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmUni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Uni Ilmi operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmUni

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf Uni Ilmi usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmUni
Values	idle active (activ) busy
Default	idle

GROUP AtmIf Uni Ilmi Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Ilmi* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Ilmi vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute identifies the ILMI channel number.

Mib	AtmUni
Values	Decimal (0..65535)
Default	16

ATTRIBUTE AtmIf Uni Ilmi operatingMode

Access	Read: All Write: All
Criticality	Component
Description	This attribute is used to enable/disable the ILMI protocol. ***addressRegEnabled*** indicates that the ILMI address registration protocol is enabled. ***addressRegDisabled*** indicates that the ILMI address registration protocol is disabled. ***ilmiDisabled*** indicates that all of ILMI is disabled.
Mib	AtmUni
Values	addressRegEnabled addressRegDisabled ilmiDisabled
Default	addressRegEnabled

ATTRIBUTE AtmIf Uni Ilmi prefixToRegister

Access	Read: All Write: All
Description	This attribute is a list of zero or more addresses. If the *side* attribute in the *Uni* component is set to ***user***, then this attribute must be empty; if the *side* attribute is set to ***network***, then this attribute is a list of prefixes.This attribute represents a list of prefix addresses (26 digits) that are sent to the user side. If no prefixes are entered, then the *nodeAddr*ess attribute in the *AtmCallRouter* component is used for address registration.
Mib	AtmUni
List of	String (26, ASCII)
List Size	10

Default	No default

GROUP AtmIf Uni Ilmi Statistics (Stats)

Properties	Operational
Description	This attribute group contains the statistics for the *AtmIlmi* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Ilmi txPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted ILMI PDUs. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Ilmi rxPdus

Access	Read: All Write: Illegal
Description	This attribute counts the total number of received ILMI PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Ilmi rxBadPdusDiscarded

Access	Read: All Write: Illegal

Description	This attribute counts the number of received ILMI PDUs that were discarded due to invalid SNMP format. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Uni Ilmi Esi

Instance	String (6, Hex)
Groups	"GROUP AtmIf Uni Ilmi Esi Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Uni Ilmi Esi* This attribute represents the End System Identifier (ESI) associated with this UNI. If the *side* attribute of the *Uni* component is set to ***network*** then there should be no *Esi* components provisioned. If the *side* attribute is set to ***user***, then the instance of the *Esi* component is a 12 hex-digit user-part address, used to compose full ATM addresses that are registered with the network side.
Mib	AtmUni
Common Verbs	Help List Display Add DELete

GROUP AtmIf Uni Ilmi Esi Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Esi* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Ilmi Esi uniScope

Access	Read: All Write: All
Criticality	Component
Description	This attribute defines the UNI address membership scope for all addresses created using this ESI. It specifies the inclusive routing hierarchy in which the address is to be known. This scope is used during ILMI dynamic address registration procedures. The ***useDefaultScope*** value maps to ***localNetwork*** for ATM group addresses, and to ***global*** for individual addresses. The value of this attribute is ignored for UNI 3.x interfaces.
Mib	AtmUni
Values	useDefaultScope (def) localNetwork (ln) localPlusOne (lpo) localPlusTwo (lpt) siteMinusOne (smo) intraSite (is) intraSitePlusOne (ispo) organizationMinusOne (omo) intraOrganization (io) organizationPlusOne (opo) communityMinusOne (cmo) intraCommunity (ic) communityPlusOne (cpo) regional (r) interRegional (ir) global (g)
Default	useDefaultScope

COMPONENT AtmIf Uni Signalling (Sig)

Groups	"GROUP AtmIf Uni Sig Provisioned (Prov)" "GROUP AtmIf Uni Sig OsiState (State)" "GROUP AtmIf Uni Sig Operational (Oper)" "GROUP AtmIf Uni Sig Statistics (Stats)"

Scope	Device
Description	*AtmIf/n Aini Signalling* *AtmIf/n Iisp Signalling* *AtmIf/n Uni Signalling* *AtmIf/n Pnni Signalling* *AtmIf/n Vpt/m Aini Signalling* *AtmIf/n Vpt/m Iisp Signalling* *AtmIf/n Vpt/m Uni Signalling* *AtmIf/n Vpt/m Pnni Signalling* This component represents the signaling entities for the interface.
Mib	AtmUni
Opt. Subcomp.	"COMPONENT AtmIf Uni Sig VirtualChannelDescriptor (Vcd)"
Common Verbs	Help List Display

GROUP AtmIf Uni Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmUni
Values	Decimal (0..65535)
Default	5

ATTRIBUTE AtmIf Uni Sig addressConversion

Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	AtmUni
Values	none nativeE164 nsap
Default	none

ATTRIBUTE AtmIf Uni Sig operatingMode

Access	Read: All Write: All
Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmUni
Values	normal provisionedOnly

Default	normal

GROUP AtmIf Uni Sig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmUni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Uni Sig operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmUni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf Uni Sig usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmUni
Values	idle active (activ) busy

Default	idle

GROUP AtmIf Uni Sig Operational (Oper)

Properties	Operational
Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Sig lastTxCauseCode

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Uni Sig lastTxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmUni
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE AtmIf Uni Sig lastRxCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Uni Sig lastRxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmUni
Values	Hex (H.0..H.ff)
Default	No default

GROUP AtmIf Uni Sig Statistics (Stats)

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Sig peakConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Sig successfulConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Sig failedConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Sig txPdus

Access	Read: All Write: Illegal

Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Sig rxPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Sig currentPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Sig peakPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	AtmUni

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Sig successfulPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Sig failedPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Sig currentConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of currently active point-to- point connections.
Mib	AtmUni
Values	Decimal (0..4294967295)

Default	No default

COMPONENT AtmIf Uni Sig VirtualChannelDescriptor (Vcd)

Groups	"GROUP AtmIf Uni Sig Vcd Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor* This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).
Mib	AtmUni
Common Verbs	Help List Display Add DELete

GROUP AtmIf Uni Sig Vcd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable traffic attributes for a control channel.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Sig Vcd trafficDescType (tdt)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.
Mib	AtmUni
Values	3 6 7 8
Default	6

ATTRIBUTE AtmIf Uni Sig Vcd atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as

"bursty". Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmUni
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	rtVariableBitRate

ATTRIBUTE AtmIf Uni Sig Vcd weight

Access	Read and write
Criticality	Component
Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca

<atmServiceCategory>/ m.

This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs.

When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***.

When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT.

When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.

Mib	AtmUni
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE AtmIf Uni Sig Vcd qosClass (qos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection.

Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video).

Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer).

Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib: AtmUni

Values:
0
1
2
3
4

Default: 2

ATTRIBUTE AtmIf Uni Sig Vcd trafficShaping (trShaping)

Access: Read and write

Criticality: Component

Description: This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface.

When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components.

When ***disabled*** is selected, traffic shaping for this connection is disabled.

Mib: AtmUni

Values: disabled
sameAsCa

Default: disabled

ATTRIBUTE AtmIf Uni Sig Vcd unshapedTransmitQueueing (unshap)

Access: Read and write

Criticality: Component

Description: This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute.

When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator.*

When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib: AtmUni

Values: common
sameAsCa

Default: sameAsCa

ATTRIBUTE AtmIf Uni Sig Vcd usageParameterControl (upc)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmUni
Values	disabled sameAsCa
Default	disabled

ATTRIBUTE AtmIf Uni Sig Vcd trafficDescParm (tdp)

Access	Read: All Write: All
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored.

The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter

2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)

COMPONENT AtmIf Uni Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate registered default]
Groups	"GROUP AtmIf Uni Addr Operational (Oper)"
Scope	Device
Description	*AtmIf/n Uni Address/address,type* *AtmIf/n Vpt/m Uni Address/address,type* This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wild-card (‘?’), and a type. The type identifies whether the Address component is for a ***primary***, ***alternate***, ***registered***, or ***default*** address.

The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses. Virtual interfaces do not have addresses of type ***default***.

The wild-card is only valid for provisioned addresses. If the address is a single wild-card, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wild-card static address, then the choice is made using a round robin algorithm.

The round robin algorithm first tries the primary routes. If none of the primary routes succeed, then the alternate routes are tried.

Note that the ***UniInfo*** and ***PnniInfo*** sub-components are mutually exclusive. Only one of these may be added under the ***AtmIf Uni Addr*** component.

Mib	AtmUni
Opt. Subcomp.	"COMPONENT AtmIf Uni Addr TerminateSPvpAndSPvc (TermSP)" "COMPONENT AtmIf Uni Addr PnniInfo" "COMPONENT AtmIf Uni Addr UniInfo"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Uni Addr Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *AtmIf/n Uni Address* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Addr reachability (reach)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmUni
Values	internal exterior
Default	No default

ATTRIBUTE AtmIf Uni Addr pnniScope

Access	Read: All Write: Illegal
Description	This attribute indicates the PNNI scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. This attribute will have the value of -1 if this node does not participate in a PNNI hierarchy, or if this address was provisioned with a UNI membership scope, rather than a PNNI routing level.
Mib	AtmUni
Values	Signed (-1..104)
Default	No default

ATTRIBUTE AtmIf Uni Addr uniScope

Access	Read: All Write: Illegal

Description	This attribute indicates the UNI membership scope of the ATM address. It specifies the inclusive routing hierarchy in which the address is known. This attribute will have the value 0 if the address was provisioned with a PNNI routing level rather than a UNI membership scope.
Mib	AtmUni
Values	scopeNotAvailable localNetwork localPlusOne localPlusTwo siteMinusOne intraSite intraSitePlusOne organizationMinusOne intraOrganization organizationPlusOne communityMinusOne intraCommunity communityPlusOne regional interRegional global
Default	No default

COMPONENT AtmIf Uni Addr TerminateSPvpAndSPvc (TermSP)

Scope	Device
Description	*AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc* The presence of this subcomponent indicates that SPvp and SPvc

call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.

Mib AtmUni

Common Verbs
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Uni Addr PnniInfo

Groups "GROUP AtmIf Uni Addr PnniInfo Provisioned (Prov)"

Scope Device

Description

AtmIf/n Aini Addr/address,type PnniInfo
AtmIf/n Iisp Addr/address,type PnniInfo
AtmIf/n Uni Addr/address,type PnniInfo
AtmIf/n Pnni Addr/address,type PnniInfo
AtmIf/n Vpt/m Aini Addr/address,type PnniInfo
AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo
AtmIf/n Vpt/m Uni Addr/address,type PnniInfo
AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo

This component contains provisioned information associated with the ATM address related to PNNI. This component appears only under provisioned *Address* components.

Mib AtmUni

Common Verbs
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Uni Addr PnniInfo Provisioned (Prov)

Properties Provisioned

Description	This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Addr PnniInfo scope

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.
Mib	AtmUni
Values	Signed (-1..104)
Default	-1

ATTRIBUTE AtmIf Uni Addr PnniInfo reachability (reach)

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmUni
Values	internal exterior
Default	internal

COMPONENT AtmIf Uni Addr UniInfo

Groups	"GROUP AtmIf Uni Addr UniInfo Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Uni Addr/address,type UniInfo* *AtmIf/n Vpt/m Uni Addr/address,type UniInfo* This component contains the provisioned information associated with the ATM address and related to the UNI. This component appears only under provisioned *Uni Address* components. This component may not appear together with the *Atmif Uni Addr PnniInfo* component, they are mutually exclusive.
Mib	AtmUni
Common Verbs	Help List Display Add DELete

GROUP AtmIf Uni Addr UniInfo Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisioned attributes relating to a UNI address for a *UniInfo* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Addr UniInfo scope

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the address UNI membership scope. It specifies the inclusive routing hierarchy in which the address will be known.

The ***useDefaultScope*** value maps to ***localNetwork*** for ATM group addresses, and to ***global*** for individual addresses.

Note that this value is ignored for UNI 3.x interfaces.

Mib: AtmUni

Values:
useDefaultScope (def)
localNetwork (ln)
localPlusOne (lpo)
localPlusTwo (lpt)
siteMinusOne (smo)
intraSite (is)
intraSitePlusOne (ispo)
organizationMinusOne (omo)
intraOrganization (io)
organizationPlusOne (opo)
communityMinusOne (cmo)
intraCommunity (ic)
communityPlusOne (cpo)
regional (r)
interRegional (ir)
global (g)

Default: useDefaultScope

ATTRIBUTE AtmIf Uni Addr UniInfo pnniReachability (reach)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through
a PNNI routing domain, but which is not located in that PNNI routing domain.

Mib: AtmUni

Values	internal exterior
Default	internal

COMPONENT AtmIf Uni CallingAddressScreening (CallingAScr)

Groups	"GROUP AtmIf Uni CallingAScr Provisioned (Prov)" "GROUP AtmIf Uni CallingAScr Statistics (Stat)"
Scope	Device
Description	*AtmIf/n Aini CallingAddressScreening* *AtmIf/n Uni CallingAddressScreening* *AtmIf/n Iisp CallingAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM calling addresses (that is, screening SVC calls coming from specific addresses). If this component is not provisioned, all call requests are accepted and no calling address screening takes place.
Mib	AtmUni
Opt. Subcomp.	"COMPONENT AtmIf Uni CallingAScr Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Uni CallingAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CallingAScr* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni CallingAScr adminStatus

Access	Read: All Write: All

Description	This attribute specifies whether the calling address screening feature is ***enabled*** or ***disabled***. If ***enabled***, incoming SVC calls are screened against provisioned addresses. If ***enabled*** and the calling address in the ATM SVC call request is provisioned to be accepted, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled***, and the calling address in the address request is not provisioned, the call is rejected If the value is ***disabled***, no calling address screening is performed.
Mib	AtmUni
Values	enabled disabled
Default	disabled

ATTRIBUTE AtmIf Uni CallingAScr defaultInsertionAddress (defInsAddr)

Access	Read: All Write: All
Description	This attribute specifies the address to be inserted into the SVC connection request if *adminStatus* is ***enabled*** and the connection request does not contain a calling address. If the *adminStatus* attribute is ***enabled*** and this attribute is empty, all incoming SVC calls which do not contain a calling address are rejected.
Mib	AtmUni
Values	String (0..20, Hex)
Default	""

GROUP AtmIf Uni CallingAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.

Mib	AtmUni

ATTRIBUTE AtmIf Uni CallingAScr acceptedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Uni CallingAScr rejectedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Uni CallingAScr unmatchedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni

Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Uni CallingAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected. For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.
Mib	AtmUni
Common Verbs	Help List Display Add DELete

COMPONENT AtmIf Uni CalledAddressScreening (CalledAScr)

Groups	"GROUP AtmIf Uni CalledAScr Provisioned (Prov)" "GROUP AtmIf Uni CalledAScr Statistics (Stat)"
Scope	Device
Description	*AtmIf/n Aini CalledAddressScreening* *AtmIf/n Uni CalledAddressScreening* *AtmIf/n Iisp CalledAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM called addresses (that is, going to specific destinations). If this component is not provisioned, all call requests are accepted and no called address screening takes place.
Mib	AtmUni
Opt. Subcomp.	"COMPONENT AtmIf Uni CalledAScr Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Uni CalledAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CalledAScr* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni CalledAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the called address screening feature is ***enabled*** or ***disabled***. If the value is ***enabled***, incoming SVC calls will be screened against provisioned called addresses. If the value is ***enabled*** and

	the called address in the ATM SVC call request has been provisioned, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled*** and the called address in the call request is not provisioned, the call is rejected. If the value is ***disabled***, no called address screening is performed.
Mib	AtmUni
Values	enabled disabled
Default	disabled

GROUP AtmIf Uni CalledAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmUni

ATTRIBUTE AtmIf Uni CalledAScr acceptedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Uni CalledAScr rejectedCalls

Access	Read: All Write: Illegal

Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Uni CalledAScr unmatchedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Uni CalledAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action

is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected.
For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected.
For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib: AtmUni

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Uni PathTraceFilter (Ptf)

Groups:
"GROUP AtmIf Uni Ptf Criteria"
"GROUP AtmIf Uni Ptf Operational (Oper)"
"GROUP AtmIf Uni Ptf RecordControl (Record)"

Scope: Device

Description:
AtmIf/n Aini PathTraceFilter
AtmIf/n Iisp PathTraceFilter
AtmIf/n Uni PathTraceFilter
AtmIf/n Pnni PathTraceFilter
AtmIf/n Vpt/vpi Aini PathTraceFilter
AtmIf/n Vpt/vpi Iisp PathTraceFilter
AtmIf/n Vpt/vpi Uni PathTraceFilter
AtmIf/n Vpt/vpi Pnni PathTraceFilter

This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced.

When this component is provisioned, the network operator can

control tracing activities by using the *Start*, *Stop*, and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When *AtmPathTraceFilter* component is deleted, all records are cleared.

Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted.

The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.

Mib	AtmUni
Dyn. Subcomp.	"COMPONENT AtmIf Uni Ptf PathTraceRecord (PTRecord)"
Common Verbs	Help List Display Add DELete

VERB START AtmIf Uni Ptf

Impact: Service

Description:

START AtmIf/n Aini PathTraceFilter
START AtmIf/n Iisp PathTraceFilter
START AtmIf/n Uni PathTraceFilter
START AtmIf/n Pnni PathTraceFilter
START AtmIf/n Vpt/vpi Aini PathTraceFilter
START AtmIf/n Vpt/vpi Iisp PathTraceFilter
START AtmIf/n Vpt/vpi Uni PathTraceFilter
START AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

VERB STOP AtmIf Uni Ptf

Impact: Service

Description:

STOP AtmIf/n Aini PathTraceFilter
STOP AtmIf/n Iisp PathTraceFilter
STOP AtmIf/n Uni PathTraceFilter
STOP AtmIf/n Pnni PathTraceFilter
STOP AtmIf/n Vpt/vpi Aini PathTraceFilter
STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter
STOP AtmIf/n Vpt/vpi Uni PathTraceFilter
STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command causes the filter to stop, but keeps the trace records.

VERB CLEAR AtmIf Uni Ptf

Impact	Service
Description	*CLEAR AtmIf/n Aini PathTraceFilter* *CLEAR AtmIf/n Iisp PathTraceFilter* *CLEAR AtmIf/n Uni PathTraceFilter* *CLEAR AtmIf/n Pnni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP AtmIf Uni Ptf Criteria

Properties	Operational
Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Ptf traceInfo (tInfo)

Access	Read: All Write: All
Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference

	and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	AtmUni
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

ATTRIBUTE AtmIf Uni Ptf calledPartyPrefix (cldPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmUni
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Uni Ptf callingPartyPrefix (clgPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmUni

Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Uni Ptf connectionType (type)

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmUni
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE AtmIf Uni Ptf connectionConfiguration (config)

Access	Read: All Write: All
Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmUni
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE AtmIf Uni Ptf serviceCategory (svcCat)

Access	Read: All Write: All

Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	AtmUni
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP AtmIf Uni Ptf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Ptf state

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active. ***inactive:*** Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.
Mib	AtmUni
Values	active inactive
Default	inactive

ATTRIBUTE AtmIf Uni Ptf recordCount

Access	Read: All Write: Illegal
Description	This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords*, which ever is less.
Mib	AtmUni
Values	Decimal (0..200)
Default	No default

ATTRIBUTE AtmIf Uni Ptf matchedConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the number of connections that match the criteria of this filter.
Mib	AtmUni
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE AtmIf Uni Ptf elapsedTime

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	AtmUni
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE AtmIf Uni Ptf timeRemaining

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmUni
Values	Decimal (0..70560)
Units	minutes
Default	No default

GROUP AtmIf Uni Ptf RecordControl (Record)

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Ptf traceTimeout

Access	Read: All Write: All
Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmUni
Values	Decimal (1..70560)
Units	minutes
Default	60

ATTRIBUTE AtmIf Uni Ptf maxTraceRecords (mRecords)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter.

	Once the maximum has been reached, the oldest record is removed.
Mib	AtmUni
Values	Decimal (1..200)
Default	2

COMPONENT AtmIf Uni Ptf PathTraceRecord (PTRecord)

Groups	"GROUP AtmIf Uni Ptf PTRecord Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord* *AtmIf/n Iisp Ptf PTRecord* *AtmIf/n Uni Ptf PTRecord* *AtmIf/n Pnni Ptf PTRecord* *AtmIf/n Vpt/n Aini Ptf PTRecord* *AtmIf/n Vpt/n Iisp Ptf PTRecord* *AtmIf/n Vpt/n Uni Ptf PTRecord* *AtmIf/n Vpt/n Pnni Ptf PTRecord* This component represents the path trace record for the last failed connection against this filter.
Mib	AtmUni
Dyn. Subcomp.	"COMPONENT AtmIf Uni Ptf PTRecord Hop"
Common Verbs	Help List Display

GROUP AtmIf Uni Ptf PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Ptf PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmUni
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord timeStamp

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmUni
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord srcPortId

Access	Read: All Write: Illegal

Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmUni
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord srcPortName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmUni
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord causeCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord diagCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmUni
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Uni Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	"GROUP AtmIf Uni Ptf PTRecord Hop Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record.

	Depending on the hops, different attributes are present.
Mib	AtmUni
Dyn. Subcomp.	"COMPONENT AtmIf Uni Ptf PTRecord Hop VendorSpecificInfo (Vsi)"
Common Verbs	Help List Display

GROUP AtmIf Uni Ptf PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop ingressDlci (dlci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop ingressCallReference (callref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmUni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop ingressEndPointReference (epref)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmUni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop nodeId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmUni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop nodeName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmUni
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop portId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop portName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmUni
Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop pnniTraceContRefusalIndPresent (refusal)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.

Mib	AtmUni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop crankbackDestNodeIndPresent (dest)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmUni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop pnniCrankbackGapIndPresent (gap)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmUni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop crankBackCause (cause)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmUni
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop blockedTransitType (type)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmUni
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop blockedNodeId (bNodeId)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmUni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop blockedLinkPrecedingNodeId (pNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmUni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop blockedLinkPortId (bPortId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier.

	This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop blockedLinkSucceedingNodeId (sNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmUni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop dstVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.

Mib	AtmUni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop dstDlci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop dstCallReference (dcr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmUni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop dstEndPointReference (depr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmUni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop specifiedPath

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmUni
Values	no yes
Default	no

COMPONENT AtmIf Uni Ptf PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	"GROUP AtmIf Uni Ptf PTRecord Hop Vsi Operational (Oper)"
Scope	Device

Description

AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m

This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.

Mib: AtmUni

Common Verbs: Help, List, Display

GROUP AtmIf Uni Ptf PTRecord Hop Vsi Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.

Mib: AtmUni

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop Vsi length

Access: Read: All
Write: Illegal

Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmUni
Values	Decimal (0..11)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop Vsi organizationUniqueId (oui)

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmUni
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE AtmIf Uni Ptf PTRecord Hop Vsi data

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmUni
Values	String (1..8, Hex)
Default	No default

COMPONENT AtmIf Uni PathTraceTestConnection (Ptt)

Groups	"GROUP AtmIf Uni Ptt Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini PathTraceTestConnection* *AtmIf/n Iisp PathTraceTestConnection* *AtmIf/n Uni PathTraceTestConnection* *AtmIf/n Pnni PathTraceTestConnection*

AtmIf/n Vpt/vpi Aini PathTraceTestConnection
AtmIf/n Vpt/vpi Iisp PathTraceTestConnection
AtmIf/n Vpt/vpi Uni PathTraceTestConnection
AtmIf/n Vpt/vpi Pnni PathTraceTestConnection

This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface.

The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test connection responds with the trace results collected during a complete or partial trace.

Mib: AtmUni

Common Verbs:
- Help
- List
- Display

VERB TRACE AtmIf Uni Ptt

Impact: Passive

Description:

TRACE AtmIf/n Aini AtmPathTraceTest
TRACE AtmIf/n Iisp AtmPathTraceTest
TRACE AtmIf/n Uni AtmPathTraceTest
TRACE AtmIf/n Pnni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest

This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node.

Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP AtmIf Uni Ptt Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *AtmPathTraceTest* component.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Ptt traceCrankback

Access	Read: All Write: All
Description	This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.
Mib	AtmUni
Values	no yes
Default	no

ATTRIBUTE AtmIf Uni Ptt txTrafficDescType (txTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmUni
Values	1 2 3 4 5 6

	7 8 9
Default	1

ATTRIBUTE AtmIf Uni Ptt rxTrafficDescType (rxTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.
Mib	AtmUni
Values	1 2 3 4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE AtmIf Uni Ptt atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection.

If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications.

The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.

Mib AtmUni

Values
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
derivedFromBBC (derived)

Default	unspecifiedBitRate

ATTRIBUTE AtmIf Uni Ptt fwdQosClass (fwdQos)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmUni
Values	0 1 2 3 4
Default	0

ATTRIBUTE AtmIf Uni Ptt bwdQosClass (bwdQos)

Access	Read: All Write: All
Criticality	Component

Description	This attribute specifies the quality of service for the backward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters. The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.
Mib	AtmUni
Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE AtmIf Uni Ptt bearerClassBbc (bcBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested

broadband connection-oriented bearer service to be provided by the network.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib	AtmUni
Values	a c x derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Uni Ptt transferCapabilityBbc (tcBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the transfer capability for this connection. UNI 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> ***0***: NoIndication, NoIndication ***1***: NoIndication, yes ***2***: NoIndication, no ***5***: CBR, yes ***8***: VBR, NoIndication ***9***: VBR, yes ***10***: VBR, no ***NotApplicable*** specifies that the user does not want to specify the transfer capability. The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data. The value ***NoIndication*** for traffic type is used if the user has not set the traffic type. This is also the case for end-to-end timing. The value ***yes*** for end-to-end timing indicates that end-to-end timing is required. The value ***no*** for end-to-end timing indicates that end-to-end timing is not required. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmUni

Values	0 1 2 5 8 9 10 notApplicable derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Uni Ptt clippingBbc (cBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.
Mib	AtmUni
Values	no yes
Default	no

ATTRIBUTE AtmIf Uni Ptt bestEffort

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer

Capability attributes.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory.* Either this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib	AtmUni
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Uni Ptt testCalledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmUni
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Uni Ptt testCalledVpiVci

Access	Read: All Write: All
Criticality	Component

Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmUni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Uni Ptt testSpecifiedPath

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmUni
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Uni Ptt bwdQosParameters (bqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the

extended QoS information element.

Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Uni Ptt fwdQosParameters (fqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Uni Ptt txTrafficDescParm (txTdp)

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled. When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero. When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero

value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A

non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE AtmIf Uni Ptt rxTrafficDescParm (rxTdp)

Access	Read: All Write: All
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC). When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused).

When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused).

When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or
I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

COMPONENT AtmIf Uni ServiceTrace (SrvTrace)

Groups	"GROUP AtmIf Uni SrvTrace Operational"

Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] Iisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.
Mib	AtmUniTrace
Common Verbs	Help List Display Add DELete

VERB Start AtmIf Uni SrvTrace

Impact	Service
Description	*Start AtmIf/n [Vpt/m] Uni ServiceTrace* *Start AtmIf/n [Vpt/m] Iisp ServiceTrace* *Start AtmIf/n [Vpt/m] Pnni ServiceTrace* *Start AtmIf/n [Vpt/m] Aini ServiceTrace* This command starts a service trace session.

VERB Stop AtmIf Uni SrvTrace

Impact	Service
Description	*Stop AtmIf/n [Vpt/m] Uni ServiceTrace* *Stop AtmIf/n [Vpt/m] Iisp ServiceTrace* *Stop AtmIf/n [Vpt/m] Pnni ServiceTrace* *Stop AtmIf/n [Vpt/m] Aini ServiceTrace* This command stops a service trace session.

GROUP AtmIf Uni SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	AtmUniTrace

ATTRIBUTE AtmIf Uni SrvTrace receiverName (rcvr)

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmUniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE AtmIf Uni SrvTrace duration

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmUniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE AtmIf Uni SrvTrace queueLimit

Access	Read and write

Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmUniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE AtmIf Uni SrvTrace session

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmUniTrace
Values	The name of the component
Default	No default

COMPONENT AtmIf Uni Reroute

Groups	"GROUP AtmIf Uni Reroute LocalOperational (LOper)" "GROUP AtmIf Uni Reroute GlobalOperational (GOper)" "GROUP AtmIf Uni Reroute Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Iisp Reroute* *AtmIf/n Aini Reroute* *AtmIf/n Uni Reroute* *AtmIf/n Vpt/vpi Iisp Reroute* *AtmIf/n Vpt/vpi Aini Reroute* *AtmIf/n Vpt/vpi Uni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg*

Pnni component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.

Mib: AtmUni

Subcomponents: "COMPONENT AtmIf Uni Reroute Ov"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB OPTIMIZE AtmIf Uni Reroute

Impact: Service

Description: *Optimize [-all] AtmIf/n Uni outeouteouteouteouteoute*sBy default, only connection segsforation. The best known optimization metric value for the connection segment is indicated by the localOptimalMetricValue attribute under the RerouteInfo component for the connection.
The -all option causes all connection segments subscribed to path optimization to be considered.s

GROUP AtmIf Uni Reroute LocalOperational (LOper)

Properties: Operational

Description: This group contains the operational attributes that indicate the local rerouting activities at the interface level.

Mib: AtmUni

ATTRIBUTE AtmIf Uni Reroute localSubscribedConnections (lsub)

Access: Read only

Description: This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.

Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute localEligibleRecoveredCon (lerc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute localIneligibleRecoveredCon (lirc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute localLastRrCauseCode (lrrcc)

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	AtmUni
Values	Decimal (0..255)

Default	No default

ATTRIBUTE AtmIf Uni Reroute localPathsOptimized (lPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Uni Reroute GlobalOperational (GOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Reroute globalSubscribedConnections (gsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute globalEligibleRecoveredCon (gerc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.

Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute globalIneligibleRecoveredCon (girc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute globalLastRrCauseCode (grrcc)

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Uni Reroute globalPathsOptimized (gPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmUni
Values	Decimal (0..4294967295)

Default	No default

GROUP AtmIf Uni Reroute Statistics (Stats)

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Reroute totalLocalConnectionRecoveries (tLConRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute totalLocalFailedRecoveries (lFailedRec)

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute totalLocalPathOptimizations (tLPathOpt)

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.

Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute totalGlobalConnectionRecoveries (tGConRec)

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute totalGlobalFailedRecoveries (gFailedRec)

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Uni Reroute totalGlobalPathOptimizations (tGPathOpt)

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE AtmIf Uni Reroute totalOptimizationPasses (optPass)

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Uni Reroute Ov

Groups	"GROUP AtmIf Uni Reroute Ov Provisioned (Prov)" "GROUP AtmIf Uni Reroute Ov LocalProvisioned (LProv)" "GROUP AtmIf Uni Reroute Ov GlobalProvisioned (GProv)"
Scope	Device
Description	*AtmIf/n Iisp Reroute Ov* *AtmIf/n Aini Reroute Ov* *AtmIf/n Uni Reroute Ov* *AtmIf/n Vpt/vpi Iisp Reroute Ov* *AtmIf/n Vpt/vpi Aini Reroute Ov* *AtmIf/n Vpt/vpi Uni Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.
Mib	AtmUni
Common Verbs	Help List Display

GROUP AtmIf Uni Reroute Ov Provisioned (Prov)

Properties	Provisioned

Description	This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.
Mib	AtmUni

ATTRIBUTE AtmIf Uni Reroute Ov protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsARtgPnniReroute***: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature. ***ebrOnly***: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.
Mib	AtmUni
Values	localGlobal localOnly globalOnly

	localEbr ebrOnly sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE AtmIf Uni Reroute Ov numOptAttempts

Access	Read and write
Description	This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization. If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization. If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.
Mib	AtmUni
Values	Decimal (0..15) sameAsARtgPnniReroute (sameAs)
Default	sameAs

ATTRIBUTE AtmIf Uni Reroute Ov moduleOptimizationConnections

Access	Read and write

Description

This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component.

One of the following values can be specified:
sameAsARtgPnniReroute: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute.
none: No connection segments are considered for path optimization.
recoveredOnly: Only connection segments that are foration. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection
allSubscribed: All connection segments subscribed to path optimization are considered.

Mib

AtmUni

Values

none
recoveredOnly
allSubscribed
sameAsARtgPnniReroute (sameAs)

Default

sameAsARtgPnniReroute

ATTRIBUTE AtmIf Uni Reroute Ov switchoverMechanism

Access

Read and write

Description

This attribute specifies the mechanism used for switchover of a rerouted connection segment.

One of the following values can be specified:
sameAsARtgPnniReroute: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute.
standard: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”.
rcl: The Reduced Cell Loss mechanism is used for switchover.

RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib: AtmUni

Values:
standard
rcl
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

GROUP AtmIf Uni Reroute Ov LocalProvisioned (LProv)

Properties: Provisioned

Description: This group contains the provisionable attributes for EBR and local rerouting protocols.

Mib: AtmUni

ATTRIBUTE AtmIf Uni Reroute Ov localConnectionRecoverySubscr (lConRec)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values.

svcSvp: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery.
sourceSpvcSpvp: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery.
transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.

Mib: AtmUni

Set of: sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Uni Reroute Ov localPathOptimizationSubscr (lPathOpt)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection

segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib: AtmUni

Set of: sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

GROUP AtmIf Uni Reroute Ov GlobalProvisioned (GProv)

Properties: Provisioned

Description: This group contains the provisionable attributes for the global and EBR rerouting protocol.

Mib: AtmUni

ATTRIBUTE AtmIf Uni Reroute Ov globalConnectionRecoverySubscr (gConRec)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery.

Connection segments of the specified types that request ***localEbr***

request subscription to both local connection recovery and EBR connection recovery. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib: AtmUni

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Uni Reroute Ov globalPathOptimizationSubscr (gPathOpt)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

Mib	AtmUni
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

COMPONENT AtmIf Iisp

Groups	"GROUP AtmIf Iisp Provisioned (Prov)" "GROUP AtmIf Iisp AccountingOptions (AcctOpt)"
Scope	Device
Description	*AtmIf/n Iisp* This component represents an ATM Interim Inter-switch Signaling Protocol (IISP) interface. If this component is provisioned, the *Uni*, *Aini*, or *Pnni* component can not be

provisioned under the same *AtmIf* component. If this component is deleted, then all associated *Vcc* components are deleted.

Mib	AtmIisp
Subcomponents	"COMPONENT AtmIf Iisp Signalling (Sig)"
Opt. Subcomp.	"COMPONENT AtmIf Iisp CallingAddressScreening (CallingAScr)" "COMPONENT AtmIf Iisp CalledAddressScreening (CalledAScr)" "COMPONENT AtmIf Iisp PathTraceFilter (Ptf)" "COMPONENT AtmIf Iisp ServiceTrace (SrvTrace)" "COMPONENT AtmIf Iisp Reroute"
Dyn. Subcomp.	"COMPONENT AtmIf Iisp PathTraceTestConnection (Ptt)"
Dyn. Subcomp.	"COMPONENT AtmIf Iisp Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Iisp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Iisp* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp version

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which specification the IISP interface complies with. The options are ***iisp10Sig30*** which refers to IISP version 1.0 with 3.0 signaling and ***iisp10Sig31*** which refers to

	IISP version 1.0 with 3.1 signaling. If this attribute is changed, all switched *Vcc* components in this interface are cleared due to the fact that the two versions are incompatible.
Mib	AtmIisp
Values	iisp10Sig30 iisp10Sig31
Default	iisp10Sig31

ATTRIBUTE AtmIf Iisp side

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which side the interface is, user or network.
Mib	AtmIisp
Values	networkSide userSide
Default	networkSide

ATTRIBUTE AtmIf Iisp softPvpAndPvcRetryPeriod (sRetryPeriod)

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	AtmIisp
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE AtmIf Iisp softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmIisp
Values	Decimal (0; 50..20000)
Units	msec
Default	0

ATTRIBUTE AtmIf Iisp interDomainCrankback

Access	Read: All Write: All
Description	This attribute specifies whether the ATM Routing System inserts a Crankback information element (IE) when hop-by-hop routing crankback fails in a neighboring domain and this node is the DTL terminating node of the call. By default, the ATM Routing System, when behaving as a DTL terminating node of a call, only inserts a Crankback IE if the routing system fails to find a static routing port that matches the called address. If this attribute is set to enabled, then a Crankback IE is also inserted when hop-by-hop crankback fails. This attribute may be provisioned on IISP links that connect two PNNI domains. Note that the cause codes that trigger the insertion of the Crankback IE are the same as those that apply to PNNI crankback normally. Not all of these cause codes apply to hop-by-hop routing. The insertion of a Crankback IE can cause extra call setup attempts in certain configurations such as PNNI

domains interconnected by IISP links.

Mib	AtmIisp
Values	disabled enabled
Default	disabled

GROUP AtmIf Iisp AccountingOptions (AcctOpt)

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp accountCollection (aco)

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit***, or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts). If none of the reasons is present, then accounting will be suppressed. The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.

Mib	AtmIisp
Set of	bill test study audit force
Default	No default

ATTRIBUTE AtmIf Iisp accountConnectionType (act)

Access	Read: All Write: All
Description	This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records. If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***. If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.
Mib	AtmIisp
Values	origTerm intermediate
Default	intermediate

ATTRIBUTE AtmIf Iisp accountClass (acl)

Access	Read: All Write: All
Description	This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator.

	Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.
Mib	AtmIisp
Values	Decimal (0..255)
Default	0

ATTRIBUTE AtmIf Iisp serviceExchange (sre)

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	AtmIisp
Values	Decimal (0..255)
Default	0

COMPONENT AtmIf Iisp Signalling (Sig)

Groups	"GROUP AtmIf Iisp Sig Provisioned (Prov)" "GROUP AtmIf Iisp Sig OsiState (State)" "GROUP AtmIf Iisp Sig Operational (Oper)" "GROUP AtmIf Iisp Sig Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Aini Signalling* *AtmIf/n Iisp Signalling* *AtmIf/n Uni Signalling* *AtmIf/n Pnni Signalling* *AtmIf/n Vpt/m Aini Signalling* *AtmIf/n Vpt/m Iisp Signalling* *AtmIf/n Vpt/m Uni Signalling* *AtmIf/n Vpt/m Pnni Signalling*

	This component represents the signaling entities for the interface.
Mib	AtmIisp
Opt. Subcomp.	"COMPONENT AtmIf Iisp Sig VirtualChannelDescriptor (Vcd)"
Common Verbs	Help List Display

GROUP AtmIf Iisp Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmIisp
Values	Decimal (0..65535)
Default	5

ATTRIBUTE AtmIf Iisp Sig addressConversion

Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then

only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.

Mib: AtmIisp

Values: none
nativeE164
nsap

Default: none

ATTRIBUTE AtmIf Iisp Sig operatingMode

Access: Read: All
Write: All

Description: This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces.
normal indicates that SVCs, SPVCs, and SPVPs are supported on the interface.

Mib: AtmIisp

Values: normal
provisionedOnly

Default: normal

GROUP AtmIf Iisp Sig OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib AtmIisp

ATTRIBUTE AtmIf Iisp Sig adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib AtmIisp

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE AtmIf Iisp Sig operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmIisp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf Iisp Sig usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmIisp
Values	idle active (activ) busy
Default	idle

GROUP AtmIf Iisp Sig Operational (Oper)

Properties	Operational
Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Sig lastTxCauseCode

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmIisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Iisp Sig lastTxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmIisp
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE AtmIf Iisp Sig lastRxCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmIisp

Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Iisp Sig lastRxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmIisp
Values	Hex (H.0..H.ff)
Default	No default

GROUP AtmIf Iisp Sig Statistics (Stats)

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Sig peakConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Sig successfulConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Sig failedConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Sig txPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Sig rxPdus

Access	Read: All Write: Illegal

Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Sig currentPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Sig peakPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Sig successfulPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.

Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Sig failedPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Sig currentConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of currently active point-to- point connections.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Iisp Sig VirtualChannelDescriptor (Vcd)

Groups	"GROUP AtmIf Iisp Sig Vcd Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor*

AtmIf/n Pnni Rcc VirtualChannelDescriptor
AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor

This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).

Mib: AtmIisp

Common Verbs:
Help
List
Display
Add
DELete

GROUP AtmIf Iisp Sig Vcd Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable traffic attributes for a control channel.

Mib: AtmIisp

ATTRIBUTE AtmIf Iisp Sig Vcd trafficDescType (tdt)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.

Mib: AtmIisp

Values:
3
6

	7 8
Default	6

ATTRIBUTE AtmIf Iisp Sig Vcd atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections. The ***unspecifiedBitRate*** service is intended for non-real time

applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib: AtmIisp

Values:
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)

Default: rtVariableBitRate

ATTRIBUTE AtmIf Iisp Sig Vcd weight

Access: Read and write

Criticality: Component

Description: This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m.

This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs.

When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***.

When this attribute is set to a value from ***1*** to ***4095***, that value is

used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT.

When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.

Mib	AtmIisp
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE AtmIf Iisp Sig Vcd qosClass (qos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib	AtmIisp
Values	0 1 2 3 4
Default	2

ATTRIBUTE AtmIf Iisp Sig Vcd trafficShaping (trShaping)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components. When ***disabled*** is selected, traffic shaping for this connection is disabled.
Mib	AtmIisp
Values	disabled sameAsCa
Default	disabled

ATTRIBUTE AtmIf Iisp Sig Vcd unshapedTransmitQueueing (unshap)

Access	Read and write
Criticality	Component

Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute. When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator.* When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmIisp
Values	common sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Iisp Sig Vcd usageParameterControl (upc)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator.* If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component.

When ***disabled*** is selected, UPC for this connection is disabled.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib: AtmIisp

Values: disabled
sameAsCa

Default: disabled

ATTRIBUTE AtmIf Iisp Sig Vcd trafficDescParm (tdp)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for

CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there

	is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.
Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)

COMPONENT AtmIf Iisp Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate default]
Groups	"GROUP AtmIf Iisp Addr Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Address/address,type* *AtmIf/n Iisp Address/address,type* *AtmIf/n Uni Address/address,type* *AtmIf/n Pnni Address/address,type* *AtmIf/n Vpt/m Aini Address/address,type* *AtmIf/n Vpt/m Iisp Address/address,type* *AtmIf/n Vpt/m Uni Address/address,type* *AtmIf/n Vpt/m Pnni Address/address,type* This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wildcard (‘?’), and a type. The type identifies whether the *Address* component is for a ***primary***, ***alternate, registered***, or ***default*** address. The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses registered through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses.Virtual interfaces do not have addresses of type ***default***.

The wildcard is only valid for provisioned addresses. If the address is a single wildcard, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wildcard static address, then the choice is driven through a round robin algorithm.

The round robin algorithm tries the primary routes and then the alternate routes if none of the primary routes succeed.
If this node participates in a PNNI hierarchy, then a *PnniInfo* subcomponent can be provisioned under the *AtmAddress* component to specify the level to which this address will be advertised.

Mib	AtmIisp
Opt. Subcomp.	"COMPONENT AtmIf Iisp Addr TerminateSPvpAndSPvc (TermSP)" "COMPONENT AtmIf Iisp Addr PnniInfo"
Common Verbs	Help List Display Add DELete

GROUP Atmlf Iisp Addr Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *Address* component.
Mib	AtmIisp

ATTRIBUTE Atmlf Iisp Addr scope

Access	Read: All Write: Illegal
Description	This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been

provisioned, then the scope will default to the level of this node in the PNNI hierarchy. If this node does not participate in a PNNI hierarchy, then this attribute will have the value of -1.

Mib: AtmIisp

Values: Signed (-1..104)

Default: No default

ATTRIBUTE AtmIf Iisp Addr reachability (reach)

Access: Read: All
Write: Illegal

Description: This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.

Mib: AtmIisp

Values: internal
exterior

Default: No default

COMPONENT AtmIf Iisp Addr TerminateSPvpAndSPvc (TermSP)

Scope: Device

Description: *AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc*
AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc
AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc

The presence of this subcomponent indicates that SPvp and SPvc

call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.

Mib: AtmIisp

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Iisp Addr PnniInfo

Groups: "GROUP AtmIf Iisp Addr PnniInfo Provisioned (Prov)"

Scope: Device

Description:

AtmIf/n Aini Addr/address,type PnniInfo
AtmIf/n Iisp Addr/address,type PnniInfo
AtmIf/n Uni Addr/address,type PnniInfo
AtmIf/n Pnni Addr/address,type PnniInfo
AtmIf/n Vpt/m Aini Addr/address,type PnniInfo
AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo
AtmIf/n Vpt/m Uni Addr/address,type PnniInfo
AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo

This component contains provisioned information associated with the ATM address related to PNNI. This component appears only under provisioned *Address* components.

Mib: AtmIisp

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Iisp Addr PnniInfo Provisioned (Prov)

Properties: Provisioned

Description	This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Addr PnniInfo scope

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.
Mib	AtmIisp
Values	Signed (-1..104)
Default	-1

ATTRIBUTE AtmIf Iisp Addr PnniInfo reachability (reach)

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmIisp
Values	internal exterior
Default	internal

COMPONENT AtmIf Iisp CallingAddressScreening (CallingAScr)

Groups	"GROUP AtmIf Iisp CallingAScr Provisioned (Prov)" "GROUP AtmIf Iisp CallingAScr Statistics (Stat)"
Scope	Device
Description	*AtmIf/n Aini CallingAddressScreening* *AtmIf/n Uni CallingAddressScreening* *AtmIf/n Iisp CallingAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM calling addresses (that is, screening SVC calls coming from specific addresses). If this component is not provisioned, all call requests are accepted and no calling address screening takes place.
Mib	AtmIisp
Opt. Subcomp.	"COMPONENT AtmIf Iisp CallingAScr Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Iisp CallingAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CallingAScr* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp CallingAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the calling address screening feature is ***enabled*** or ***disabled***. If ***enabled***, incoming SVC calls are screened against provisioned

addresses. If ***enabled*** and the calling address in the ATM SVC call request is provisioned to be accepted, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled***, and the calling address in the address request is not provisioned, the call is rejected

If the value is ***disabled***, no calling address screening is performed.

Mib	AtmIisp
Values	enabled disabled
Default	disabled

ATTRIBUTE AtmIf Iisp CallingAScr defaultInsertionAddress (defInsAddr)

Access	Read: All Write: All
Description	This attribute specifies the address to be inserted into the SVC connection request if *adminStatus* is ***enabled*** and the connection request does not contain a calling address. If the *adminStatus* attribute is ***enabled*** and this attribute is empty, all incoming SVC calls which do not contain a calling address are rejected.
Mib	AtmIisp
Values	String (0..20, Hex)
Default	""

GROUP AtmIf Iisp CallingAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp CallingAScr acceptedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Iisp CallingAScr rejectedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Iisp CallingAScr unmatchedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Iisp CallingAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected. For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.
Mib	AtmIisp
Common Verbs	Help List Display Add DELete

COMPONENT AtmIf Iisp CalledAddressScreening (CalledAScr)

Groups	"GROUP AtmIf Iisp CalledAScr Provisioned (Prov)" "GROUP AtmIf Iisp CalledAScr Statistics (Stat)"
Scope	Device

Description	*AtmIf/n Aini CalledAddressScreening* *AtmIf/n Uni CalledAddressScreening* *AtmIf/n Iisp CalledAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM called addresses (that is, going to specific destinations). If this component is not provisioned, all call requests are accepted and no called address screening takes place.
Mib	AtmIisp
Opt. Subcomp.	"COMPONENT AtmIf Iisp CalledAScr Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Iisp CalledAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CalledAScr* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp CalledAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the called address screening feature is ***enabled*** or ***disabled***. If the value is ***enabled***, incoming SVC calls will be screened against provisioned called addresses. If the value is ***enabled*** and the called address in the ATM SVC call request has been provisioned, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled*** and the called address in the call request is not provisioned, the call is rejected. If the value is ***disabled***, no called address screening is performed.

Mib	AtmIisp
Values	enabled disabled
Default	disabled

GROUP AtmIf Iisp CalledAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp CalledAScr acceptedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Iisp CalledAScr rejectedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmIisp

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Iisp CalledAScr unmatchedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Iisp CalledAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called

address matches that address is rejected.
For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib: AtmIisp

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Iisp PathTraceFilter (Ptf)

Groups:
"GROUP AtmIf Iisp Ptf Criteria"
"GROUP AtmIf Iisp Ptf Operational (Oper)"
"GROUP AtmIf Iisp Ptf RecordControl (Record)"

Scope: Device

Description:
AtmIf/n Aini PathTraceFilter
AtmIf/n Iisp PathTraceFilter
AtmIf/n Uni PathTraceFilter
AtmIf/n Pnni PathTraceFilter
AtmIf/n Vpt/vpi Aini PathTraceFilter
AtmIf/n Vpt/vpi Iisp PathTraceFilter
AtmIf/n Vpt/vpi Uni PathTraceFilter
AtmIf/n Vpt/vpi Pnni PathTraceFilter

This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced.

When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop*, and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When

AtmPathTraceFilter component is deleted, all records are cleared.

Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted.

The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.

Mib: AtmIisp

Dyn. Subcomp.: "COMPONENT AtmIf Iisp Ptf PathTraceRecord (PTRecord)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB START AtmIf Iisp Ptf

Impact: Service

Description:

START AtmIf/n Aini PathTraceFilter
START AtmIf/n Iisp PathTraceFilter
START AtmIf/n Uni PathTraceFilter
START AtmIf/n Pnni PathTraceFilter
START AtmIf/n Vpt/vpi Aini PathTraceFilter
START AtmIf/n Vpt/vpi Iisp PathTraceFilter
START AtmIf/n Vpt/vpi Uni PathTraceFilter
START AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

VERB STOP AtmIf Iisp Ptf

Impact	Service
Description	*STOP AtmIf/n Aini PathTraceFilter* *STOP AtmIf/n Iisp PathTraceFilter* *STOP AtmIf/n Uni PathTraceFilter* *STOP AtmIf/n Pnni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Aini PathTraceFilter* *STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter* *STOP AtmIf/n Vpt/vpi Uni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command causes the filter to stop, but keeps the trace records.

VERB CLEAR AtmIf Iisp Ptf

Impact	Service
Description	*CLEAR AtmIf/n Aini PathTraceFilter* *CLEAR AtmIf/n Iisp PathTraceFilter* *CLEAR AtmIf/n Uni PathTraceFilter* *CLEAR AtmIf/n Pnni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP AtmIf Iisp Ptf Criteria

Properties	Operational
Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Ptf traceInfo (tInfo)

Access	Read: All Write: All
Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	AtmIisp
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

ATTRIBUTE AtmIf Iisp Ptf calledPartyPrefix (cldPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmIisp

Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf callingPartyPrefix (clgPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmIisp
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf connectionType (type)

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmIisp
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE AtmIf Iisp Ptf connectionConfiguration (config)

Access	Read: All Write: All

Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmIisp
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE AtmIf Iisp Ptf serviceCategory (svcCat)

Access	Read: All Write: All
Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	AtmIisp
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP AtmIf Iisp Ptf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Ptf state

Access	Read: All Write: Illegal

Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active. ***inactive:*** Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.
Mib	AtmIisp
Values	active inactive
Default	inactive

ATTRIBUTE AtmIf Iisp Ptf recordCount

Access	Read: All Write: Illegal
Description	This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords,* which ever is less.
Mib	AtmIisp
Values	Decimal (0..200)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf matchedConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the number of connections that match the criteria of this filter.
Mib	AtmIisp
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf elapsedTime

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	AtmIisp
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE AtmIf Iisp Ptf timeRemaining

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmIisp
Values	Decimal (0..70560)
Units	minutes
Default	No default

GROUP AtmIf Iisp Ptf RecordControl (Record)

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Ptf traceTimeout

Access	Read: All Write: All

Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmIisp
Values	Decimal (1..70560)
Units	minutes
Default	60

ATTRIBUTE AtmIf Iisp Ptf maxTraceRecords (mRecords)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter. Once the maximum has been reached, the oldest record is removed.
Mib	AtmIisp
Values	Decimal (1..200)
Default	2

COMPONENT AtmIf Iisp Ptf PathTraceRecord (PTRecord)

Groups	"GROUP AtmIf Iisp Ptf PTRecord Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord* *AtmIf/n Iisp Ptf PTRecord* *AtmIf/n Uni Ptf PTRecord* *AtmIf/n Pnni Ptf PTRecord* *AtmIf/n Vpt/n Aini Ptf PTRecord* *AtmIf/n Vpt/n Iisp Ptf PTRecord* *AtmIf/n Vpt/n Uni Ptf PTRecord* *AtmIf/n Vpt/n Pnni Ptf PTRecord*

	This component represents the path trace record for the last failed connection against this filter.
Mib	AtmIisp
Dyn. Subcomp.	"COMPONENT AtmIf Iisp Ptf PTRecord Hop"
Common Verbs	Help List Display

GROUP AtmIf Iisp Ptf PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Ptf PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmIisp
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations

Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord timeStamp

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmIisp
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord srcPortId

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmIisp
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord srcPortName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmIisp
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord causeCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmIisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord diagCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmIisp
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Iisp Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	"GROUP AtmIf Iisp Ptf PTRecord Hop Operational (Oper)"
Scope	Device

Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmIisp
Dyn. Subcomp.	"COMPONENT AtmIf Iisp Ptf PTRecord Hop VendorSpecificInfo (Vsi)"
Common Verbs	Help List Display

GROUP AtmIf Iisp Ptf PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmIisp
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop ingressDlci (dlci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop ingressCallReference (callref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message.

	The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmIisp
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop ingressEndPointReference (epref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmIisp
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop nodeId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmIisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop nodeName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmIisp
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop portId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop portName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmIisp

Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop pnniTraceContRefusalIndPresent (refusal)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmIisp
Values	absent present
Default	absent

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop crankbackDestNodeIndPresent (dest)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmIisp
Values	absent present
Default	absent

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop pnniCrankbackGapIndPresent (gap)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmIisp
Values	absent present
Default	absent

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop crankBackCause (cause)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmIisp
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop blockedTransitType (type)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked transit type.

	This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmIisp
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop blockedNodeId (bNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmIisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop blockedLinkPrecedingNodeId (pNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.

Mib	AtmIisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop blockedLinkPortId (bPortId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop blockedLinkSucceedingNodeId (sNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmIisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop dstVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmIisp
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop dstDlci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop dstCallReference (dcr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmIisp
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop dstEndPointReference (depr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmIisp
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop specifiedPath

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmIisp
Values	no yes
Default	no

COMPONENT AtmIf Iisp Ptf PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	"GROUP AtmIf Iisp Ptf PTRecord Hop Vsi Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

	All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmIisp
Common Verbs	Help List Display

GROUP AtmIf Iisp Ptf PTRecord Hop Vsi Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop Vsi length

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmIisp
Values	Decimal (0..11)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop Vsi organizationUniqueId (oui)

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmIisp
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE AtmIf Iisp Ptf PTRecord Hop Vsi data

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmIisp
Values	String (1..8, Hex)
Default	No default

COMPONENT AtmIf Iisp PathTraceTestConnection (Ptt)

Groups	"GROUP AtmIf Iisp Ptt Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini PathTraceTestConnection* *AtmIf/n Iisp PathTraceTestConnection* *AtmIf/n Uni PathTraceTestConnection* *AtmIf/n Pnni PathTraceTestConnection* *AtmIf/n Vpt/vpi Aini PathTraceTestConnection* *AtmIf/n Vpt/vpi Iisp PathTraceTestConnection* *AtmIf/n Vpt/vpi Uni PathTraceTestConnection* *AtmIf/n Vpt/vpi Pnni PathTraceTestConnection* This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface. The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test connection responds with the trace results collected during a complete or partial trace.
Mib	AtmIisp
Common Verbs	Help List Display

VERB TRACE Atmlf Iisp Ptt

Impact	Passive
Description	*TRACE AtmIf/n Aini AtmPathTraceTest* *TRACE AtmIf/n Iisp AtmPathTraceTest* *TRACE AtmIf/n Uni AtmPathTraceTest* *TRACE AtmIf/n Pnni AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest* This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node. Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP Atmlf Iisp Ptt Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *AtmPathTraceTest* component.
Mib	AtmIisp

ATTRIBUTE Atmlf Iisp Ptt traceCrankback

Access	Read: All Write: All
Description	This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.
Mib	AtmIisp
Values	no yes

Default	no

ATTRIBUTE AtmIf Iisp Ptt txTrafficDescType (txTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmIisp
Values	1 2 3 4 5 6 7 8 9
Default	1

ATTRIBUTE AtmIf Iisp Ptt rxTrafficDescType (rxTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.
Mib	AtmIisp
Values	1 2

3
4
5
6
7
8
9
sameAsTx

Default sameAsTx

ATTRIBUTE AtmIf lisp Ptt atmServiceCategory (service)

Access
Read: All
Write: All

Criticality Component

Description This attribute specifies the ATM service category for both directions of the connection.

If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications.

The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of

real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.

Mib: AtmIisp

Values:
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
derivedFromBBC (derived)

Default: unspecifiedBitRate

ATTRIBUTE AtmIf Iisp Ptt fwdQosClass (fwdQos)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the quality of service for the forward direction for this connection.

Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video).

Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D

performance requirements (connection-less data transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib: AtmIisp

Values:
0
1
2
3
4

Default: 0

ATTRIBUTE AtmIf Iisp Ptt bwdQosClass (bwdQos)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the quality of service for the backward direction for this connection.

Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video).

Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.

Mib	AtmIisp
Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE AtmIf Iisp Ptt bearerClassBbc (bcBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network. The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib: AtmIisp

Values:
a
c
x
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Iisp Ptt transferCapabilityBbc (tcBbc)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the transfer capability for this connection. UNI 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

NotApplicable specifies that the user does not want to specify the transfer capability.

The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data.

The value ***NoIndication*** for traffic type is used if the user has not set the traffic type. This is also the case for end-to-end timing.

The value ***yes*** for end-to-end timing indicates that end-to-end timing is required.

The value ***no*** for end-to-end timing indicates that end-to-end timing is not required.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmIisp

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Iisp Ptt clippingBbc (cBbc)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes.

Clipping is an impairment where the first fraction of a second of

information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.

Mib: AtmIisp

Values:
no
yes

Default: no

ATTRIBUTE AtmIf Iisp Ptt bestEffort

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmIisp

Values:
indicated
notIndicated
derivedFromServiceCategory (derived)

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Iisp Ptt testCalledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmIisp
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Iisp Ptt testCalledVpiVci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmIisp
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Iisp Ptt testSpecifiedPath

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmIisp
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Iisp Ptt bwdQosParameters (bqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Iisp Ptt fwdQosParameters (fqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element.

The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element.

The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.

Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Iisp Ptt txTrafficDescParm (txTdp)

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled. When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero. When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for

CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-

zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE AtmIf Iisp Ptt rxTrafficDescParm (rxTdp)

Access	Read: All Write: All
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC). When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused). When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused). When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2. When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1

traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or
I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

COMPONENT AtmIf Iisp ServiceTrace (SrvTrace)

Groups	"GROUP AtmIf Iisp SrvTrace Operational"
Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] Iisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver

is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.

Mib AtmIispTrace

Common Verbs
Help
List
Display
Add
DELete

VERB Start AtmIf Iisp SrvTrace

Impact Service

Description *Start AtmIf/n [Vpt/m] Uni ServiceTrace*
Start AtmIf/n [Vpt/m] Iisp ServiceTrace
Start AtmIf/n [Vpt/m] Pnni ServiceTrace
Start AtmIf/n [Vpt/m] Aini ServiceTrace
This command starts a service trace session.

VERB Stop AtmIf Iisp SrvTrace

Impact Service

Description *Stop AtmIf/n [Vpt/m] Uni ServiceTrace*
Stop AtmIf/n [Vpt/m] Iisp ServiceTrace
Stop AtmIf/n [Vpt/m] Pnni ServiceTrace
Stop AtmIf/n [Vpt/m] Aini ServiceTrace
This command stops a service trace session.

GROUP AtmIf Iisp SrvTrace Operational

Properties Operational

Description This group provides the operational attributes for the *SrvTrace* component.

Mib AtmIispTrace

ATTRIBUTE AtmIf Iisp SrvTrace receiverName (rcvr)

Access Read and write

Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmIispTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE AtmIf Iisp SrvTrace duration

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmIispTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE AtmIf Iisp SrvTrace queueLimit

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmIispTrace
Values	Decimal (1..100)
Units	Kbyte

Default	20

ATTRIBUTE AtmIf Iisp SrvTrace session

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmIispTrace
Values	The name of the component
Default	No default

COMPONENT AtmIf Iisp Reroute

Groups	"GROUP AtmIf Iisp Reroute LocalOperational (LOper)" "GROUP AtmIf Iisp Reroute GlobalOperational (GOper)" "GROUP AtmIf Iisp Reroute Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Iisp Reroute* *AtmIf/n Aini Reroute* *AtmIf/n Uni Reroute* *AtmIf/n Vpt/vpi Iisp Reroute* *AtmIf/n Vpt/vpi Aini Reroute* *AtmIf/n Vpt/vpi Uni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of

this component, or changes to its provisionable attributes, does not affect existing connections.

Mib AtmIisp

Subcomponents "COMPONENT AtmIf Iisp Reroute Ov"

Common Verbs
Help
List
Display
Add
DELete

VERB OPTIMIZE AtmIf Iisp Reroute

Impact Service

Description *Optimize [-all] AtmIf/n Uni outeouteouteouteouteoute*sBy default, only connection segsforation. The best known optimization metric value for the connection segment is indicated by the localOptimalMetricValue attribute under the RerouteInfo component for the connection.
The -all option causes all connection segments subscribed to path optimization to be considered.s

GROUP AtmIf Iisp Reroute LocalOperational (LOper)

Properties Operational

Description This group contains the operational attributes that indicate the local rerouting activities at the interface level.

Mib AtmIisp

ATTRIBUTE AtmIf Iisp Reroute localSubscribedConnections (lsub)

Access Read only

Description This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.

Mib AtmIisp

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute localEligibleRecoveredCon (lerc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute localIneligibleRecoveredCon (lirc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute localLastRrCauseCode (lrrcc)

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	AtmIisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute localPathsOptimized (lPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Iisp Reroute GlobalOperational (GOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Reroute globalSubscribedConnections (gsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute globalEligibleRecoveredCon (gerc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	AtmIisp

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute globalIneligibleRecoveredCon (girc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute globalLastRrCauseCode (grrcc)

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	AtmIisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute globalPathsOptimized (gPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Iisp Reroute Statistics (Stats)

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Reroute totalLocalConnectionRecoveries (tLConRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute totalLocalFailedRecoveries (lFailedRec)

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute totalLocalPathOptimizations (tLPathOpt)

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmIisp

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute totalGlobalConnectionRecoveries (tGConRec)

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute totalGlobalFailedRecoveries (gFailedRec)

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute totalGlobalPathOptimizations (tGPathOpt)

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Iisp Reroute totalOptimizationPasses (optPass)

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Iisp Reroute Ov

Groups	"GROUP AtmIf Iisp Reroute Ov Provisioned (Prov)" "GROUP AtmIf Iisp Reroute Ov LocalProvisioned (LProv)" "GROUP AtmIf Iisp Reroute Ov GlobalProvisioned (GProv)"
Scope	Device
Description	*AtmIf/n Iisp Reroute Ov* *AtmIf/n Aini Reroute Ov* *AtmIf/n Uni Reroute Ov* *AtmIf/n Vpt/vpi Iisp Reroute Ov* *AtmIf/n Vpt/vpi Aini Reroute Ov* *AtmIf/n Vpt/vpi Uni Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.
Mib	AtmIisp
Common Verbs	Help List Display

GROUP AtmIf Iisp Reroute Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.

Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Reroute Ov protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsARtgPnniReroute***: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature. ***ebrOnly***: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.
Mib	AtmIisp
Values	localGlobal localOnly globalOnly localEbr ebrOnly sameAsARtgPnniReroute (sameAs)

Default	sameAsARtgPnniReroute

ATTRIBUTE AtmIf Iisp Reroute Ov numOptAttempts

Access	Read and write
Description	This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization. If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization. If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.
Mib	AtmIisp
Values	Decimal (0..15) sameAsARtgPnniReroute (sameAs)
Default	sameAs

ATTRIBUTE AtmIf Iisp Reroute Ov moduleOptimizationConnections

Access	Read and write
Description	This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component. One of the following values can be specified:

sameAsARtgPnniReroute: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute.
none: No connection segments are considered for path optimization.
recoveredOnly: Only connection segments that are foration. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection
allSubscribed: All connection segments subscribed to path optimization are considered.

Mib: AtmIisp

Values:
none
recoveredOnly
allSubscribed
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE AtmIf Iisp Reroute Ov switchoverMechanism

Access: Read and write

Description: This attribute specifies the mechanism used for switchover of a rerouted connection segment.

One of the following values can be specified:
sameAsARtgPnniReroute: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute.
standard: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”.
rcl: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib: AtmIisp

Values	standard rcl sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

GROUP AtmIf Iisp Reroute Ov LocalProvisioned (LProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for EBR and local rerouting protocols.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Reroute Ov localConnectionRecoverySubscr (lConRec)

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted. One or more of the following values can be specified: ***sameAsARtgPnniReroute:*** If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values. ***svcSvp***: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery. ***sourceSpvcSpvp***: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery.

transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.

Mib: AtmIisp

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Iisp Reroute Ov localPathOptimizationSubscr (lPathOpt)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and

	SPVP connection segments request subscription to local path optimization.
Mib	AtmIisp
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

GROUP AtmIf Iisp Reroute Ov GlobalProvisioned (GProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for the global and EBR rerouting protocol.
Mib	AtmIisp

ATTRIBUTE AtmIf Iisp Reroute Ov globalConnectionRecoverySubscr (gConRec)

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery. Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery. Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one is granted. One or more of the following values can be specified: ***sameAsARtgPnniReroute***: If this value is set, the global or EBR

connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib: AtmIisp

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Iisp Reroute Ov globalPathOptimizationSubscr (gPathOpt)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

Mib: AtmIisp

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

COMPONENT AtmIf NailedUpAccounting (NAcct)

Groups: "GROUP AtmIf NAcct Provisioned (Prov)"

Scope: Device

Description: *AtmIf/n NailedUpAccounting*
This component represents the ATM accounting options for all nailed up connections (PVCs) on this ATM interface. The component must be provisioned in order to perform PVC ATM accounting on this ATM interface.

Mib: AtmCore

Common Verbs:
Help
List
Display
Add
DELete

GROUP AtmIf NAcct Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for PVC accounting.
Mib	AtmCore

ATTRIBUTE AtmIf NAcct accountCollection (aco)

Access	Read: All Write: All
Description	This attribute specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit*** or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA (time of day accounting) changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - when the PVC is deleted (a call record is generated with final cell counts). If none of the reasons is present, then accounting will be suppressed for all PVCs on this interface. Accounting can be suppressed on individual PVCs by specifying a null *correlationTag* attribute in the *AtmIf NAcct* component. The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason*, as appropriate.
Mib	AtmCore
Set of	bill test study audit force
Default	No default

ATTRIBUTE AtmIf NAcct accountConnectionType (act)

Access	Read: All Write: All
Description	This attribute specifies whether accounting records generated for the PVCs on this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record. It may be used by downstream accounting processing to correlate the records. If the value is ***origTerm*** then the value of attribute *connPointType* in the accounting records generated for incoming calls will be ***originating*** and records generated for outgoing calls will be ***terminating***. If the value is ***intermediate*** then the value of attribute *connPointType* in the accounting records generated for all calls will be ***intermediate***.
Mib	AtmCore
Values	origTerm intermediate
Default	origTerm

ATTRIBUTE AtmIf NAcct accountClass (acl)

Access	Read: All Write: All
Description	This attribute specifies the accounting class associated with the PVCs on this interface. Its meaning is determined by the network operator. Its value is recorded in the accounting records generated by this interface, in the attributes, *callingServiceType* and *calledServiceType*.
Mib	AtmCore
Values	Decimal (0..255)

Default	0

ATTRIBUTE AtmIf NAcct serviceExchange (sre)

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is recorded in the accounting records generated by this interface, in the attributes, *callingDse* and *calledDse*.
Mib	AtmCore
Values	Decimal (0..255)
Default	0

COMPONENT AtmIf VirtualPathTerminator (Vpt)

Instance	Decimal (0..4095)
Groups	"GROUP AtmIf Vpt OsiState (State)" "GROUP AtmIf Vpt Operational (Oper)" "GROUP AtmIf Vpt Status" "GROUP AtmIf Vpt Statistics (Stats)"

"COLLECTED STATS AtmInterface VirtualPathTerminator"

Scope	Device
Description	*AtmIf/n VirtualPathTerminator/vpi* This component represents a virtual path terminator (VPT). The

instance value defines the VPI value for this connection—for example, *Vpt/120* defines a terminator with a VPI of 120.

Mib	AtmCore
Subcomponents	"COMPONENT AtmIf Vpt VirtualPathDescriptor (Vpd)"
Opt. Subcomp.	"COMPONENT AtmIf Vpt ConnectionAdministrator (CA)" "COMPONENT AtmIf Vpt Iisp" "COMPONENT AtmIf Vpt Pnni" "COMPONENT AtmIf Vpt UserNetworkInterface (Uni)" "COMPONENT AtmIf Vpt Aini"
Dyn. Subcomp.	"COMPONENT AtmIf Vpt TrafficManagement (Tm)"
Dyn. Subcomp.	"COMPONENT AtmIf Vpt VirtualChannelConnection (Vcc)"
Common Verbs	Help List Display Add DELete

VERB TRACE AtmIf Vpt

Impact	Service
Description	*TRACE AtmIf/n Vpt/vpi* *TRACE -p AtmIf/n Vpt/vpi*

This command traces the path of an intra-network segment of a connection. It displays the names of interface and connection components found along this segment of a connection path. The trace output also includes the *Virtual Path Terminator (VPT)* at the end of the path, should one exist.

The option for the OAM trace is as follows:

-*p*: Selects the Nortel Networks proprietary OAM Connection Management Trace instead of the proprietary OAM Legacy Loopback Trace. If no options are provided, the default configuration uses the Legacy Loopback Trace.

GROUP AtmIf Vpt OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmCore
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Vpt operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmCore
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf Vpt usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmCore
Values	idle active (activ) busy

Default	idle

GROUP AtmIf Vpt Operational (Oper)

Properties	Operational
Description	This group contains operational information for a *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt connectionPointType (cpt)

Access	Read only
Description	This attribute reflects the role of the connection component at this interface. A value of ***connectionEndPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are processed by the connection component. A value of ***segmentEndPoint*** indicates that user cells and end-to-end OAM cells are relayed by the connection component, while segment OAM cells are processed by the connection component. A value of ***connectingPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are relayed by the connection component. A value of ***unknown*** indicates that the connection component is inactive.
Mib	AtmCore
Values	connectionEndPoint segmentEndPoint connectingPoint unknown
Default	No default

GROUP AtmIf Vpt Status

Properties	Operational

Description	This group contains operational status information for a *Vcc*, *Vpc* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt operStatus (opStat)

Access	Read only
Description	This attribute indicates the present operational status of the *Vcc*, *Vpc* or *Vpt* component. Its value is dependent upon the current state of the *segLinkSideLoopbackState* and *endToEndLoopbackState* attributes. The value is ***end2endUp*** when the *endToEndLoopbackState* is ***good*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***end2endDown*** when the *endToEndLoopbackState* is ***bad*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***unknown*** and the *segLinkSideLoopbackState* is ***good***. The value is ***localDown*** when *segLinkSideLoopbackState* is ***bad***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***notApplicable*** and the *segLinkSideLoopbackState* is ***good***. The value is ***unknown*** when the *endToEndLoopbackState* is either ***unknown*** or ***notApplicable*** and the *segLinkSideLoopbackState* is ***unknown***.
Mib	AtmCore
Values	unknown end2endUp end2endDown

localUpEnd2endUnknown
localDown

Default — No default

ATTRIBUTE AtmIf Vpt localFailureCause

Access — Read only

Description — This attribute indicates the failure cause of the *Vcc*, *Vpc* or *Vpt* component. A value of ***noFailure*** indicates that there is currently no bandwidth related failure for this connection.

A value of ***portDown*** indicates that the interface corresponding to the parent *AtmIf* is down.

A value of ***localBwLoss*** indicates that the *AtmIf* has lost some, but not all bandwidth, and as a result, this connection has been released.

A value of ***notAdmitted*** indicates that this connection has failed to be admitted by the Connection Admission Control (CAC) algorithm.

A value of ***appNotRegistered*** indicates that there is no application registered to use this connection. This may be the case, for example when there is a *Vcc Test* application, but the test has not been started. Check the status of the application to determine why it is not functional.

A value of ***disabledByApp*** indicates that the application using this connection has requested that the connection be disabled. An example is a connection used by a trunk application where the trunk has timed out on an attempt to stage. Check the application to determine why it is not fully functional.

A value of ***bwReduced*** indicates that this connection is operating in a reduced bandwidth state. It is a bandwidth elastic connection which currently has been allocated less than the requested (equivalent) bandwidth.

A value of ***vpDown*** indicates that this connection has been

notified of a fault detected at the associated VP-layer. A value of ***vpDown*** is applicable for *Vpt Vcc*s only.

Mib: AtmCore

Values:
noFailure
localBwLoss
portDown
notAdmitted
appNotRegistered
disabledByApp
bwReduced
vpDown

Default: No default

ATTRIBUTE AtmIf Vpt troubled

Access: Read only

Description: This attribute indicates whether or not the connection is in a troubled state. Connections become troubled because of OAM failures; when one of the attributes *segLinkSideLoopbackState*, *segSwitchSideLoopbackState*, *endToEndLoopbackState*, *aisState* (when receiving AIS cells only) or *rdiState* go bad, this attribute is set to ***yes***; otherwise it is set to ***no***.

Mib: AtmCore

Values:
no
yes

Default: no

ATTRIBUTE AtmIf Vpt segLinkSideLoopbackState (segLkLbkState)

Access: Read only

Description: This attribute contains the current state of the link-side segment loopback for this connection. Link-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the link (port). The value of this attribute is dependent upon the current setting of the *segLinkSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state

(if applicable).

The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint***.

The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***.

The value is ***good*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the segment link side loopback is working.

The value is ***bad*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the link side segment loopback is not working.

The value is ***unknown*** when the *segLinkSideLoopback* is ***off***.

The value is ***unknown*** when the value of the *segLinkSideLoopback* attribute is ***on***, the *connectionPointType* attribute is set to ***segmentEndPoint*** or ***connectionEndPoint***, and the segment link side loopback has not yet been determined.

The state of this attribute determines, in part, the value of the *operStatus* attribute**.**

Mib: AtmCore

Values:
good
bad
unknown
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt segSwitchSideLoopbackState (segSwLbkState)

Access: Read only

Description: This attribute contains the current state of the switch-side segment loopback for this connection. Switch-side segment

loopback cells are transmitted (inserted) by a connection component in the direction of the bus. The value of this attribute is dependent upon the current setting of the *segSwitchSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable).

The value is only applicable when the *connectionPointType* is a ***segmentEndPoint***. The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or ***connectionEndPoint***. The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***.

The value is ***good*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback is working.

The value is ***bad*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the switch side segment loopback is not working.

The value is ***unknown*** when the *segSwitchSideLoopback* is ***off***.

The value is ***unknown*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback has not been determined.

Mib: AtmCore

Values:
good
bad
unknown
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt endToEndLoopbackState (eeLbkState)

Access: Read only

Description: This attribute contains the current state of the end-to-end loopback for this connection. Its value is dependent upon the current setting of the *endToEndLoopback* provisionable attribute

and the connection point type as specified by the *connectionPointType* attribute.

The value is only applicable when the *connectionPointType* is a ***connectionEndPoint***. The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or s***egmentEndPoint***. The value is ***notApplicable*** when the *distributionType* is a ***pointToMultipoint***.

The value is ***good*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is working.

The value is ***bad*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is not working.

The value is ***unknown*** when the *endToEndLoopback* is ***off***.

The value is ***unknown*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback status has not been determined.

The state of this attribute determines, in part, the value of the *operStatus* attribute.

Mib: AtmCore

Values:
good
bad
unknown
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt rxOamCellCongestionState (rxOamCongState)

Access: Read only

Description: This attribute contains the current state of the receive side OAM cell congestion for this connection. Its value reflects whether the rate of received OAM cells for this connection is below a specified threshold. The connection maintains a count of the

number of OAM cells which are terminated per second. Once that count exceeds the specified threshold, extraction of all OAM cells for this connection is disabled for a period of one minute. This is a congestion management mechanism to prevent the processor from being overloaded with handling OAM cells for a particular connection. This mechanism ensures that tasks, such as trunks obtain enough processor cycles to remain in service, and are not adversely affected by excessive rate of OAM cells on a particular connection.

The value is ***good*** when the rate of received OAM cells is less than the allowed threshold.

The value is ***bad*** when the arrival rate has exceeded the allowed threshold. It remains ***bad*** for one minute, before returning to ***good*** again. During this timeout, extraction of all OAM cells is disabled for this connection. As a result, other loopback failure conditions may occur.

The value is ***unknown*** when the application has not yet begun to use this connection. An example is the *Test* component before a test has been started.

Each type of OAM cell is counted separately. The threshold for AIS cells is three cells per second. If more than three AIS cells are received within a one second interval, this attribute is set to ***bad***. The threshold for RDI cells and each loopback type is also three, but the threshold for trace cells is 250 per second.

The state of this attribute has no direct effect on the value of the *operStatus* attribute or on the number of troubled connections.

Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt aisState

Access	Read only
Description	This attribute contains the current state of the Alarm Indication Signal for this connection. A value of ***good*** indicates that the connection's application is active and no alarm has occurred. A value of ***bad*** indicates that the connection's application is active and an alarm has occurred. A value of ***unknown*** indicates that the connection's application is inactive. A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt rdiState

Access	Read only
Description	This attribute indicates the current state of the Remote Defect Indication for this connection. A value of ***good*** indicates that the connection's application is active and no alarm has occurred. A value of ***bad*** indicates that the connection's application is active and an alarm has occurred. A value of ***unknown*** indicates that the connection's application is

inactive.

A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.

Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

GROUP AtmIf Vpt Statistics (Stats)

Properties	Operational
Description	This group contains traffic statistics for a *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt txCell

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt txCellClp (txClp)

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection with the CLP=1.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpt txCellDiscard (txcd)

Access: Read only

Description: This attribute counts the number of cells received from the backplane on this connection that have been discarded.

Discarded cells are not counted in the *txCell* attribute.

Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscard* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpt txCellDiscardClp (txcdClp)

Access	Read only
Description	This attribute counts the number of cells received from the backplane on this connection with CLP=1 that have been discarded. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed. This count is included in the *txCellDiscard* attribute. Discarded cells are not counted in the *txCellClp* attribute. Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscardClp* values for all connections associated with the *Vpt*. When both ingress and egress of a port is down, txcells are silently discarded. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer

Default	No default

ATTRIBUTE AtmIf Vpt txFrameDiscard (txfd)

Access	Read only
Description	This attribute counts the number of frames received from the backplane on this connection that have been discarded. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed. Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled. This count is independent of the *txCell* or *txCellDiscard* attribute. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscard* values for all connections associated with the *Vpt*. Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscard* attribute. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer

Default No default

ATTRIBUTE AtmIf Vpt txFrameDiscardClp (txfdClp)

Access Read only

Description This attribute counts the number of discarded frames on this connection that were received from the backplane and composed of one or more CLP=1 cells.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled.

This count is included in the *txFrameDiscard* attribute.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscardClp* values for all connections associated with the *Vpt*.

Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscardClp* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib AtmCore

Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt rxCell

Access	Read only
Description	This attribute counts the number of cells that have been received from the interface on this connection. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells that have been discarded by the interface due to non-conformance with UPC. For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down. For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2,*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when the PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down and is increased when either the SPVC or SPVP connection is down. For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted. For ***16pOC3PosAtm*** card, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM

cells are transmitted.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpt rxCellClp (rxClp)

Access: Read only

Description: This attribute counts the number of cells that have been received from the interface on this connection with the CLP=1.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpt rxCellDiscard (rxcd)

Access: Read only

Description: This attribute counts the number of cells received from the interface on this connection that have been discarded. This count is included in the *rxCell* attribute.

This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells discarded due to non-conformance with UPC.

For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscard* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc*, are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscard* attribute.

For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down, regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, this count will be reset to 0 when either PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or only F4 and F5 OAM cells are transmitted.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib — AtmCore

Values — Long Integer

Default — No default

ATTRIBUTE AtmIf Vpt rxCellDiscardClp (rxcdClp)

Access — Read only

Description — This attribute counts the number of cells received from the interface on this connection with CLP=1 that have been discarded. This count is included in the *rxCell* and *rxCellDiscard* attributes.

This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that

reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscardClp* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc*, are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscardClp* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpt rxFrameDiscard (rxfd)

Access: Read only

Description: This attribute counts the number of frames received from the interface on this connection that have been discarded. This count is independent of the *rxCellDiscard* attribute.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a

connectionPointType of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscard* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpt rxFrameDiscardClp (rxfdClp)

Access: Read only

Description: This attribute counts the number of discarded frames on this connection that were received from the interface and composed of one or more CLP1 cells. This count is included in the *rxFrameDiscard* attribute. It is independent of the *rxCellDiscard* attribute.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do

AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscardClp* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpt rxUpcViolationOnEnforcer1 (rxEnforcer1)

Access: Read only

Description: This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 1. This attribute is only applicable if UPC is enforced or monitored on the connection.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed.

When the value of the *rxTrafficDescType* attribute for this connection is 3, 4, 5, 6, 7, 8, or 9 (for UBR with MDCR connections) Enforcer 1 enforces conformance of traffic received from the interface to PCR CLP0+1.

When the value of the *rxTrafficDescType* attribute for this connection is 9 (for ABR connections), Enforcer 1 performs the Dynamic Generic Cell Rate Algorithm (DGCRA) used for the Available Bit Rate (ABR) service category.

If UPC is enforced all non-conforming cells are discarded by this enforcer. These discarded cells are included in the *rxCellDiscard* attribute.

For basic *Vpt*s, this attribute provides an aggregated total of all *rxUpcViolationOnEnforcer1* values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpt rxUpcViolationOnEnforcer2 (rxEnforcer2)

Access	Read only
Description	This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 2. This attribute is only applicable if UPC is enforced or monitored on the connection.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed.

This attribute is only applicable if the value of the *rxTrafficDescType* attribute for this connection is 4, 5, 6, 7, or 8.

When the value of the *rxTrafficDescType* attribute is 4, or 5**,** Enforcer 2 enforces conformance of traffic received from the interface to PCR CLP0.

When the value of the *rxTrafficDescType* attribute is 6**,** Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0+1.

When the value of the *rxTrafficDescType* attribute is 7, or 8,

Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0.

If UPC is enforced, Enforcer 2 discards non-conforming cells for *rxTrafficDescType* values of 4, 6, and 7. It tags non-conforming cells for *rxTrafficDescType* values of 5, and 8. Discarded cells are counted in the rxCellDiscard attribute.

For basic *Vpt*s, this attribute provides an aggregated total of all *rxUpcViolationOnEnforcer2* values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpt rxAal5FrameError (rxfer)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have AAL5 length errors or AAL5 CRC errors. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed. AAL5 length or CRC errors typically occur because of cell discards due to congestion, UPC, or due to corruption of data between the AAL5 segmentation and reassembly end points. This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a

connectionPointType of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameError* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpt rxAal5FrameAbort (rxfa)

Access: Read only

Description: This attribute counts the number of frames received from the interface on this connection that have the AAL5 length field set to zero.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed.

An AAL5 length of zero is an indication by the far end segmentation point, to this reassembly point, that the frame is to be discarded without reassembly. This mechanism is typically used by a segmentation point if it detects an error in a frame after some of the cells belonging to that frame have already been transmitted.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all

rxAal5FrameAbort values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

COLLECTED STATS AtmInterface VirtualPathTerminator

Description: The statistics record generated by the AtmInterface VirtualPathTerminator component.

ATTRIBUTE AtmIf Vpt remoteInstance

Description: This attribute indicates the remote ATM interface, as provisioned in the *remoteAtmInterfaceLabel*.

Values: String (0..60, ASCII)

ATTRIBUTE AtmIf Vpt provRate

Description: This attribute indicates the provisioned bandwidth for this ATM interface.

Values: Decimal (0..4294967295)

Units: cell/s

ATTRIBUTE AtmIf Vpt actualRate

Description: This attribute indicates the actual bandwidth for this ATM interface. When no errors occur it has a value equal to *provRate*. When the link (or IMA group) is down for the entire collection interval it has a value of zero. When the link goes down during the collection interval it has a value representing the average bandwidth during the collection interval.

Values: Decimal (0..4294967295)

Units: cell/s

ATTRIBUTE AtmIf Vpt txUtilization

Description

This attribute indicates the average transmit traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth.

On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%.

If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.

Values

Decimal (0..65535)

Units

%

ATTRIBUTE AtmIf Vpt rxUtilization

Description

This attribute indicates the average receive traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth.

On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%.

	If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.
Values	Decimal (0..65535)
Units	%

ATTRIBUTE AtmIf Vpt txMaxCellRate

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt txMaxCellRateByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txMinCellRate

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt txMinCellRateByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txAvgCellRate

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt txAvgCellRateByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxMaxCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt rxMaxCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxMinCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt rxMinCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxAvgCellRate

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt rxAvgCellRateByServiceCat

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txMaxCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt txMaxCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txMinCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt txMinCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txAvgCellRateClp

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt txAvgCellRateClpByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxMaxCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt rxMaxCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxMinCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt rxMinCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxAvgCellRateClp

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt rxAvgCellRateClpByServiceCat

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txCellDiscards

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt txCellDiscardsByServiceCat

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxCellDiscards

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt rxCellDiscardsByServiceCat

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt txFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt rxFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt txCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt rxCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt txFrameDiscardsClpByServiceCat

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt rxFrameDiscardsClpByServiceCat

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

COMPONENT AtmIf Vpt VirtualPathDescriptor (Vpd)

Groups	"GROUP AtmIf Vpt Vpd Loopback (Lbk)" "GROUP AtmIf Vpt Vpd Accounting (Acct)" "GROUP AtmIf Vpt Vpd Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vpt/vpi Vpd* The *Vpt Vpd* component contains provisioning information about its parent *Vpt* component.
Mib	AtmCore
Subcomponents	"COMPONENT AtmIf Vpt Vpd TrafficManagement (Tm)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Vpd Loopback (Lbk)

Properties	Provisioned
Description	This group contains the provisionable loopback attributes for a *Vcc*, *Vpc*, or *Vpt* component. Note that certain loopback requests may not be possible on a given connection. In such cases, the corresponding operational loopback attribute in the *Status* group of the *Vcc*, *Vpc*, or *Vpt*

component indicates ***notApplicable*** and the requested loopback is not performed.

If loopbacks are provisioned to be on, and for any reason the segment or end-to-end OAM loopback cells are not relayed, the connection component becomes troubled, and user cell traffic may be discarded. If loopbacks are provisioned to be on, all of the nodes in the segment, and external networks which are in the end-to-end connection must relay the OAM loopback cells.

Mib AtmCore

ATTRIBUTE AtmIf Vpt Vpd segLinkSideLoopback (segLkLbk)

Access Read and write

Description This attribute specifies whether link-side segment loopback insertion should be performed on this connection.

A value of ***sameAsInterface*** means the link-side segment loopback insertion for the connection is based on the *segLinkSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has link-side segment loopback insertion turned on, then link-side segment loopback insertion is also on for the connection.

A value of ***on***, or ***off*** means link-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component.

Note that link-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***. Link-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *segLinkSideLoopbackState* attribute indicates ***notApplicable*** and link-side segment loopback insertion is not performed.

Link-side segment loopback insertion is always possible on a *Vpt*.

Mib AtmCore

Values	on off sameAsInterface
Default	sameAsInterface

ATTRIBUTE AtmIf Vpt Vpd segSwitchSideLoopback (segSwLbk)

Access	Read and write
Description	This attribute specifies whether switch-side segment loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the switch-side segment loopback insertion for the connection is based on the *segSwitchSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has switch-side segment loopback insertion turned on, then switch-side segment loopback insertion is also on for the connection. A value of ***on***, or ***off*** means switch-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component. Note that switch-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint*** or ***connectionEndPoint***. Switch-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint*** In such cases, the operational *segSwitchSideLoopbackState* attribute indicates ***notApplicable*** and switch-side segment loopback insertion is not performed. Switch-side segment loopback is never possible on a *Vpt*.
Mib	AtmCore
Values	on off sameAsInterface
Default	sameAsInterface

ATTRIBUTE AtmIf Vpt Vpd endToEndLoopback (eeLbk)

Access	Read and write
Description	This attribute specifies whether end-to-end loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the end-to-end loopback insertion for the connection is based on the *endToEndLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has end-to-end loopback insertion turned on, then end-to-end loopback insertion is also on for the connection. A value of ***on***, or ***off*** means end-to-end loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component. Note that end-to-end loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***, or ***segmentEndPoint***. End-to-end loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *endToEndLoopbackState* attribute indicates ***notApplicable*** and end-to-end loopback insertion is not performed. End-to-end loopback insertion is always possible on a *Vpt*.
Mib	AtmCore
Values	on off sameAsInterface
Default	sameAsInterface

ATTRIBUTE AtmIf Vpt Vpd mCastConnectionType (connType)

Access	Read and write
Criticality	Component
Description	This attribute specifies if this *Vcc* or *Vpc* is part of point-to-point or point-to-multiPoint connection.

A value of ***pointToMultiPointRoot*** must be set when this *Vcc* has an *Msrc* or an *Mnrp* subcomponent, or this *Vpc* has an *Mnrp* subcomponent.

A value of ***pointToMultiPointLeaf*** must be set when this *Vcc* or *Vpc* has a *Nrp* subcomponent and its *nextHop* attribute is linked to a *Mnrp* component.

Otherwise a value of ***pointToPoint*** must be set.

Mib: AtmCore

Values:
pointToPoint (ptp)
pointToMultipointRoot (pmpRoot)
pointToMultipointLeaf (pmpLeaf)

Default: pointToPoint

GROUP AtmIf Vpt Vpd Accounting (Acct)

Properties: Provisioned

Description: This group contains the provisionable ATM accounting attributes for a *Vcc*, *Vpc*, or *Vpt* component.

Mib: AtmCore

ATTRIBUTE AtmIf Vpt Vpd correlationTag (tag)

Access: Read and write

Description: This attribute specifies a unique identifier for each end of a PVC. It that may be used by downstream processing systems to correlate accounting records issued at different nodes in the network. The attribute can be up to 64 bytes long. If it is less than 64 bytes, it is zero filled on the right to create a 64 byte value. The resulting value is recorded in the attribute *callConnId* for this PVC's ATM accounting records.

If the value is a null string then this PVC does not have any accounting records generated for it.

Mib: AtmCore

Values	String (0..64, ASCII)
Default	""

GROUP AtmIf Vpt Vpd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable ATM Virtual Path Descriptor attributes for a *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt Vpd vptType

Access	Read and write
Description	This attribute specifies the type of the *Vpt*. A value of ***basic*** configures one level of traffic management (TM) for the VPT, at the VC level. VCs within the VP are treated like independent VCC connections, and thus, are scheduled the same as other VCs under the *AtmIf*, with no scheduling done for the VP itself. A value of ***standard*** configures two levels of traffic management (TM) for the VPT, one level for VP TM and one level for VC TM. VCs within the VP use weighted fair queuing to schedule the VCs within the VPT, with VCs differentiated as either real-time (CBR, rt-VBR) or non-real-time (nrt-VBR, UBR) connections. The VP itself has a full range of emission scheduling and service category differentiation available between itself and the other connections under the *AtmIf*. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***1pOC48ChSmIrAtm,*** and ***4pMRPosAtm*** cards, all *Vpts* must be ***basic***. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***,

	3pDS3Atm2, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards, *Vpts* may be of any type.
Mib	AtmCore
Values	basic standard
Default	basic

COMPONENT AtmIf Vpt Vpd TrafficManagement (Tm)

Groups	"GROUP AtmIf Vpt Vpd Tm Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Vcd TrafficManagement,* *AtmIf/n Vpc/vci Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci Vcd TrafficManagement* This component contains provisioned traffic management attributes of a connection. It is added automatically when a *Vcc*, *Vpc*, or *Vpt* is added in provisioning mode. It is a mandatory subcomponent of the *Vcd* or *Vpd* component.
Mib	AtmCore
Opt. Subcomp.	"COMPONENT AtmIf Vpt Vpd Tm AvailableBitRate (Abr)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Vpd Tm Provisioned (Prov)

Properties	Provisioned
Description	This group contains traffic related provisionable attributes for the *Vcc*, *Vpc*, and *Vpt* components. Changing any of the attributes in this group causes a service interruption on the *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt Vpd Tm txTrafficDescType (txTdt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	1

ATTRIBUTE AtmIf Vpt Vpd Tm fwdQosClass (fwdQos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. This attribute is only used for SPVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer).

Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib: AtmCore

Values:
0
1
2
3
4

Default: 0

ATTRIBUTE AtmIf Vpt Vpd Tm txQueueLimit (txQlim)

Access: Read and write

Criticality: Component

Description: This attribute specifies an override to the default transmit queue limit for this connection.

A value of ***sameAsCa*** means that the default common or per-VC transmit queue limit, as defined by the CA service category, is used for this connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***sameAsCa*** must be specified.

A value from 5 to 512,000 means that the connection transmit queue limit differs from the default common or per-VC transmit queue limit, as defined by the CA service category. A value other than ***sameAsCa*** is ignored for connections where common queuing is specified for the service category.

For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the per-VC utilization limit of the service category common queue.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the valid range for this attribute is from 5 to 512000

inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

On all other cards, the valid range for this attribute is from 5 to 63488 inclusive.

The actual transmit queue limit for a connection is visible in the *Vcc Tm*, *Vpc Tm* or *Vpt txQueueThresholds* attribute.

This attribute is not applicable for basic *Vpt*s.

Mib	AtmCore
Values	Decimal (5..1011840) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm holdingPriority (hpri)

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. The default holding priority for a provisioned connection is higher then default holding priorities for dynamic (SVC) connections. The value of this attribute may be overridden by certain applications, for example *Vcc Test*, which use this connection. This attribute is not applicable for *Vpt Vcc*s.

Mib	AtmCore
Values	0 1 2 3 4
Default	2

ATTRIBUTE AtmIf Vpt Vpd Tm rxTrafficDescType (rxTdt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute. The value ***sameAsTx*** means the *rxTrafficDescType* as well as the *rxTrafficDescParm* attribute values are taken from the values of the *txTrafficDescType* and *txTrafficDescParm* attributes.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE AtmIf Vpt Vpd Tm bwdQosClass (bwdQos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. This attribute is only used for SPVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters. The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.
Mib	AtmCore
Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE AtmIf Vpt Vpd Tm atmServiceCategory (service)

Access	Read and write
Criticality	Component

Description

This attribute specifies the ATM service category for both directions of the connection.

The value ***derivedFromBBC*** may only be used if the *Src* or *Dst* component is provisioned under this connection. Otherwise a specific ATM service category must be specified.

A value of ***derivedFromBBC*** means the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

A value other than ***derivedFromBBC*** means the value of this attribute is used to override the provisioned BBC Information Element parameters. In this case, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application.

The ***rtVariableBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real-time VBR service may support statistical multiplexing of real-time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non real-time VBR service may support statistical multiplexing of connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

The ***unspecifiedBitRate*** service is intended for non real-time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmCore
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) availableBitRate (abr) derivedFromBBC (derived)
Default	unspecifiedBitRate

ATTRIBUTE AtmIf Vpt Vpd Tm trafficShaping (trShaping)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. This attribute is ignored if the *atmServiceCategory* is ***availableBitRate***. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is ignored.

A value of ***sameAsCa*** means traffic shaping for the connection is based on the value of the *trafficShaping* attribute of the connection's service category component under the *CA*. If the service category has *trafficShaping* set to ***enabled*** or ***inverseUpc***, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm*, *Vpc Tm*, or *Vpt Tm* components.

A value of ***disabled*** means traffic shaping for this connection is disabled regardless of the provisioning of the connection's service category component.

Mib	AtmCore
Values	disabled sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm unshapedTransmitQueueing (unshap)

Access	Read and write
Criticality	Component
Description	This attribute specifies the transmit queuing method for this connection if it is unshaped. The two possible methods are per-VC queuing and common queuing. This attribute does not apply if the connection is shaped. A value of ***sameAsCa*** means the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *CA*. A value of ***common*** means transmit traffic on this unshaped connection is destined for the common queue. For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32,

1pOC12SmLrAtm, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***1pOC48ChSmIrAtm***, and ***4pMRPosAtm*** cards, this attribute must have the value ***sameAsCa***.

This attribute is ignored in the following situations:
- if the connection has *trafficShaping* ***enabled*** or ***inverseUpc***, or
- if the *atmServiceCategory* is ***availableBitRate***, or
- if the *atmServiceCategory* is ***constantBitRate***, or
- for basic *Vpt*s and standard *Vpt Vcc*s.

Mib — AtmCore

Values — common
sameAsCa

Default — sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm weight

Access — Read and write

Criticality — Component

Description — This attribute specifies an override for the weight of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, and basic *Vpt*s.

A value of ***sameAsCa*** means the weight is determined by the *weightPolicy* attribute under the *CA* service category component for all but standard *Vpt Vcc*s. For standard *Vpt Vcc*s, the weight is determined by the *Vcc*'s service category, when the value is set to ***sameAsCa***.

A value from 1 to 4095 means that value is used for the fairness weight of this connection relative to other connections. For all but standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the *Vpt*.

A value of ***upToQueueLimit*** means the fairness weight is limited only by the *txQueueLimit*.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, the value ***upToQueueLimit*** is not permitted.

Mib	AtmCore
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm forceTagging (tagging)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether force tagging of the CLP bit is enforced for cells of this connection. Force tagging can be enabled for permanent connections of any service category and on switched connections of UBR service category. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards, and for *Vpt*s, this attribute is not applicable and is ignored. A value of ***sameAsCa*** means the force tagging functionality is determined by the *forceTagging* attribute under the *CA* service category component. A value of ***enabled*** means force tagging is enabled. When this option is selected, the CLP bit is set to 1 for all cells on the connection.

A value of ***disabled*** means force tagging is disabled. When this option is selected, the CLP bit is unchanged for cells on the connection.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction. In this case, cells which are tagged are counted in the *txCellClp* attribute.

Mib: AtmCore

Values: sameAsCa
enabled
disabled

Default: sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm usageParameterControl (upc)

Access: Read and write

Criticality: Component

Description: This attribute specifies whether this connection enables usage parameter control (UPC) when receiving traffic from the ATM interface.

The value ***sameAsCa*** means UPC for the connection is based on the value of the *usageParameterControl* attribute of the service category component under the *AtmIf CA*. If the service category has UPC ***enforced*** or ***monitored***, then UPC is enabled on the connection.

The value ***disabled*** means UPC for this connection is disabled regardless of the provisioning of the service category.

The value ***enforced*** means UPC for this connection is enforced regardless of the provisioning of the service category. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*.

The value ***monitored*** means UPC for this connection is monitored regardless of the provisioning of the service category. When UPC is monitored, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged.

Note that setting UPC to ***enforced*** or ***monitored*** may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc*, *Vpc*, and *Vpt* components.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported.

For ***1pOC48ChSmIrAtm*** cards, the values ***enforced***, and ***monitored***, are not supported.

Mib: AtmCore

Values:
enforced
disabled
sameAsCa
monitored

Default: sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm bearerClassBbc (bcBbc)

Access: Read and write

Criticality: Component

Description: This attribute specifies the bearer capability. This attribute is only used for SPVC and SPVP connections. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory*

attribute must be set to ***derivedFromBBC***, but not both.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***) and timing requirements are user defined (that is, transparent to the network).When ***x*** is set the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.

Class **vp** service is used to specify a transparent VP service. When the value of this attribute is vp, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except or VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP connections.

Mib	AtmCore
Values	a c x vp derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Vpd Tm transferCapabilityBbc (tcBbc)

Access	Read and write
Criticality	Component
Description	This attribute specifies the transfer capability for this connection. Uni 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> 0: NoIndication, NoIndication 1: NoIndication, yes 2: NoIndication, no 5: CBR, yes 8: VBR, NoIndication 9: VBR, yes 10: VBR, no The value ***notApplicable*** specifies that the user does not want to specify the transfer capability. The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data. The value no indication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing. The value yes for end-to-end timing indicates that end-to-end timing is required. The value no for end-to-end timing indicates that end-to-end timing is not required. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmCore

Values	0 1 2 5 8 9 10 notApplicable derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Vpd Tm txWredThreshold

Access	Read and write
Criticality	Component
Description	This attribute specifies the threshold for weighted random early detection (WRED). This threshold is calculated as a percentage of the early packet discard (EPD) threshold, which is 85% of the transmit queue length. When the value is ***25%***, WRED starts as soon as the queue is 25% of the way to the EPD threshold. When the value is ***50%***, WRED starts later, after the queue is 50% of the way to the EPD threshold. When the value is ***75%***, WRED starts only when the queue is 75% of the way to the EPD threshold. This attribute is ignored if the value of the *txWredMode* or *txPacketWiseDiscard* attributes is ***disabled.*** For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.
Mib	AtmCore
Values	Decimal (25; 50; 75)
Units	%
Default	25

ATTRIBUTE AtmIf Vpt Vpd Tm clippingBbc (cBbc)

Access	Read and write
Criticality	Component
Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.
Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE AtmIf Vpt Vpd Tm bestEffort

Access	Read and write
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to

derivedFromServiceCategory, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmCore

Values:
indicated
notIndicated
derivedFromServiceCategory (derived)

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Vpd Tm txPacketWiseDiscard (txpd)

Access: Read and write

Criticality: Component

Description: This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the transmit data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s.

For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

Packet-wise functions increase the “goodput” of the link. The transmit packet-wise functions are Early Packet Discard (EPD) and Partial Packet Discard (PPD).

EPD allows the connection to discard an entire frame once the transmit queue has reached the EPD threshold. EPD increases the “goodput” of a link, since discarding an entire frame means that some queue capacity is guarded for some other frame which is already partially transmitted. All cells of the frame are discarded from the Beginning of Message (BOM) cell up to and including the End of Message (EOM) cell.

PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the packet-wise discard functions are PPD and EPD. PPD is applicable at cell-transfer points. PPD is not applicable at frame-to-cell conversion points, and is not applicable for *Vpc*s. PPD is configured by this attribute. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded. EPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***16pOC3PosAtm***, ***1pOC48ChSmIrAtm,*** and ***4pMRPosAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Both PPD and EPD are controlled by this attribute. This attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

A value of ***enabled*** means packet-wise discard functions are applied to transmit traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to transmit traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the backward

direction. When this attribute is set to ***disabled***, backward frame discard is not requested in the SPVC call setup.

The transmit packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute.

Mib: AtmCore

Values: disabled
enabled

Default: disabled

ATTRIBUTE AtmIf Vpt Vpd Tm rxPacketWiseDiscard (rxpd)

Access: Read and write

Criticality: Component

Description: This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the receive data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s.

For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

Packet-wise functions increase the “goodput” of the link. The receive packet-wise function is Partial Packet Discard (PPD).

PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded, for example due to UPC. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD is available at all VCC connection points where UPC may be activated. PPD is not applicable for *Vpcs*. Packet-wise discards should only be enabled for connections carrying AAL5

segmentation traffic. Setting the value to ***enabled*** for any other traffic type may result in traffic being discarded. PPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC48ChSmIrAtm*** cards, this attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

A value of ***enabled*** means packet-wise discard functions are applied to receive traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to receive traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the forward direction. When this attribute is set to ***disabled***, forward frame discard is not requested in the SPVC call setup.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. A value of ***enabled*** for the *rxPacketWiseDiscard* attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in enabling packet-wise discard functions on these cards. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

The receive packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm rxPacketWiseDiscard* operational attribute.

Mib: AtmCore

Values: disabled
enabled

Default: disabled

ATTRIBUTE AtmIf Vpt Vpd Tm txWredMode

Access: Read and write

Criticality: Component

Description: This attribute specifies the activation of weighted random early detection (WRED) functionality. WRED is considered a packet-wise discard function and as such applies only to AAL5 frame traffic.

WRED is applied in the transmit direction for this connection. WRED function should be enabled only for connections which are transferring TCP/IP traffic. WRED acts to prevent synchronization of multiple TCP/IP sources by randomly discarding a small percentage of frames when transmit queue congestion reaches the designated level. WRED may also be used to differentiate service on VCC's by preferentially discarding one VCC before another. Discards start at 0% of cells, when the queue is part-way to the Early Packet Discard (EPD) threshold, and rise to 100% of cells discarded at the EPD threshold. WRED discards all the cells in a frame.

A value of ***enabled*** means WRED is enabled for all applications linked to the given *Vcc*.

A value of ***perFlow*** means each TCP application has individual control over whether to enable or disable WRED.

If the value of the *txPacketWiseDiscard* attribute is ***disabled***, or if the value of this attribute is ***disabled***, WRED functionality is disabled.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, the value of this attribute must be ***disabled***.

If WRED is active, it is visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute.

This attribute is not applicable for *Vpt*s or *Vpt Vcc*s.

Mib: AtmCore

Values:
disabled
enabled
perFlow

Default: disabled

ATTRIBUTE AtmIf Vpt Vpd Tm abrConnectionType (abrType)

Access: Read and write

Criticality: Component

Description: This attribute specifies the type of ABR behavior which is to be enforced at this connection. This attribute is only applicable if the value of the *atmServiceCategory* attribute is ***availableBitRate***. If the value of the *atmServicecategory* attribute is not ***availableBitRate***, this attribute is ignored.

The value ***sameAsCa*** is used to request the default behavior as specified in the *CA Abr* component for this *Vcc*. Otherwise, this attribute overrides the default behavior.

The value ***virtualSourceDest*** is used to request that this connection point function as a virtual source/virtual destination.

The value ***sourceDest*** requires that this connection point function as a S/D for RM cells. S/D mode is automatically invoked at this connection point either if this is a connection end point, or if the next hop connection point is configured as ***nonAbrInterworking***.

The value ***nonAbrInterworking*** is used to request that this connection point function as an interworking between ABR and non-ABR service categories. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***.

The value ***abrSwitch*** is used to request ABR switch behavior for this connection point. The ABR switch behavior is first, to conform to ***virtualSourceDest*** or ***nonAbrInterworking*** setting on the next hop, and otherwise to implement ABR ER switch behavior.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the only allowable values are ***sameAsCa***, ***nonAbrInterworking*** or ***abrSwitch***. If ***abrSwitch*** is selected, EFCI marking behavior is implemented.

For ***1pOC12SmLrAtm*** cards, the only allowable values are ***sameAsCa*** or ***abrSwitch.*** If ***abrSwitch*** is selected, EFCI marking behavior is implemented.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the only allowable value is ***sameAsCa***.

The actual ABR functionality which is in effect is visible in the *Vcc/Vpc/Vpt Tm abrConnectionType* operational attribute.

Mib	AtmCore
Values	abrSwitch virtualSourceDest sourceDest nonAbrInterworking sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm txTrafficDescParm (txTdp)

Access	Read and write
Criticality	Component

Description

This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute.

The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR, MCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *txTrafficDescType* is 1 or 2, all of the parameters must be set to zero.

When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must

be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 4 and parameter 5 represent are not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter 3. Parameter 3 may be optionally zero.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate. When the *atmServiceCategory* is ***availableBitRate*** (ABR), the shaping rate is dynamically chosen, based on the ABR flow control mechanism, as a value between the MCR and the PCR or the requested shaping rate if applicable.

For *txTrafficDescType* 3, 4 and 5, the transmit traffic is shaped at the next available shaping rate less than the PCR.

For *txTrafficDescType* 6, 7 and 8 if linear traffic shaping is selected, the transmit traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

For *txTrafficDescType* 6, 7 and 8 if inverse-UPC traffic shaping is selected, the transmit traffic is shaped at a variable rate which conforms to the PCR, SCR and MBS of the connection traffic descriptor.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE AtmIf Vpt Vpd Tm rxTrafficDescParm (rxTdp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. If the value of the *rxTrafficDescType* attribute is ***sameAsTx***, the values provisioned in this attribute are ignored. The traffic parameters for the receive direction are taken from the *txTrafficDescParm* attribute.

The values of peak cell rate (PCR), sustained cell rate (SCR), and Minimum Cell Rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. The value of CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for usage parameter control (UPC).

When *rxTrafficDescType* is 1 or 2, all of the parameters must be set to zero (unused).

When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused).

When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameter 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

If the value of CDVT either in parameter 2 or in parameter 4 is zero, the CDVT is taken from the *CA* defaults for the particular *atmServiceCategory* of this connection.

Parameter 5 of the *rxTrafficDescParm* is always unused.

When *rxTrafficDescriptorType* is 3 through 8, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware. The *check prov* command detects such cases and generates an error message. If this happens, adjust the parameters until they fall within the supported limits.
To calculate the limits, use the following formulae:
I1 = 1,000,000,000 / PCR
L1 = CDVT * 1000
I2 = 1,000,000,000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is 6 through 8.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, I1 and I2 must be less than or equal to 335,523,840. I1 + L1 must be less than or equal to 1,342,156,800. I2 + L2 must be less than or equal to 1,342,156,800. If the values of I1, L1, I2 or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:

I1 > 41,940,480 or
I2 > 41,940,480 or
I1 + L1 > 167,769,600 or
I2 + L2 > 167,769,600
then both I1 and I2 must be greater than 20,480.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, L2 must be less than or equal to 2,674,011,406.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, L2 must be less than or equal to 17,179,869,180.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE AtmIf Vpt Vpd Tm fwdQosParameters (fqp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The *cdv* element specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR the CDV is irrelevant, and its value is forced to the default. The *ctd* specifies the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end to end transit delay information element. For nrt-VBR and UBR the CTD is irrelevant, and its value is forced to the default. The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the

	extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.
Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Vpt Vpd Tm bwdQosParameters (bqp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of two elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The *cdv* specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR, the CDV is irrelevant, and its value is forced to the default. The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.
Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv clr
Default	(cdv: 16777215, clr: 255)

COMPONENT AtmIf Vpt Vpd Tm AvailableBitRate (Abr)

Groups	"GROUP AtmIf Vpt Vpd Tm Abr Provisioned (Prov)"

Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Vcd Tm AvailableBitRate,* *AtmIf/n Vpc/vci Vpd Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vpd Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vcc/vci Vcd Tm AvailableBitRate* This component contains provisioned ABR-related attributes of a connection. It is an optional subcomponent of the *Vcd Tm* and *Vpd Tm* component. It is used to override DGCRA-related defaults in the *CA Abr* component. It contains the specific configuration for the ABR connection at this connection point. If this is the source of an SPVC connection, this component also contains the ABR parameters required for the SPVC call request.
Mib	AtmCore
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Vpd Tm Abr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes for the ABR ATM connections configured on an ATM interface.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt Vpd Tm Abr initialCellRate (icr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period. The value ***sameAsCa*** means the initial cell rate is determined by the *AtmIf CA Abr*/0 *icr* attribute.

The value ***useMcr*** means ICR is set to the same value as the Minimum Cell Rate (MCR) for the connection.

The value ***usePcr*** means ICR is set to the same value as the Peak Cell Rate (PCR) for the connection.

If the value is less than the MCR of the connection, then the MCR is used as the ICR. If the value is more than PCR of the connection, then PCR is used as the ICR.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.

Mib	AtmCore
Values	Decimal (0..16777215) sameAsCa useMcr usePcr
Units	cell/s
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm Abr transientBufferExposure (tbe)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the source to send during start-up periods, before the first Resource Management (RM) cell returns. TBE divided by *fixedRoundTripTime* determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. TBE divided by *maxCellsPerRmCell* specifies the operational value of *forwardRmCellLimit*, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells.

	This attribute is ignored under all conditions where the operational attribute *abrConnectionType* is set to ***erSwitch***.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	16777215

ATTRIBUTE AtmIf Vpt Vpd Tm Abr fixedRoundTripTime (frtt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. The value of *transientBufferExposure* divided by the value of FRTT (in seconds) determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	5000000

ATTRIBUTE AtmIf Vpt Vpd Tm Abr rateDecreaseFactor (rdf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the provisioned

value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256.

RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

Mib	AtmCore
Values	Decimal (0..15) sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm Abr rateIncreaseFactor (rif)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64. RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.
Mib	AtmCore

Values	Decimal (0..15) sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm Abr maxCellPerRmCell (nrm)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell. A value of 2 is not recommended although it is permitted according to the ATM Forum standard. When this attribute is set to a value of 2, it is possible that only one forward and one backward RM cell are repeatedly transmitted, and all data traffic is queued up indefinitely. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.
Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm Abr maxTimeBetweenRmCells (trm)

Access	Read and write
Criticality	Component
Description	This attribute specifies the TRM parameter for this connection. TRM provides an lower bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least two other cells have been sent, then the

next cell to be transmitted would be a forward RM cell.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

The provisioned value of 781 is signaled as TRM = 0, in the ABR Additional Parameters Information Element.
1563 is signaled as TRM = 1.
3125 is signaled as TRM = 2.
6250 is signaled as TRM = 3.
12500 is signaled as TRM = 4
25000 is signaled as TRM = 5.
50000 is signaled as TRM = 6.
100000 is signaled as TRM = 7.

Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm Abr cutoffDecreaseFactor (cdf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero. CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the CRM parameter, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

The value of CRM is indicated by the *forwardRmCellLimit* attribute.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.

Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64) sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm Abr acrDecreaseTimeFactor (adtf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the maximum time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..1023) sameAsCa
Units	centiseconds
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm Abr dgcraMaximumDelay (dgcraMaxDelay)

Access	Read and write
Criticality	Component
Description	This attribute specifies an upper bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward direction). This upper bound may be approximated as the sum of the round trip fixed and propagation delays and the maximum queuing delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When there is a reduction in the Allowed Cell Rate (ACR), the policer waits for a correspondingly longer period of time before it enforces at the new cell rate. The value of this attribute must not be less than the *dgcraMinimumDelay* attribute.
Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm Abr dgcraMinimumDelay (dgcraMinDelay)

Access	Read and write
Criticality	Component
Description	This attribute specifies a lower bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward connection).

This lower bound may be approximated as the sum of the round trip fixed and propagation delays between the ABR source and this interface.

The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A smaller value for this attribute implies a more lenient policer. When there is a increase in the Allowed Cell Rate (ACR), the policer waits for a correspondingly shorter period of time before it enforces at the new cell rate.

Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vpd Tm Abr farEndAcrDecreaseTimeFactor (feAdtf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) of the far end ABR source. The value specified should be the same as the ADTF parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the value of this attribute, the policer begins to limit enforce the incoming traffic at the initial cell rate (ICR) of the far end, as specified by the *farEndInitialCellRate* attribute.
Mib	AtmCore
Values	Decimal (0..1023)

Units	centiseconds
Default	50

ATTRIBUTE AtmIf Vpt Vpd Tm Abr farEndInitialCellRate (feIcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Initial Cell Rate (ICR) of the far end ABR source. The value specified should be the same as the ICR parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the *farEndAcrDecreaseTimeFactor* attribute, the policer begins to enforce the incoming traffic at the value of this attribute. If this attribute is specified less than the MCR of the connection, then the MCR is used as the *feIcr*. If this attribute is more than the PCR of the connection, then PCR is used as the *feIcr*.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cell/s
Default	0

COMPONENT AtmIf Vpt ConnectionAdministrator (CA)

Groups	"GROUP AtmIf Vpt CA Provisioned (Prov)" "GROUP AtmIf Vpt CA Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vpt/n ConnectionAdministrator* This component controls connection admission and reports statistics about the ATM connections which have been admitted

on this Virtual Path Terminator (VPT).

If the VPT does not have the optional *CA* component, all connections associated with the given *VPT* attempt their admission through the *AtmIf CA*.

The provisionable attributes of this *ConnectionAdministrator* override those of the *AtmIf CA*, for all connections associated with this *Vpt*. Any attributes of the *AtmIf CA* that cannot be overridden in the *Vpt CA* affect all connections, including *Vpt* VCCs.

Mib: AtmCore

Subcomponents:
"COMPONENT AtmIf Vpt CA ConstantBitRate (Cbr)"
"COMPONENT AtmIf Vpt CA RealTimeVariableBitRate (RtVbr)"
"COMPONENT AtmIf Vpt CA NonRealTimeVariableBitRate (NrtVbr)"
"COMPONENT AtmIf Vpt CA AvailableBitRate (Abr)"
"COMPONENT AtmIf Vpt CA UnspecifiedBitRate (Ubr)"

Common Verbs:
Help
List
Display
Add
DELete

GROUP AtmIf Vpt CA Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioned attributes which specify the behavior of Connection Admission Control (CAC) for the ATM connections associated with a Virtual Path Terminator. Note that the names of some of the attributes follow the conventions of UNI 4.0 for forward compatibility reasons. This does not imply conformance in general with the UNI 4.0 specification.

The provisioned attributes of this *ConnectionAdministrator* override those of the *AtmIf CA*, for all connections associated with this *Vpt* component. Any attributes of the *AtmIf CA* that

	cannot be overridden in the *Vpt CA* affect all connections, including *Vpt* VCCs.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt CA maxVccs (vccs)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of VCCs that can be associated with this *Vpt* component. The value must not exceed the *maxVccs* attribute of the *Atmif CA*. A value of ***autoConfigure*** means an appropriate value is selected based on the card type. For ***2pSTM1eCh***, and MSA32 cards, the value is ***100***. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, the value is ***127***. For all other cards, the value is ***255***.
Mib	AtmCore
Values	Decimal (0..16384) autoConfigure
Default	autoConfigure

ATTRIBUTE AtmIf Vpt CA permittedAtmServiceCategories (permitAtm)

Access	Read and write
Criticality	Component
Description	This attribute specifies which ATM service categories are permitted on this *Vpt* for SVCs. The value of this attribute does not affect control VCCs, such as signaling and ILMI channels. If the value is empty, no SVCs are permitted to use this *Vpt*.
Mib	AtmCore
Set of	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)

Default	(unspecifiedBitRate, constantBitRate, rtVariableBitRate, nrtVariableBitRate)

ATTRIBUTE AtmIf Vpt CA bandwidthPool (bwPool)

Access	Read and write
Description	Total *Vpt* bandwidth capacity is partitioned into five bandwidth pools. This attribute specifies the percentage of *Vpt* bandwidth that is allowed for each pool. The percentage for each pool ranges from 0% to 12,800%. This allows for both under and over subscription of the *Vpt* bandwidth. Under subscription occurs when the sum of the percentages assigned to the five pools is less than 100%. Over subscription occurs when the sum of the percentages for the five pools exceeds 100%.
Mib	AtmCore
Vector of	Decimal (0..12800)
Units	%
Index	Decimal (1..5)
Default	(100, 0, 0, 0, 0)

GROUP AtmIf Vpt CA Operational (Oper)

Properties	Operational
Description	This group contains operational attributes giving statistics about the ATM connections associated with a Virtual Path Terminator (VPT).
Mib	AtmCore

ATTRIBUTE AtmIf Vpt CA actualMaxVccs (mVccs)

Access	Read only
Description	This attribute indicates the maximum number of VCCs that can be supported on this *Vpt*. The value includes both provisioned and dynamic connections. This value is determined from the provisioned attribute *maxVccs*.
Mib	AtmCore

Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf Vpt CA permanentVccs (pVccs)

Access	Read only
Description	This attribute indicates the number of permanent VCCs that are currently associated with this *Vpt*.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf Vpt CA switchedVccs (sVccs)

Access	Read only
Description	This attribute indicates the number of switched VCCs that are currently associated with this *Vpt*.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf Vpt CA troubledVccs (trVccs)

Access	Read only
Description	This attribute indicates the number of troubled VCCs associated with this *Vpt*. A *Vcc* is “troubled” if its operational *troubled* attribute has the value ***yes***.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE AtmIf Vpt CA connectionPoolUsage (connUsage)

Access	Read only

Description	This attribute indicates the number of allocated VCCs associated with this *Vpt*. Each of these VCCs uses a single connection. Each *Vcc* reduces the number of connections indicated in the *Lp Eng Arc connectionPoolAvailable*, or *protectedConnectionPoolAvailable* attributes, and increases the number of connections indicated in *Arc connectionPoolUsage*, or *protectedConnectionPoolUsage* attributes.
Mib	AtmCore
Values	Decimal (0..10752)
Default	No default

ATTRIBUTE AtmIf Vpt CA poolAvailableBandwidth (poolAvailBw)

Access	Read only
Description	This attribute indicates the total available bandwidth in the bandwidth pool. A positive value indicates that there is still bandwidth available in the pool which has not been allocated. A negative value indicates that some bandwidth-elastic provisioned connections are running in reduced mode, where their allocated bandwidth is below their originally allocated ECR. The negative amount is equal to the sum of the *bwReduction* attribute for all connections.
Mib	AtmCore
Vector of	Signed (0..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf Vpt CA poolProvisionedBandwidth (poolProvBw)

Access	Read only
Description	This attribute indicates the total bandwidth from the bandwidth pool that is specified by provisioned connections. The value of

	this attribute is the sum of the equivalent cell rate (ECR) of the provisioned connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf Vpt CA poolRequestedBandwidth (poolRequBw)

Access	Read only
Description	This attribute indicates the total requested bandwidth from the bandwidth pool. This attribute includes the bandwidth for ATM networking signaling connections. The value of this attribute is the sum of the equivalent cell rate (ECR) for connections which are admitted, and for connections which are requesting admission, but have not yet been admitted.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf Vpt CA poolAdmittedBandwidth (poolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted bandwidth from the bandwidth pool. This attribute includes the bandwidth for ATM networking signaling connections. The value of this attribute is the sum of the equivalent cell rate (ECR) of the admitted connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)

Units	cell/s
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf Vpt CA poolAdmittedConnections (poolAdmConns)

Access	Read only
Description	This attribute counts the connections which are currently admitted in the bandwidth pool. This attribute includes ATM networking signaling connections.
Mib	AtmCore
Vector of	Decimal (0..16384)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf Vpt CA poolWaitAdmitConnections (poolWaitAdmConns)

Access	Read only
Description	This attribute counts the connections which have requested admission in the bandwidth pool but are not yet admitted. This attribute does not include ATM networking signaling connections.
Mib	AtmCore
Vector of	Decimal (0..16384)
Index	Decimal (1..5)
Default	No default

COMPONENT AtmIf Vpt CA ConstantBitRate (Cbr)

Instance	Decimal (0)
Groups	"GROUP AtmIf Vpt CA Cbr Provisioned (Prov)"
Scope	Device

Description	*AtmIf/n Vpt/n CA ConstantBitRate/n* This component controls default characteristics of the constant bit rate (CBR) service category, for VCCs administered by this *CA*. Any attributes of the *AtmIf CA Cbr* that cannot be overridden in the *Vpt CA Cbr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf Vpt CA Cbr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control Connection Admission Control (CAC) and Usage Parameter Control (UPC) attributes for the CBR ATM connections managed by this *Vpt*. Any attributes of the *AtmIf CA Cbr* that cannot be overridden in the *Vpt CA Cbr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt CA Cbr pool

Access	Read and write
Criticality	Component
Description	This attribute specifies the bandwidth pool which is to be used to support the constant bit rate (CBR) service category. The percentage of *Vpt* bandwidth capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to CBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *Vpt CA* component.
Mib	AtmCore
Values	pool1 pool2

	pool3 pool4 pool5
Default	pool1

ATTRIBUTE AtmIf Vpt CA Cbr cdvt

Access	Read and write
Criticality	Component
Description	This attribute specifies the default cell delay variation tolerance (CDVT) for connections of the CBR service category. An override to this default may be specified for a provisioned connection under the *Vcd Tm* or *Vpd Tm* component. This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required by a given CBR connection. The larger the value of CDVT, the larger is its ECR. If Usage Parameter Control (UPC) is enabled for a connection, CDVT is used by the UPC function to decide whether a cell is conforming or non-conforming based on the connection's traffic descriptor type. The larger the CDVT value, the more tolerant is the UPC of bandwidth usage beyond the traffic contract.
Mib	AtmCore
Values	Decimal (1..10000)
Units	microsec
Default	250

ATTRIBUTE AtmIf Vpt CA Cbr cdv

Access	Read and write
Description	This attribute specifies the peak-to-peak cell delay variation (CDV) which is contributed to all CBR connections associated with this *Vpt*. The CDV is a measure of the delay jitter introduced mostly by

traffic buffering and cell scheduling.

This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this *Vpt* can meet the CDV requirement for that connection. If so, the value of this attribute is added to the cumulative CDV field of the extended QoS information element.

Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec
Default	250

ATTRIBUTE AtmIf Vpt CA Cbr maxCtd

Access	Read and write
Description	This attribute specifies the maximum cell transfer delay (MaxCTD) which is applied to all CBR connections associated with this *Vpt*. MaxCTD is the sum of the fixed delay and the CDV. The components of the fixed delay include propagation delay through the physical media, delays induced by the transmission system and fixed components of switch processing delay. This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this *Vpt* can meet the ATM connection's MaxCTD requirement.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec
Default	1000

ATTRIBUTE AtmIf Vpt CA Cbr cellLossRatio (clr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the tolerable cell loss ratio (CLR) for CBR traffic. The value specified is the negative base 10 logarithm of the CLR. For example, if the target CLR = 1E-10 then the value of the *cellLossRatio* attribute is ***10***. The value of this attribute must be the same as the value of the *RtVbr cellLossRatio* attribute since CBR and rt-VBR traffic have the same discard priority. This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required for CBR connections. There is a trade-off between the service category CLR and the achievable *Vpt* bandwidth utilization. To guarantee an excellent service category, the CLR should be as small as possible (for example, 1E-10). However, a smaller CLR results in a larger equivalent cell rate for a given connection and hence a lower *Vpt* bandwidth utilization. A value of ***anyClrValue*** means that no bandwidth is reserved for CBR connections, and CAC is effectively turned off. All CBR connections are admitted.
Mib	AtmCore
Values	Decimal (1..15) anyClrValue
Default	10

COMPONENT AtmIf Vpt CA RealTimeVariableBitRate (RtVbr)

Instance	Decimal (0)
Groups	"GROUP AtmIf Vpt CA RtVbr Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vpt/n CA RealTimeVariableBitRate/n* This component controls default characteristics of the real-time variable bit rate (rt-VBR) service category, for VCCs

administered by this *CA*. Any attributes of the *AtmIf CA RtVbr* that cannot be overridden in the *Vpt CA RtVbr* affect all connections, including *Vpt* VCCs.

Mib: AtmCore

Common Verbs:
- Help
- List
- Display
- Add

GROUP AtmIf Vpt CA RtVbr Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioned attributes which control Connection Admission Control (CAC) for the rt-VBR ATM connections associated with this *Vpt*. Any attributes of the *AtmIf CA RtVbr* that cannot be overridden in the *Vpt CA RtVbr* affect all connections, including *Vpt* VCCs.

Mib: AtmCore

ATTRIBUTE AtmIf Vpt CA RtVbr pool

Access: Read and write

Criticality: Component

Description: This attribute specifies the bandwidth pool which is to be used to support the real-time variable bit rate (rt-VBR) service category. The percentage of *Vpt* bandwidth capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to rt-VBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *Vpt CA* component.

Mib: AtmCore

Values:
- pool1
- pool2
- pool3
- pool4
- pool5

Default	pool1

ATTRIBUTE AtmIf Vpt CA RtVbr cdv

Access	Read and write
Description	This attribute specifies the peak-to-peak cell delay variation (CDV) which is contributed to all rt-VBR connections associated with this *Vpt*. The CDV is a measure of the delay jitter introduced mostly by traffic buffering and cell scheduling. This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine whether this *Vpt* can meet the CDV requirement for that connection. If so, the value of this attribute is added to the cumulative CDV field of the extended QoS information element.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec
Default	1268

ATTRIBUTE AtmIf Vpt CA RtVbr maxCtd

Access	Read and write
Description	This attribute specifies the maximum cell transfer delay (MaxCTD) which is applied to all rt-VBR connections associated with this *Vpt*. MaxCTD is the sum of the fixed delay and the CDV. The components of the fixed delay include propagation delay through the physical media, delays induced by the transmission system and fixed components of switch processing delay. This attribute is used by PNNI in the Resource Availability Information Group (RAIG) topology updates and route selection. It is also used by CAC at connection set-up time to determine

	whether this *Vpt* can meet the ATM connection's MaxCTD requirement.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	microsec
Default	2000

ATTRIBUTE AtmIf Vpt CA RtVbr cellLossRatio (clr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the tolerable cell loss ratio (CLR) for rt-VBR traffic. The value specified is the negative base 10 logarithm of the CLR. For example, if the target CLR = 1E-10 then the value of the *cellLossRatio* attribute is ***10***. The value of this attribute must be the same as the value of the *Cbr cellLossRatio* attribute since CBR and rt-VBR traffic have the same discard priority. The value of this attribute must also be greater than or equal to the value of the *NrtVbr cellLossRatio* attribute since rt-VBR traffic has a higher discard priority. This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required for rt-VBR connections. There is a trade-off between the service category CLR and the achievable *Vpt* bandwidth utilization. To guarantee an excellent service category, the CLR should be as small as possible (for example, 1E-10). However, a smaller CLR results in a larger equivalent cell rate for a given connection and hence a lower *Vpt* bandwidth utilization. A value of ***anyClrValue*** means that no bandwidth is reserved for rt-VBR connections and CAC is effectively turned off. All rt-VBR connections are admitted.
Mib	AtmCore

Values	Decimal (1..15) anyClrValue
Default	10

COMPONENT AtmIf Vpt CA NonRealTimeVariableBitRate (NrtVbr)

Instance	Decimal (0)
Groups	"GROUP AtmIf Vpt CA NrtVbr Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vpt/n CA NonRealTimeVariableBitRate/n* This component controls default characteristics of the non-real-time variable bit rate (nrt-VBR) service category, for VCCs administered by this *CA*. Any attributes of the *AtmIf CA NrtVbr* that cannot be overridden in the *Vpt CA NrtVbr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf Vpt CA NrtVbr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control Connection Admission Control (CAC) for the nrt-VBR ATM connections associated with this *Vpt*. Any attributes of the *AtmIf CA NrtVbr* that cannot be overridden in the *Vpt CA NrtVbr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt CA NrtVbr pool

Access	Read and write
Criticality	Component

Description	This attribute specifies the bandwidth pool which is to be used to support the non-real time variable bit rate (nrt-VBR) service category. The percentage of *Vpt* bandwidth capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to nrt-VBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *Vpt CA* component.
Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

ATTRIBUTE AtmIf Vpt CA NrtVbr cellLossRatio (clr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the tolerable cell loss ratio (CLR) for nrt-VBR traffic. The value specified is the negative base 10 logarithm of the CLR. For example, if the target CLR = 1E-10 then the value of the *cellLossRatio* attribute is ***10***. The value of this attribute must be less than or equal to the value of the *RtVbr cellLossRatio* attribute since rt-VBR traffic has a higher discard priority. This attribute is used by the Connection Admission Control (CAC) algorithm to compute the equivalent cell rate (ECR) required for nrt-VBR connections. There is a trade-off between the service category CLR and the achievable *Vpt* bandwidth utilization. To guarantee an excellent service category, the CLR should be as small as possible (for example, 1E-10). However, a smaller CLR results in a larger equivalent cell rate for a given connection and hence a lower *Vpt* bandwidth utilization.

A value of ***anyClrValue*** means that no bandwidth is reserved for nrt-VBR connections and CAC is effectively turned off. All nrt-VBR connections are admitted.

Mib: AtmCore

Values: Decimal (1..15)
anyClrValue

Default: 7

COMPONENT AtmIf Vpt CA AvailableBitRate (Abr)

Instance: Decimal (0)

Groups: "GROUP AtmIf Vpt CA Abr Provisioned (Prov)"

Scope: Device

Description: *AtmIf/n Vpt/n CA AvailableBitRate/n*
This component controls default characteristics of the available bit rate (ABR) service category, for VCCs administered by this *CA*. Any attributes of the *AtmIf CA Abr* that cannot be overridden in the *Vpt CA Abr* affect all connections, including *Vpt* VCCs.

Mib: AtmCore

Common Verbs:
- Help
- List
- Display
- Add

GROUP AtmIf Vpt CA Abr Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioned attributes which control Connection Admission Control (CAC) for ABR connections associated with this *Vpt*. Any attributes of the *AtmIf CA Abr* that cannot be overridden in the *Vpt CA Abr* affect all connections, including *Vpt* VCCs.

Mib: AtmCore

ATTRIBUTE AtmIf Vpt CA Abr pool

Access	Read and write
Criticality	Component
Description	This attribute specifies the bandwidth pool which is to be used to support the available bit rate (ABR) service category. The percentage of *Vpt* bandwidth capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to ABR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *Vpt CA* component.
Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

COMPONENT AtmIf Vpt CA UnspecifiedBitRate (Ubr)

Instance	Decimal (0)
Groups	"GROUP AtmIf Vpt CA Ubr Provisioned (Prov)" "GROUP AtmIf Vpt CA Ubr Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vpt/n CA UnspecifiedBitRate/n* This component controls default characteristics of the unspecified bit rate (UBR) service category, for VCCs administered by this *CA*. Any attributes of the *AtmIf CA Ubr* that cannot be overridden in the *Vpt CA Ubr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore
Common Verbs	Help List Display Add

GROUP AtmIf Vpt CA Ubr Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes which control Connection Admission Control (CAC) attributes for UBR connections associated with this *Vpt*. Any attributes of the *AtmIf CA Ubr* that cannot be overridden in the *Vpt CA Ubr* affect all connections, including *Vpt* VCCs.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt CA Ubr maxVccs (vccs)

Access	Read and write
Description	This attribute specifies the maximum number of UBR VCCs that can be associated with this *Vpt*. The value of this attribute must not exceed the *maxVccs* attribute of the parent *Vpt CA* component. A value of ***sameAsCa*** means the maximum number of UBR VCCs is defined by the *maxVccs* attribute of the *Vpt CA*. Changes to this attribute are not critical to the *Vpt*, and do not affect existing VCCs. If the value is changed to a number smaller than the current number of active UBR VCCs, no new UBR VCCs are admitted until the number of active UBR VCCs drops below the value of this attribute. The current number of active UBR VCCs is indicated by the *vccUsage* operational attribute of the *Vpt CA Ubr* component.
Mib	AtmCore
Values	Decimal (0..16384) sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpt CA Ubr pool

Access	Read and write
Criticality	Component

Description	This attribute specifies the bandwidth pool which is to be used to support the unspecified bit rate (UBR) service category. The percentage of *Vpt* bandwidth capacity reserved for the given bandwidth pool is the maximum bandwidth that can be allocated to UBR traffic. The percentage allocated to each bandwidth pool can be provisioned through the *bandwidthPool* attribute of the *Vpt CA* component.
Mib	AtmCore
Values	pool1 pool2 pool3 pool4 pool5
Default	pool1

ATTRIBUTE AtmIf Vpt CA Ubr minimumCellRate (mcr)

Access	Read and write
Description	This attribute specifies the default minimum cell rate (MCR) which is allocated from the UBR bandwidth pool for each UBR connection which is admitted using Connection Admission Control (CAC). UBR connections normally are serviced on a best effort basis, but this attribute allows allocation of a default minimum bandwidth for each connection.
Mib	AtmCore
Values	Decimal (0..2147483647)
Default	0

GROUP AtmIf Vpt CA Ubr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for UBR connections associated with this *Vpt*.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt CA Ubr vccUsage

Access	Read only
Description	This attribute indicates the number of active UBR VCCs associated with this *Vpt*. It includes switched and permanent connections.
Mib	AtmCore
Values	Decimal (0..16384)
Default	No default

COMPONENT AtmIf Vpt Iisp

Groups	"GROUP AtmIf Vpt Iisp Provisioned (Prov)" "GROUP AtmIf Vpt Iisp AccountingOptions (AcctOpt)" "GROUP AtmIf Vpt Iisp VIispProvisioned (VProv)"
Scope	Device
Description	*AtmIf/n VirtualPathTerminator/m Iisp* This component represents a virtual ATM Interim Inter-switch Signaling Protocol (IISP) interface. If this component is provisioned, neither a *Uni*, an *Aini*, nor a *Pnni* component can be

provisioned under the same *Vpt* component. If this component is deleted, then all associated *Vcc* components are deleted.

Mib	AtmIisp
Subcomponents	"COMPONENT AtmIf Vpt Iisp Signalling (Sig)"
Opt. Subcomp.	"COMPONENT AtmIf Vpt Iisp CallingAddressScreening (CallingAScr)" "COMPONENT AtmIf Vpt Iisp CalledAddressScreening (CalledAScr)" "COMPONENT AtmIf Vpt Iisp PathTraceFilter (Ptf)" "COMPONENT AtmIf Vpt Iisp ServiceTrace (SrvTrace)" "COMPONENT AtmIf Vpt Iisp Reroute"
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Iisp PathTraceTestConnection (Ptt)"
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Iisp Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Iisp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Iisp* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp version

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which specification the IISP interface complies with. The options are ***iisp10Sig30*** which refers to IISP version 1.0 with 3.0 signaling and ***iisp10Sig31*** which refers to

	IISP version 1.0 with 3.1 signaling. If this attribute is changed, all switched *Vcc* components in this interface are cleared due to the fact that the two versions are incompatible.
Mib	AtmIisp
Values	iisp10Sig30 iisp10Sig31
Default	iisp10Sig31

ATTRIBUTE AtmIf Vpt Iisp side

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which side the interface is, user or network.
Mib	AtmIisp
Values	networkSide userSide
Default	networkSide

ATTRIBUTE AtmIf Vpt Iisp softPvpAndPvcRetryPeriod (sRetryPeriod)

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	AtmIisp
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE AtmIf Vpt Iisp softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmIisp
Values	Decimal (0; 50..20000)
Units	msec
Default	0

ATTRIBUTE AtmIf Vpt Iisp interDomainCrankback

Access	Read: All Write: All
Description	This attribute specifies whether the ATM Routing System inserts a Crankback information element (IE) when hop-by-hop routing crankback fails in a neighboring domain and this node is the DTL terminating node of the call. By default, the ATM Routing System, when behaving as a DTL terminating node of a call, only inserts a Crankback IE if the routing system fails to find a static routing port that matches the called address. If this attribute is set to enabled, then a Crankback IE is also inserted when hop-by-hop crankback fails. This attribute may be provisioned on IISP links that connect two PNNI domains. Note that the cause codes that trigger the insertion of the Crankback IE are the same as those that apply to PNNI crankback normally. Not all of these cause codes apply to hop-by-hop routing. The insertion of a Crankback IE can cause extra call setup attempts in certain configurations such as PNNI

domains interconnected by IISP links.

Mib	AtmIisp
Values	disabled enabled
Default	disabled

GROUP AtmIf Vpt Iisp AccountingOptions (AcctOpt)

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp accountCollection (aco)

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit***, or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts). If none of the reasons is present, then accounting will be suppressed. The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.

Mib	AtmIisp
Set of	bill test study audit force
Default	No default

ATTRIBUTE AtmIf Vpt Iisp accountConnectionType (act)

Access	Read: All Write: All
Description	This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records. If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***. If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.
Mib	AtmIisp
Values	origTerm intermediate
Default	intermediate

ATTRIBUTE AtmIf Vpt Iisp accountClass (acl)

Access	Read: All Write: All
Description	This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator.

Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.

Mib: AtmIisp

Values: Decimal (0..255)

Default: 0

ATTRIBUTE AtmIf Vpt Iisp serviceExchange (sre)

Access: Read: All
Write: All

Description: This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator.

Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.

Mib: AtmIisp

Values: Decimal (0..255)

Default: 0

GROUP AtmIf Vpt Iisp VIispProvisioned (VProv)

Properties: Provisioned

Description: This group contains the provisionable attributes for the *Iisp* component which are specific to virtual IISP interfaces.

Mib: AtmIisp

ATTRIBUTE AtmIf Vpt Iisp vpci

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the Virtual Path Connection Identifier (VPCI) to be used between this signaling entity and its peer. The

	VPCI of the peer virtual IISP must have the same value for switched connections to be set up across the interface.
Mib	AtmIisp
Values	Decimal (0..255)
Default	0

COMPONENT AtmIf Vpt Iisp Signalling (Sig)

Groups	"GROUP AtmIf Vpt Iisp Sig Provisioned (Prov)" "GROUP AtmIf Vpt Iisp Sig OsiState (State)" "GROUP AtmIf Vpt Iisp Sig Operational (Oper)" "GROUP AtmIf Vpt Iisp Sig Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Aini Signalling* *AtmIf/n Iisp Signalling* *AtmIf/n Uni Signalling* *AtmIf/n Pnni Signalling* *AtmIf/n Vpt/m Aini Signalling* *AtmIf/n Vpt/m Iisp Signalling* *AtmIf/n Vpt/m Uni Signalling* *AtmIf/n Vpt/m Pnni Signalling* This component represents the signaling entities for the interface.
Mib	AtmIisp
Opt. Subcomp.	"COMPONENT AtmIf Vpt Iisp Sig VirtualChannelDescriptor (Vcd)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Iisp Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.

Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmIisp
Values	Decimal (0..65535)
Default	5

ATTRIBUTE AtmIf Vpt Iisp Sig addressConversion

Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	AtmIisp
Values	none nativeE164 nsap
Default	none

ATTRIBUTE AtmIf Vpt Iisp Sig operatingMode

Access	Read: All Write: All
Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmIisp
Values	normal provisionedOnly
Default	normal

GROUP AtmIf Vpt Iisp Sig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: AtmIisp

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE AtmIf Vpt Iisp Sig operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmIisp

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmIf Vpt Iisp Sig usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	AtmIisp
Values	idle active (activ) busy
Default	idle

GROUP AtmIf Vpt Iisp Sig Operational (Oper)

Properties	Operational
Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Sig lastTxCauseCode

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmIisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Sig lastTxDiagCode

Access	Read: All Write: Illegal

Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmIisp
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Sig lastRxCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmIisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Sig lastRxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmIisp
Values	Hex (H.0..H.ff)

Default	No default

GROUP AtmIf Vpt Iisp Sig Statistics (Stats)

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Sig peakConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Sig successfulConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Sig failedConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.

Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Sig txPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Sig rxPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Sig currentPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Sig peakPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Sig successfulPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Sig failedPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Sig currentConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of currently active point-to- point connections.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Vpt Iisp Sig VirtualChannelDescriptor (Vcd)

Groups	"GROUP AtmIf Vpt Iisp Sig Vcd Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor* This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).
Mib	AtmIisp
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Iisp Sig Vcd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable traffic attributes for a control channel.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Sig Vcd trafficDescType (tdt)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.
Mib	AtmIisp
Values	3 6 7 8
Default	6

ATTRIBUTE AtmIf Vpt Iisp Sig Vcd atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the

application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmIisp
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	rtVariableBitRate

ATTRIBUTE AtmIf Vpt Iisp Sig Vcd weight

Access	Read and write
Criticality	Component

Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m. This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs. When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***. When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT. When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.
Mib	AtmIisp
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Iisp Sig Vcd qosClass (qos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmIisp
Values	0 1 2 3 4
Default	2

ATTRIBUTE AtmIf Vpt Iisp Sig Vcd trafficShaping (trShaping)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category

has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components.

When ***disabled*** is selected, traffic shaping for this connection is disabled.

Mib: AtmIisp

Values: disabled
sameAsCa

Default: disabled

ATTRIBUTE AtmIf Vpt Iisp Sig Vcd unshapedTransmitQueueing (unshap)

Access: Read and write

Criticality: Component

Description: This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute.

When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator.*

When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib: AtmIisp

Values	common sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Iisp Sig Vcd usageParameterControl (upc)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmIisp
Values	disabled sameAsCa
Default	disabled

ATTRIBUTE AtmIf Vpt Iisp Sig Vcd trafficDescParm (tdp)

Access	Read: All Write: All
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested

shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for

CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)

COMPONENT AtmIf Vpt Iisp Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate default]
Groups	"GROUP AtmIf Vpt Iisp Addr Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Address/address,type* *AtmIf/n Iisp Address/address,type* *AtmIf/n Uni Address/address,type*

AtmIf/n Pnni Address/address,type
AtmIf/n Vpt/m Aini Address/address,type
AtmIf/n Vpt/m Iisp Address/address,type
AtmIf/n Vpt/m Uni Address/address,type
AtmIf/n Vpt/m Pnni Address/address,type

This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wildcard (‘?’), and a type. The type identifies whether the *Address* component is for a ***primary***, ***alternate, registered***, or ***default*** address.

The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses registered through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses.Virtual interfaces do not have addresses of
type ***default***.

The wildcard is only valid for provisioned addresses. If the address is a single wildcard, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wildcard static address, then the choice is driven through a round robin algorithm.

The round robin algorithm tries the primary routes and then the alternate routes if none of the primary routes succeed.
If this node participates in a PNNI hierarchy, then a *PnniInfo* subcomponent can be provisioned under the *AtmAddress*

component to specify the level to which this address will be advertised.

Mib	AtmIisp
Opt. Subcomp.	"COMPONENT AtmIf Vpt Iisp Addr TerminateSPvpAndSPvc (TermSP)" "COMPONENT AtmIf Vpt Iisp Addr PnniInfo"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Iisp Addr Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *Address* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Addr scope

Access	Read: All Write: Illegal
Description	This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. If this node does not participate in a PNNI hierarchy, then this attribute will have the value of -1.
Mib	AtmIisp
Values	Signed (-1..104)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Addr reachability (reach)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmIisp
Values	internal exterior
Default	No default

COMPONENT AtmIf Vpt Iisp Addr TerminateSPvpAndSPvc (TermSP)

Scope	Device
Description	*AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc* The presence of this subcomponent indicates that SPvp and SPvc call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.
Mib	AtmIisp
Common Verbs	Help List Display Add DELete

COMPONENT AtmIf Vpt Iisp Addr PnniInfo

Groups	"GROUP AtmIf Vpt Iisp Addr PnniInfo Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Aini Addr/address,type PnniInfo* *AtmIf/n Iisp Addr/address,type PnniInfo* *AtmIf/n Uni Addr/address,type PnniInfo* *AtmIf/n Pnni Addr/address,type PnniInfo* *AtmIf/n Vpt/m Aini Addr/address,type PnniInfo* *AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo* *AtmIf/n Vpt/m Uni Addr/address,type PnniInfo* *AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo* This component contains provisioned information associated with the ATM address related to PNNI. This component appears only under provisioned *Address* components.
Mib	AtmIisp
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Iisp Addr PnniInfo Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Addr PnniInfo scope

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the

	PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.
Mib	AtmIisp
Values	Signed (-1..104)
Default	-1

ATTRIBUTE AtmIf Vpt Iisp Addr PnniInfo reachability (reach)

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmIisp
Values	internal exterior
Default	internal

COMPONENT AtmIf Vpt Iisp CallingAddressScreening (CallingAScr)

Groups	"GROUP AtmIf Vpt Iisp CallingAScr Provisioned (Prov)" "GROUP AtmIf Vpt Iisp CallingAScr Statistics (Stat)"
Scope	Device
Description	*AtmIf/n Aini CallingAddressScreening* *AtmIf/n Uni CallingAddressScreening* *AtmIf/n Iisp CallingAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM calling addresses (that is, screening SVC calls coming from specific addresses). If this

component is not provisioned, all call requests are accepted and no calling address screening takes place.

Mib: AtmIisp

Opt. Subcomp.: "COMPONENT AtmIf Vpt Iisp CallingAScr Address (Addr)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpt Iisp CallingAScr Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisionable attributes for the *CallingAScr* component.

Mib: AtmIisp

ATTRIBUTE AtmIf Vpt Iisp CallingAScr adminStatus

Access: Read: All
Write: All

Description: This attribute specifies whether the calling address screening feature is ***enabled*** or ***disabled***.

If ***enabled***, incoming SVC calls are screened against provisioned addresses. If ***enabled*** and the calling address in the ATM SVC call request is provisioned to be accepted, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled***, and the calling address in the address request is not provisioned, the call is rejected

If the value is ***disabled***, no calling address screening is performed.

Mib: AtmIisp

Values: enabled
disabled

Default	disabled

ATTRIBUTE AtmIf Vpt Iisp CallingAScr defaultInsertionAddress (defInsAddr)

Access	Read: All Write: All
Description	This attribute specifies the address to be inserted into the SVC connection request if *adminStatus* is ***enabled*** and the connection request does not contain a calling address. If the *adminStatus* attribute is ***enabled*** and this attribute is empty, all incoming SVC calls which do not contain a calling address are rejected.
Mib	AtmIisp
Values	String (0..20, Hex)
Default	""

GROUP AtmIf Vpt Iisp CallingAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp CallingAScr acceptedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpt Iisp CallingAScr rejectedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpt Iisp CallingAScr unmatchedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Vpt Iisp CallingAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a

matching calling (or called) address.
For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected.
For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected.
For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib: AtmIisp

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Vpt Iisp CalledAddressScreening (CalledAScr)

Groups: "GROUP AtmIf Vpt Iisp CalledAScr Provisioned (Prov)"
"GROUP AtmIf Vpt Iisp CalledAScr Statistics (Stat)"

Scope: Device

Description:
AtmIf/n Aini CalledAddressScreening
AtmIf/n Uni CalledAddressScreening
AtmIf/n Iisp CalledAddressScreening
This component represents the screening of incoming ATM SVC call requests against provisioned ATM called addresses (that is, going to specific destinations). If this component is not

provisioned, all call requests are accepted and no called address screening takes place.

Mib: AtmIisp

Opt. Subcomp.: "COMPONENT AtmIf Vpt Iisp CalledAScr Address (Addr)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpt Iisp CalledAScr Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisionable attributes for the *CalledAScr* component.

Mib: AtmIisp

ATTRIBUTE AtmIf Vpt Iisp CalledAScr adminStatus

Access: Read: All
Write: All

Description: This attribute specifies whether the called address screening feature is ***enabled*** or ***disabled***.
If the value is ***enabled***, incoming SVC calls will be screened against provisioned called addresses. If the value is ***enabled*** and the called address in the ATM SVC call request has been provisioned, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled*** and the called address in the call request is not provisioned, the call is rejected.
If the value is ***disabled***, no called address screening is performed.

Mib: AtmIisp

Values: enabled
disabled

Default: disabled

GROUP AtmIf Vpt Iisp CalledAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp CalledAScr acceptedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpt Iisp CalledAScr rejectedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpt Iisp CalledAScr unmatchedCalls

Access	Read: All Write: Illegal

Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Vpt Iisp CalledAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected.

For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib: AtmIisp

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Vpt Iisp PathTraceFilter (Ptf)

Groups:
"GROUP AtmIf Vpt Iisp Ptf Criteria"
"GROUP AtmIf Vpt Iisp Ptf Operational (Oper)"
"GROUP AtmIf Vpt Iisp Ptf RecordControl (Record)"

Scope: Device

Description:
AtmIf/n Aini PathTraceFilter
AtmIf/n Iisp PathTraceFilter
AtmIf/n Uni PathTraceFilter
AtmIf/n Pnni PathTraceFilter
AtmIf/n Vpt/vpi Aini PathTraceFilter
AtmIf/n Vpt/vpi Iisp PathTraceFilter
AtmIf/n Vpt/vpi Uni PathTraceFilter
AtmIf/n Vpt/vpi Pnni PathTraceFilter

This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced.

When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop*, and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When *AtmPathTraceFilter* component is deleted, all records are

cleared.

Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted.

The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.

Mib: AtmIisp

Dyn. Subcomp.: "COMPONENT AtmIf Vpt Iisp Ptf PathTraceRecord (PTRecord)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB START AtmIf Vpt Iisp Ptf

Impact: Service

Description:

START AtmIf/n Aini PathTraceFilter
START AtmIf/n Iisp PathTraceFilter
START AtmIf/n Uni PathTraceFilter
START AtmIf/n Pnni PathTraceFilter
START AtmIf/n Vpt/vpi Aini PathTraceFilter
START AtmIf/n Vpt/vpi Iisp PathTraceFilter
START AtmIf/n Vpt/vpi Uni PathTraceFilter
START AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

VERB STOP AtmIf Vpt Iisp Ptf

Impact	Service
Description	*STOP AtmIf/n Aini PathTraceFilter* *STOP AtmIf/n Iisp PathTraceFilter* *STOP AtmIf/n Uni PathTraceFilter* *STOP AtmIf/n Pnni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Aini PathTraceFilter* *STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter* *STOP AtmIf/n Vpt/vpi Uni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command causes the filter to stop, but keeps the trace records.

VERB CLEAR AtmIf Vpt Iisp Ptf

Impact	Service
Description	*CLEAR AtmIf/n Aini PathTraceFilter* *CLEAR AtmIf/n Iisp PathTraceFilter* *CLEAR AtmIf/n Uni PathTraceFilter* *CLEAR AtmIf/n Pnni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP AtmIf Vpt Iisp Ptf Criteria

Properties	Operational
Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Ptf traceInfo (tInfo)

Access	Read: All Write: All

Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	AtmIisp
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

ATTRIBUTE AtmIf Vpt Iisp Ptf calledPartyPrefix (cldPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmIisp
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf callingPartyPrefix (clgPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmIisp
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf connectionType (type)

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmIisp
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE AtmIf Vpt Iisp Ptf connectionConfiguration (config)

Access	Read: All Write: All
Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match

successfully, the call is traced.

Mib	AtmIisp
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE AtmIf Vpt Iisp Ptf serviceCategory (svcCat)

Access	Read: All Write: All
Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	AtmIisp
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP AtmIf Vpt Iisp Ptf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Ptf state

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active.

	inactive: Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.
Mib	AtmIisp
Values	active inactive
Default	inactive

ATTRIBUTE AtmIf Vpt Iisp Ptf recordCount

Access	Read: All Write: Illegal
Description	This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords*, which ever is less.
Mib	AtmIisp
Values	Decimal (0..200)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf matchedConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the number of connections that match the criteria of this filter.
Mib	AtmIisp
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf elapsedTime

Access	Read: All Write: Illegal

Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	AtmIisp
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf timeRemaining

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmIisp
Values	Decimal (0..70560)
Units	minutes
Default	No default

GROUP AtmIf Vpt Iisp Ptf RecordControl (Record)

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Ptf traceTimeout

Access	Read: All Write: All
Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmIisp
Values	Decimal (1..70560)

Units	minutes
Default	60

ATTRIBUTE AtmIf Vpt Iisp Ptf maxTraceRecords (mRecords)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter. Once the maximum has been reached, the oldest record is removed.
Mib	AtmIisp
Values	Decimal (1..200)
Default	2

COMPONENT AtmIf Vpt Iisp Ptf PathTraceRecord (PTRecord)

Groups	"GROUP AtmIf Vpt Iisp Ptf PTRecord Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord* *AtmIf/n Iisp Ptf PTRecord* *AtmIf/n Uni Ptf PTRecord* *AtmIf/n Pnni Ptf PTRecord* *AtmIf/n Vpt/n Aini Ptf PTRecord* *AtmIf/n Vpt/n Iisp Ptf PTRecord* *AtmIf/n Vpt/n Uni Ptf PTRecord* *AtmIf/n Vpt/n Pnni Ptf PTRecord*

	This component represents the path trace record for the last failed connection against this filter.
Mib	AtmIisp
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Iisp Ptf PTRecord Hop"
Common Verbs	Help List Display

GROUP AtmIf Vpt Iisp Ptf PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmIisp
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations

Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord timeStamp

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmIisp
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord srcPortId

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmIisp
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord srcPortName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmIisp
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord causeCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmIisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord diagCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmIisp
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Vpt Iisp Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	"GROUP AtmIf Vpt Iisp Ptf PTRecord Hop Operational (Oper)"
Scope	Device

Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmIisp
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Iisp Ptf PTRecord Hop VendorSpecificInfo (Vsi)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Iisp Ptf PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmIisp
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop ingressDlci (dlci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop ingressCallReference (callref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message.

	The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmIisp
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop ingressEndPointReference (epref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmIisp
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop nodeId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmIisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop nodeName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmIisp
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop portId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop portName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmIisp

Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop pnniTraceContRefusalIndPresent (refusal)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmIisp
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop crankbackDestNodeIndPresent (dest)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmIisp
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop pnniCrankbackGapIndPresent (gap)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmIisp
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop crankBackCause (cause)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmIisp
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop blockedTransitType (type)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmIisp
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop blockedNodeId (bNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmIisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop blockedLinkPrecedingNodeId (pNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked.

	This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmIisp
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop blockedLinkPortId (bPortId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop blockedLinkSucceedingNodeId (sNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmIisp

Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop dstVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmIisp
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop dstDlci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmIisp
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop dstCallReference (dcr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmIisp
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop dstEndPointReference (depr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmIisp
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop specifiedPath

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmIisp
Values	no yes
Default	no

COMPONENT AtmIf Vpt Iisp Ptf PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	"GROUP AtmIf Vpt Iisp Ptf PTRecord Hop Vsi Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

	All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmIisp
Common Verbs	Help List Display

GROUP AtmIf Vpt Iisp Ptf PTRecord Hop Vsi Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop Vsi length

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmIisp
Values	Decimal (0..11)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop Vsi organizationUniqueId (oui)

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmIisp
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptf PTRecord Hop Vsi data

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmIisp
Values	String (1..8, Hex)
Default	No default

COMPONENT AtmIf Vpt Iisp PathTraceTestConnection (Ptt)

Groups	"GROUP AtmIf Vpt Iisp Ptt Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini PathTraceTestConnection* *AtmIf/n Iisp PathTraceTestConnection* *AtmIf/n Uni PathTraceTestConnection* *AtmIf/n Pnni PathTraceTestConnection* *AtmIf/n Vpt/vpi Aini PathTraceTestConnection* *AtmIf/n Vpt/vpi Iisp PathTraceTestConnection* *AtmIf/n Vpt/vpi Uni PathTraceTestConnection* *AtmIf/n Vpt/vpi Pnni PathTraceTestConnection* This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface. The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test connection responds with the trace results collected during a complete or partial trace.
Mib	AtmIisp
Common Verbs	Help List Display

VERB TRACE AtmIf Vpt Iisp Ptt

Impact	Passive
Description	*TRACE AtmIf/n Aini AtmPathTraceTest* *TRACE AtmIf/n Iisp AtmPathTraceTest* *TRACE AtmIf/n Uni AtmPathTraceTest* *TRACE AtmIf/n Pnni AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest* This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node. Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP AtmIf Vpt Iisp Ptt Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *AtmPathTraceTest* component.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Ptt traceCrankback

Access	Read: All Write: All
Description	This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.
Mib	AtmIisp
Values	no yes

Default no

ATTRIBUTE AtmIf Vpt Iisp Ptt txTrafficDescType (txTdt)

Access
Read: All
Write: All

Description
This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.

Mib
AtmIisp

Values
1
2
3
4
5
6
7
8
9

Default 1

ATTRIBUTE AtmIf Vpt Iisp Ptt rxTrafficDescType (rxTdt)

Access
Read: All
Write: All

Description
This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute

When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.

Mib
AtmIisp

Values
1
2
3

4
5
6
7
8
9
sameAsTx

Default sameAsTx

ATTRIBUTE AtmIf Vpt Iisp Ptt atmServiceCategory (service)

Access Read: All
Write: All

Criticality Component

Description This attribute specifies the ATM service category for both directions of the connection.

If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications.

The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.

Mib: AtmIisp

Values:
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
derivedFromBBC (derived)

Default: unspecifiedBitRate

ATTRIBUTE AtmIf Vpt Iisp Ptt fwdQosClass (fwdQos)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the quality of service for the forward direction for this connection.

Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video).

Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib: AtmIisp

Values:
0
1
2
3
4

Default: 0

ATTRIBUTE AtmIf Vpt Iisp Ptt bwdQosClass (bwdQos)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the quality of service for the backward direction for this connection.

Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video).

Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.

Mib: AtmIisp

Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE AtmIf Vpt Iisp Ptt bearerClassBbc (bcBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network. The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it. Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements

are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib: AtmIisp

Values:
a
c
x
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Iisp Ptt transferCapabilityBbc (tcBbc)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the transfer capability for this connection. UNI 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

NotApplicable specifies that the user does not want to specify the transfer capability.

The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data.

The value ***NoIndication*** for traffic type is used if the user has not

set the traffic type. This is also the case for end-to-end timing.

The value ***yes*** for end-to-end timing indicates that end-to-end timing is required.

The value ***no*** for end-to-end timing indicates that end-to-end timing is not required.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib	AtmIisp
Values	0 1 2 5 8 9 10 notApplicable derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Iisp Ptt clippingBbc (cBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is

answered and before an associated connection is switched through.

Mib: AtmIisp

Values:
no
yes

Default: no

ATTRIBUTE AtmIf Vpt Iisp Ptt bestEffort

Access:
Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmIisp

Values:
indicated
notIndicated
derivedFromServiceCategory (derived)

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Iisp Ptt testCalledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmIisp
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptt testCalledVpiVci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmIisp
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptt testSpecifiedPath

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmIisp
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Ptt bwdQosParameters (bqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Vpt Iisp Ptt fwdQosParameters (fqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay

(maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element.

The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.

Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Vpt Iisp Ptt txTrafficDescParm (txTdp)

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled. When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero. When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter

5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)

Default ([5] 0)

ATTRIBUTE AtmIf Vpt lisp Ptt rxTrafficDescParm (rxTdp)

Access Read: All
Write: All

Description This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in
cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC).

When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused).

When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused).

When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for

CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or

I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

Mib	AtmIisp
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

COMPONENT AtmIf Vpt Iisp ServiceTrace (SrvTrace)

Groups	"GROUP AtmIf Vpt Iisp SrvTrace Operational"
Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] Iisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.
Mib	AtmIispTrace
Common Verbs	Help List Display Add DELete

VERB Start AtmIf Vpt Iisp SrvTrace

Impact	Service
Description	*Start AtmIf/n [Vpt/m] Uni ServiceTrace* *Start AtmIf/n [Vpt/m] Iisp ServiceTrace* *Start AtmIf/n [Vpt/m] Pnni ServiceTrace* *Start AtmIf/n [Vpt/m] Aini ServiceTrace* This command starts a service trace session.

VERB Stop AtmIf Vpt Iisp SrvTrace

Impact	Service
Description	*Stop AtmIf/n [Vpt/m] Uni ServiceTrace* *Stop AtmIf/n [Vpt/m] Iisp ServiceTrace* *Stop AtmIf/n [Vpt/m] Pnni ServiceTrace* *Stop AtmIf/n [Vpt/m] Aini ServiceTrace* This command stops a service trace session.

GROUP AtmIf Vpt Iisp SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	AtmIispTrace

ATTRIBUTE AtmIf Vpt Iisp SrvTrace receiverName (rcvr)

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmIispTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt lisp SrvTrace duration

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmIispTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE AtmIf Vpt lisp SrvTrace queueLimit

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmIispTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE AtmIf Vpt lisp SrvTrace session

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmIispTrace
Values	The name of the component
Default	No default

COMPONENT AtmIf Vpt Iisp Reroute

Groups	"GROUP AtmIf Vpt Iisp Reroute LocalOperational (LOper)" "GROUP AtmIf Vpt Iisp Reroute GlobalOperational (GOper)" "GROUP AtmIf Vpt Iisp Reroute Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Iisp Reroute* *AtmIf/n Aini Reroute* *AtmIf/n Uni Reroute* *AtmIf/n Vpt/vpi Iisp Reroute* *AtmIf/n Vpt/vpi Aini Reroute* *AtmIf/n Vpt/vpi Uni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	AtmIisp
Subcomponents	"COMPONENT AtmIf Vpt Iisp Reroute Ov"
Common Verbs	Help List Display Add DELete

VERB OPTIMIZE AtmIf Vpt Iisp Reroute

Impact	Service
Description	*Optimize [-all] AtmIf/n Uni outeouteouteouteouteoute*sBy default, only connection segsforation. The best known optimization metric value for the connection segment is indicated by the localOptimalMetricValue attribute under the RerouteInfo component for the connection. The -all option causes all connection segments subscribed to path optimization to be considered.s

GROUP AtmIf Vpt Iisp Reroute LocalOperational (LOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Reroute localSubscribedConnections (lsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute localEligibleRecoveredCon (lerc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute localIneligibleRecoveredCon (lirc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.

Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute localLastRrCauseCode (lrrcc)

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	AtmIisp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute localPathsOptimized (lPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vpt Iisp Reroute GlobalOperational (GOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Reroute globalSubscribedConnections (gsub)

Access	Read only

Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute globalEligibleRecoveredCon (gerc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute globalIneligibleRecoveredCon (girc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute globalLastRrCauseCode (grrcc)

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	AtmIisp
Values	Decimal (0..255)

Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute globalPathsOptimized (gPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vpt Iisp Reroute Statistics (Stats)

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Reroute totalLocalConnectionRecoveries (tLConRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute totalLocalFailedRecoveries (lFailedRec)

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.

Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute totalLocalPathOptimizations (tLPathOpt)

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute totalGlobalConnectionRecoveries (tGConRec)

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute totalGlobalFailedRecoveries (gFailedRec)

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute totalGlobalPathOptimizations (tGPathOpt)

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Iisp Reroute totalOptimizationPasses (optPass)

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmIisp
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Vpt Iisp Reroute Ov

Groups	"GROUP AtmIf Vpt Iisp Reroute Ov Provisioned (Prov)" "GROUP AtmIf Vpt Iisp Reroute Ov LocalProvisioned (LProv)" "GROUP AtmIf Vpt Iisp Reroute Ov GlobalProvisioned (GProv)"
Scope	Device
Description	*AtmIf/n Iisp Reroute Ov* *AtmIf/n Aini Reroute Ov* *AtmIf/n Uni Reroute Ov* *AtmIf/n Vpt/vpi Iisp Reroute Ov* *AtmIf/n Vpt/vpi Aini Reroute Ov* *AtmIf/n Vpt/vpi Uni Reroute Ov*

This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.

Mib AtmIisp

Common Verbs
Help
List
Display

GROUP AtmIf Vpt Iisp Reroute Ov Provisioned (Prov)

Properties Provisioned

Description This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.

Mib AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Reroute Ov protocol

Access Read and write

Description This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning.

One of the following values can be specified:
sameAsARtgPnniReroute: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute.
localGlobal: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature.
localOnly: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
globalOnly: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting

feature.
***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib: AtmIisp

Values:
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE AtmIf Vpt Iisp Reroute Ov numOptAttempts

Access: Read and write

Description: This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib: AtmIisp

Values: Decimal (0..15)
sameAsARtgPnniReroute (sameAs)

Default: sameAs

ATTRIBUTE AtmIf Vpt Iisp Reroute Ov moduleOptimizationConnections

Access: Read and write

Description: This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component.

One of the following values can be specified:
sameAsARtgPnniReroute: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute.
none: No connection segments are considered for path optimization.
recoveredOnly: Only connection segments that are foration. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection
allSubscribed: All connection segments subscribed to path optimization are considered.

Mib: AtmIisp

Values: none
recoveredOnly
allSubscribed
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE AtmIf Vpt Iisp Reroute Ov switchoverMechanism

Access: Read and write

Description	This attribute specifies the mechanism used for switchover of a rerouted connection segment. One of the following values can be specified: ***sameAsARtgPnniReroute***: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute. ***standard***: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”. ***rcl***: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.
Mib	AtmIisp
Values	standard rcl sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

GROUP AtmIf Vpt Iisp Reroute Ov LocalProvisioned (LProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for EBR and local rerouting protocols.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Reroute Ov localConnectionRecoverySubscr (lConRec)

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local

connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values.
svcSvp: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery.
sourceSpvcSpvp: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery.
transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.

Mib: AtmIisp

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Vpt Iisp Reroute Ov localPathOptimizationSubscr (lPathOpt)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib	AtmIisp
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

GROUP AtmIf Vpt Iisp Reroute Ov GlobalProvisioned (GProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for the global and EBR rerouting protocol.
Mib	AtmIisp

ATTRIBUTE AtmIf Vpt Iisp Reroute Ov globalConnectionRecoverySubscr (gConRec)

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute

affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib	AtmIisp
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Vpt Iisp Reroute Ov globalPathOptimizationSubscr (gPathOpt)

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization.

This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

Mib	AtmIisp
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

COMPONENT AtmIf Vpt Pnni

Groups	"GROUP AtmIf Vpt Pnni Provisioned (Prov)" "GROUP AtmIf Vpt Pnni AdminWeights" "GROUP AtmIf Vpt Pnni AccountingOptions (AcctOpt)" "GROUP AtmIf Vpt Pnni Operational" "GROUP AtmIf Vpt Pnni VPnniProvisioned (VProv)" "GROUP AtmIf Vpt Pnni Threshold" "GROUP AtmIf Vpt Pnni TraceProv (Trace)"
Scope	Device
Description	*AtmIf/n VirtualPathTerminator/m Pnni* This component represents a virtual ATM Private Network-Network Interface (PNNI) interface. If this component is provisioned, neither a *Uni*, an *Aini*, nor an *Iisp* component can be provisioned under the same *Vpt* component. Also, the *ARtg Pnni* component and the *ConfiguredNode* component corresponding to the participation of this node in a lowest level peer group must both exist if a *Pnni* component is to be provisioned under a *Vpt* component. If this component is deleted, then all associated *Vcc* components are deleted.
Mib	AtmPnni
Subcomponents	"COMPONENT AtmIf Vpt Pnni Signalling (Sig)" "COMPONENT AtmIf Vpt Pnni RoutingControlChannel (Rcc)"
Opt. Subcomp.	"COMPONENT AtmIf Vpt Pnni PathTraceFilter (Ptf)" "COMPONENT AtmIf Vpt Pnni ServiceTrace (SrvTrace)"
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Pnni PathTraceTestConnection (Ptt)"
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Pnni Address (Addr)" "COMPONENT AtmIf Vpt Pnni Reroute"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Pnni Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Pnni component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni softPvpAndPvcRetryPeriod

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	AtmPnni
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE AtmIf Vpt Pnni softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmPnni
Values	Decimal (0; 50..20000)
Units	msec
Default	0

GROUP AtmIf Vpt Pnni AdminWeights

Properties	Provisioned
Description	This group contains the provisionable administrative weights for the *Pnni* component. These weights will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni cbrWeight (cbrWt)

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Constant Bit Rate (CBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

ATTRIBUTE AtmIf Vpt Pnni rtVbrWeight (rtVbrWt)

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Real-Time Variable Bit Rate (RT-VBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni

Values	Decimal (1..16777215)
Default	5040

ATTRIBUTE AtmIf Vpt Pnni nrtVbrWeight (nrtVbrWt)

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Non Real-Time Variable Bit Rate (NRT-VBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

ATTRIBUTE AtmIf Vpt Pnni ubrWeight (ubrWt)

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Unspecified Bit Rate (UBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

GROUP AtmIf Vpt Pnni AccountingOptions (AcctOpt)

Properties	Provisioned

Description	This group contains the provisionable attributes for accounting.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni accountCollection (aco)

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit***, or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts). If none of the reasons is present, then accounting will be suppressed. The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.
Mib	AtmPnni
Set of	bill test study audit force
Default	No default

ATTRIBUTE AtmIf Vpt Pnni accountConnectionType (act)

Access	Read: All Write: All
Description	This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of

the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records.

If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***.

If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.

Mib: AtmPnni

Values: origTerm
intermediate

Default: intermediate

ATTRIBUTE AtmIf Vpt Pnni accountClass (acl)

Access: Read: All
Write: All

Description: This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator.

Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.

Mib: AtmPnni

Values: Decimal (0..255)

Default: 0

ATTRIBUTE AtmIf Vpt Pnni serviceExchange (sre)

Access: Read: All
Write: All

Description: This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator.

Its value is simply recorded in the accounting records generated

	by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	AtmPnni
Values	Decimal (0..255)
Default	0

GROUP AtmIf Vpt Pnni Operational

Properties	Operational
Description	This group contains the operational attributes for a *Pnni* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni portId

Access	Read: All Write: Illegal
Description	This attribute indicates the port id of the PNNI interface, which is the parent *AtmIf*'s instance number.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vpt Pnni VPnniProvisioned (VProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Pnni* component which are specific to virtual PNNI interfaces.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni vpci

Access	Read: All Write: All
Criticality	Component

Description	This attribute specifies the Virtual Path Connection Identifier (VPCI) to be used between this signaling entity and its peer. The VPCI of the peer virtual PNNI must have the same value for switched connections to be set up across the interface.
Mib	AtmPnni
Values	Decimal (0..255)
Default	0

GROUP AtmIf Vpt Pnni Threshold

Properties	Provisioned
Description	This group contains the provisionable attributes for the change threshold for the *Atmif Pnni* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni avcrMt

Access	Read: All Write: All
Description	This attribute, multiplied by the Maximum Cell Rate, specifies the minimum threshold used in the algorithms that determine significant change for average cell rate parameters for this interface. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni avcrMt*.
Mib	AtmPnni
Values	Decimal (1..99) sameAsPnni
Units	%
Default	sameAsPnni

ATTRIBUTE AtmIf Vpt Pnni avcrPm

Access	Read: All Write: All

Description	This attribute multiplied by the current Available Cell Rate (AvCr) specifies the threshold used in the algorithms that determine significant change for AvCR parameters for this interface. If the resulting threshold is lower than the AvCr, the minimum threshold (*Atmif pnni avcrMt*) is used. Increasing the value of the attribute increases the range of insignificance and reduces the amount of PTSP flooding due to changes in resource availability. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni avcrPm*.
Mib	AtmPnni
Values	Decimal (1..99) sameAsPnni
Units	%
Default	sameAsPnni

GROUP AtmIf Vpt Pnni TraceProv (Trace)

Properties	Provisioned
Description	This group contains the provisionable trace attributes for the Pnni component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni traceDestination (tDst)

Access	Read: All Write: All
Description	This attribute specifies if this node is a trace destination. A PNNI interface may be a trace destination interface. By default, it's not. If an operator wants to trace only until this PNNI interface, this interface can be set to trace destination by setting this attribute.
Mib	AtmPnni
Values	no yes

Default	no

COMPONENT AtmIf Vpt Pnni Signalling (Sig)

Groups	"GROUP AtmIf Vpt Pnni Sig Provisioned (Prov)" "GROUP AtmIf Vpt Pnni Sig OsiState (State)" "GROUP AtmIf Vpt Pnni Sig Operational (Oper)" "GROUP AtmIf Vpt Pnni Sig Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Aini Signalling* *AtmIf/n Iisp Signalling* *AtmIf/n Uni Signalling* *AtmIf/n Pnni Signalling* *AtmIf/n Vpt/m Aini Signalling* *AtmIf/n Vpt/m Iisp Signalling* *AtmIf/n Vpt/m Uni Signalling* *AtmIf/n Vpt/m Pnni Signalling* This component represents the signaling entities for the interface.
Mib	AtmPnni
Opt. Subcomp.	"COMPONENT AtmIf Vpt Pnni Sig VirtualChannelDescriptor (Vcd)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Pnni Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmPnni
Values	Decimal (0..65535)
Default	5

ATTRIBUTE AtmIf Vpt Pnni Sig addressConversion

Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	AtmPnni
Values	none nativeE164 nsap
Default	none

ATTRIBUTE AtmIf Vpt Pnni Sig operatingMode

Access	Read: All Write: All

Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmPnni
Values	normal provisionedOnly
Default	normal

GROUP AtmIf Vpt Pnni Sig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: AtmPnni

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE AtmIf Vpt Pnni Sig operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmPnni

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmIf Vpt Pnni Sig usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has

spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	AtmPnni
Values	idle active (activ) busy
Default	idle

GROUP AtmIf Vpt Pnni Sig Operational (Oper)

Properties	Operational
Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Sig lastTxCauseCode

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig lastTxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information

	element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmPnni
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig lastRxCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig lastRxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmPnni
Values	Hex (H.0..H.ff)
Default	No default

GROUP AtmIf Vpt Pnni Sig Statistics (Stats)

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Sig peakConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig successfulConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig failedConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig txPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig rxPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig currentPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig peakPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig successfulPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig failedPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Sig currentConnections

Access	Read: All Write: Illegal

Description	This attribute indicates the total number of currently active point-to- point connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Vpt Pnni Sig VirtualChannelDescriptor (Vcd)

Groups	"GROUP AtmIf Vpt Pnni Sig Vcd Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor* This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).
Mib	AtmPnni
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Pnni Sig Vcd Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable traffic attributes for a control channel.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Sig Vcd trafficDescType (tdt)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.
Mib	AtmPnni
Values	3 6 7 8
Default	6

ATTRIBUTE AtmIf Vpt Pnni Sig Vcd atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmPnni
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	rtVariableBitRate

ATTRIBUTE AtmIf Vpt Pnni Sig Vcd weight

Access	Read and write
Criticality	Component

Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m. This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs. When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***. When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT. When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.
Mib	AtmPnni
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Pnni Sig Vcd qosClass (qos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmPnni
Values	0 1 2 3 4
Default	2

ATTRIBUTE AtmIf Vpt Pnni Sig Vcd trafficShaping (trShaping)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category

has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components.

When ***disabled*** is selected, traffic shaping for this connection is disabled.

Mib: AtmPnni

Values: disabled
sameAsCa

Default: disabled

ATTRIBUTE AtmIf Vpt Pnni Sig Vcd unshapedTransmitQueueing (unshap)

Access: Read and write

Criticality: Component

Description: This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute.

When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator.*

When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib: AtmPnni

Values	common sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Pnni Sig Vcd usageParameterControl (upc)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmPnni
Values	disabled sameAsCa
Default	disabled

ATTRIBUTE AtmIf Vpt Pnni Sig Vcd trafficDescParm (tdp)

Access	Read: All Write: All
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested

shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for

CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)

COMPONENT AtmIf Vpt Pnni RoutingControlChannel (Rcc)

Groups	"GROUP AtmIf Vpt Pnni Rcc Provisioned (Prov)" "GROUP AtmIf Vpt Pnni Rcc HelloParms (HlParms)" "GROUP AtmIf Vpt Pnni Rcc OsiState (State)" "GROUP AtmIf Vpt Pnni Rcc Operational (Oper)" "GROUP AtmIf Vpt Pnni Rcc Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Pnni RoutingControlChannel* *AtmIf/n Vpt/m Pnni RoutingControlChannel*

	This component represents the Routing Control Channel (RCC) associated with a PNNI interface. The RCC is used to exchange routing information between nodes in a peer group.
Mib	AtmPnni
Opt. Subcomp.	"COMPONENT AtmIf Vpt Pnni Rcc VirtualChannelDescriptor (Vcd)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Pnni Rcc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the generic provisionable attributes of an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Rcc vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the VCI for the Routing Control Channel (RCC). The value should not be changed from the default of 18 unless absolutely necessary. If a different VCI is specified, ensure that the RCC at the far end is provisioned to use the same VCI, otherwise the RCC will not come up.
Mib	AtmPnni
Values	Decimal (0..65535)
Default	18

ATTRIBUTE AtmIf Vpt Pnni Rcc aggregationToken

Access	Read: All Write: All

Description	This attribute specifies the aggregation token for this interface at the local end of the link. The aggregation tokens at both ends are use to form the *derivedAggregationToken* for the link. The aggregation token controls how links are aggregated together. Except for the lowest level nodes, links between two logical nodes are aggregated together if they have the same aggregation token. Link aggregation is not done at the lowest level node, except in the degenerate node situation, where the lowest level node is a neighbor to an LGN. The value is ignored for links having a type value of ***unknown*** or ***lowestLevelHorizLink***.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	0

GROUP AtmIf Vpt Pnni Rcc HelloParms (HlParms)

Properties	Provisioned
Description	This group contains the provisionable Hello protocol parameters for an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Rcc helloHoldDown (hhd)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the rate at which this node sends out Hello packets. It specifies the default minimum length of time between successive Hellos used by routing control channels on this node. A provisioning check is made to ensure that this value cannot be greater than *helloInterval*. A value of 0 specifies that the value provisioned for the *helloHoldDown* attribute of the *ARtg Pnni* component should be used.
Mib	AtmPnni

Values	Decimal (0.0..65535.0)
Units	seconds
Default	0.0

ATTRIBUTE AtmIf Vpt Pnni Rcc helloInterval (hli)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the default duration of the Hello Timer for routing control channels on this node. Every *helloInterval* seconds, this node sends out a Hello packet to the neighbor node, subject to the *helloHoldDown* timer having expired at least once since the last Hello packet was sent. A provisioning check is made to ensure that this value cannot be less than *helloHoldDown*. A value of 0 specifies that the value provisioned for the *helloInterval* attribute of the *ARtg Pnni* component should be used.
Mib	AtmPnni
Values	Decimal (0..65535)
Units	seconds
Default	0

ATTRIBUTE AtmIf Vpt Pnni Rcc helloInactivityFactor (hif)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the number of Hello intervals allowed to pass without receiving a Hello from a neighbor, before an attempt is made to stage the RCC to that neighbor. The hello inactivity timer is enabled when the *helloState* is one of ***oneWayInside***, ***twoWayInside***, ***oneWayOutside***, ***twoWayOutside*** or ***commonOutside***.

A value of 0 specifies that the value provisioned for the *helloInactivityFactor* attribute of the *ARtg Pnni* component should be used.

Mib: AtmPnni

Values: Decimal (0..65535)

Default: 0

GROUP AtmIf Vpt Pnni Rcc OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Rcc adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	AtmPnni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Vpt Pnni Rcc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmPnni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf Vpt Pnni Rcc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	AtmPnni
Values	idle active (activ) busy
Default	idle

GROUP AtmIf Vpt Pnni Rcc Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Rcc type

Access	Read: All Write: Illegal
Description	This attribute indicates the role of this link in the PNNI hierarchy. The following values are possible: ***unknown***: the Hello protocol has not yet determined the role of the link. ***lowestLevelHorizLink***: the link is a horizontal link between two lowest level nodes. ***lowestLevelOutsideLink***: the link is an outside link between two border nodes. ***horizontalLinkToLgn***: the link is a horizontal link to a Logical Group Node (LGN). ***uplink***: the link is a uplink to a higher level LGN.
Mib	AtmPnni
Values	unknown lowestLevelHorizLink lowestLevelOutsideLink

	horizontalLinkToLGN uplink
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Rcc negotiatedVersion

Access	Read: All Write: Illegal
Description	This attribute indicates the PNNI version negotiated with the neighbor node.
Mib	AtmPnni
Values	unsupported version1point0
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Rcc helloState

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the Hello protocol exchange over this link. The following are the possible values for this attribute: ***down***: the link is down. No PNNI routing packets are sent or received over such a link. This is the initial state of the Hello Finite State Machine, and can also be reached when lower-level protocols have indicated that the link is not usable. ***attempt***: no Hello packets or Hello packets, with mismatched information, have been received recently from the neighbor. Attempts are made to contact the neighbor node by sending out Hello packets every *helloInterval* seconds. ***oneWayInside***: Hello packets have been recently received from the neighbor and it has been established that both nodes are members of the same peer group, but the remote node ID and remote port ID in the neighbor's Hello packets were set to zero. A Hello packet is sent to the neighbor and the Hello timer is

restarted.

twoWayInside: Bidirectional communication over this link between this node and the neighbor node has been achieved.

oneWayOutside: Hello packets have been recently received from the neighbor and it has been established that both nodes are members of a different peer group, but the remote node ID and remote port ID in the neighbor's Hello packets were set to zero.

twoWayOutside: Hello packets have recently been received from the neighbor indicating that the neighbor node belongs to a different peer group. The correct remote node ID and remote port ID fields were included in the Hello packet, but the nodal hierarchy list did not include any common peer group. This state can also be reached if a hierarchy mismatch occurs while in the ***commonOutside*** state.

commonOutside: A common level of the routing hierarchy has been found, in addition to achieving full bidirectional communication between the two nodes.

Mib	AtmPnni
Values	notApplicable down attempt oneWayInside twoWayInside oneWayOutside twoWayOutside commonOutside
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Rcc remoteNodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node id at the far end of the link.

Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Rcc remotePortId

Access	Read: All Write: Illegal
Description	This attribute indicates the Port ID of the neighboring node, which is an unsigned integer of 32 bits. When the remote end of a PNNI physical link is terminated by a Nortel Networks Multiservice Switch, the first 16 bits of the hex encoded format represent the *AtmIf* instance of the PNNI link of the remote node, the next 12 bits correspond to the VPI of the PNNI link and the last 4 bits are unspecified (that is, it provide no value for physical interpretation).
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Rcc derivedAggregationToken

Access	Read: All Write: Illegal
Description	This attribute indicates the derived aggregation token value used on this link. The algorithm for computing the value of the derived aggregation token is: 1. If neighbors exchange identical values of the configured aggregation token, that value is the derived aggregation token value. 2. If the configured aggregation token value of one neighbor is zero (default), and that of the other neighbor is non-zero, the non-zero value is the derived aggregation token value. 3. If the configured aggregation token values of the neighbors are different and both non-zero, the derived aggregation token value is zero.

The attribute is not displayed for links having a type value of ***unknown*** or ***lowestLevelHorizLink***.

Mib: AtmPnni

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE AtmIf Vpt Pnni Rcc remoteNodeName

Access: Read: All
Write: Illegal

Description: This attribute indicates the node name and the hierarchy level for the node at the far end of the link.

A typical value for this attribute has the following form: ***OBELIX@96***.

Here, ***OBELIX*** is the node name and ***96*** is the hierarchy level for the up node. The **@** symbol is used to separate the node name from the hierarchy level in the display.

The value of this attribute is an empty string if the far end is not a Nortel Networks Multiservice Switch.

Mib: AtmPnni

Values: String (1..16, ASCII)

Default: No default

ATTRIBUTE AtmIf Vpt Pnni Rcc remoteInterfaceName

Access: Read: All
Write: Illegal

Description: This attribute indicates the interface name of the node at the far end of the link.

When the far end of the link is a Nortel Networks Multiservice Switch, this attribute's value can take one of the following forms:
(a) ***AtmIf/<1-4095>*** - If the far end is an ATM interface.
(b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT

	interface. (c) Values ***0-4294967295*** - If the link is a logical link. The value of this attribute is an empty string if the far end is not a Nortel Networks Multiservice Switch.
Mib	AtmPnni
Values	String (0..19, ASCII)
Default	No default

GROUP AtmIf Vpt Pnni Rcc Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes for an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Rcc helloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of Hello packets received across this RCC, including bad and mismatched Hello packets. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Rcc helloPacketsTx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of Hello packets transmitted across this RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Rcc mismatchedHelloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of mismatched Hello packets received over this RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Rcc badHelloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bad Hello packets received over this RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Vpt Pnni Rcc VirtualChannelDescriptor (Vcd)

Groups	"GROUP AtmIf Vpt Pnni Rcc Vcd Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor*

AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor

This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).

Mib: AtmPnni

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpt Pnni Rcc Vcd Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable traffic attributes for a control channel.

Mib: AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Rcc Vcd trafficDescType (tdt)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.

Mib: AtmPnni

Values:
- 3
- 6
- 7
- 8

Default 6

ATTRIBUTE AtmIf Vpt Pnni Rcc Vcd atmServiceCategory (service)

Access Read: All
Write: All

Criticality Component

Description This attribute specifies the ATM service category for both directions of the connection.

The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR

service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib: AtmPnni

Values:
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)

Default: rtVariableBitRate

ATTRIBUTE AtmIf Vpt Pnni Rcc Vcd weight

Access: Read and write

Criticality: Component

Description: This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m.

This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs.

When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***.

When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy*

	determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT. When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.
Mib	AtmPnni
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Pnni Rcc Vcd qosClass (qos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmPnni

Values	0 1 2 3 4
Default	2

ATTRIBUTE AtmIf Vpt Pnni Rcc Vcd trafficShaping (trShaping)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components. When ***disabled*** is selected, traffic shaping for this connection is disabled.
Mib	AtmPnni
Values	disabled sameAsCa
Default	disabled

ATTRIBUTE AtmIf Vpt Pnni Rcc Vcd unshapedTransmitQueueing (unshap)

Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the

unshapedTransmitQueueing attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute.

When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator.*

When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib	AtmPnni
Values	common sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Pnni Rcc Vcd usageParameterControl (upc)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator.* If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib: AtmPnni

Values: disabled
sameAsCa

Default: disabled

ATTRIBUTE AtmIf Vpt Pnni Rcc Vcd trafficDescParm (tdp)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1.

This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)

COMPONENT AtmIf Vpt Pnni Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate registered default]
Groups	"GROUP AtmIf Vpt Pnni Addr Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Address/address,type* *AtmIf/n Iisp Address/address,type* *AtmIf/n Uni Address/address,type* *AtmIf/n Pnni Address/address,type* *AtmIf/n Vpt/m Aini Address/address,type* *AtmIf/n Vpt/m Iisp Address/address,type* *AtmIf/n Vpt/m Uni Address/address,type* *AtmIf/n Vpt/m Pnni Address/address,type* This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wildcard (‘?’), and a type. The type identifies whether the *Address* component is for a ***primary***, ***alternate***, ***registered***, or ***default*** address. The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses registered through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses.Virtual interfaces do not have addresses of type ***default***. The wildcard is only valid for provisioned addresses. If the

address is a single wildcard, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wildcard static address, then the choice is driven through a round robin algorithm.

The round robin algorithm tries the primary routes and then the alternate routes if none of the primary routes succeed.
If this node participates in a PNNI hierarchy, then a *PnniInfo* subcomponent can be provisioned under the *AtmAddress* component to specify the level to which this address will be advertised.

Mib: AtmPnni

Opt. Subcomp.: "COMPONENT AtmIf Vpt Pnni Addr TerminateSPvpAndSPvc (TermSP)"
"COMPONENT AtmIf Vpt Pnni Addr PnniInfo"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpt Pnni Addr Operational (Oper)

Properties: Operational

Description: This attribute group contains the operational attributes for the *Address* component.

Mib: AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Addr scope

Access: Read: All
Write: Illegal

Description: This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node

in the PNNI hierarchy. If this node does not participate in a PNNI hierarchy, then this attribute will have the value of -1.

Mib: AtmPnni

Values: Signed (-1..104)

Default: No default

ATTRIBUTE AtmIf Vpt Pnni Addr reachability (reach)

Access: Read: All
Write: Illegal

Description: This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.

Mib: AtmPnni

Values: internal
exterior

Default: No default

COMPONENT AtmIf Vpt Pnni Addr TerminateSPvpAndSPvc (TermSP)

Scope: Device

Description: *AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc*
AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc
AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc

The presence of this subcomponent indicates that SPvp and SPvc

call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.

Mib: AtmPnni

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Vpt Pnni Addr PnniInfo

Groups: "GROUP AtmIf Vpt Pnni Addr PnniInfo Provisioned (Prov)"

Scope: Device

Description:

AtmIf/n Aini Addr/address,type PnniInfo
AtmIf/n Iisp Addr/address,type PnniInfo
AtmIf/n Uni Addr/address,type PnniInfo
AtmIf/n Pnni Addr/address,type PnniInfo
AtmIf/n Vpt/m Aini Addr/address,type PnniInfo
AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo
AtmIf/n Vpt/m Uni Addr/address,type PnniInfo
AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo

This component contains provisioned information associated with the ATM address related to PNNI. This component appears only under provisioned *Address* components.

Mib: AtmPnni

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpt Pnni Addr PnniInfo Provisioned (Prov)

Properties: Provisioned

Description	This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Addr PnniInfo scope

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.
Mib	AtmPnni
Values	Signed (-1..104)
Default	-1

ATTRIBUTE AtmIf Vpt Pnni Addr PnniInfo reachability (reach)

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmPnni
Values	internal exterior
Default	internal

COMPONENT AtmIf Vpt Pnni PathTraceFilter (Ptf)

Groups

"GROUP AtmIf Vpt Pnni Ptf Criteria"
"GROUP AtmIf Vpt Pnni Ptf Operational (Oper)"
"GROUP AtmIf Vpt Pnni Ptf RecordControl (Record)"

Scope

Device

Description

AtmIf/n Aini PathTraceFilter
AtmIf/n Iisp PathTraceFilter
AtmIf/n Uni PathTraceFilter
AtmIf/n Pnni PathTraceFilter
AtmIf/n Vpt/vpi Aini PathTraceFilter
AtmIf/n Vpt/vpi Iisp PathTraceFilter
AtmIf/n Vpt/vpi Uni PathTraceFilter
AtmIf/n Vpt/vpi Pnni PathTraceFilter

This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced.

When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop*, and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When *AtmPathTraceFilter* component is deleted, all records are cleared.

Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted.

The *AtmPathTraceFilter* component is not permitted to be added

when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.

Mib: AtmPnni

Dyn. Subcomp.: "COMPONENT AtmIf Vpt Pnni Ptf PathTraceRecord (PTRecord)"

Common Verbs:

Help
List
Display
Add
DELete

VERB START AtmIf Vpt Pnni Ptf

Impact: Service

Description:

START AtmIf/n Aini PathTraceFilter
START AtmIf/n Iisp PathTraceFilter
START AtmIf/n Uni PathTraceFilter
START AtmIf/n Pnni PathTraceFilter
START AtmIf/n Vpt/vpi Aini PathTraceFilter
START AtmIf/n Vpt/vpi Iisp PathTraceFilter
START AtmIf/n Vpt/vpi Uni PathTraceFilter
START AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

VERB STOP AtmIf Vpt Pnni Ptf

Impact	Service
Description	*STOP AtmIf/n Aini PathTraceFilter* *STOP AtmIf/n Iisp PathTraceFilter* *STOP AtmIf/n Uni PathTraceFilter* *STOP AtmIf/n Pnni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Aini PathTraceFilter* *STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter* *STOP AtmIf/n Vpt/vpi Uni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command causes the filter to stop, but keeps the trace records.

VERB CLEAR AtmIf Vpt Pnni Ptf

Impact	Service
Description	*CLEAR AtmIf/n Aini PathTraceFilter* *CLEAR AtmIf/n Iisp PathTraceFilter* *CLEAR AtmIf/n Uni PathTraceFilter* *CLEAR AtmIf/n Pnni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP AtmIf Vpt Pnni Ptf Criteria

Properties	Operational
Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Ptf traceInfo (tInfo)

Access	Read: All Write: All

Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	AtmPnni
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

ATTRIBUTE AtmIf Vpt Pnni Ptf calledPartyPrefix (cldPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmPnni
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf callingPartyPrefix (clgPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmPnni
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf connectionType (type)

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmPnni
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE AtmIf Vpt Pnni Ptf connectionConfiguration (config)

Access	Read: All Write: All
Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match

successfully, the call is traced.

Mib	AtmPnni
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE AtmIf Vpt Pnni Ptf serviceCategory (svcCat)

Access	Read: All Write: All
Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	AtmPnni
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP AtmIf Vpt Pnni Ptf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Ptf state

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active.

inactive: Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.

Mib: AtmPnni

Values: active
inactive

Default: inactive

ATTRIBUTE AtmIf Vpt Pnni Ptf recordCount

Access: Read: All
Write: Illegal

Description: This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords*, which ever is less.

Mib: AtmPnni

Values: Decimal (0..200)

Default: No default

ATTRIBUTE AtmIf Vpt Pnni Ptf matchedConnections

Access: Read: All
Write: Illegal

Description: This attribute indicates the number of connections that match the criteria of this filter.

Mib: AtmPnni

Values: Decimal (0..2147483647)

Default: No default

ATTRIBUTE AtmIf Vpt Pnni Ptf elapsedTime

Access: Read: All
Write: Illegal

Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	AtmPnni
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf timeRemaining

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmPnni
Values	Decimal (0..70560)
Units	minutes
Default	No default

GROUP AtmIf Vpt Pnni Ptf RecordControl (Record)

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Ptf traceTimeout

Access	Read: All Write: All
Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmPnni
Values	Decimal (1..70560)

Units	minutes
Default	60

ATTRIBUTE AtmIf Vpt Pnni Ptf maxTraceRecords (mRecords)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter. Once the maximum has been reached, the oldest record is removed.
Mib	AtmPnni
Values	Decimal (1..200)
Default	2

COMPONENT AtmIf Vpt Pnni Ptf PathTraceRecord (PTRecord)

Groups	"GROUP AtmIf Vpt Pnni Ptf PTRecord Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord* *AtmIf/n Iisp Ptf PTRecord* *AtmIf/n Uni Ptf PTRecord* *AtmIf/n Pnni Ptf PTRecord* *AtmIf/n Vpt/n Aini Ptf PTRecord* *AtmIf/n Vpt/n Iisp Ptf PTRecord* *AtmIf/n Vpt/n Uni Ptf PTRecord* *AtmIf/n Vpt/n Pnni Ptf PTRecord*

This component represents the path trace record for the last failed connection against this filter.

Mib: AtmPnni

Dyn. Subcomp.: "COMPONENT AtmIf Vpt Pnni Ptf PTRecord Hop"

Common Verbs:
Help
List
Display

GROUP AtmIf Vpt Pnni Ptf PTRecord Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the path trace record component.

Mib: AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord status

Access:
Read: All
Write: Illegal

Description: This attribute indicates the status of the trace. The string is one of the following:

Completed normally*:* The trace completed normally.

Incomplete*:* Partial trace returned.

Exceeded information element length limitations*:* The number of traced nodes exceeded the maximum number of hops.

Exceeded message length limitations*:* The message length exceeded the maximum allowed size.

Mib: AtmPnni

Values:
Completed normally
Incomplete
Exceeded information element length limitations
Exceeded message length limitations

Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord timeStamp

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmPnni
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord srcPortId

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmPnni
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord srcPortName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmPnni
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord causeCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord diagCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmPnni
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Vpt Pnni Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	"GROUP AtmIf Vpt Pnni Ptf PTRecord Hop Operational (Oper)"
Scope	Device

Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmPnni
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Pnni Ptf PTRecord Hop VendorSpecificInfo (Vsi)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Pnni Ptf PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmPnni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop ingressDlci (dlci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop ingressCallReference (callref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message.

	The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmPnni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop ingressEndPointReference (epref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmPnni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop nodeId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop nodeName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmPnni
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop portId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop portName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmPnni

Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop pnniTraceContRefusalIndPresent (refusal)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmPnni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop crankbackDestNodeIndPresent (dest)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmPnni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop pnniCrankbackGapIndPresent (gap)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmPnni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop crankBackCause (cause)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmPnni
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop blockedTransitType (type)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmPnni
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop blockedNodeId (bNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop blockedLinkPrecedingNodeId (pNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked.

	This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop blockedLinkPortId (bPortId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop blockedLinkSucceedingNodeId (sNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmPnni

Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop dstVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmPnni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop dstDlci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmPnni
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop dstCallReference (dcr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmPnni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop dstEndPointReference (depr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmPnni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop specifiedPath

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmPnni
Values	no yes
Default	no

COMPONENT AtmIf Vpt Pnni Ptf PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	"GROUP AtmIf Vpt Pnni Ptf PTRecord Hop Vsi Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

	All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmPnni
Common Verbs	Help List Display

GROUP AtmIf Vpt Pnni Ptf PTRecord Hop Vsi Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop Vsi length

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmPnni
Values	Decimal (0..11)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop Vsi organizationUniqueId (oui)

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmPnni
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptf PTRecord Hop Vsi data

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmPnni
Values	String (1..8, Hex)
Default	No default

COMPONENT AtmIf Vpt Pnni PathTraceTestConnection (Ptt)

Groups	"GROUP AtmIf Vpt Pnni Ptt Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini PathTraceTestConnection* *AtmIf/n Iisp PathTraceTestConnection* *AtmIf/n Uni PathTraceTestConnection* *AtmIf/n Pnni PathTraceTestConnection* *AtmIf/n Vpt/vpi Aini PathTraceTestConnection* *AtmIf/n Vpt/vpi Iisp PathTraceTestConnection* *AtmIf/n Vpt/vpi Uni PathTraceTestConnection* *AtmIf/n Vpt/vpi Pnni PathTraceTestConnection* This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface. The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test connection responds with the trace results collected during a complete or partial trace.
Mib	AtmPnni
Common Verbs	Help List Display

VERB TRACE Atmlf Vpt Pnni Ptt

Impact	Passive
Description	*TRACE AtmIf/n Aini AtmPathTraceTest* *TRACE AtmIf/n Iisp AtmPathTraceTest* *TRACE AtmIf/n Uni AtmPathTraceTest* *TRACE AtmIf/n Pnni AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest* This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node. Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP Atmlf Vpt Pnni Ptt Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *AtmPathTraceTest* component.
Mib	AtmPnni

ATTRIBUTE Atmlf Vpt Pnni Ptt traceCrankback

Access	Read: All Write: All
Description	This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.
Mib	AtmPnni
Values	no yes

Default no

ATTRIBUTE AtmIf Vpt Pnni Ptt txTrafficDescType (txTdt)

Access
Read: All
Write: All

Description
This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.

Mib
AtmPnni

Values
1
2
3
4
5
6
7
8
9

Default 1

ATTRIBUTE AtmIf Vpt Pnni Ptt rxTrafficDescType (rxTdt)

Access
Read: All
Write: All

Description
This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute

When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.

Mib
AtmPnni

Values
1
2
3

	4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE AtmIf Vpt Pnni Ptt atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection. If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used. The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications. The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.

Mib: AtmPnni

Values:
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
derivedFromBBC (derived)

Default: unspecifiedBitRate

ATTRIBUTE AtmIf Vpt Pnni Ptt fwdQosClass (fwdQos)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the quality of service for the forward direction for this connection.

Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video).

Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib: AtmPnni

Values:
0
1
2
3
4

Default: 0

ATTRIBUTE AtmIf Vpt Pnni Ptt bwdQosClass (bwdQos)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the quality of service for the backward direction for this connection.

Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video).

Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.

Mib: AtmPnni

Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE AtmIf Vpt Pnni Ptt bearerClassBbc (bcBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network. The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory.* Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it. Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements

are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib: AtmPnni

Values:
a
c
x
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Pnni Ptt transferCapabilityBbc (tcBbc)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the transfer capability for this connection. UNI 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

NotApplicable specifies that the user does not want to specify the transfer capability.

The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data.

The value ***NoIndication*** for traffic type is used if the user has not

set the traffic type. This is also the case for end-to-end timing.

The value ***yes*** for end-to-end timing indicates that end-to-end timing is required.

The value ***no*** for end-to-end timing indicates that end-to-end timing is not required.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmPnni

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Pnni Ptt clippingBbc (cBbc)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes.

Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is

answered and before an associated connection is switched through.

Mib: AtmPnni

Values:
no
yes

Default: no

ATTRIBUTE AtmIf Vpt Pnni Ptt bestEffort

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmPnni

Values:
indicated
notIndicated
derivedFromServiceCategory (derived)

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Pnni Ptt testCalledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmPnni
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptt testCalledVpiVci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmPnni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptt testSpecifiedPath

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmPnni
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Ptt bwdQosParameters (bqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Vpt Pnni Ptt fwdQosParameters (fqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay

(maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element.

The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.

Mib: AtmPnni

Vector of: Decimal (0..2147483647)

Index: cdv
ctd
clr

Default: (cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Vpt Pnni Ptt txTrafficDescParm (txTdp)

Access: Read: All
Write: All

Description: This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled.

When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero.

When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter

5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)

Default ([5] 0)

ATTRIBUTE AtmIf Vpt Pnni Ptt rxTrafficDescParm (rxTdp)

Access Read: All
Write: All

Description This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in
cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC).

When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused).

When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused).

When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for

CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or

I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

COMPONENT AtmIf Vpt Pnni ServiceTrace (SrvTrace)

Groups	"GROUP AtmIf Vpt Pnni SrvTrace Operational"
Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] Iisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.
Mib	AtmPnniTrace
Common Verbs	Help List Display Add DELete

VERB Start AtmIf Vpt Pnni SrvTrace

Impact	Service
Description	*Start AtmIf/n [Vpt/m] Uni ServiceTrace* *Start AtmIf/n [Vpt/m] Iisp ServiceTrace* *Start AtmIf/n [Vpt/m] Pnni ServiceTrace* *Start AtmIf/n [Vpt/m] Aini ServiceTrace* This command starts a service trace session.

VERB Stop AtmIf Vpt Pnni SrvTrace

Impact	Service
Description	*Stop AtmIf/n [Vpt/m] Uni ServiceTrace* *Stop AtmIf/n [Vpt/m] Iisp ServiceTrace* *Stop AtmIf/n [Vpt/m] Pnni ServiceTrace* *Stop AtmIf/n [Vpt/m] Aini ServiceTrace* This command stops a service trace session.

GROUP AtmIf Vpt Pnni SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	AtmPnniTrace

ATTRIBUTE AtmIf Vpt Pnni SrvTrace receiverName (rcvr)

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmPnniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni SrvTrace duration

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmPnniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE AtmIf Vpt Pnni SrvTrace queueLimit

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmPnniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE AtmIf Vpt Pnni SrvTrace session

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmPnniTrace
Values	The name of the component
Default	No default

COMPONENT AtmIf Vpt Pnni Reroute

Groups	"GROUP AtmIf Vpt Pnni Reroute DomainOperational (DOper)" "GROUP AtmIf Vpt Pnni Reroute LocalOperational (LOper)" "GROUP AtmIf Vpt Pnni Reroute GlobalOperational (GOper)" "GROUP AtmIf Vpt Pnni Reroute Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Pnni Reroute* *AtmIf/n Vpt/vpi Pnni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	AtmPnni
Subcomponents	"COMPONENT AtmIf Vpt Pnni Reroute Ov"
Common Verbs	Help List Display Add DELete

VERB OPTIMIZE AtmIf Vpt Pnni Reroute

Impact	Service
Description	*Optimize [-all] AtmIf/n Pnni Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Pnni Reroute* This command triggers path optimization for the connection segments managed by the *Reroute* component. By default, only connection segsforation. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection. The *-all* option causes all connection segments subscribed to path optimization to be considered. Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP AtmIf Vpt Pnni Reroute DomainOperational (DOper)

Properties	Operational
Description	This group contains the operational attributes specific to rerouting activities on a PNNI interface.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Reroute localDomainLink (domain)

Access	Read only
Description	This attribute indicates the local PNNI domain link type. One of the following values is indicated: ***intraDomainLink***: The PNNI interface is not a local domain edge node. ***interDomainLink***: The PNNI interface acts as a local domain edge node.
Mib	AtmPnni

Values	intraDomainLink interDomainLink
Default	No default

GROUP AtmIf Vpt Pnni Reroute LocalOperational (LOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Reroute localSubscribedConnections (lsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute localEligibleRecoveredCon (lerc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute localIneligibleRecoveredCon (lirc)

Access	Read only

Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute localLastRrCauseCode (lrrcc)

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute localPathsOptimized (lPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vpt Pnni Reroute GlobalOperational (GOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.

Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Reroute globalSubscribedConnections (gsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute globalEligibleRecoveredCon (gerc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute globalIneligibleRecoveredCon (girc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute globalLastRrCauseCode (grrcc)

Access	Read only

Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute globalPathsOptimized (gPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vpt Pnni Reroute Statistics (Stats)

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Reroute totalLocalConnectionRecoveries (tLConRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute totalLocalFailedRecoveries (lFailedRec)

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute totalLocalPathOptimizations (tLPathOpt)

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute totalGlobalConnectionRecoveries (tGConRec)

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute totalGlobalFailedRecoveries (gFailedRec)

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting

	connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute totalGlobalPathOptimizations (tGPathOpt)

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Pnni Reroute totalOptimizationPasses (optPass)

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Vpt Pnni Reroute Ov

Groups	"GROUP AtmIf Vpt Pnni Reroute Ov DomainProvisioned (DProv)" "GROUP AtmIf Vpt Pnni Reroute Ov Provisioned (Prov)" "GROUP AtmIf Vpt Pnni Reroute Ov LocalProvisioned (LProv)" "GROUP AtmIf Vpt Pnni Reroute Ov GlobalProvisioned (GProv)"

Scope	Device
Description	*AtmIf/n Pnni Reroute Ov* *AtmIf/n Vpt/vpi Pnni Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.
Mib	AtmPnni
Common Verbs	Help List Display

GROUP AtmIf Vpt Pnni Reroute Ov DomainProvisioned (DProv)

Properties	Provisioned
Description	This group contains the provisionable attributes specific to rerouting on a PNNI interface.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Reroute Ov localDomainLink (domain)

Access	Read and write
Description	This attribute specifies the method used to identify the type of local domain link. One of the following values can be specified: ***sameAsARtgPnniReroute***: The type of the local domain link is determined by the exchange of the *ARtg Pnni Reroute localDomain* value with the PNNI neighbor. ***intraDomainLink***: The result of the exchange of the *localDomain* is ignored. The local domain link type is set to intra-domain link. ***interDomainLink***: The result of the exchange of the *localDomain* is ignored. The local domain link type is set to inter-domain link.
Mib	AtmPnni

Values	sameAsARtgPnniReroute (sameAs) intraDomainLink (intra) interDomainLink (inter)
Default	sameAsARtgPnniReroute

GROUP AtmIf Vpt Pnni Reroute Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.
Mib	AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Reroute Ov protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsARtgPnniReroute***: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the

DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib AtmPnni

Values
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsARtgPnniReroute (sameAs)

Default sameAsARtgPnniReroute

ATTRIBUTE AtmIf Vpt Pnni Reroute Ov numOptAttempts

Access Read and write

Description This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib AtmPnni

Values	Decimal (0..15) sameAsARtgPnniReroute (sameAs)
Default	sameAs

ATTRIBUTE AtmIf Vpt Pnni Reroute Ov moduleOptimizationConnections

Access	Read and write
Description	This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component. One of the following values can be specified: ***sameAsARtgPnniReroute***: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute. ***none***: No connection segments are considered for path optimization. ***recoveredOnly***: Only connection segments that are foration. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection ***allSubscribed***: All connection segments subscribed to path optimization are considered.
Mib	AtmPnni
Values	none recoveredOnly allSubscribed sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE AtmIf Vpt Pnni Reroute Ov switchoverMechanism

Access	Read and write
Description	This attribute specifies the mechanism used for switchover of a rerouted connection segment. One of the following values can be specified: ***sameAsARtgPnniReroute***: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism*

attribute.
standard: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”.
rcl: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib: AtmPnni

Values:
standard
rcl
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

GROUP AtmIf Vpt Pnni Reroute Ov LocalProvisioned (LProv)

Properties: Provisioned

Description: This group contains the provisionable attributes for EBR and local rerouting protocols.

Mib: AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Reroute Ov localConnectionRecoverySubscr (lConRec)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values.
svcSvp: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery.
sourceSpvcSpvp: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery.
transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.

Mib: AtmPnni

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Vpt Pnni Reroute Ov localPathOptimizationSubscr (lPathOpt)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:

sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib: AtmPnni

Set of: sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

GROUP AtmIf Vpt Pnni Reroute Ov GlobalProvisioned (GProv)

Properties: Provisioned

Description: This group contains the provisionable attributes for the global and EBR rerouting protocol.

Mib: AtmPnni

ATTRIBUTE AtmIf Vpt Pnni Reroute Ov globalConnectionRecoverySubscr (gConRec)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib	AtmPnni
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Vpt Pnni Reroute Ov globalPathOptimizationSubscr (gPathOpt)

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to

global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

Mib: AtmPnni

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

COMPONENT AtmIf Vpt UserNetworkInterface (Uni)

Groups:
"GROUP AtmIf Vpt Uni Provisioned (Prov)"
"GROUP AtmIf Vpt Uni AccountingOptions (AcctOpt)"
"GROUP AtmIf Vpt Uni VUniProvisioned (VProv)"

Scope: Device

Description:
AtmIf/n VirtualPathTerminator/m Uni
This component represents a virtual ATM UNI interface. If this

component is provisioned, neither an *Iisp*, an *Aini*, nor a *Pnni* component can be provisioned under the same *Vpt* component. If this component is deleted, then all associated *Vcc* components are deleted.

Mib	AtmUni
Subcomponents	"COMPONENT AtmIf Vpt Uni Signalling (Sig)"
Opt. Subcomp.	"COMPONENT AtmIf Vpt Uni CallingAddressScreening (CallingAScr)" "COMPONENT AtmIf Vpt Uni CalledAddressScreening (CalledAScr)" "COMPONENT AtmIf Vpt Uni PathTraceFilter (Ptf)" "COMPONENT AtmIf Vpt Uni ServiceTrace (SrvTrace)" "COMPONENT AtmIf Vpt Uni Reroute"
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Uni PathTraceTestConnection (Ptt)"
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Uni Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Uni Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Uni* component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni version

Access	Read: All Write: All
Criticality	Component

Description	This attribute specifies which specification the UNI complies with. The options are ATM FORUM 3.0, ATM FORUM 3.1 or ATM FORUM 4.0. If this attribute is changed then all switched *Vcc* components in this interface are cleared due to the fact that the two versions are incompatible.
Mib	AtmUni
Values	atmForum30 atmForum31 atmForum40
Default	atmForum40

ATTRIBUTE AtmIf Vpt Uni side

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which side the interface is, user or network.
Mib	AtmUni
Values	network user
Default	network

ATTRIBUTE AtmIf Vpt Uni softPvpAndPvcRetryPeriod

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	AtmUni
Values	Decimal (20..999999)
Units	seconds

Default	60

ATTRIBUTE AtmIf Vpt Uni softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmUni
Values	Decimal (0; 50..20000)
Units	msec
Default	0

ATTRIBUTE AtmIf Vpt Uni loopPrevention

Access	Read: All Write: Configuration
Description	This attribute specifies whether loop prevention is in effect on this interface. When the value is ***enabled***, incoming calls on this interface cannot be routed back out the same interface. When the value is ***disabled***, routing of incoming calls back out the same interface is permitted. The recommended value is ***enabled***. The value ***disabled*** should only be used if routing of incoming calls back out over this interface is actually required. As an example, the value ***disabled*** might be needed if the interface is connected to an end-user multiplexing device which has no routing capability. Note that setting the value to ***enabled*** prevents only routing loops which involve two network nodes.

Mib	AtmUni
Values	disabled enabled
Default	enabled

ATTRIBUTE AtmIf Vpt Uni interfaceType

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the *Type* of the interface, ***private*** or ***public***.
Mib	AtmUni
Values	public private
Default	private

GROUP AtmIf Vpt Uni AccountingOptions (AcctOpt)

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni accountCollection (aco)

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit*** or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts).

If none of the reasons is present, then accounting will be suppressed.

The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.

Mib: AtmUni

Set of:
bill
test
study
audit
force

Default: No default

ATTRIBUTE AtmIf Vpt Uni accountConnectionType (act)

Access:
Read: All
Write: All

Description: This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records.

If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***.

If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.

Mib: AtmUni

Values:
origTerm
intermediate

Default: origTerm

ATTRIBUTE AtmIf Vpt Uni accountClass (acl)

Access	Read: All Write: All
Description	This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.
Mib	AtmUni
Values	Decimal (0..255)
Default	0

ATTRIBUTE AtmIf Vpt Uni serviceExchange (sre)

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	AtmUni
Values	Decimal (0..255)
Default	0

GROUP AtmIf Vpt Uni VUniProvisioned (VProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Uni* component which are specific to virtual UNI interfaces.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni vpci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the Virtual Path Connection Identifier (VPCI) to be used between this signaling entity and its peer. The VPCI of the peer virtual UNI must have the same value for switched connections to be set up across the interface.
Mib	AtmUni
Values	Decimal (0..255)
Default	0

COMPONENT AtmIf Vpt Uni Signalling (Sig)

Groups	"GROUP AtmIf Vpt Uni Sig Provisioned (Prov)" "GROUP AtmIf Vpt Uni Sig OsiState (State)" "GROUP AtmIf Vpt Uni Sig Operational (Oper)" "GROUP AtmIf Vpt Uni Sig Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Aini Signalling* *AtmIf/n Iisp Signalling* *AtmIf/n Uni Signalling* *AtmIf/n Pnni Signalling* *AtmIf/n Vpt/m Aini Signalling* *AtmIf/n Vpt/m Iisp Signalling* *AtmIf/n Vpt/m Uni Signalling* *AtmIf/n Vpt/m Pnni Signalling* This component represents the signaling entities for the interface.
Mib	AtmUni
Opt. Subcomp.	"COMPONENT AtmIf Vpt Uni Sig VirtualChannelDescriptor (Vcd)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Uni Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmUni
Values	Decimal (0..65535)
Default	5

ATTRIBUTE AtmIf Vpt Uni Sig addressConversion

Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	AtmUni

Values	none nativeE164 nsap
Default	none

ATTRIBUTE AtmIf Vpt Uni Sig operatingMode

Access	Read: All Write: All
Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmUni
Values	normal provisionedOnly
Default	normal

GROUP AtmIf Vpt Uni Sig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: AtmUni

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE AtmIf Vpt Uni Sig operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmUni

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmIf Vpt Uni Sig usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmUni
Values	idle active (activ) busy
Default	idle

GROUP AtmIf Vpt Uni Sig Operational (Oper)

Properties	Operational
Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Sig lastTxCauseCode

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmUni
Values	Decimal (0..255)

Default	No default

ATTRIBUTE AtmIf Vpt Uni Sig lastTxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmUni
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Sig lastRxCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Sig lastRxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if

	a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmUni
Values	Hex (H.0..H.ff)
Default	No default

GROUP AtmIf Vpt Uni Sig Statistics (Stats)

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Sig peakConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Sig successfulConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Sig failedConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Sig txPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Sig rxPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Sig currentPmpConnections

Access	Read: All Write: Illegal

Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Sig peakPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Sig successfulPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Sig failedPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.

Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Sig currentConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of currently active point-to- point connections.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Vpt Uni Sig VirtualChannelDescriptor (Vcd)

Groups	"GROUP AtmIf Vpt Uni Sig Vcd Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor*

This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).

Mib: AtmUni

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpt Uni Sig Vcd Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable traffic attributes for a control channel.

Mib: AtmUni

ATTRIBUTE AtmIf Vpt Uni Sig Vcd trafficDescType (tdt)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.

Mib: AtmUni

Values:
- 3
- 6
- 7
- 8

Default: 6

ATTRIBUTE AtmIf Vpt Uni Sig Vcd atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections. The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to

the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib: AtmUni

Values:
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)

Default: rtVariableBitRate

ATTRIBUTE AtmIf Vpt Uni Sig Vcd weight

Access: Read and write

Criticality: Component

Description: This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m.

This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs.

When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***.

When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy*

determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT.

When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.

Mib: AtmUni

Values:
Decimal (1..4095)
sameAsCa
upToQueueLimit

Default: sameAsCa

ATTRIBUTE AtmIf Vpt Uni Sig Vcd qosClass (qos)

Access: Read and write

Criticality: Component

Description: This attribute specifies the quality of service for both the forward and backward direction for this connection.

Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video).

Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer).

Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib: AtmUni

Values:
0
1
2

	3 4
Default	2

ATTRIBUTE AtmIf Vpt Uni Sig Vcd trafficShaping (trShaping)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components. When ***disabled*** is selected, traffic shaping for this connection is disabled.
Mib	AtmUni
Values	disabled sameAsCa
Default	disabled

ATTRIBUTE AtmIf Vpt Uni Sig Vcd unshapedTransmitQueueing (unshap)

Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute.

When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator.*

When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib: AtmUni

Values: common
sameAsCa

Default: sameAsCa

ATTRIBUTE AtmIf Vpt Uni Sig Vcd usageParameterControl (upc)

Access: Read and write

Criticality: Component

Description: This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface.

When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator.* If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component.

When ***disabled*** is selected, UPC for this connection is disabled.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib: AtmUni

Values	disabled sameAsCa
Default	disabled

ATTRIBUTE AtmIf Vpt Uni Sig Vcd trafficDescParm (tdp)

Access	Read: All Write: All
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled. When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)

COMPONENT AtmIf Vpt Uni Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate registered default]
Groups	"GROUP AtmIf Vpt Uni Addr Operational (Oper)"
Scope	Device
Description	*AtmIf/n Uni Address/address,type* *AtmIf/n Vpt/m Uni Address/address,type* This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wild-card (‘?’), and a type. The type identifies whether the Address component is for a ***primary***, ***alternate***, ***registered***, or ***default*** address. The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses. Virtual interfaces do not have addresses of type ***default***. The wild-card is only valid for provisioned addresses. If the address is a single wild-card, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wild-card static address, then the choice is made using a round robin algorithm. The round robin algorithm first tries the primary routes. If none of the primary routes succeed, then the alternate routes are tried. Note that the ***UniInfo*** and ***PnniInfo*** sub-components are

mutually exclusive. Only one of these may be added under the ***AtmIf Uni Addr*** component.

Mib: AtmUni

Opt. Subcomp.: "COMPONENT AtmIf Vpt Uni Addr TerminateSPvpAndSPvc (TermSP)"
"COMPONENT AtmIf Vpt Uni Addr PnniInfo"
"COMPONENT AtmIf Vpt Uni Addr UniInfo"

Common Verbs:
Help
List
Display
Add
DELete

GROUP AtmIf Vpt Uni Addr Operational (Oper)

Properties: Operational

Description: This attribute group contains the operational attributes for the *AtmIf/n Uni Address* component.

Mib: AtmUni

ATTRIBUTE AtmIf Vpt Uni Addr reachability (reach)

Access: Read: All
Write: Illegal

Description: This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.

Mib: AtmUni

Values: internal
exterior

Default: No default

ATTRIBUTE AtmIf Vpt Uni Addr pnniScope

Access	Read: All Write: Illegal
Description	This attribute indicates the PNNI scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. This attribute will have the value of -1 if this node does not participate in a PNNI hierarchy, or if this address was provisioned with a UNI membership scope, rather than a PNNI routing level.
Mib	AtmUni
Values	Signed (-1..104)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Addr uniScope

Access	Read: All Write: Illegal
Description	This attribute indicates the UNI membership scope of the ATM address. It specifies the inclusive routing hierarchy in which the address is known. This attribute will have the value 0 if the address was provisioned with a PNNI routing level rather than a UNI membership scope.
Mib	AtmUni
Values	scopeNotAvailable localNetwork localPlusOne localPlusTwo siteMinusOne intraSite intraSitePlusOne organizationMinusOne intraOrganization organizationPlusOne communityMinusOne

intraCommunity
communityPlusOne
regional
interRegional
global

Default: No default

COMPONENT AtmIf Vpt Uni Addr TerminateSPvpAndSPvc (TermSP)

Scope: Device

Description:

AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc
AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc
AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc

The presence of this subcomponent indicates that SPvp and SPvc call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.

Mib: AtmUni

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Vpt Uni Addr PnniInfo

Groups: "GROUP AtmIf Vpt Uni Addr PnniInfo Provisioned (Prov)"

Scope: Device

Description:

AtmIf/n Aini Addr/address,type PnniInfo
AtmIf/n Iisp Addr/address,type PnniInfo
AtmIf/n Uni Addr/address,type PnniInfo

AtmIf/n Pnni Addr/address,type PnniInfo
AtmIf/n Vpt/m Aini Addr/address,type PnniInfo
AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo
AtmIf/n Vpt/m Uni Addr/address,type PnniInfo
AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo

This component contains provisioned information associated with the ATM address related to PNNI. This component appears only under provisioned *Address* components.

Mib: AtmUni

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpt Uni Addr PnniInfo Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.

Mib: AtmUni

ATTRIBUTE AtmIf Vpt Uni Addr PnniInfo scope

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.

Mib: AtmUni

Values: Signed (-1..104)

Default	-1

ATTRIBUTE AtmIf Vpt Uni Addr PnniInfo reachability (reach)

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmUni
Values	internal exterior
Default	internal

COMPONENT AtmIf Vpt Uni Addr UniInfo

Groups	"GROUP AtmIf Vpt Uni Addr UniInfo Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Uni Addr/address,type UniInfo* *AtmIf/n Vpt/m Uni Addr/address,type UniInfo* This component contains the provisioned information associated with the ATM address and related to the UNI. This component appears only under provisioned *Uni Address* components.

This component may not appear together with the *Atmif Uni Addr PnniInfo* component, they are mutually exclusive.

Mib: AtmUni

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpt Uni Addr UniInfo Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisioned attributes relating to a UNI address for a *UniInfo* component.

Mib: AtmUni

ATTRIBUTE AtmIf Vpt Uni Addr UniInfo scope

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the address UNI membership scope. It specifies the inclusive routing hierarchy in which the address will be known.

The ***useDefaultScope*** value maps to ***localNetwork*** for ATM group addresses, and to ***global*** for individual addresses.

Note that this value is ignored for UNI 3.x interfaces.

Mib: AtmUni

Values:
- useDefaultScope (def)
- localNetwork (ln)
- localPlusOne (lpo)
- localPlusTwo (lpt)
- siteMinusOne (smo)
- intraSite (is)

	intraSitePlusOne (ispo) organizationMinusOne (omo) intraOrganization (io) organizationPlusOne (opo) communityMinusOne (cmo) intraCommunity (ic) communityPlusOne (cpo) regional (r) interRegional (ir) global (g)
Default	useDefaultScope

ATTRIBUTE AtmIf Vpt Uni Addr UniInfo pnniReachability (reach)

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmUni
Values	internal exterior
Default	internal

COMPONENT AtmIf Vpt Uni CallingAddressScreening (CallingAScr)

Groups	"GROUP AtmIf Vpt Uni CallingAScr Provisioned (Prov)" "GROUP AtmIf Vpt Uni CallingAScr Statistics (Stat)"
Scope	Device
Description	*AtmIf/n Aini CallingAddressScreening* *AtmIf/n Uni CallingAddressScreening* *AtmIf/n Iisp CallingAddressScreening*

	This component represents the screening of incoming ATM SVC call requests against provisioned ATM calling addresses (that is, screening SVC calls coming from specific addresses). If this component is not provisioned, all call requests are accepted and no calling address screening takes place.
Mib	AtmUni
Opt. Subcomp.	"COMPONENT AtmIf Vpt Uni CallingAScr Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Uni CallingAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CallingAScr* component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni CallingAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the calling address screening feature is ***enabled*** or ***disabled***. If ***enabled***, incoming SVC calls are screened against provisioned addresses. If ***enabled*** and the calling address in the ATM SVC call request is provisioned to be accepted, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled***, and the calling address in the address request is not provisioned, the call is rejected If the value is ***disabled***, no calling address screening is performed.
Mib	AtmUni

Values	enabled disabled
Default	disabled

ATTRIBUTE AtmIf Vpt Uni CallingAScr defaultInsertionAddress (defInsAddr)

Access	Read: All Write: All
Description	This attribute specifies the address to be inserted into the SVC connection request if *adminStatus* is ***enabled*** and the connection request does not contain a calling address. If the *adminStatus* attribute is ***enabled*** and this attribute is empty, all incoming SVC calls which do not contain a calling address are rejected.
Mib	AtmUni
Values	String (0..20, Hex)
Default	""

GROUP AtmIf Vpt Uni CallingAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni CallingAScr acceptedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE AtmIf Vpt Uni CallingAScr rejectedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpt Uni CallingAScr unmatchedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Vpt Uni CallingAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action*

AtmIf/n Uni CalledAScr Address/addr,action
AtmIf/n Iisp CalledAScr Address/addr,action
This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address.
For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected.
For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected.
For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib: AtmUni

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Vpt Uni CalledAddressScreening (CalledAScr)

Groups: "GROUP AtmIf Vpt Uni CalledAScr Provisioned (Prov)"
"GROUP AtmIf Vpt Uni CalledAScr Statistics (Stat)"

Scope: Device

Description:
AtmIf/n Aini CalledAddressScreening
AtmIf/n Uni CalledAddressScreening
AtmIf/n Iisp CalledAddressScreening
This component represents the screening of incoming ATM SVC call requests against provisioned ATM called addresses (that is, going to specific destinations). If this component is not

provisioned, all call requests are accepted and no called address screening takes place.

Mib	AtmUni
Opt. Subcomp.	"COMPONENT AtmIf Vpt Uni CalledAScr Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Uni CalledAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CalledAScr* component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni CalledAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the called address screening feature is ***enabled*** or ***disabled***. If the value is ***enabled***, incoming SVC calls will be screened against provisioned called addresses. If the value is ***enabled*** and the called address in the ATM SVC call request has been provisioned, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled*** and the called address in the call request is not provisioned, the call is rejected. If the value is ***disabled***, no called address screening is performed.
Mib	AtmUni
Values	enabled disabled
Default	disabled

GROUP AtmIf Vpt Uni CalledAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni CalledAScr acceptedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpt Uni CalledAScr rejectedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpt Uni CalledAScr unmatchedCalls

Access	Read: All Write: Illegal

Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Vpt Uni CalledAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected.

For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib AtmUni

Common Verbs

Help
List
Display
Add
DELete

COMPONENT AtmIf Vpt Uni PathTraceFilter (Ptf)

Groups "GROUP AtmIf Vpt Uni Ptf Criteria"
"GROUP AtmIf Vpt Uni Ptf Operational (Oper)"
"GROUP AtmIf Vpt Uni Ptf RecordControl (Record)"

Scope Device

Description

AtmIf/n Aini PathTraceFilter
AtmIf/n Iisp PathTraceFilter
AtmIf/n Uni PathTraceFilter
AtmIf/n Pnni PathTraceFilter
AtmIf/n Vpt/vpi Aini PathTraceFilter
AtmIf/n Vpt/vpi Iisp PathTraceFilter
AtmIf/n Vpt/vpi Uni PathTraceFilter
AtmIf/n Vpt/vpi Pnni PathTraceFilter

This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced.

When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop*, and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When *AtmPathTraceFilter* component is deleted, all records are

cleared.

Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted.

The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.

Mib	AtmUni
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Uni Ptf PathTraceRecord (PTRecord)"
Common Verbs	Help List Display Add DELete

VERB START AtmIf Vpt Uni Ptf

Impact	Service
Description	*START AtmIf/n Aini PathTraceFilter* *START AtmIf/n Iisp PathTraceFilter* *START AtmIf/n Uni PathTraceFilter* *START AtmIf/n Pnni PathTraceFilter* *START AtmIf/n Vpt/vpi Aini PathTraceFilter* *START AtmIf/n Vpt/vpi Iisp PathTraceFilter* *START AtmIf/n Vpt/vpi Uni PathTraceFilter* *START AtmIf/n Vpt/vpi Pnni PathTraceFilter*

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

VERB STOP AtmIf Vpt Uni Ptf

Impact	Service
Description	*STOP AtmIf/n Aini PathTraceFilter* *STOP AtmIf/n Iisp PathTraceFilter* *STOP AtmIf/n Uni PathTraceFilter* *STOP AtmIf/n Pnni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Aini PathTraceFilter* *STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter* *STOP AtmIf/n Vpt/vpi Uni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command causes the filter to stop, but keeps the trace records.

VERB CLEAR AtmIf Vpt Uni Ptf

Impact	Service
Description	*CLEAR AtmIf/n Aini PathTraceFilter* *CLEAR AtmIf/n Iisp PathTraceFilter* *CLEAR AtmIf/n Uni PathTraceFilter* *CLEAR AtmIf/n Pnni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP AtmIf Vpt Uni Ptf Criteria

Properties	Operational
Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Ptf traceInfo (tInfo)

Access	Read: All Write: All

Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	AtmUni
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

ATTRIBUTE AtmIf Vpt Uni Ptf calledPartyPrefix (cldPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmUni
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf callingPartyPrefix (clgPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmUni
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf connectionType (type)

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmUni
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE AtmIf Vpt Uni Ptf connectionConfiguration (config)

Access	Read: All Write: All
Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match

successfully, the call is traced.

Mib	AtmUni
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE AtmIf Vpt Uni Ptf serviceCategory (svcCat)

Access	Read: All Write: All
Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	AtmUni
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP AtmIf Vpt Uni Ptf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Ptf state

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active.

inactive: Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.

Mib: AtmUni

Values: active
inactive

Default: inactive

ATTRIBUTE AtmIf Vpt Uni Ptf recordCount

Access: Read: All
Write: Illegal

Description: This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords*, which ever is less.

Mib: AtmUni

Values: Decimal (0..200)

Default: No default

ATTRIBUTE AtmIf Vpt Uni Ptf matchedConnections

Access: Read: All
Write: Illegal

Description: This attribute indicates the number of connections that match the criteria of this filter.

Mib: AtmUni

Values: Decimal (0..2147483647)

Default: No default

ATTRIBUTE AtmIf Vpt Uni Ptf elapsedTime

Access: Read: All
Write: Illegal

Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	AtmUni
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf timeRemaining

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmUni
Values	Decimal (0..70560)
Units	minutes
Default	No default

GROUP AtmIf Vpt Uni Ptf RecordControl (Record)

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Ptf traceTimeout

Access	Read: All Write: All
Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmUni
Values	Decimal (1..70560)

Units	minutes
Default	60

ATTRIBUTE AtmIf Vpt Uni Ptf maxTraceRecords (mRecords)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter. Once the maximum has been reached, the oldest record is removed.
Mib	AtmUni
Values	Decimal (1..200)
Default	2

COMPONENT AtmIf Vpt Uni Ptf PathTraceRecord (PTRecord)

Groups	"GROUP AtmIf Vpt Uni Ptf PTRecord Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord* *AtmIf/n Iisp Ptf PTRecord* *AtmIf/n Uni Ptf PTRecord* *AtmIf/n Pnni Ptf PTRecord* *AtmIf/n Vpt/n Aini Ptf PTRecord* *AtmIf/n Vpt/n Iisp Ptf PTRecord* *AtmIf/n Vpt/n Uni Ptf PTRecord* *AtmIf/n Vpt/n Pnni Ptf PTRecord*

	This component represents the path trace record for the last failed connection against this filter.
Mib	AtmUni
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Uni Ptf PTRecord Hop"
Common Verbs	Help List Display

GROUP AtmIf Vpt Uni Ptf PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmUni
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations

Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord timeStamp

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmUni
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord srcPortId

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmUni
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord srcPortName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmUni
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord causeCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord diagCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmUni
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Vpt Uni Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	"GROUP AtmIf Vpt Uni Ptf PTRecord Hop Operational (Oper)"
Scope	Device

Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmUni
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Uni Ptf PTRecord Hop VendorSpecificInfo (Vsi)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Uni Ptf PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop ingressDlci (dlci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop ingressCallReference (callref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message.

	The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmUni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop ingressEndPointReference (epref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmUni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop nodeId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmUni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop nodeName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmUni
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop portId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop portName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmUni

Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop pnniTraceContRefusalIndPresent (refusal)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmUni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop crankbackDestNodeIndPresent (dest)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmUni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop pnniCrankbackGapIndPresent (gap)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmUni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop crankBackCause (cause)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmUni
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop blockedTransitType (type)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmUni
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop blockedNodeId (bNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmUni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop blockedLinkPrecedingNodeId (pNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked.

	This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmUni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop blockedLinkPortId (bPortId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop blockedLinkSucceedingNodeId (sNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmUni

Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop dstVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop dstDlci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmUni
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop dstCallReference (dcr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmUni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop dstEndPointReference (depr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmUni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop specifiedPath

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmUni
Values	no yes
Default	no

COMPONENT AtmIf Vpt Uni Ptf PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	"GROUP AtmIf Vpt Uni Ptf PTRecord Hop Vsi Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

	All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmUni
Common Verbs	Help List Display

GROUP AtmIf Vpt Uni Ptf PTRecord Hop Vsi Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop Vsi length

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmUni
Values	Decimal (0..11)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop Vsi organizationUniqueId (oui)

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmUni
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptf PTRecord Hop Vsi data

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmUni
Values	String (1..8, Hex)
Default	No default

COMPONENT AtmIf Vpt Uni PathTraceTestConnection (Ptt)

Groups	"GROUP AtmIf Vpt Uni Ptt Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini PathTraceTestConnection* *AtmIf/n Iisp PathTraceTestConnection* *AtmIf/n Uni PathTraceTestConnection* *AtmIf/n Pnni PathTraceTestConnection* *AtmIf/n Vpt/vpi Aini PathTraceTestConnection* *AtmIf/n Vpt/vpi Iisp PathTraceTestConnection* *AtmIf/n Vpt/vpi Uni PathTraceTestConnection* *AtmIf/n Vpt/vpi Pnni PathTraceTestConnection* This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface. The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test connection responds with the trace results collected during a complete or partial trace.
Mib	AtmUni
Common Verbs	Help List Display

VERB TRACE AtmIf Vpt Uni Ptt

Impact	Passive
Description	*TRACE AtmIf/n Aini AtmPathTraceTest* *TRACE AtmIf/n Iisp AtmPathTraceTest* *TRACE AtmIf/n Uni AtmPathTraceTest* *TRACE AtmIf/n Pnni AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest* This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node. Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP AtmIf Vpt Uni Ptt Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *AtmPathTraceTest* component.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Ptt traceCrankback

Access	Read: All Write: All
Description	This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.
Mib	AtmUni
Values	no yes

Default no

ATTRIBUTE AtmIf Vpt Uni Ptt txTrafficDescType (txTdt)

Access
Read: All
Write: All

Description
This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.

Mib
AtmUni

Values
1
2
3
4
5
6
7
8
9

Default 1

ATTRIBUTE AtmIf Vpt Uni Ptt rxTrafficDescType (rxTdt)

Access
Read: All
Write: All

Description
This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute

When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.

Mib
AtmUni

Values
1
2
3

4
5
6
7
8
9
sameAsTx

Default sameAsTx

ATTRIBUTE AtmIf Vpt Uni Ptt atmServiceCategory (service)

Access
Read: All
Write: All

Criticality Component

Description

This attribute specifies the ATM service category for both directions of the connection.

If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications.

The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.

Mib: AtmUni

Values:
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
derivedFromBBC (derived)

Default: unspecifiedBitRate

ATTRIBUTE AtmIf Vpt Uni Ptt fwdQosClass (fwdQos)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the quality of service for the forward direction for this connection.

Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video).

Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib: AtmUni

Values:
0
1
2
3
4

Default: 0

ATTRIBUTE AtmIf Vpt Uni Ptt bwdQosClass (bwdQos)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the quality of service for the backward direction for this connection.

Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video).

Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.

Mib: AtmUni

Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE AtmIf Vpt Uni Ptt bearerClassBbc (bcBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network. The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it. Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements

are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib: AtmUni

Values:
a
c
x
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Uni Ptt transferCapabilityBbc (tcBbc)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the transfer capability for this connection. UNI 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

NotApplicable specifies that the user does not want to specify the transfer capability.

The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data.

The value ***NoIndication*** for traffic type is used if the user has not

set the traffic type. This is also the case for end-to-end timing.

The value ***yes*** for end-to-end timing indicates that end-to-end timing is required.

The value ***no*** for end-to-end timing indicates that end-to-end timing is not required.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmUni

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Uni Ptt clippingBbc (cBbc)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes.

Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is

answered and before an associated connection is switched through.

Mib: AtmUni

Values:
no
yes

Default: no

ATTRIBUTE AtmIf Vpt Uni Ptt bestEffort

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmUni

Values:
indicated
notIndicated
derivedFromServiceCategory (derived)

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Uni Ptt testCalledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmUni
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptt testCalledVpiVci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmUni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptt testSpecifiedPath

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmUni
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Ptt bwdQosParameters (bqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Vpt Uni Ptt fwdQosParameters (fqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay

(maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element.

The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.

Mib: AtmUni

Vector of: Decimal (0..2147483647)

Index:
cdv
ctd
clr

Default: (cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Vpt Uni Ptt txTrafficDescParm (txTdp)

Access:
Read: All
Write: All

Description: This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled.

When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero.

When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter

5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

Mib	AtmUni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)

Default ([5] 0)

ATTRIBUTE AtmIf Vpt Uni Ptt rxTrafficDescParm (rxTdp)

Access
Read: All
Write: All

Description
This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in
cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC).

When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused).

When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused).

When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for

CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or

I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

Mib: AtmUni

Vector of: Decimal (0..2147483647)

Index: Decimal (1..5)

Default: ([5] 0)

COMPONENT AtmIf Vpt Uni ServiceTrace (SrvTrace)

Groups: "GROUP AtmIf Vpt Uni SrvTrace Operational"

Scope: Application

Description:
AtmIf/n [Vpt/m] Uni ServiceTrace
AtmIf/n [Vpt/m] Iisp ServiceTrace
AtmIf/n [Vpt/m] Pnni ServiceTrace
AtmIf/n [Vpt/m] Aini ServiceTrace
The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service.

Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.

Mib: AtmUniTrace

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB Start AtmIf Vpt Uni SrvTrace

Impact	Service
Description	*Start AtmIf/n [Vpt/m] Uni ServiceTrace* *Start AtmIf/n [Vpt/m] Iisp ServiceTrace* *Start AtmIf/n [Vpt/m] Pnni ServiceTrace* *Start AtmIf/n [Vpt/m] Aini ServiceTrace* This command starts a service trace session.

VERB Stop AtmIf Vpt Uni SrvTrace

Impact	Service
Description	*Stop AtmIf/n [Vpt/m] Uni ServiceTrace* *Stop AtmIf/n [Vpt/m] Iisp ServiceTrace* *Stop AtmIf/n [Vpt/m] Pnni ServiceTrace* *Stop AtmIf/n [Vpt/m] Aini ServiceTrace* This command stops a service trace session.

GROUP AtmIf Vpt Uni SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	AtmUniTrace

ATTRIBUTE AtmIf Vpt Uni SrvTrace receiverName (rcvr)

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmUniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Uni SrvTrace duration

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmUniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE AtmIf Vpt Uni SrvTrace queueLimit

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmUniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE AtmIf Vpt Uni SrvTrace session

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmUniTrace
Values	The name of the component
Default	No default

COMPONENT AtmIf Vpt Uni Reroute

Groups	"GROUP AtmIf Vpt Uni Reroute LocalOperational (LOper)" "GROUP AtmIf Vpt Uni Reroute GlobalOperational (GOper)" "GROUP AtmIf Vpt Uni Reroute Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Iisp Reroute* *AtmIf/n Aini Reroute* *AtmIf/n Uni Reroute* *AtmIf/n Vpt/vpi Iisp Reroute* *AtmIf/n Vpt/vpi Aini Reroute* *AtmIf/n Vpt/vpi Uni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	AtmUni
Subcomponents	"COMPONENT AtmIf Vpt Uni Reroute Ov"
Common Verbs	Help List Display Add DELete

VERB OPTIMIZE AtmIf Vpt Uni Reroute

Impact	Service
Description	*Optimize [-all] AtmIf/n Uni outeouteouteouteouteoute*sBy default, only connection segsforation. The best known optimization metric value for the connection segment is indicated by the localOptimalMetricValue attribute under the RerouteInfo component for the connection. The -all option causes all connection segments subscribed to path optimization to be considered.s

GROUP AtmIf Vpt Uni Reroute LocalOperational (LOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Reroute localSubscribedConnections (lsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute localEligibleRecoveredCon (lerc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute localIneligibleRecoveredCon (lirc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.

Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute localLastRrCauseCode (lrrcc)

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	AtmUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute localPathsOptimized (lPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vpt Uni Reroute GlobalOperational (GOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Reroute globalSubscribedConnections (gsub)

Access	Read only

Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute globalEligibleRecoveredCon (gerc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute globalIneligibleRecoveredCon (girc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute globalLastRrCauseCode (grrcc)

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	AtmUni
Values	Decimal (0..255)

Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute globalPathsOptimized (gPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vpt Uni Reroute Statistics (Stats)

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Reroute totalLocalConnectionRecoveries (tLConRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute totalLocalFailedRecoveries (lFailedRec)

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.

Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute totalLocalPathOptimizations (tLPathOpt)

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute totalGlobalConnectionRecoveries (tGConRec)

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute totalGlobalFailedRecoveries (gFailedRec)

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute totalGlobalPathOptimizations (tGPathOpt)

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Uni Reroute totalOptimizationPasses (optPass)

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmUni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Vpt Uni Reroute Ov

Groups	"GROUP AtmIf Vpt Uni Reroute Ov Provisioned (Prov)" "GROUP AtmIf Vpt Uni Reroute Ov LocalProvisioned (LProv)" "GROUP AtmIf Vpt Uni Reroute Ov GlobalProvisioned (GProv)"
Scope	Device
Description	*AtmIf/n Iisp Reroute Ov* *AtmIf/n Aini Reroute Ov* *AtmIf/n Uni Reroute Ov* *AtmIf/n Vpt/vpi Iisp Reroute Ov* *AtmIf/n Vpt/vpi Aini Reroute Ov* *AtmIf/n Vpt/vpi Uni Reroute Ov*

This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.

Mib AtmUni

Common Verbs
Help
List
Display

GROUP AtmIf Vpt Uni Reroute Ov Provisioned (Prov)

Properties Provisioned

Description This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.

Mib AtmUni

ATTRIBUTE AtmIf Vpt Uni Reroute Ov protocol

Access Read and write

Description This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning.

One of the following values can be specified:
sameAsARtgPnniReroute: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute.
localGlobal: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature.
localOnly: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
globalOnly: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting

feature.
***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib: AtmUni

Values:
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE AtmIf Vpt Uni Reroute Ov numOptAttempts

Access: Read and write

Description: This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib: AtmUni

Values: Decimal (0..15)
sameAsARtgPnniReroute (sameAs)

Default: sameAs

ATTRIBUTE AtmIf Vpt Uni Reroute Ov moduleOptimizationConnections

Access: Read and write

Description: This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component.

One of the following values can be specified:
sameAsARtgPnniReroute: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute.
none: No connection segments are considered for path optimization.
recoveredOnly: Only connection segments that are foration. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection
allSubscribed: All connection segments subscribed to path optimization are considered.

Mib: AtmUni

Values: none
recoveredOnly
allSubscribed
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE AtmIf Vpt Uni Reroute Ov switchoverMechanism

Access: Read and write

Description	This attribute specifies the mechanism used for switchover of a rerouted connection segment. One of the following values can be specified: ***sameAsARtgPnniReroute***: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute. ***standard***: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”. ***rcl***: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.
Mib	AtmUni
Values	standard rcl sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

GROUP AtmIf Vpt Uni Reroute Ov LocalProvisioned (LProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for EBR and local rerouting protocols.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Reroute Ov localConnectionRecoverySubscr (lConRec)

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator. Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local

connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values.
svcSvp: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery.
sourceSpvcSpvp: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery.
transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.

Mib: AtmUni

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Vpt Uni Reroute Ov localPathOptimizationSubscr (lPathOpt)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib	AtmUni
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

GROUP AtmIf Vpt Uni Reroute Ov GlobalProvisioned (GProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for the global and EBR rerouting protocol.
Mib	AtmUni

ATTRIBUTE AtmIf Vpt Uni Reroute Ov globalConnectionRecoverySubscr (gConRec)

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute

affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib: AtmUni

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Vpt Uni Reroute Ov globalPathOptimizationSubscr (gPathOpt)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization.

This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

Mib	AtmUni
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

COMPONENT AtmIf Vpt TrafficManagement (Tm)

Groups	"GROUP AtmIf Vpt Tm Operational (Oper)"

Scope	Device
Description	*AtmIf/n Vpc/vpi TrafficManagement,* *AtmIf/n Vcc/vpi.vci TrafficManagement,* *AtmIf/n Vpt/vpi TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci TrafficManagement* The *Tm* subcomponent contains the operational traffic management attributes of a connection. It is created dynamically for each activated *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Tm AvailableBitRate (Abr)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Tm Operational (Oper)

Properties	Operational
Description	This group contains attributes for the *Tm* component to reflect operational traffic attributes.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt Tm txTrafficDescType (txTdt)

Access	Read only
Description	T his attribute indicates the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5

	6 7 8 9
Default	No default

ATTRIBUTE AtmIf Vpt Tm txQosClass (txQos)

Access	Read only
Description	This attribute indicates the quality of service for the calling to called direction for this connection. This is only applicable to Soft PVC and SVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified QOS class; no objective is specified for the performance parameters. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	0 1 2 3 4 notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt Tm txQueueLength (txQLen)

Access	Read only
Description	This attribute indicates the current number of cells in the transmit queue for this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the length of the common queue which is used for this ATM service category. If this connection has *unshapedTransmitQueueing* attribute displayed as ***fifo***, this attribute indicates the number of cells for this connection which are enqueued in a first-in-first-out queuing method for this ATM service category. This will only occur for connections on ATM IP cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the length of the per-VC queue. For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current number of cells in the link class queue used by this connection to buffer its traffic. This attribute does not apply to basic *Vpt*s.
Mib	AtmCore
Values	Decimal (0..1011840)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpt Tm txQueueCongestionState (txQCong)

Access	Read only
Description	This attribute indicates the congestion state of the transmit queue for this connection. If this connection has *unshapedTransmitQueueing* attribute

displayed as ***common***, this attribute displays the congestion state of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the congestion state of the per-VC queue.

The congestion state of a queue is indicated by a numeric value ranging from 0 to 3. When a queue is in a congested state x, only traffic with discard priority (DP) 0 to x are enqueued. Traffic with DP > x is discarded.

For example, if the congestion state is 3, there is no congestion and all traffic is enqueued. Likewise, when the congestion state is 0, there is maximum congestion and only traffic with DP=0 is enqueued on that queue.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current congestion state of the link class queue used by this connection to buffer its traffic.

This attribute does not apply to basic *Vpt*s.

Mib — AtmCore

Values — Decimal (0..3)

Default — No default

ATTRIBUTE AtmIf Vpt Tm holdingPriority (hpri)

Access — Read only

Description — This attribute indicates the actual holding priority in effect for this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. Some applications, for example *Vcc Test*, may override the provisioned holding priority.

A value of ***notApplicable*** is displayed when this is an elastic connection. Holding priority does not apply to bandwidth elastic

connections.

Holding priority has no effect if the equivalent cell rate (ECR) for a connection is zero.

This attribute does not apply to *Vpt Vcc*s.

Mib: AtmCore

Values:
0
1
2
3
4
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Tm rxTrafficDescType (rxTdt)

Access: Read only

Description: This attribute indicates the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute.

Mib: AtmCore

Values:
1
2
3
4
5
6
7
8
9

Default: No default

ATTRIBUTE AtmIf Vpt Tm rxQosClass (rxQos)

Access	Read only
Description	This attribute indicates the quality of service for the called to calling direction for this connection. This is only applicable to Soft PVC and SVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified QOS class; no objective is specified for the performance parameters. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	0 1 2 3 4 notApplicable sameAsFwd
Default	No default

ATTRIBUTE AtmIf Vpt Tm atmServiceCategory (service)

Access	Read only
Description	This attribute indicates the ATM service category used for traffic in both directions of the connection.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to have significantly reduced value for the application.

The ***rtVariableBitRate*** service category is intended for real time applications; that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to

the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib AtmCore

Values
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtVbr)
nrtVariableBitRate (nrtVbr)
availableBitRate (abr)

Default No default

ATTRIBUTE AtmIf Vpt Tm trafficShaping (trShaping)

Access Read only

Description This attribute indicates the traffic shaping state of the connection.

A value of ***notApplicable*** indicates that traffic shaping is not applicable or not supported for this connection. This is the case:
- when the *txTrafficDescType* is 1 or 2.
- for standard *Vpt Vcc*s and basic *Vpt*s.
- for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, when the *atmServiceCategory* is ***constantBitRate***.

In these cases, the value of ***notApplicable*** is indicated regardless of whether traffic shaping is enabled or disabled in the provisioning data.

A value of ***disabled*** indicates that traffic shaping is applicable and supported for the type of connection but has been turned off in the provisioning data.

A value of ***linear*** or ***inverseUpc*** indicates that traffic shaping is applicable and supported for the type of connection and has been turned on in the provisioning data. This is the only case that indicates that traffic shaping is performed on the connection. In this case, the actual shaping rate is reflected in the *txTrafficDescParm* attribute, parameter number 4. A value of ***linear*** indicates that traffic is being shaped at the constant rate indicated in *txTrafficDescParm* 4. A value of ***inverseUpc***

indicates that the shaper strictly conforms to the requirements of a dual leaky bucket UPC enforcer. This value is indicated if traffic shaping is enabled, and the *txTrafficDescType* for this connection is 6, 7 or 8.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is always ***disabled***.

Traffic shaping for connections with *atmServiceCategory* as ***availableBitRate*** (*txTrafficDescType* 9) depends upon the *abrConnectionType* attribute. If *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, the value of this attribute is ***linear***. If *abrConnectionType* is ***erSwitch*** or ***efciSwitch***, this attribute is ***notApplicable***.

Mib: AtmCore

Values:
disabled
linear
inverseUpc
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Tm bearerClassBbc (bcBbc)

Access: Read only

Description: This attribute indicates the bearer capability for this connection.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is displayed, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements.When ***c*** is displayed, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***cbr*** or ***vbr***), and timing requirements are user defined (that is, transparent to the network). When the value of this attribute is ***x***, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.

Class vp service is used to indicate a transparent VP service when the user is requesting an ATM only service from the network. In this case, the network does not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except for VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP and SVP connections.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
a
c
x
vp
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Tm transferCapabilityBbc (tcBbc)

Access: Read only

Description: This attribute indicates the transfer capability for this connection. Uni 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication

9: VBR, yes
10: VBR, no

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance, or in the case that the transfer capability in the call request was set to NoIndication.

The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data.

The value NoIndication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing.

The value yes for end-to-end timing indicates that end-to-end timing is required for the connection.

The value no for end-to-end timing indicates that end-to-end timing is not required for the connection.

Mib	AtmCore
Values	0 1 2 5 8 9 10 notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt Tm clippingBbc (cBbc)

Access	Read only
Description	This attribute indicates the value of the clipping susceptibility parameter in the broadband bearer capability (BBC) Information Element.

Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
no
yes
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Tm unshapedTransmitQueueing (unshap)

Access: Read only

Description: This attribute indicates the unshaped transmit queuing state of the connection.

A value of ***common*** indicates that transmit traffic is being enqueued onto the common transmit queue for this service category.
The *txQueueLength* attribute indicates the current length of the common transmit queue.

A value of ***fifo*** indicates that transmit traffic is being queued in a first-in-first-out basis for this service category. This is similar to ***common*** queuing, but the *txQueueLength* attribute indicates the number of cells in this connection queue. A value of ***fifo*** will only be indicated for connections on ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***.

A value of ***perVc*** indicates that transmit traffic is being enqueued onto a per-VC queue for this connection.

A value of ***notApplicable*** indicates that transmit traffic is being shaped for this connection, or that unshaped transmit queuing is not applicable for this type of connection. Transmit traffic for a shaped connection is enqueued onto a per-VC queue, but this attribute is only applicable for unshaped connections. Unshaped transmit queuing is not applicable for basic *Vpt*s.

Mib: AtmCore

Values:
perVc
common
notApplicable
fifo

Default: No default

ATTRIBUTE AtmIf Vpt Tm bestEffort

Access: Read only

Description: This attribute indicates value of best effort parameter in the ATM Traffic Descriptor Information Element.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
indicated
notIndicated
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Tm forceTagging (tagging)

Access: Read only

Description

This attribute indicates the state of force tagging option for this connection. Force tagging refers to setting the CLP bit for all cells on a connection.

A value of ***enabled*** indicates that the CLP bit is being set to 1 for all cells in the transmit direction on this connection.

A value of ***disabled*** indicates that the CLP bit is unchanged for cells in the transmit direction on this connection. The value ***disabled*** is always displayed for *Vpt*s since forced tagging is applied on a per *Vpt Vcc* basis.

Mib

AtmCore

Values

disabled
enabled

Default

No default

ATTRIBUTE AtmIf Vpt Tm weight

Access

Read only

Description

This attribute indicates the relative weight of this unshaped connection. Connections with a larger weight get a larger proportion of the link bandwidth or in the case of standard *Vpt Vcc*s, the *Vpt* bandwidth.

For all but standard *Vpt Vcc*s, the default connection weight is determined by the weight policy for a service category and the traffic descriptor for a connection. For standard *Vpt Vcc*s, the default connection weight is determined by the *Vcc*'s service category.

A value from 1 to 4095 indicates an actual weight. The value ***upToQueueLimit*** indicates that the weight of a connection is up to the transmit queue limit for this connection and is used for connections which have the value of the *unshapedTransmitQueueing* attribute displayed as ***fifo***.

This attribute has a displayed value of ***notApplicable*** in the following cases:
- This connection has the value of the *trafficShaping* attribute

displayed as either ***linear*** or ***inverseUpc***.
- This connection has the value of the *trafficShaping* attribute displayed as ***disabled***, but the connection's service category has the *trafficShaping* attribute provisioned as either ***enabled*** or ***inverseUpc***.
- This connection has the value of the *unshapedTransmitQueueing* attribute displayed as ***common***.
- This is a basic *Vpt* connection.
- For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, since per-connection weight is not supported.

Mib: AtmCore

Values:
Decimal (1..4095)
upToQueueLimit
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Tm usageParameterControl (upc)

Access: Read only

Description: This attribute indicates the UPC state of the connection.

A value of ***notApplicable*** indicates that UPC is not applicable or not supported for the connection. This is the case:
- when the connection's *rxTrafficDescType* is 1 or 2.
- for standard *Vpt Vcc*s and basic *Vpt*s.

A value of ***notApplicable*** is set regardless of whether UPC is disabled or enabled in provisioning data.

A value of ***disabled*** indicates that UPC is applicable and supported for the type of connection but has been turned off in the provisioning data.

A value of ***enforced*** indicates that UPC is actively checking conformance for the connection and is discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. On some

ATM cards, the counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

A value of ***monitored*** indicates that UPC is actively checking conformance for the connection and counting the violations, but is not discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. The counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt. rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

If the *atmServiceCategory* for this connection is ***availableBitRate***, a value of ***enforced*** indicates that Dynamic Generic Cell Rate Algorithm (DGCRA) is active for the connection. The traffic descriptor parameters used for DGCRA enforcement are reflected in the *rxTrafficDescParm* of the connection.

Mib	AtmCore
Values	enforced disabled monitored notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt Tm txPacketWiseDiscard (txpd)

Access	Read only
Description	This attribute indicates the current set of packet-wise discard functions in effect in the transmit data direction at this connection point. A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point.

A value of ***wred*** indicates that Weighted Random Early Detection is in effect at this connection point. W-RED can be enabled by provisioning for PVCs and SPVCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Packet-wise functions are not applicable to virtual path connections (VPCs) on these cards.

On all other ATM cards, all packet-wise discard functions also apply to virtual path connections (VPCs).

This attribute is not applicable for *Vpt*s.

Mib	AtmCore
Set of	ppd epd wred
Default	No default

ATTRIBUTE AtmIf Vpt Tm rxPacketWiseDiscard (rxpd)

Access	Read only
Description	This attribute indicates the current set of packet-wise discard functions in effect in the receive data direction at this connection point. A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, packet-wise functions are not applicable to virtual path connections (VPCs).

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Note that a provisioned value of ***enabled*** for the *Vcc/Vpc Vcd/Vpd Tm rxPacketWiseDiscard* provisionable attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in actually enabling packet-wise discard functions in the receive data direction of a connection locally on these cards, thus does not affect the operational value displayed.

On all other ATM cards, all packet-wise discard functions also apply to virtual path connections (VPCs).

This attribute is not applicable for *Vpt*s.

Mib: AtmCore

Set of: ppd
epd

Default: No default

ATTRIBUTE AtmIf Vpt Tm bandwidthElastic (bwElastic)

Access: Read only

Description: This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether

the application (for example, *Trunk*) running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced is displayed in the *bandwidthReduction* attribute.

A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection is not released.

A value of ***no*** indicates that the bandwidth for this connection is not reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority.*

Bandwidth elasticity has no effect for connections which have an equivalent cell rate (ECR) of zero.

This attribute is not applicable for *Vpt*s and *Vpt Vcc*s.

Mib — AtmCore

Values — no
yes

Default — No default

ATTRIBUTE AtmIf Vpt Tm bandwidthReduction (bwReduction)

Access — Read only

Description — This attribute shows the amount by which the bandwidth has been reduced for this connection. This value is non-zero only for connections which have *bandwidthElastic* displayed as ***yes***, and which are also operating in a reduced bandwidth mode. This is typically the case for selected connections running over an IMA link. This attribute takes a value from 0 (no reduction) up to the ECR. For all connections which are running at their full allocated bandwidth, *bwReduction* has the value 0. Connections which have been reduced in allocated bandwidth have a positive number for this attribute. The *bwReduction* may be subtracted from the ECR (which is displayed as *txTrafficDescParm* 5) to determine the actual bandwidth allocated to this connection.

Mib — AtmCore

Values	Decimal (0..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE AtmIf Vpt Tm abrConnectionType (abrType)

Access	Read only
Description	This attribute indicates the type of ABR behavior which is in effect at this connection. This attribute is only applicable if the *atmServiceCategory* attribute is ***availableBitRate***. If the *atmServiceCategory* attribute is not ***availableBitRate***, this attribute value is set to ***notApplicable***. For ATM cards which do not support ABR connections, the possible values for this attribute are ***notApplicable***, ***efciSwitch***, or ***nonAbrInterworking***. In EFCI marking mode, the Explicit Forward Congestion Indication (EFCI) field in the data cell headers is used to indicate transmit queue congestion. For ATM cards which do support ABR connections, if the *connectionPointType* is ***connectionEndPoint***, the value of this attribute is ***sourceDest***. In this mode, the ABR Source and Destination behavior is in effect at this connection. This attribute is also ***sourceDest*** in the case where the next hop connection is specified as ***nonAbrInterworking***. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component. If the *connectionPointType* is not ***connectionEndPoint***, the value of this attribute depends upon the *abrConnectionType* provisioning and the card type to which the traffic is forwarded on the backplane. The default *abrConnectionType* is provisioned at the *CA Abr abrConnectionType* attribute, and may be overridden for a provisioned connection in the *Vcd Tm abrConnectionType* or *Vpd Tm abrConnectionType* attribute. If the *CA Abr abrConnectionType* attribute is ***virtualSourceDest*** at either one of the two connection points, and if both the connection points are defined on ATM cards which support ABR connections, virtual source and destination behavior is applied to

the connection. In this instance, the attribute displays the value ***virtualSourceDest***.

This attribute has the value ***erSwitch*** if ABR explicit rate functionality is in effect at this connection. In this mode, the switch may modify the Explicit Rate (ER) field of backward Resource Management (RM) cells to indicate the status of congestion at this connection point.

This attribute has the value ***nonAbrInterworking*** in the case where this connection point is functioning as an SPVC origin for an ABR connection where the link side of this connection is configured as a non-ABR ATM service category. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***.

Mib: AtmCore

Values:
erSwitch
efciSwitch
virtualSourceDest
sourceDest
nonAbrInterworking
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Tm txTrafficDescParm (txTdp)

Access: Read only

Description: This attribute is a vector of five transmit traffic parameters whose mapping is defined by the *txTrafficDescType* attribute.

The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR), actual cell rate (ACR), explicit rate (ER), equivalent cell rate (ECR), and actual shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds.

When *txTrafficDescType* is 1 or 2, parameters 1 through 5 are unused.

In this description, PCR is the greater of either the PCR or the requested shaping rate (parameter 1 or parameter 5) specified in the *txTrafficDescParm* attribute under the *Vcd Tm* or *Vpd Tm* component.

When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 or 1 traffic; parameters 2 and 3 are unused.

When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard.

When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging.

When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic.

When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, parameter 4 reflects the actual shaping rate in cell/s for this connection. For CQC-based ATM cards, the set of available shaping rates is based on the number of interfaces doing shaping (attribute *perVcQueueInterfaces*), and the *shapingScalingFactor* attribute of the *Arc Cqc Override* component. A rate of zero (0) indicates that shaping is not performed, or that the interface is down.

When *txTrafficDescType* is 9**,** parameter 1 represents the PCR;

parameter 2 represents the Cell Delay Variation Toleration (CDVT); parameter 3 represents the Minimum Cell Rate (MCR); the meaning of parameter 4 depends upon the value of the *abrConnectionType* attribute. if *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, parameter 4 represents the Allowed Cell Rate (ACR); If *abrConnectionType* is ***erSwitch***, parameter 4 represents the Explicit Rate (ER); and if *abrConnectionType* is ***efciSwitch***, parameter 4 reflects the actual shaping rate in cell/s for this connection.

When *txTrafficDescType* is 3, 4, 5, 6, 7, 8, or 9, parameter 5 reflects the equivalent cell rate in cell/s for this connection as determined by the Connection Admission Control (CAC) algorithm. The equivalent cell rate is useful in determining the admission characteristics of this connection.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf Vpt Tm txQueueThresholds (txQThresh)

Access	Read only
Description	This attribute indicates the queue limit and the discard thresholds for the transmit queue of this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the thresholds of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the thresholds of the per-VC queue. The first element indicates the queue limit. The provisioned value of the transmit queue limit is derived from the *txQueueLimit* attribute under the service category subcomponents of the *CA* component for the service category of this connection.

The second element is the threshold that marks the transition from congestion state 1 to congestion state 0. This is the threshold at which traffic with discard priority (DP) = 1 is discarded. This threshold is set at approximately 90 percent of the first parameter, the operational queue limit.

The third element is the threshold that marks the transition from congestion state 2 to congestion state 1. This is the threshold at which traffic with DP = 2 is discarded. This threshold is set at approximately 75 percent of the first parameter, the operational queue limit.

The fourth element is the threshold that marks the transition from congestion state 3 to congestion state 2. This is the threshold at which traffic with DP = 3 is discarded. This threshold is set at approximately 35 percent of the first parameter, the operational queue limit.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the thresholds of the link class queue used by this connection to buffer it traffic.

This attribute does not apply to basic *Vpt*s.

Mib	AtmCore
Vector of	Decimal (0..1011840)
Units	cells
Index	Decimal (0..3)
Default	No default

ATTRIBUTE AtmIf Vpt Tm rxTrafficDescParm (rxTdp)

Access	Read only
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. Cell delay variation

tolerance (CDVT) is expressed in microseconds.

When *rxTrafficDescType* is 1 or 2, none of the parameters are used.

When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents CDVT; parameter 3 represents the MCR; parameter 4 is not used.

If *upc* is ***disabled*** for this connection, the values of PCR, SCR, MBS and CDVT are the provisioned parameters.

If *upc* is ***enabled***, the values of PCR, SCR, MBS, and CDVT are exactly the values used by the usage parameter control hardware in policing the arriving traffic. These may vary slightly from the provisioned values due to granularity of the hardware. In the case where the PCR is equal to the SCR, the effective MBS is zero.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE AtmIf Vpt Tm txQosParameters (tqp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

ATTRIBUTE AtmIf Vpt Tm rxQosParameters (rqp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

COMPONENT AtmIf Vpt Tm AvailableBitRate (Abr)

Groups	"GROUP AtmIf Vpt Tm Abr Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vpc/vpi Tm AvailableBitRate,* *AtmIf/n Vcc/vpi.vci Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vcc/vci Tm AvailableBitRate* This component contains ABR-related operational attributes of a connection. It is dynamically created for connections where the value of the *atmServiceCategory* attribute is ***availableBitRate***,

and where the value of the *abrConnectionType* attribute is ***sourceDest***, or ***virtualSourceDest***.

Mib AtmCore

Common Verbs
Help
List
Display

GROUP AtmIf Vpt Tm Abr Operational (Oper)

Properties Operational

Description This group contains operational attributes for connections using ABR service category.

Mib AtmCore

ATTRIBUTE AtmIf Vpt Tm Abr initialCellRate (icr)

Access Read only

Description This attribute indicates the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period.

For nailed-up connections, this attribute is determined by the provisioned value of the *initialCellRate* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.

The ICR for a connection is a value between the MCR and the PCR. Furthermore, ICR has an upper bound determined by the *transientBufferExposure* divided by *fixedRoundTripTime*.

Mib AtmCore

Values Decimal (0..16777215)

Units cell/s

Default No default

ATTRIBUTE AtmIf Vpt Tm Abr transientBufferExposure (tbe)

Access	Read only
Description	This attribute indicates the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the resource to send during start-up periods, before the first Resource Management (RM) cell returns. For nailed-up connections, this attribute is determined by the provisioned value of the *transientBufferExposure* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpt Tm Abr fixedRoundTripTime (frtt)

Access	Read only
Description	This attribute indicates the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. For nailed-up connections, this attribute is determined by the provisioned value of the *fixedRoundTripTime* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	No default

ATTRIBUTE AtmIf Vpt Tm Abr rateDecreaseFactor (rdf)

Access	Read only

Description	This attribute indicates the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. For nailed-up connections, this attribute is determined by the provisioned value of the *rateDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..15)
Default	No default

ATTRIBUTE AtmIf Vpt Tm Abr rateIncreaseFactor (rif)

Access	Read only
Description	This attribute indicates the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64. RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR. For nailed-up connections, this attribute is determined by the provisioned value of the *rateIncreaseFactor* attribute. For

signaled connections, it is indicated in the ABR Setup Parameters Information Element.

Mib: AtmCore

Values: Decimal (0..15)

Default: No default

ATTRIBUTE AtmIf Vpt Tm Abr maxCellPerRmCell (nrm)

Access: Read only

Description: This attribute indicates the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell.

For nailed-up connections, this attribute is determined by the provisioned value of the *maxCellsPerRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.

Mib: AtmCore

Values: Decimal (2; 4; 8; 16; 32; 64; 128; 256)

Units: cells

Default: No default

ATTRIBUTE AtmIf Vpt Tm Abr maxTimeBetweenRmCell (trm)

Access: Read only

Description: This attribute indicates the TRM parameter for this connection.

TRM provides an upper bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least 2 other cells have been sent, the next cell to be transmitted would be a forward RM cell.

For nailed-up connections, this attribute is determined by the provisioned value of the *maxTimeBetweenRmCell* attribute. For

signaled connections, it is indicated in the ABR Additional Parameters Information Element.

Mib: AtmCore

Values: Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000)

Units: microsec

Default: No default

ATTRIBUTE AtmIf Vpt Tm Abr cutoffDecreaseFactor (cdf)

Access: Read only

Description: This attribute indicates the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero.

CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the *forwardRmCellLimit* attribute, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

For nailed-up connections, this attribute is determined by the provisioned value of the *cutoffDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.

Mib: AtmCore

Values: Decimal (0; 1; 2; 4; 8; 16; 32; 64)

Default: No default

ATTRIBUTE AtmIf Vpt Tm Abr acrDecreaseTimeFactor (adtf)

Access: Read only

Description	This attribute indicates the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. For nailed-up connections, this attribute is determined by the provisioned value of the *acrDecreaseTimeFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	No default

ATTRIBUTE AtmIf Vpt Tm Abr forwardRmCellLimit (crm)

Access	Read only
Description	This attribute indicates the CRM parameter for this connection. CRM is the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor*. The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. The value of CRM is obtained as *transientBufferExposure* divided by *maxCellsPerRmCell*.
Mib	AtmCore
Values	Decimal (1; 3; 7; 15; 31; 63; 127; 255; 511; 1023; 2047; 4095)

Units	cells
Default	No default

ATTRIBUTE AtmIf Vpt Tm Abr txRateChangeInfo (txrci)

Access	Read only
Description	This attribute indicates the rate change information put into the last forward Resource Management (RM) cell turned around as a backward-RM cell. For connections configured as an ABR Source or Destination, the turned around backward-RM cell is sent over the interface. For connections configured as an ABR Virtual Source or Virtual Destination, the turned around backward-RM cell is sent over the backplane.
Mib	AtmCore
Values	congestionIndicated noIncreaseIndicated explicitRateIndicated
Default	No default

ATTRIBUTE AtmIf Vpt Tm Abr acrRateChangeInfo (arci)

Access	Read only
Description	This attribute indicates the type of change in the Allowed Cell Rate (ACR) as a result of the information in the last backward Resource Management (B-RM) cell received from the interface. This attribute value is only applicable when the *Vcc Tm* or *Vpc Tm abrConnectionType* attribute is ***sourceDest*** or ***VirtualSourceDest***. In all other cases, this attribute value is ***notApplicable***. A value of ***noChange*** indicates that the rate did not change as a result of the last backward RM cell received. A value of ***decreasedByRdf*** or ***increasedByRif*** indicates that the ACR was increased or decreased by the corresponding factor. This change is as a result of the CI or NI bit setting in the last backward RM cell, or an ADTF timeout.

A value of ***setToExplicitRate*** indicates that the ACR was set to the ER value in the last backward RM cell.

Mib: AtmCore

Values:
noChange
decreasedByRdf
increasedByRif
setToExplicitRate
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Tm Abr txFwdRmCells

Access: Read only

Description: This attribute counts the number of forward Resource Management (RM) cells sent over the interface since the last backward RM-cell was received from the interface. If the value of this attribute is greater than or equal to the value of *forwardRmCellLimit*, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor.*

This counter is reset to zero each time a backward-RM cell is received.

This counter does not wrap to zero if it reaches its maximum value of 4095 in order to indicate that no backward RM cell has been received.

Mib: AtmCore

Values: Decimal (0..4095)

Units: cells

Default: No default

ATTRIBUTE AtmIf Vpt Tm Abr rxEfci

Access: Read only

Description	This attribute indicates the value of the Explicit Forward Congestion Indication (EFCI) bit of the last data cell received from the interface. When a forward Resource Management (RM) cell is turned around as a backward-RM cell, the Congestion Indication (CI) field of the backward-RM cell is set to 1, if the value of this attribute is ***indicated***. This attribute is set to ***notIndicated*** each time a backward-RM cell is transmitted.
Mib	AtmCore
Values	notIndicated indicated
Default	No default

COMPONENT AtmIf Vpt Aini

Groups	"GROUP AtmIf Vpt Aini Provisioned (Prov)" "GROUP AtmIf Vpt Aini AccountingOptions (AcctOpt)" "GROUP AtmIf Vpt Aini VAiniProvisioned (VProv)"
Scope	Device
Description	*AtmIf/n VirtualPathTerminator/m Aini* This component represents an ATM Inter-Network Interface (AINI) signaling interface. If this component is provisioned, the *Uni*, *Iisp*, or *Pnni* component can not be provisioned under the

	same *AtmIf Vpt* component. If this component is deleted, then all associated *Vcc* components are deleted.
Mib	AtmAini
Subcomponents	"COMPONENT AtmIf Vpt Aini Signalling (Sig)"
Opt. Subcomp.	"COMPONENT AtmIf Vpt Aini CallingAddressScreening (CallingAScr)" "COMPONENT AtmIf Vpt Aini CalledAddressScreening (CalledAScr)" "COMPONENT AtmIf Vpt Aini PathTraceFilter (Ptf)" "COMPONENT AtmIf Vpt Aini ServiceTrace (SrvTrace)" "COMPONENT AtmIf Vpt Aini Reroute"
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Aini PathTraceTestConnection (Ptt)"
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Aini Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Aini Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Aini* component.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini side

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which side the interface is, user or network.
Mib	AtmAini

Values	networkSide userSide
Default	networkSide

ATTRIBUTE AtmIf Vpt Aini softPvpAndPvcRetryPeriod (sRetryPeriod)

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	AtmAini
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE AtmIf Vpt Aini softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmAini
Values	Decimal (0; 50..20000)
Units	msec
Default	0

ATTRIBUTE AtmIf Vpt Aini passAlongRequest

Access	Read: All Write: All
Description	This attribute specifies whether unrecognized messages and information elements with the pass along request set are accepted when received at the interface. If they are not allowed, then they are discarded and the procedures specified by the message or information element's action indicator field are followed.
Mib	AtmAini
Values	allowed discarded
Default	allowed

GROUP AtmIf Vpt Aini AccountingOptions (AcctOpt)

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini accountCollection (aco)

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit***, or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts). If none of the reasons is present, then accounting will be suppressed. The reason for collection is recorded in the accounting record, in

	the attribute *callingCollectReason* or *calledCollectReason* as appropriate.
Mib	AtmAini
Set of	bill test study audit force
Default	No default

ATTRIBUTE AtmIf Vpt Aini accountConnectionType (act)

Access	Read: All Write: All
Description	This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records. If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***. If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.
Mib	AtmAini
Values	origTerm intermediate
Default	intermediate

ATTRIBUTE AtmIf Vpt Aini accountClass (acl)

Access	Read: All Write: All

Description	This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.
Mib	AtmAini
Values	Decimal (0..255)
Default	0

ATTRIBUTE AtmIf Vpt Aini serviceExchange (sre)

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	AtmAini
Values	Decimal (0..255)
Default	0

GROUP AtmIf Vpt Aini VAiniProvisioned (VProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Aini* component which are specific to virtual AINI interfaces.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini vpci

Access	Read: All Write: All
Criticality	Component

Description	This attribute specifies the Virtual Path Connection Identifier (VPCI) to be used between this signalling entity and its peer. The VPCI of the peer virtual AINI must have the same value for switched connections to be set up across the interface.
Mib	AtmAini
Values	Decimal (0..255)
Default	0

COMPONENT AtmIf Vpt Aini Signalling (Sig)

Groups	"GROUP AtmIf Vpt Aini Sig Provisioned (Prov)" "GROUP AtmIf Vpt Aini Sig OsiState (State)" "GROUP AtmIf Vpt Aini Sig Operational (Oper)" "GROUP AtmIf Vpt Aini Sig Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Aini Signalling* *AtmIf/n Iisp Signalling* *AtmIf/n Uni Signalling* *AtmIf/n Pnni Signalling* *AtmIf/n Vpt/m Aini Signalling* *AtmIf/n Vpt/m Iisp Signalling* *AtmIf/n Vpt/m Uni Signalling* *AtmIf/n Vpt/m Pnni Signalling* This component represents the signaling entities for the interface.
Mib	AtmAini
Opt. Subcomp.	"COMPONENT AtmIf Vpt Aini Sig VirtualChannelDescriptor (Vcd)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Aini Sig Provisioned (Prov)

Properties	Provisioned

Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmAini
Values	Decimal (0..65535)
Default	5

ATTRIBUTE AtmIf Vpt Aini Sig addressConversion

Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	AtmAini
Values	none nativeE164 nsap
Default	none

ATTRIBUTE AtmIf Vpt Aini Sig operatingMode

Access	Read: All Write: All
Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmAini
Values	normal provisionedOnly
Default	normal

GROUP AtmIf Vpt Aini Sig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is

administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: AtmAini

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE AtmIf Vpt Aini Sig operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmAini

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmIf Vpt Aini Sig usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: AtmAini

Values:
idle
active (activ)
busy

Default: idle

GROUP AtmIf Vpt Aini Sig Operational (Oper)

Properties: Operational

Description: This attribute contains the operational attributes for the AtmSignalling component.

Mib: AtmAini

ATTRIBUTE AtmIf Vpt Aini Sig lastTxCauseCode

Access:
Read: All
Write: Illegal

Description: This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.

Mib: AtmAini

Values: Decimal (0..255)

Default: No default

ATTRIBUTE AtmIf Vpt Aini Sig lastTxDiagCode

Access:
Read: All
Write: Illegal

Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmAini
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Sig lastRxCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Sig lastRxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmAini
Values	Hex (H.0..H.ff)

Default	No default

GROUP AtmIf Vpt Aini Sig Statistics (Stats)

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Sig peakConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Sig successfulConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Sig failedConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.

Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Sig txPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Sig rxPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Sig currentPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Sig peakPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Sig successfulPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Sig failedPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Sig currentConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of currently active point-to- point connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Vpt Aini Sig VirtualChannelDescriptor (Vcd)

Groups	"GROUP AtmIf Vpt Aini Sig Vcd Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor* This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).
Mib	AtmAini
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Aini Sig Vcd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable traffic attributes for a control channel.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Sig Vcd trafficDescType (tdt)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.
Mib	AtmAini
Values	3 6 7 8
Default	6

ATTRIBUTE AtmIf Vpt Aini Sig Vcd atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the

application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmAini
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	rtVariableBitRate

ATTRIBUTE AtmIf Vpt Aini Sig Vcd weight

Access	Read and write
Criticality	Component

Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m. This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs. When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***. When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT. When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.
Mib	AtmAini
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Aini Sig Vcd qosClass (qos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmAini
Values	0 1 2 3 4
Default	2

ATTRIBUTE AtmIf Vpt Aini Sig Vcd trafficShaping (trShaping)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category

has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components.

When ***disabled*** is selected, traffic shaping for this connection is disabled.

Mib: AtmAini

Values: disabled
sameAsCa

Default: disabled

ATTRIBUTE AtmIf Vpt Aini Sig Vcd unshapedTransmitQueueing (unshap)

Access: Read and write

Criticality: Component

Description: This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute.

When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator.*

When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib: AtmAini

Values	common sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Aini Sig Vcd usageParameterControl (upc)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmAini
Values	disabled sameAsCa
Default	disabled

ATTRIBUTE AtmIf Vpt Aini Sig Vcd trafficDescParm (tdp)

Access	Read: All Write: All
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested

shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for

CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)

COMPONENT AtmIf Vpt Aini Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate default]
Groups	"GROUP AtmIf Vpt Aini Addr Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Address/address,type* *AtmIf/n Iisp Address/address,type* *AtmIf/n Uni Address/address,type*

AtmIf/n Pnni Address/address,type
AtmIf/n Vpt/m Aini Address/address,type
AtmIf/n Vpt/m Iisp Address/address,type
AtmIf/n Vpt/m Uni Address/address,type
AtmIf/n Vpt/m Pnni Address/address,type

This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wildcard ('?'), and a type. The type identifies whether the *Address* component is for a ***primary***, ***alternate, registered***, or ***default*** address.

The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses registered through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses.Virtual interfaces do not have addresses of
type ***default***.

The wildcard is only valid for provisioned addresses. If the address is a single wildcard, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wildcard static address, then the choice is driven through a round robin algorithm.

The round robin algorithm tries the primary routes and then the alternate routes if none of the primary routes succeed.
If this node participates in a PNNI hierarchy, then a *PnniInfo* subcomponent can be provisioned under the *AtmAddress*

component to specify the level to which this address will be advertised.

Mib: AtmAini

Opt. Subcomp.: "COMPONENT AtmIf Vpt Aini Addr TerminateSPvpAndSPvc (TermSP)"
"COMPONENT AtmIf Vpt Aini Addr PnniInfo"

Common Verbs:
Help
List
Display
Add
DELete

GROUP AtmIf Vpt Aini Addr Operational (Oper)

Properties: Operational

Description: This attribute group contains the operational attributes for the *Address* component.

Mib: AtmAini

ATTRIBUTE AtmIf Vpt Aini Addr scope

Access: Read: All
Write: Illegal

Description: This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. If this node does not participate in a PNNI hierarchy, then this attribute will have the value of -1.

Mib: AtmAini

Values: Signed (-1..104)

Default: No default

ATTRIBUTE AtmIf Vpt Aini Addr reachability (reach)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmAini
Values	internal exterior
Default	No default

COMPONENT AtmIf Vpt Aini Addr TerminateSPvpAndSPvc (TermSP)

Scope	Device
Description	*AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc* The presence of this subcomponent indicates that SPvp and SPvc call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.
Mib	AtmAini
Common Verbs	Help List Display Add DELete

COMPONENT AtmIf Vpt Aini Addr PnniInfo

Groups	"GROUP AtmIf Vpt Aini Addr PnniInfo Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Aini Addr/address,type PnniInfo* *AtmIf/n Iisp Addr/address,type PnniInfo* *AtmIf/n Uni Addr/address,type PnniInfo* *AtmIf/n Pnni Addr/address,type PnniInfo* *AtmIf/n Vpt/m Aini Addr/address,type PnniInfo* *AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo* *AtmIf/n Vpt/m Uni Addr/address,type PnniInfo* *AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo* This component contains provisioned information associated with the ATM address related to PNNI. This component appears only under provisioned *Address* components.
Mib	AtmAini
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Aini Addr PnniInfo Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Addr PnniInfo scope

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the

PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.

Mib: AtmAini

Values: Signed (-1..104)

Default: -1

ATTRIBUTE AtmIf Vpt Aini Addr PnniInfo reachability (reach)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.

Mib: AtmAini

Values: internal
exterior

Default: internal

COMPONENT AtmIf Vpt Aini CallingAddressScreening (CallingAScr)

Groups: "GROUP AtmIf Vpt Aini CallingAScr Provisioned (Prov)"
"GROUP AtmIf Vpt Aini CallingAScr Statistics (Stat)"

Scope: Device

Description: *AtmIf/n Aini CallingAddressScreening*
AtmIf/n Uni CallingAddressScreening
AtmIf/n Iisp CallingAddressScreening
This component represents the screening of incoming ATM SVC call requests against provisioned ATM calling addresses (that is, screening SVC calls coming from specific addresses). If this

component is not provisioned, all call requests are accepted and no calling address screening takes place.

Mib	AtmAini
Opt. Subcomp.	"COMPONENT AtmIf Vpt Aini CallingAScr Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Aini CallingAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CallingAScr* component.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini CallingAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the calling address screening feature is ***enabled*** or ***disabled***. If ***enabled***, incoming SVC calls are screened against provisioned addresses. If ***enabled*** and the calling address in the ATM SVC call request is provisioned to be accepted, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled***, and the calling address in the address request is not provisioned, the call is rejected If the value is ***disabled***, no calling address screening is performed.
Mib	AtmAini
Values	enabled disabled

Default	disabled

ATTRIBUTE AtmIf Vpt Aini CallingAScr defaultInsertionAddress (defInsAddr)

Access	Read: All Write: All
Description	This attribute specifies the address to be inserted into the SVC connection request if *adminStatus* is ***enabled*** and the connection request does not contain a calling address. If the *adminStatus* attribute is ***enabled*** and this attribute is empty, all incoming SVC calls which do not contain a calling address are rejected.
Mib	AtmAini
Values	String (0..20, Hex)
Default	""

GROUP AtmIf Vpt Aini CallingAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini CallingAScr acceptedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpt Aini CallingAScr rejectedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpt Aini CallingAScr unmatchedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Vpt Aini CallingAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a

matching calling (or called) address.
For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected.
For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected.
For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib: AtmAini

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Vpt Aini CalledAddressScreening (CalledAScr)

Groups: "GROUP AtmIf Vpt Aini CalledAScr Provisioned (Prov)"
"GROUP AtmIf Vpt Aini CalledAScr Statistics (Stat)"

Scope: Device

Description:
AtmIf/n Aini CalledAddressScreening
AtmIf/n Uni CalledAddressScreening
AtmIf/n Iisp CalledAddressScreening
This component represents the screening of incoming ATM SVC call requests against provisioned ATM called addresses (that is, going to specific destinations). If this component is not

provisioned, all call requests are accepted and no called address screening takes place.

Mib	AtmAini
Opt. Subcomp.	"COMPONENT AtmIf Vpt Aini CalledAScr Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Aini CalledAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CalledAScr* component.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini CalledAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the called address screening feature is ***enabled*** or ***disabled***. If the value is ***enabled***, incoming SVC calls will be screened against provisioned called addresses. If the value is ***enabled*** and the called address in the ATM SVC call request has been provisioned, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled*** and the called address in the call request is not provisioned, the call is rejected. If the value is ***disabled***, no called address screening is performed.
Mib	AtmAini
Values	enabled disabled
Default	disabled

GROUP AtmIf Vpt Aini CalledAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini CalledAScr acceptedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpt Aini CalledAScr rejectedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpt Aini CalledAScr unmatchedCalls

Access	Read: All Write: Illegal

Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Vpt Aini CalledAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected.

For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib AtmAini

Common Verbs

Help
List
Display
Add
DELete

COMPONENT AtmIf Vpt Aini PathTraceFilter (Ptf)

Groups "GROUP AtmIf Vpt Aini Ptf Criteria"
"GROUP AtmIf Vpt Aini Ptf Operational (Oper)"
"GROUP AtmIf Vpt Aini Ptf RecordControl (Record)"

Scope Device

Description *AtmIf/n Aini PathTraceFilter*
AtmIf/n Iisp PathTraceFilter
AtmIf/n Uni PathTraceFilter
AtmIf/n Pnni PathTraceFilter
AtmIf/n Vpt/vpi Aini PathTraceFilter
AtmIf/n Vpt/vpi Iisp PathTraceFilter
AtmIf/n Vpt/vpi Uni PathTraceFilter
AtmIf/n Vpt/vpi Pnni PathTraceFilter

This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced.

When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop*, and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When *AtmPathTraceFilter* component is deleted, all records are

cleared.

Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted.

The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.

Mib	AtmAini
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Aini Ptf PathTraceRecord (PTRecord)"
Common Verbs	Help List Display Add DELete

VERB START AtmIf Vpt Aini Ptf

Impact	Service
Description	*START AtmIf/n Aini PathTraceFilter* *START AtmIf/n Iisp PathTraceFilter* *START AtmIf/n Uni PathTraceFilter* *START AtmIf/n Pnni PathTraceFilter* *START AtmIf/n Vpt/vpi Aini PathTraceFilter* *START AtmIf/n Vpt/vpi Iisp PathTraceFilter* *START AtmIf/n Vpt/vpi Uni PathTraceFilter* *START AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command starts the path tracing based on the specified filtering criteria. When the command is issued, the *traceTimeout* timer is reset.

VERB STOP AtmIf Vpt Aini Ptf

Impact	Service
Description	*STOP AtmIf/n Aini PathTraceFilter* *STOP AtmIf/n Iisp PathTraceFilter* *STOP AtmIf/n Uni PathTraceFilter* *STOP AtmIf/n Pnni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Aini PathTraceFilter* *STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter* *STOP AtmIf/n Vpt/vpi Uni PathTraceFilter* *STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command causes the filter to stop, but keeps the trace records.

VERB CLEAR AtmIf Vpt Aini Ptf

Impact	Service
Description	*CLEAR AtmIf/n Aini PathTraceFilter* *CLEAR AtmIf/n Iisp PathTraceFilter* *CLEAR AtmIf/n Uni PathTraceFilter* *CLEAR AtmIf/n Pnni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP AtmIf Vpt Aini Ptf Criteria

Properties	Operational
Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Ptf traceInfo (tInfo)

Access	Read: All Write: All

Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	AtmAini
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

ATTRIBUTE AtmIf Vpt Aini Ptf calledPartyPrefix (cldPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmAini
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf callingPartyPrefix (clgPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmAini
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf connectionType (type)

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmAini
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE AtmIf Vpt Aini Ptf connectionConfiguration (config)

Access	Read: All Write: All
Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match

successfully, the call is traced.

Mib	AtmAini
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE AtmIf Vpt Aini Ptf serviceCategory (svcCat)

Access	Read: All Write: All
Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	AtmAini
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP AtmIf Vpt Aini Ptf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Ptf state

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active.

inactive: Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.

Mib: AtmAini

Values: active
inactive

Default: inactive

ATTRIBUTE AtmIf Vpt Aini Ptf recordCount

Access: Read: All
Write: Illegal

Description: This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords*, which ever is less.

Mib: AtmAini

Values: Decimal (0..200)

Default: No default

ATTRIBUTE AtmIf Vpt Aini Ptf matchedConnections

Access: Read: All
Write: Illegal

Description: This attribute indicates the number of connections that match the criteria of this filter.

Mib: AtmAini

Values: Decimal (0..2147483647)

Default: No default

ATTRIBUTE AtmIf Vpt Aini Ptf elapsedTime

Access: Read: All
Write: Illegal

Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	AtmAini
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf timeRemaining

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmAini
Values	Decimal (0..70560)
Units	minutes
Default	No default

GROUP AtmIf Vpt Aini Ptf RecordControl (Record)

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Ptf traceTimeout

Access	Read: All Write: All
Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmAini
Values	Decimal (1..70560)

Units	minutes
Default	60

ATTRIBUTE AtmIf Vpt Aini Ptf maxTraceRecords (mRecords)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter. Once the maximum has been reached, the oldest record is removed.
Mib	AtmAini
Values	Decimal (1..200)
Default	2

COMPONENT AtmIf Vpt Aini Ptf PathTraceRecord (PTRecord)

Groups	"GROUP AtmIf Vpt Aini Ptf PTRecord Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord* *AtmIf/n Iisp Ptf PTRecord* *AtmIf/n Uni Ptf PTRecord* *AtmIf/n Pnni Ptf PTRecord* *AtmIf/n Vpt/n Aini Ptf PTRecord* *AtmIf/n Vpt/n Iisp Ptf PTRecord* *AtmIf/n Vpt/n Uni Ptf PTRecord* *AtmIf/n Vpt/n Pnni Ptf PTRecord*

	This component represents the path trace record for the last failed connection against this filter.
Mib	AtmAini
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Aini Ptf PTRecord Hop"
Common Verbs	Help List Display

GROUP AtmIf Vpt Aini Ptf PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmAini
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations

Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord timeStamp

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmAini
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord srcPortId

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmAini
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord srcPortName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmAini
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord causeCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord diagCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmAini
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Vpt Aini Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	"GROUP AtmIf Vpt Aini Ptf PTRecord Hop Operational (Oper)"
Scope	Device

Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmAini
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Aini Ptf PTRecord Hop VendorSpecificInfo (Vsi)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Aini Ptf PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop ingressDlci (dlci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop ingressCallReference (callref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message.

	The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmAini
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop ingressEndPointReference (epref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmAini
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop nodeId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop nodeName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmAini
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop portId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop portName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmAini

Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop pnniTraceContRefusalIndPresent (refusal)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmAini
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop crankbackDestNodeIndPresent (dest)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmAini
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop pnniCrankbackGapIndPresent (gap)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmAini
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop crankBackCause (cause)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmAini
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop blockedTransitType (type)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmAini
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop blockedNodeId (bNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop blockedLinkPrecedingNodeId (pNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked.

	This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop blockedLinkPortId (bPortId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop blockedLinkSucceedingNodeId (sNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmAini

Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop dstVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop dstDlci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop dstCallReference (dcr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmAini
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop dstEndPointReference (depr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmAini
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop specifiedPath

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmAini
Values	no yes
Default	no

COMPONENT AtmIf Vpt Aini Ptf PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	"GROUP AtmIf Vpt Aini Ptf PTRecord Hop Vsi Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

	All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.
Mib	AtmAini
Common Verbs	Help List Display

GROUP AtmIf Vpt Aini Ptf PTRecord Hop Vsi Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop Vsi length

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmAini
Values	Decimal (0..11)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop Vsi organizationUniqueId (oui)

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmAini
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptf PTRecord Hop Vsi data

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmAini
Values	String (1..8, Hex)
Default	No default

COMPONENT AtmIf Vpt Aini PathTraceTestConnection (Ptt)

Groups	"GROUP AtmIf Vpt Aini Ptt Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini PathTraceTestConnection* *AtmIf/n Iisp PathTraceTestConnection* *AtmIf/n Uni PathTraceTestConnection* *AtmIf/n Pnni PathTraceTestConnection* *AtmIf/n Vpt/vpi Aini PathTraceTestConnection* *AtmIf/n Vpt/vpi Iisp PathTraceTestConnection* *AtmIf/n Vpt/vpi Uni PathTraceTestConnection* *AtmIf/n Vpt/vpi Pnni PathTraceTestConnection* This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface. The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test connection responds with the trace results collected during a complete or partial trace.
Mib	AtmAini
Common Verbs	Help List Display

VERB TRACE AtmIf Vpt Aini Ptt

Impact	Passive
Description	*TRACE AtmIf/n Aini AtmPathTraceTest* *TRACE AtmIf/n Iisp AtmPathTraceTest* *TRACE AtmIf/n Uni AtmPathTraceTest* *TRACE AtmIf/n Pnni AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest* *TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest* This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node. Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP AtmIf Vpt Aini Ptt Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *AtmPathTraceTest* component.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Ptt traceCrankback

Access	Read: All Write: All
Description	This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.
Mib	AtmAini
Values	no yes

Default no

ATTRIBUTE AtmIf Vpt Aini Ptt txTrafficDescType (txTdt)

Access
Read: All
Write: All

Description
This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.

Mib
AtmAini

Values
1
2
3
4
5
6
7
8
9

Default 1

ATTRIBUTE AtmIf Vpt Aini Ptt rxTrafficDescType (rxTdt)

Access
Read: All
Write: All

Description
This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute

When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.

Mib
AtmAini

Values
1
2
3

4
5
6
7
8
9
sameAsTx

Default sameAsTx

ATTRIBUTE AtmIf Vpt Aini Ptt atmServiceCategory (service)

Access
Read: All
Write: All

Criticality Component

Description

This attribute specifies the ATM service category for both directions of the connection.

If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications.

The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.

Mib: AtmAini

Values:
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
derivedFromBBC (derived)

Default: unspecifiedBitRate

ATTRIBUTE AtmIf Vpt Aini Ptt fwdQosClass (fwdQos)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the quality of service for the forward direction for this connection.

Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video).

Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video).

Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer).

Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer).

	Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmAini
Values	0 1 2 3 4
Default	0

ATTRIBUTE AtmIf Vpt Aini Ptt bwdQosClass (bwdQos)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters. The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.
Mib	AtmAini

Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE AtmIf Vpt Aini Ptt bearerClassBbc (bcBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network. The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory.* Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it. Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements

are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib: AtmAini

Values:
a
c
x
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Aini Ptt transferCapabilityBbc (tcBbc)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the transfer capability for this connection. UNI 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

NotApplicable specifies that the user does not want to specify the transfer capability.

The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data.

The value ***NoIndication*** for traffic type is used if the user has not

set the traffic type. This is also the case for end-to-end timing.

The value ***yes*** for end-to-end timing indicates that end-to-end timing is required.

The value ***no*** for end-to-end timing indicates that end-to-end timing is not required.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmAini

Values:
0
1
2
5
8
9
10
notApplicable
derivedFromServiceCategory

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Aini Ptt clippingBbc (cBbc)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes.

Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is

answered and before an associated connection is switched through.

Mib: AtmAini

Values:
no
yes

Default: no

ATTRIBUTE AtmIf Vpt Aini Ptt bestEffort

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer Capability attributes.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib: AtmAini

Values:
indicated
notIndicated
derivedFromServiceCategory (derived)

Default: derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Aini Ptt testCalledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmAini
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptt testCalledVpiVci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmAini
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptt testSpecifiedPath

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmAini
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Ptt bwdQosParameters (bqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Vpt Aini Ptt fwdQosParameters (fqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay

(maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element.

The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.

Mib: AtmAini

Vector of: Decimal (0..2147483647)

Index:
cdv
ctd
clr

Default: (cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Vpt Aini Ptt txTrafficDescParm (txTdp)

Access:
Read: All
Write: All

Description: This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled.

When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero.

When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter

5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)

Default ([5] 0)

ATTRIBUTE AtmIf Vpt Aini Ptt rxTrafficDescParm (rxTdp)

Access Read: All
Write: All

Description This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in
cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC).

When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused).

When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused).

When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for

CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or

I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

COMPONENT AtmIf Vpt Aini ServiceTrace (SrvTrace)

Groups	"GROUP AtmIf Vpt Aini SrvTrace Operational"
Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] Iisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.
Mib	AtmAiniTrace
Common Verbs	Help List Display Add DELete

VERB Start AtmIf Vpt Aini SrvTrace

Impact	Service
Description	*Start AtmIf/n [Vpt/m] Uni ServiceTrace* *Start AtmIf/n [Vpt/m] Iisp ServiceTrace* *Start AtmIf/n [Vpt/m] Pnni ServiceTrace* *Start AtmIf/n [Vpt/m] Aini ServiceTrace* This command starts a service trace session.

VERB Stop AtmIf Vpt Aini SrvTrace

Impact	Service
Description	*Stop AtmIf/n [Vpt/m] Uni ServiceTrace* *Stop AtmIf/n [Vpt/m] Iisp ServiceTrace* *Stop AtmIf/n [Vpt/m] Pnni ServiceTrace* *Stop AtmIf/n [Vpt/m] Aini ServiceTrace* This command stops a service trace session.

GROUP AtmIf Vpt Aini SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	AtmAiniTrace

ATTRIBUTE AtmIf Vpt Aini SrvTrace receiverName (rcvr)

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmAiniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Aini SrvTrace duration

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmAiniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE AtmIf Vpt Aini SrvTrace queueLimit

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmAiniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE AtmIf Vpt Aini SrvTrace session

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmAiniTrace
Values	The name of the component
Default	No default

COMPONENT AtmIf Vpt Aini Reroute

Groups	"GROUP AtmIf Vpt Aini Reroute LocalOperational (LOper)" "GROUP AtmIf Vpt Aini Reroute GlobalOperational (GOper)" "GROUP AtmIf Vpt Aini Reroute Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Iisp Reroute* *AtmIf/n Aini Reroute* *AtmIf/n Uni Reroute* *AtmIf/n Vpt/vpi Iisp Reroute* *AtmIf/n Vpt/vpi Aini Reroute* *AtmIf/n Vpt/vpi Uni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	AtmAini
Subcomponents	"COMPONENT AtmIf Vpt Aini Reroute Ov"
Common Verbs	Help List Display Add DELete

VERB OPTIMIZE AtmIf Vpt Aini Reroute

Impact	Service
Description	*Optimize [-all] AtmIf/n Uni outeouteouteouteouteoute*sBy default, only connection segsforation. The best known optimization metric value for the connection segment is indicated by the localOptimalMetricValue attribute under the RerouteInfo component for the connection. The -all option causes all connection segments subscribed to path optimization to be considered.s

GROUP AtmIf Vpt Aini Reroute LocalOperational (LOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Reroute localSubscribedConnections (lsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute localEligibleRecoveredCon (lerc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute localIneligibleRecoveredCon (lirc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.

Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute localLastRrCauseCode (lrrcc)

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute localPathsOptimized (lPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vpt Aini Reroute GlobalOperational (GOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Reroute globalSubscribedConnections (gsub)

Access	Read only

Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute globalEligibleRecoveredCon (gerc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute globalIneligibleRecoveredCon (girc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute globalLastRrCauseCode (grrcc)

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	AtmAini
Values	Decimal (0..255)

Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute globalPathsOptimized (gPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vpt Aini Reroute Statistics (Stats)

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmAini

ATTRIBUTE AtmIf Vpt Aini Reroute totalLocalConnectionRecoveries (tLConRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute totalLocalFailedRecoveries (lFailedRec)

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.

Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute totalLocalPathOptimizations (tLPathOpt)

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute totalGlobalConnectionRecoveries (tGConRec)

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute totalGlobalFailedRecoveries (gFailedRec)

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute totalGlobalPathOptimizations (tGPathOpt)

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Aini Reroute totalOptimizationPasses (optPass)

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Vpt Aini Reroute Ov

Groups	"GROUP AtmIf Vpt Aini Reroute Ov Provisioned (Prov)" "GROUP AtmIf Vpt Aini Reroute Ov LocalProvisioned (LProv)" "GROUP AtmIf Vpt Aini Reroute Ov GlobalProvisioned (GProv)"
Scope	Device
Description	*AtmIf/n Iisp Reroute Ov* *AtmIf/n Aini Reroute Ov* *AtmIf/n Uni Reroute Ov* *AtmIf/n Vpt/vpi Iisp Reroute Ov* *AtmIf/n Vpt/vpi Aini Reroute Ov* *AtmIf/n Vpt/vpi Uni Reroute Ov*

This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.

Mib AtmAini

Common Verbs
Help
List
Display

GROUP AtmIf Vpt Aini Reroute Ov Provisioned (Prov)

Properties Provisioned

Description This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.

Mib AtmAini

ATTRIBUTE AtmIf Vpt Aini Reroute Ov protocol

Access Read and write

Description This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning.

One of the following values can be specified:
sameAsARtgPnniReroute: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute.
localGlobal: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature.
localOnly: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
globalOnly: Global rerouting is requested. Global rerouting is

granted if the DTL terminator is provisioned with the Rerouting feature.
***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib: AtmAini

Values:
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE AtmIf Vpt Aini Reroute Ov numOptAttempts

Access: Read and write

Description: This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib: AtmAini

Values: Decimal (0..15)
sameAsARtgPnniReroute (sameAs)

Default: sameAs

ATTRIBUTE AtmIf Vpt Aini Reroute Ov moduleOptimizationConnections

Access: Read and write

Description: This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component.

One of the following values can be specified:
sameAsARtgPnniReroute: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute.
none: No connection segments are considered for path optimization.
recoveredOnly: Only connection segments that are foration. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection
allSubscribed: All connection segments subscribed to path optimization are considered.

Mib: AtmAini

Values: none
recoveredOnly
allSubscribed
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE AtmIf Vpt Aini Reroute Ov switchoverMechanism

Access: Read and write

Description

This attribute specifies the mechanism used for switchover of a rerouted connection segment.

One of the following values can be specified:
sameAsARtgPnniReroute: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute.
standard: The mechanism described in the ATM Forum "Domain based Rerouting" specification is used for switchover. This value ensures interoperability with other vendors' equipment running ATM Forum "Domain based Rerouting".
rcl: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib

AtmAini

Values

standard
rcl
sameAsARtgPnniReroute (sameAs)

Default

sameAsARtgPnniReroute

GROUP AtmIf Vpt Aini Reroute Ov LocalProvisioned (LProv)

Properties

Provisioned

Description

This group contains the provisionable attributes for EBR and local rerouting protocols.

Mib

AtmAini

ATTRIBUTE AtmIf Vpt Aini Reroute Ov localConnectionRecoverySubscr (lConRec)

Access

Read and write

Description

This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local

connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values.
svcSvp: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery.
sourceSpvcSpvp: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery.
transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.

Mib: AtmAini

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Vpt Aini Reroute Ov localPathOptimizationSubscr (lPathOpt)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib: AtmAini

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

GROUP AtmIf Vpt Aini Reroute Ov GlobalProvisioned (GProv)

Properties: Provisioned

Description: This group contains the provisionable attributes for the global and EBR rerouting protocol.

Mib: AtmAini

ATTRIBUTE AtmIf Vpt Aini Reroute Ov globalConnectionRecoverySubscr (gConRec)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute

affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib	AtmAini
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Vpt Aini Reroute Ov globalPathOptimizationSubscr (gPathOpt)

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization.

This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

Mib	AtmAini
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

COMPONENT AtmIf Vpt VirtualChannelConnection (Vcc)

Instance	Decimal (0..65535)

Groups	"GROUP AtmIf Vpt Vcc OsiState (State)" "GROUP AtmIf Vpt Vcc Operational (Oper)" "GROUP AtmIf Vpt Vcc ConnectionInfo (ConnInfo)" "GROUP AtmIf Vpt Vcc Status" "GROUP AtmIf Vpt Vcc Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Vpt/vpi VirtualChannelConnection/vci* This component represents a virtual channel connection terminated by a *Virtual Path Terminator (VPT)*. For *Vccs* beneath *Vpts*, the instance value defines the VCI value for this connection—for example, Vpt/16 Vcc/32 would define a connection with a VPI of 16, and a VCI of 32. The VPI value of the *Vcc* is inherited from the parent *Vpt*. The VPI can be in the range of 0 to 4095 and the VCI can be in the range of 0 to 65535. Note that a *Vcc* instance of 0.0 is invalid

	as defined in the ATM Forum. Thus, the combination of *Vpt/0 Vcc/0* is also invalid.
Mib	AtmCore
Subcomponents	"COMPONENT AtmIf Vpt Vcc VirtualChannelDescriptor (Vcd)"
Opt. Subcomp.	"COMPONENT AtmIf Vpt Vcc Loop (Loop)" "COMPONENT AtmIf Vpt Vcc NailedUpRelayPoint (Nrp)" "COMPONENT AtmIf Vpt Vcc NailedUpEndPoint (Nep)" "COMPONENT AtmIf Vpt Vcc Test (Test)" "COMPONENT AtmIf Vpt Vcc SourcePvc (Src)" "COMPONENT AtmIf Vpt Vcc MulticastNailedUpRelayPoint (Mnrp)"
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Vcc TrafficManagement (Tm)" "COMPONENT AtmIf Vpt Vcc EndPoint (Ep)" "COMPONENT AtmIf Vpt Vcc RelayPoint (Rp)" "COMPONENT AtmIf Vpt Vcc PathTraceRecord (PTRecord)" "COMPONENT AtmIf Vpt Vcc RerouteInfo (RerInfo)"
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Vcc DestinationPvc (Dst)"
Common Verbs	Help List Display Add DELete

VERB TRACE AtmIf Vpt Vcc

Impact: Service

Description:

TRACE AtmIf/n Vpt/vpi Vcc/vci
TRACE -s -v -a -e AtmIf/n Vpt/vpi Vcc/vci
TRACE -p AtmIf/n Vpt/vpi Vcc/vci

This command traces the path of an intra-network segment of a connection. It displays the names of interface and connection components along this segment of a connection.

The Trace response for a *Vcc* does not show any hops of a connection which are conveyed on a path connection (VPC). In this case the Trace command only shows the *Vcc* hop points. Note however, that if the connection traverses a *Vcc* which resides beneath a *Vpt*, the *Vpt/vpi Vcc/vci* hierarchy is displayed in the trace results.

The option for the OAM trace is as follows:

-*p*: Selects the Nortel Networks proprietary OAM Connection Management Trace instead of the proprietary OAM Legacy Loopback Trace. If no options are provided, the default configuration uses the Legacy Loopback Trace.

The options for the signaling trace are as follows:

-*s*: Selects the PNNI signaling call trace instead of the Nortel Networks proprietary OAM-based trace procedure. Option -*s* must be present if any one of options -*v*, -*a*, and -*e* are present. Otherwise, it defaults to the OAM-based trace.

-*v*: Requests that the VPI.VCI values be collected along the trace. This option is only valid when the -*s* option is present.

-*a*: Requests that the call reference/end point reference values be collected along the trace. This option is only valid when the -*s* option is present.

-*e*: Used on point-to-multipoint connections to specify the end

point reference value indicating which party to trace. If no *-e* option is used for a point-to-multipoint connection, the default traces the path with endpoint reference 0, which is the first party. This option is only valid when the *-s* option is present.

Only one connection trace is supported at a time. An error message is returned if a response from the network is not received within 30 seconds.

If the verb is issued with the *-s* option for the *Vpt/vpi Vcc/vci* values that are not active or were not created by signaling (for example, control channels), the command is refused

VERB CLEAR AtmIf Vpt Vcc

Impact	Service
Description	*CLEAR AtmIf/n Vpt/vpi Vcc/vci* This command is used to clear a switched connection which is under a *Vpt*.

GROUP AtmIf Vpt Vcc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt Vcc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component.

When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	AtmCore
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Vpt Vcc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmCore
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf Vpt Vcc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmCore
Values	idle active (activ) busy
Default	idle

GROUP AtmIf Vpt Vcc Operational (Oper)

Properties	Operational
Description	This group contains operational information for a *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt Vcc connectionPointType (cpt)

Access	Read only
Description	This attribute reflects the role of the connection component at this interface. A value of ***connectionEndPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are processed by the connection component. A value of ***segmentEndPoint*** indicates that user cells and end-to-end OAM cells are relayed by the connection component, while segment OAM cells are processed by the connection component.

A value of ***connectingPoint*** indicates that user cells, end-to-end OAM cells, and segment OAM cells are relayed by the connection component.

A value of ***unknown*** indicates that the connection component is inactive.

Mib: AtmCore

Values:
connectionEndPoint
segmentEndPoint
connectingPoint
unknown

Default: No default

GROUP AtmIf Vpt Vcc ConnectionInfo (ConnInfo)

Properties: Operational

Description: This group contains operational connection characteristics information for a *Vcc* component.

Mib: AtmCore

ATTRIBUTE AtmIf Vpt Vcc distributionType (distrbt)

Access: Read only

Description: This attribute indicates the way data is distributed in the connection.

A value of ***pointToPoint*** indicates this connection point is part of a point-to-point connection.

A value of ***pointToMultipoint*** indicates this connection point is part of a point-to-multipoint connection.

Mib: AtmCore

Values:
pointToPoint
pointToMultipoint

Default: pointToPoint

ATTRIBUTE AtmIf Vpt Vcc numLeaves (nlvs)

Access	Read only
Description	This attribute indicates the number of destination leaves of the connection. If the *distributionType* is ***pointToPoint*** the value of this attribute is 0.
Mib	AtmCore
Values	Decimal (0..2147483647)
Default	0

ATTRIBUTE AtmIf Vpt Vcc callDirection (cdir)

Access	Read only
Description	This attribute indicates the direction of the call setup request for an SVC. A value of ***fromLink*** means that the call setup originated from the link. A value of ***toLink*** means that the call setup was directed to the link. For PVC connections, the value of this attribute is ***notApplicable.*** For SPVC connections, the value of this attribute is ***notApplicable*** for *Vccs* with the *SourcePVC* and *DestinationPVC* subcomponents. For Signaling channels, the value of this attribute is ***notApplicable***.
Mib	AtmCore
Values	fromLink toLink notApplicable
Default	notApplicable

GROUP AtmIf Vpt Vcc Status

Properties	Operational
Description	This group contains operational status information for a *Vcc*, *Vpc* or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt Vcc operStatus (opStat)

Access	Read only
Description	This attribute indicates the present operational status of the *Vcc*, *Vpc* or *Vpt* component. Its value is dependent upon the current state of the *segLinkSideLoopbackState* and *endToEndLoopbackState* attributes. The value is ***end2endUp*** when the *endToEndLoopbackState* is ***good*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***end2endDown*** when the *endToEndLoopbackState* is ***bad*** and the *segLinkSideLoopbackState* is either ***good*** or ***unknown***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***unknown*** and the *segLinkSideLoopbackState* is ***good***. The value is ***localDown*** when *segLinkSideLoopbackState* is ***bad***. The value is ***localUpEnd2endUnknown*** when the *endToEndLoopbackState* is ***notApplicable*** and the *segLinkSideLoopbackState* is ***good***. The value is ***unknown*** when the *endToEndLoopbackState* is either ***unknown*** or ***notApplicable*** and the *segLinkSideLoopbackState* is ***unknown***.
Mib	AtmCore

Values
unknown
end2endUp
end2endDown
localUpEnd2endUnknown
localDown

Default
No default

ATTRIBUTE AtmIf Vpt Vcc localFailureCause

Access
Read only

Description
This attribute indicates the failure cause of the *Vcc*, *Vpc* or *Vpt* component. A value of ***noFailure*** indicates that there is currently no bandwidth related failure for this connection.

A value of ***portDown*** indicates that the interface corresponding to the parent *AtmIf* is down.

A value of ***localBwLoss*** indicates that the *AtmIf* has lost some, but not all bandwidth, and as a result, this connection has been released.

A value of ***notAdmitted*** indicates that this connection has failed to be admitted by the Connection Admission Control (CAC) algorithm.

A value of ***appNotRegistered*** indicates that there is no application registered to use this connection. This may be the case, for example when there is a *Vcc Test* application, but the test has not been started. Check the status of the application to determine why it is not functional.

A value of ***disabledByApp*** indicates that the application using this connection has requested that the connection be disabled. An example is a connection used by a trunk application where the trunk has timed out on an attempt to stage. Check the application to determine why it is not fully functional.

A value of ***bwReduced*** indicates that this connection is operating in a reduced bandwidth state. It is a bandwidth elastic connection which currently has been allocated less than the requested

(equivalent) bandwidth.

A value of ***vpDown*** indicates that this connection has been notified of a fault detected at the associated VP-layer. A value of ***vpDown*** is applicable for *Vpt Vcc*s only.

Mib: AtmCore

Values:
noFailure
localBwLoss
portDown
notAdmitted
appNotRegistered
disabledByApp
bwReduced
vpDown

Default: No default

ATTRIBUTE AtmIf Vpt Vcc troubled

Access: Read only

Description: This attribute indicates whether or not the connection is in a troubled state. Connections become troubled because of OAM failures; when one of the attributes *segLinkSideLoopbackState*, *segSwitchSideLoopbackState*, *endToEndLoopbackState*, *aisState* (when receiving AIS cells only) or *rdiState* go bad, this attribute is set to ***yes***; otherwise it is set to ***no***.

Mib: AtmCore

Values:
no
yes

Default: no

ATTRIBUTE AtmIf Vpt Vcc segLinkSideLoopbackState (segLkLbkState)

Access: Read only

Description: This attribute contains the current state of the link-side segment loopback for this connection. Link-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the link (port). The value of this attribute is

dependent upon the current setting of the *segLinkSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable).

The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint***.

The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***.

The value is ***good*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the segment link side loopback is working.

The value is ***bad*** when the *segLinkSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** or a ***connectionEndPoint***, and the link side segment loopback is not working.

The value is ***unknown*** when the *segLinkSideLoopback* is ***off***.

The value is ***unknown*** when the value of the *segLinkSideLoopback* attribute is ***on***, the *connectionPointType* attribute is set to ***segmentEndPoint*** or ***connectionEndPoint***, and the segment link side loopback has not yet been determined.

The state of this attribute determines, in part, the value of the *operStatus* attribute**.**

Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt Vcc segSwitchSideLoopbackState (segSwLbkState)

Access	Read only
Description	This attribute contains the current state of the switch-side segment loopback for this connection. Switch-side segment loopback cells are transmitted (inserted) by a connection component in the direction of the bus. The value of this attribute is dependent upon the current setting of the *segSwitchSideLoopback* provisionable attribute, the connection point type as specified by the *connectionPointType* attribute, and the current loopback state (if applicable). The value is only applicable when the *connectionPointType* is a ***segmentEndPoint***. The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or ***connectionEndPoint***. The value is ***notApplicable*** when the *distributionType* is ***pointToMultipoint***. The value is ***good*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback is working. The value is ***bad*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the switch side segment loopback is not working. The value is ***unknown*** when the *segSwitchSideLoopback* is ***off***. The value is ***unknown*** when the *segSwitchSideLoopback* is ***on***, the *connectionPointType* is a ***segmentEndPoint*** and the segment switch side loopback has not been determined.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt Vcc endToEndLoopbackState (eeLbkState)

Access	Read only

Description	This attribute contains the current state of the end-to-end loopback for this connection. Its value is dependent upon the current setting of the *endToEndLoopback* provisionable attribute and the connection point type as specified by the *connectionPointType* attribute. The value is only applicable when the *connectionPointType* is a ***connectionEndPoint***. The value is ***notApplicable*** when the *connectionPointType* is a ***connectingPoint*** or s***egmentEndPoint***. The value is ***notApplicable*** when the *distributionType* is a ***pointToMultipoint***. The value is ***good*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is working. The value is ***bad*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback is not working. The value is ***unknown*** when the *endToEndLoopback* is ***off***. The value is ***unknown*** when the *endToEndLoopback* is ***on***, the *connectionPointType* is a ***connectionEndPoint*** and the end-to-end loopback status has not been determined. The state of this attribute determines, in part, the value of the *operStatus* attribute.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt Vcc rxOamCellCongestionState (rxOamCongState)

Access	Read only

Description	This attribute contains the current state of the receive side OAM cell congestion for this connection. Its value reflects whether the rate of received OAM cells for this connection is below a specified threshold. The connection maintains a count of the number of OAM cells which are terminated per second. Once that count exceeds the specified threshold, extraction of all OAM cells for this connection is disabled for a period of one minute. This is a congestion management mechanism to prevent the processor from being overloaded with handling OAM cells for a particular connection. This mechanism ensures that tasks, such as trunks obtain enough processor cycles to remain in service, and are not adversely affected by excessive rate of OAM cells on a particular connection. The value is ***good*** when the rate of received OAM cells is less than the allowed threshold. The value is ***bad*** when the arrival rate has exceeded the allowed threshold. It remains ***bad*** for one minute, before returning to ***good*** again. During this timeout, extraction of all OAM cells is disabled for this connection. As a result, other loopback failure conditions may occur. The value is ***unknown*** when the application has not yet begun to use this connection. An example is the *Test* component before a test has been started. Each type of OAM cell is counted separately. The threshold for AIS cells is three cells per second. If more than three AIS cells are received within a one second interval, this attribute is set to ***bad***. The threshold for RDI cells and each loopback type is also three, but the threshold for trace cells is 250 per second. The state of this attribute has no direct effect on the value of the *operStatus* attribute or on the number of troubled connections.
Mib	AtmCore
Values	good bad

	unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt Vcc aisState

Access	Read only
Description	This attribute contains the current state of the Alarm Indication Signal for this connection. A value of ***good*** indicates that the connection's application is active and no alarm has occurred. A value of ***bad*** indicates that the connection's application is active and an alarm has occurred. A value of ***unknown*** indicates that the connection's application is inactive. A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.
Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt Vcc rdiState

Access	Read only
Description	This attribute indicates the current state of the Remote Defect Indication for this connection. A value of ***good*** indicates that the connection's application is active and no alarm has occurred.

A value of ***bad*** indicates that the connection's application is active and an alarm has occurred.

A value of ***unknown*** indicates that the connection's application is inactive.

A value of ***notApplicable*** occurs when the *connectionPointType* is either a ***segmentEndPoint*** or a ***connectingPoint***.

Mib	AtmCore
Values	good bad unknown notApplicable
Default	No default

GROUP AtmIf Vpt Vcc Statistics (Stats)

Properties	Operational
Description	This group contains traffic statistics for a *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt Vcc txCell

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc txCellClp (txClp)

Access	Read only
Description	This attribute counts the number of cells that have been transmitted from the interface on this connection with the CLP=1. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc txCellDiscard (txcd)

Access	Read only
Description	This attribute counts the number of cells received from the backplane on this connection that have been discarded. Discarded cells are not counted in the *txCell* attribute. Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscard* values for all connections associated with the *Vpt*. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc txCellDiscardClp (txcdClp)

Access	Read only
Description	This attribute counts the number of cells received from the backplane on this connection with CLP=1 that have been discarded. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed. This count is included in the *txCellDiscard* attribute. Discarded cells are not counted in the *txCellClp* attribute. Cells are discarded due to transmit congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection's interface is disabled. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point. For *Vpt*s, this attribute provides an aggregated total of all *txCellDiscardClp* values for all connections associated with the *Vpt*. When both ingress and egress of a port is down, txcells are silently discarded.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpt Vcc txFrameDiscard (txfd)

Access: Read only

Description: This attribute counts the number of frames received from the backplane on this connection that have been discarded.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled.

This count is independent of the *txCell* or *txCellDiscard* attribute.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscard* values for all connections associated with the *Vpt*.

Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscard* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpt Vcc txFrameDiscardClp (txfdClp)

Access: Read only

Description: This attribute counts the number of discarded frames on this connection that were received from the backplane and composed of one or more CLP=1 cells.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

Frames are discarded due to congestion, Partial Packet Discard (PPD), Early Packet Discard (EPD), and Weighted Random Early Detection (W-RED) mechanisms, or when the connection interface is disabled.

This count is included in the *txFrameDiscard* attribute.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is applicable only to connections that segment frames into cells (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *txFrameDiscardClp* values for all connections associated with the *Vpt*.

Discards due to EPD, PPD, and W-RED for a standard *Vpt Vcc* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt txFrameDiscardClp* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpt Vcc rxCell

Access: Read only

Description: This attribute counts the number of cells that have been received from the interface on this connection.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells that have been discarded by the interface due to non-conformance with UPC.

For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2,*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when the PVC, PVP, SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down and is increased when either the SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only

user traffic or the F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc rxCellClp (rxClp)

Access	Read only
Description	This attribute counts the number of cells that have been received from the interface on this connection with the CLP=1. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc rxCellDiscard (rxcd)

Access	Read only
Description	This attribute counts the number of cells received from the interface on this connection that have been discarded. This count is included in the *rxCell* attribute. This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded

due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this count does not include cells discarded due to non-conformance with UPC.

For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscard* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc,* are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscard* attribute.

For ***3pOC3MmAtm, 3pOC3SmAtm, 3pDS3Atm, 3pE3Atm, 3pDS1Atm, 3pE1Atm, 2pJ6MAtm, 8pDS1Atm*** and ***8pE1Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down, and is reset to 0 when either the SPVC or SPVP connection is down. If only the F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down.

For ***2pOC3MmAtm2, 2pOC3SmAtm2, 2pSTM1eAtm, 2pSTM1eChAtm, 4pOC3MmAtm, 4pOC3SmIrAtm, 3pDS3Atm2, 4pDS3ChAtm, 12pDS3Atm, 3pE3Atm2*** and ***12pE3Atm*** cards, if only user traffic is transmitted, this count will be increased when either the PVC or PVP connection is down,

while not be increased when either the SPVC or SPVP connection is down. If only F4 and F5 OAM cells are transmitted, this count will be reset to 0 when either the PVC or PVP connection is down, while not be increased when either the SPVC or SPVP connection is down.

For ***4pOC12SmIrAtm, 4pOC12SmLrAtm*** and ***16pOC3SmIrAtm*** cards, this count will be reset to 0 when either the PVC, PVP, SPVC or SPVP connection is down, regardless of whether only user traffic or the F4 and F5 OAM cells are transmitted.

For ***16pOC3PosAtm*** card, this count will be reset to 0 when either PVC, PVP, SPVC or SPVP connection is down regardless of whether only user traffic or only F4 and F5 OAM cells are transmitted.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc rxCellDiscardClp (rxcdClp)

Access	Read only
Description	This attribute counts the number of cells received from the interface on this connection with CLP=1 that have been discarded. This count is included in the *rxCell* and *rxCellDiscard* attributes. This count includes cells discarded due to non-conformance with UPC, cells which are part of a frame which has been discarded due to an AAL5 frame reassembly error, cells which are discarded due to congestion, or cells which are received while the next hop connection to which the traffic is directed across the backplane is down. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***

cards, this attribute is not applicable and is not displayed.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable to connections that reassemble cells into frames (AAL5 adaptation). Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxCellDiscardClp* values for all connections associated with the *Vpt*. Discards due to non-conformance with UPC at the VP layer, for a standard *Vpt Vcc*, are not included in this attribute. These discards are counted in the *Vcc*'s parent *Vpt rxCellDiscardClp* attribute.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc rxFrameDiscard (rxfd)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have been discarded. This count is independent of the *rxCellDiscard* attribute. For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed. This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount

of available frame memory is determined by the *Lp Eng Arc Ov* component.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscard* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib: AtmCore

Values: Long Integer

Default: No default

ATTRIBUTE AtmIf Vpt Vcc rxFrameDiscardClp (rxfdClp)

Access: Read only

Description: This attribute counts the number of discarded frames on this connection that were received from the interface and composed of one or more CLP1 cells. This count is included in the *rxFrameDiscard* attribute. It is independent of the *rxCellDiscard* attribute.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, this attribute is not applicable and is not displayed.

This count includes frames discarded due to an AAL5 frame reassembly error, frames discarded due to early packet discard (EPD), frames discarded due to processor (CPU) congestion, and frames discarded due to insufficient frame memory. The amount of available frame memory is determined by the *Lp Eng Arc Ov* component.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxFrameDiscardClp* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib — AtmCore

Values — Long Integer

Default — No default

ATTRIBUTE AtmIf Vpt Vcc rxUpcViolationOnEnforcer1 (rxEnforcer1)

Access — Read only

Description — This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 1. This attribute is only applicable if UPC is enforced or monitored on the connection.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed.

When the value of the *rxTrafficDescType* attribute for this connection is 3, 4, 5, 6, 7, 8, or 9 (for UBR with MDCR connections) Enforcer 1 enforces conformance of traffic received from the interface to PCR CLP0+1.

When the value of the *rxTrafficDescType* attribute for this connection is 9 (for ABR connections), Enforcer 1 performs the Dynamic Generic Cell Rate Algorithm (DGCRA) used for the

Available Bit Rate (ABR) service category.

If UPC is enforced all non-conforming cells are discarded by this enforcer. These discarded cells are included in the *rxCellDiscard* attribute.

For basic *Vpt*s, this attribute provides an aggregated total of all *rxUpcViolationOnEnforcer1* values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpt Vcc rxUpcViolationOnEnforcer2 (rxEnforcer2)

Access	Read only
Description	This attribute counts the number of UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 2. This attribute is only applicable if UPC is enforced or monitored on the connection.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, and ***1pOC48ChSmIrAtm*** cards, this attribute is not applicable and is not displayed.

This attribute is only applicable if the value of the *rxTrafficDescType* attribute for this connection is 4, 5, 6, 7, or 8.

When the value of the *rxTrafficDescType* attribute is 4, or 5**,** Enforcer 2 enforces conformance of traffic received from the interface to PCR CLP0.

When the value of the *rxTrafficDescType* attribute is 6**,** Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0+1.

When the value of the *rxTrafficDescType* attribute is 7, or 8, Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0.

If UPC is enforced, Enforcer 2 discards non-conforming cells for *rxTrafficDescType* values of 4, 6, and 7. It tags non-conforming cells for *rxTrafficDescType* values of 5, and 8. Discarded cells are counted in the rxCellDiscard attribute.

For basic *Vpt*s, this attribute provides an aggregated total of all *rxUpcViolationOnEnforcer2* values for all *Vcc*s associated with the *Vpt*. This attribute is not applicable for standard *Vpt Vcc*s.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib — AtmCore

Values — Long Integer

Units — cells

Default — No default

ATTRIBUTE AtmIf Vpt Vcc rxAal5FrameError (rxfer)

Access — Read only

Description — This attribute counts the number of frames received from the interface on this connection that have AAL5 length errors or AAL5 CRC errors.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed.

AAL5 length or CRC errors typically occur because of cell discards due to congestion, UPC, or due to corruption of data between the AAL5 segmentation and reassembly end points.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1 connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameError* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc rxAal5FrameAbort (rxfa)

Access	Read only
Description	This attribute counts the number of frames received from the interface on this connection that have the AAL5 length field set to zero.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, this attribute is not applicable and is not displayed.

An AAL5 length of zero is an indication by the far end segmentation point, to this reassembly point, that the frame is to be discarded without reassembly. This mechanism is typically used by a segmentation point if it detects an error in a frame after some of the cells belonging to that frame have already been transmitted.

This attribute is applicable only to connections that reassemble incoming cells into frames. Such connections usually have a *connectionPointType* of ***connectionEndPoint***. AAL1

connections are an exception to this rule; although they have a *connectionPointType* of ***connectionEndPoint***, they do not do AAL5 adaptation at this point.

For *Vpt*s, this attribute provides an aggregated total of all *rxAal5FrameAbort* values for all connections associated with the *Vpt*.

The counter wraps to zero if it exceeds its maximum value of (2**64)-1.

Mib	AtmCore
Values	Long Integer
Default	No default

COMPONENT AtmIf Vpt Vcc VirtualChannelDescriptor (Vcd)

Groups	"GROUP AtmIf Vpt Vcc Vcd Loopback (Lbk)" "GROUP AtmIf Vpt Vcc Vcd Accounting (Acct)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci VirtualChannelDescriptor*, *AtmIf/n Vpt/vpi Vcc/vci VirtualChannelDescriptor* The *Vcd* component contains provisioning information about its parent *Vcc* component.
Mib	AtmCore
Subcomponents	"COMPONENT AtmIf Vpt Vcc Vcd TrafficManagement (Tm)"
Opt. Subcomp.	"COMPONENT AtmIf Vpt Vcc Vcd PerformanceMonitoring (Pm)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Vcc Vcd Loopback (Lbk)

Properties	Provisioned

Description

This group contains the provisionable loopback attributes for a *Vcc, Vpc,* or *Vpt* component.

Note that certain loopback requests may not be possible on a given connection. In such cases, the corresponding operational loopback attribute in the *Status* group of the *Vcc, Vpc,* or *Vpt* component indicates ***notApplicable*** and the requested loopback is not performed.

If loopbacks are provisioned to be on, and for any reason the segment or end-to-end OAM loopback cells are not relayed, the connection component becomes troubled, and user cell traffic may be discarded. If loopbacks are provisioned to be on, all of the nodes in the segment, and external networks which are in the end-to-end connection must relay the OAM loopback cells.

Mib

AtmCore

ATTRIBUTE AtmIf Vpt Vcc Vcd segLinkSideLoopback (segLkLbk)

Access

Read and write

Description

This attribute specifies whether link-side segment loopback insertion should be performed on this connection.

A value of ***sameAsInterface*** means the link-side segment loopback insertion for the connection is based on the *segLinkSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has link-side segment loopback insertion turned on, then link-side segment loopback insertion is also on for the connection.

A value of ***on***, or ***off*** means link-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component.

Note that link-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***. Link-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *segLinkSideLoopbackState* attribute indicates

notApplicable and link-side segment loopback insertion is not performed.

Link-side segment loopback insertion is always possible on a *Vpt*.

Mib: AtmCore

Values:
on
off
sameAsInterface

Default: sameAsInterface

ATTRIBUTE AtmIf Vpt Vcc Vcd segSwitchSideLoopback (segSwLbk)

Access: Read and write

Description: This attribute specifies whether switch-side segment loopback insertion should be performed on this connection.

A value of ***sameAsInterface*** means the switch-side segment loopback insertion for the connection is based on the *segSwitchSideLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has switch-side segment loopback insertion turned on, then switch-side segment loopback insertion is also on for the connection.

A value of ***on***, or ***off*** means switch-side segment loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component.

Note that switch-side segment loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint*** or ***connectionEndPoint***. Switch-side segment loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint*** In such cases, the operational *segSwitchSideLoopbackState* attribute indicates ***notApplicable*** and switch-side segment loopback insertion is not performed.

Switch-side segment loopback is never possible on a *Vpt*.

Mib: AtmCore

Values	on off sameAsInterface
Default	sameAsInterface

ATTRIBUTE AtmIf Vpt Vcc Vcd endToEndLoopback (eeLbk)

Access	Read and write
Description	This attribute specifies whether end-to-end loopback insertion should be performed on this connection. A value of ***sameAsInterface*** means the end-to-end loopback insertion for the connection is based on the *endToEndLoopback* attribute of the connection's parent *AtmIf* component—if the ATM interface has end-to-end loopback insertion turned on, then end-to-end loopback insertion is also on for the connection. A value of ***on***, or ***off*** means end-to-end loopback insertion is turned on or off respectively for the connection regardless of the provisioning of the parent *AtmIf* component. Note that end-to-end loopback insertion is not possible if the value of the *connectionPointType* attribute of the *Vcc* or *Vpc* component is ***connectingPoint***, or ***segmentEndPoint***. End-to-end loopback insertion is also not possible if the value of the *distributionType* attribute of the *Vcc* is ***pointToMultipoint***. In such cases, the operational *endToEndLoopbackState* attribute indicates ***notApplicable*** and end-to-end loopback insertion is not performed. End-to-end loopback insertion is always possible on a *Vpt*.
Mib	AtmCore
Values	on off sameAsInterface
Default	sameAsInterface

ATTRIBUTE AtmIf Vpt Vcc Vcd mCastConnectionType (connType)

Access	Read and write
Criticality	Component
Description	This attribute specifies if this *Vcc* or *Vpc* is part of point-to-point or point-to-multiPoint connection. A value of ***pointToMultiPointRoot*** must be set when this *Vcc* has an *Msrc* or an *Mnrp* subcomponent, or this *Vpc* has an *Mnrp* subcomponent. A value of ***pointToMultiPointLeaf*** must be set when this *Vcc* or *Vpc* has a *Nrp* subcomponent and its *nextHop* attribute is linked to a *Mnrp* component. Otherwise a value of ***pointToPoint*** must be set.
Mib	AtmCore
Values	pointToPoint (ptp) pointToMultipointRoot (pmpRoot) pointToMultipointLeaf (pmpLeaf)
Default	pointToPoint

GROUP AtmIf Vpt Vcc Vcd Accounting (Acct)

Properties	Provisioned
Description	This group contains the provisionable ATM accounting attributes for a *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt Vcc Vcd correlationTag (tag)

Access	Read and write
Description	This attribute specifies a unique identifier for each end of a PVC. It that may be used by downstream processing systems to correlate accounting records issued at different nodes in the network. The attribute can be up to 64 bytes long. If it is less than 64 bytes, it is zero filled on the right to create a 64 byte value. The resulting value is recorded in the attribute *callConnId* for this PVC's ATM accounting records.

	If the value is a null string then this PVC does not have any accounting records generated for it.
Mib	AtmCore
Values	String (0..64, ASCII)
Default	""

COMPONENT AtmIf Vpt Vcc Vcd TrafficManagement (Tm)

Groups	"GROUP AtmIf Vpt Vcc Vcd Tm Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Vcd TrafficManagement,* *AtmIf/n Vpc/vci Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vpd TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci Vcd TrafficManagement* This component contains provisioned traffic management attributes of a connection. It is added automatically when a *Vcc*, *Vpc*, or *Vpt* is added in provisioning mode. It is a mandatory subcomponent of the *Vcd* or *Vpd* component.
Mib	AtmCore
Opt. Subcomp.	"COMPONENT AtmIf Vpt Vcc Vcd Tm AvailableBitRate (Abr)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Vcc Vcd Tm Provisioned (Prov)

Properties	Provisioned
Description	This group contains traffic related provisionable attributes for the *Vcc*, *Vpc*, and *Vpt* components. Changing any of the attributes in this group causes a service interruption on the *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm txTrafficDescType (txTdt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	1

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm fwdQosClass (fwdQos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. This attribute is only used for SPVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer).

Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib: AtmCore

Values:
0
1
2
3
4

Default: 0

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm txQueueLimit (txQlim)

Access: Read and write

Criticality: Component

Description: This attribute specifies an override to the default transmit queue limit for this connection.

A value of ***sameAsCa*** means that the default common or per-VC transmit queue limit, as defined by the CA service category, is used for this connection. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***sameAsCa*** must be specified.

A value from 5 to 512,000 means that the connection transmit queue limit differs from the default common or per-VC transmit queue limit, as defined by the CA service category. A value other than ***sameAsCa*** is ignored for connections where common queuing is specified for the service category.

For ***1pOC48ChSmIrAtm*** cards, this attribute is used to set the per-VC utilization limit of the service category common queue.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm***

cards, the valid range for this attribute is from 5 to 512000 inclusive.

For ***16pOC3PosAtm*** cards, the valid range for this attribute is from ***32*** to ***261120*** inclusive.

For ***4pMRPosAtm*** cards, the valid range for this attribute is from ***32*** to ***1011840*** inclusive.

On all other cards, the valid range for this attribute is from 5 to 63488 inclusive.

The actual transmit queue limit for a connection is visible in the *Vcc Tm*, *Vpc Tm* or *Vpt txQueueThresholds* attribute.

This attribute is not applicable for basic *Vpt*s.

Mib	AtmCore
Values	Decimal (5..1011840) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm holdingPriority (hpri)

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. The default holding priority for a provisioned connection is higher then default holding priorities for dynamic (SVC) connections. The value of this attribute may be overridden by certain applications, for example *Vcc Test*, which use this connection.

This attribute is not applicable for *Vpt Vcc*s.

Mib AtmCore

Values
0
1
2
3
4

Default 2

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm rxTrafficDescType (rxTdt)

Access Read and write

Criticality Component

Description This attribute specifies the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute.

The value ***sameAsTx*** means the *rxTrafficDescType* as well as the *rxTrafficDescParm* attribute values are taken from the values of the *txTrafficDescType* and *txTrafficDescParm* attributes.

Mib AtmCore

Values
1
2
3
4
5
6
7
8
9
sameAsTx

Default sameAsTx

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm bwdQosClass (bwdQos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for the backward direction for this connection. This attribute is only used for SPVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified bit rate QOS class; no objective is specified for the performance parameters. The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.
Mib	AtmCore
Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm atmServiceCategory (service)

Access	Read and write
Criticality	Component

Description

This attribute specifies the ATM service category for both directions of the connection.

The value ***derivedFromBBC*** may only be used if the *Src* or *Dst* component is provisioned under this connection. Otherwise a specific ATM service category must be specified.

A value of ***derivedFromBBC*** means the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

A value other than ***derivedFromBBC*** means the value of this attribute is used to override the provisioned BBC Information Element parameters. In this case, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application.

The ***rtVariableBitRate*** service category is intended for real-time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real-time VBR service may support statistical multiplexing of real-time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non real-time VBR service may support statistical multiplexing of connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

The ***unspecifiedBitRate*** service is intended for non real-time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmCore
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) availableBitRate (abr) derivedFromBBC (derived)
Default	unspecifiedBitRate

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm trafficShaping (trShaping)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface. This attribute is ignored if the *atmServiceCategory* is ***availableBitRate***. For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is ignored.

A value of ***sameAsCa*** means traffic shaping for the connection is based on the value of the *trafficShaping* attribute of the connection's service category component under the *CA*. If the service category has *trafficShaping* set to ***enabled*** or ***inverseUpc***, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm*, *Vpc Tm*, or *Vpt Tm* components.

A value of ***disabled*** means traffic shaping for this connection is disabled regardless of the provisioning of the connection's service category component.

Mib: AtmCore

Values: disabled
sameAsCa

Default: sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm unshapedTransmitQueueing (unshap)

Access: Read and write

Criticality: Component

Description: This attribute specifies the transmit queuing method for this connection if it is unshaped. The two possible methods are per-VC queuing and common queuing. This attribute does not apply if the connection is shaped.

A value of ***sameAsCa*** means the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *CA*.

A value of ***common*** means transmit traffic on this unshaped connection is destined for the common queue.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32,

1pOC12SmLrAtm, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm***, ***1pOC48ChSmIrAtm***, and ***4pMRPosAtm*** cards, this attribute must have the value ***sameAsCa***.

This attribute is ignored in the following situations:
- if the connection has *trafficShaping* ***enabled*** or ***inverseUpc***, or
- if the *atmServiceCategory* is ***availableBitRate***, or
- if the *atmServiceCategory* is ***constantBitRate***, or
- for basic *Vpt*s and standard *Vpt Vcc*s.

Mib: AtmCore

Values: common
sameAsCa

Default: sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm weight

Access: Read and write

Criticality: Component

Description: This attribute specifies an override for the weight of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, and basic *Vpt*s.

A value of ***sameAsCa*** means the weight is determined by the *weightPolicy* attribute under the *CA* service category component for all but standard *Vpt Vcc*s. For standard *Vpt Vcc*s, the weight is determined by the *Vcc*'s service category, when the value is set to ***sameAsCa***.

A value from 1 to 4095 means that value is used for the fairness weight of this connection relative to other connections. For all but standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard *Vpt Vcc*s, fairness weight determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the *Vpt*.

A value of ***upToQueueLimit*** means the fairness weight is limited only by the *txQueueLimit*.

This attribute is not applicable and is ignored for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, ***1pOC12SmLrAtm***, and ***1pOC48ChSmIrAtm*** cards.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, the value ***upToQueueLimit*** is not permitted.

Mib	AtmCore
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm forceTagging (tagging)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether force tagging of the CLP bit is enforced for cells of this connection. Force tagging can be enabled for permanent connections of any service category and on switched connections of UBR service category. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards, and for *Vpt*s, this attribute is not applicable and is ignored. A value of ***sameAsCa*** means the force tagging functionality is determined by the *forceTagging* attribute under the *CA* service category component. A value of ***enabled*** means force tagging is enabled. When this option is selected, the CLP bit is set to 1 for all cells on the connection.

A value of ***disabled*** means force tagging is disabled. When this option is selected, the CLP bit is unchanged for cells on the connection.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, force tagging applies to cells in the receive direction. For all other cards, force tagging applies to cells in the transmit direction. In this case, cells which are tagged are counted in the *txCellClp* attribute.

Mib: AtmCore

Values:
sameAsCa
enabled
disabled

Default: sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm usageParameterControl (upc)

Access: Read and write

Criticality: Component

Description: This attribute specifies whether this connection enables usage parameter control (UPC) when receiving traffic from the ATM interface.

The value ***sameAsCa*** means UPC for the connection is based on the value of the *usageParameterControl* attribute of the service category component under the *AtmIf CA*. If the service category has UPC ***enforced*** or ***monitored***, then UPC is enabled on the connection.

The value ***disabled*** means UPC for this connection is disabled regardless of the provisioning of the service category.

The value ***enforced*** means UPC for this connection is enforced regardless of the provisioning of the service category. When UPC is enforced, non-conforming cells are either tagged or discarded depending on the *rxTrafficDescriptorType*.

The value ***monitored*** means UPC for this connection is monitored regardless of the provisioning of the service category. When UPC is monitored, instead of the non-conforming cells being tagged or discarded, they are merely counted in the UPC violations counts and passed on unchanged.

Note that setting UPC to ***enforced*** or ***monitored*** may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc*, *Vpc*, and *Vpt* components.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the value ***monitored*** is not supported.

For ***1pOC48ChSmIrAtm*** cards, the values ***enforced***, and ***monitored***, are not supported.

Mib: AtmCore

Values:
enforced
disabled
sameAsCa
monitored

Default: sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm bearerClassBbc (bcBbc)

Access: Read and write

Criticality: Component

Description: This attribute specifies the bearer capability. This attribute is only used for SPVC and SPVP connections. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested broadband connection-oriented bearer service to be provided by the network.

The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory*

attribute must be set to ***derivedFromBBC***, but not both.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***) and timing requirements are user defined (that is, transparent to the network).When ***x*** is set the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.

Class **vp** service is used to specify a transparent VP service. When the value of this attribute is vp, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except or VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP connections.

Mib	AtmCore
Values	a c x vp derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm transferCapabilityBbc (tcBbc)

Access	Read and write
Criticality	Component
Description	This attribute specifies the transfer capability for this connection. Uni 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> 0: NoIndication, NoIndication 1: NoIndication, yes 2: NoIndication, no 5: CBR, yes 8: VBR, NoIndication 9: VBR, yes 10: VBR, no The value ***notApplicable*** specifies that the user does not want to specify the transfer capability. The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data. The value no indication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing. The value yes for end-to-end timing indicates that end-to-end timing is required. The value no for end-to-end timing indicates that end-to-end timing is not required. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmCore

Values	0 1 2 5 8 9 10 notApplicable derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm txWredThreshold

Access	Read and write
Criticality	Component
Description	This attribute specifies the threshold for weighted random early detection (WRED). This threshold is calculated as a percentage of the early packet discard (EPD) threshold, which is 85% of the transmit queue length. When the value is ***25%***, WRED starts as soon as the queue is 25% of the way to the EPD threshold. When the value is ***50%***, WRED starts later, after the queue is 50% of the way to the EPD threshold. When the value is ***75%***, WRED starts only when the queue is 75% of the way to the EPD threshold. This attribute is ignored if the value of the *txWredMode* or *txPacketWiseDiscard* attributes is ***disabled.*** For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.
Mib	AtmCore
Values	Decimal (25; 50; 75)
Units	%
Default	25

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm clippingBbc (cBbc)

Access	Read and write
Criticality	Component
Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.
Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm bestEffort

Access	Read and write
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor Information Element. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib	AtmCore
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm txPacketWiseDiscard (txpd)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the transmit data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s. For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored. Packet-wise functions increase the “goodput” of the link. The transmit packet-wise functions are Early Packet Discard (EPD) and Partial Packet Discard (PPD). EPD allows the connection to discard an entire frame once the transmit queue has reached the EPD threshold. EPD increases the “goodput” of a link, since discarding an entire frame means that some queue capacity is guarded for some other frame which is already partially transmitted. All cells of the frame are discarded from the Beginning of Message (BOM) cell up to and including the End of Message (EOM) cell. PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm***

cards, the packet-wise discard functions are PPD and EPD. PPD is applicable at cell-transfer points. PPD is not applicable at frame-to-cell conversion points, and is not applicable for *Vpc*s. PPD is configured by this attribute. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded. EPD is automatically ***enabled*** at frame-to-cell conversion points, independent of the setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***16pOC3PosAtm***, ***1pOC48ChSmIrAtm,*** and ***4pMRPosAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Both PPD and EPD are controlled by this attribute. This attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

A value of ***enabled*** means packet-wise discard functions are applied to transmit traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to transmit traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the backward direction. When this attribute is set to ***disabled***, backward frame discard is not requested in the SPVC call setup.

The transmit packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute.

Mib: AtmCore

Values: disabled
enabled

Default: disabled

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm rxPacketWiseDiscard (rxpd)

Access: Read and write

Criticality: Component

Description: This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the receive data direction for this connection. Packet-wise discard functions apply to AAL5 frame traffic. This attribute is not applicable for *Vpt*s.

For ***1pOC12SmLrAtm*** cards, this attribute is not applicable and is ignored.

Packet-wise functions increase the “goodput” of the link. The receive packet-wise function is Partial Packet Discard (PPD).

PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded, for example due to UPC. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD is available at all VCC connection points where UPC may be activated. PPD is not applicable for *Vpcs*. Packet-wise discards should only be enabled for connections carrying AAL5 segmentation traffic. Setting the value to ***enabled*** for any other traffic type may result in traffic being discarded. PPD is automatically ***enabled*** at frame-to-cell conversion points,

independent of the setting of this attribute.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC48ChSmIrAtm*** cards, this attribute may safely be set to ***enabled*** for any connection (*Vcc* or *Vpc*) since these FPs have the ability to automatically detect AAL5-segmented traffic on a connection, and only enable packet-wise discards if AAL5-segmented traffic is detected.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, packet-wise discard functions include EPD and PPD. PPD and EPD apply to individual VCCs and VCCs within VPCs at all connection points, including tandem VPC connections. Packet-wise discard should only be enabled for connections carrying AAL5 segmentation traffic. Setting this attribute to ***enabled*** for any other traffic type may result in all traffic being discarded.

A value of ***enabled*** means packet-wise discard functions are applied to receive traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to receive traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the forward direction. When this attribute is set to ***disabled***, forward frame discard is not requested in the SPVC call setup.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. A value of ***enabled*** for the *rxPacketWiseDiscard* attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in enabling packet-wise discard functions on these cards. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

The receive packet-wise discard functions that are active are visible in the *Vcc/Vpc Tm rxPacketWiseDiscard* operational attribute.

Mib	AtmCore
Values	disabled enabled
Default	disabled

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm txWredMode

Access	Read and write
Criticality	Component
Description	This attribute specifies the activation of weighted random early detection (WRED) functionality. WRED is considered a packet-wise discard function and as such applies only to AAL5 frame traffic. WRED is applied in the transmit direction for this connection. WRED function should be enabled only for connections which are transferring TCP/IP traffic. WRED acts to prevent synchronization of multiple TCP/IP sources by randomly discarding a small percentage of frames when transmit queue congestion reaches the designated level. WRED may also be used to differentiate service on VCC's by preferentially discarding one VCC before another. Discards start at 0% of cells, when the queue is part-way to the Early Packet Discard (EPD) threshold, and rise to 100% of cells discarded at the EPD threshold. WRED discards all the cells in a frame. A value of ***enabled*** means WRED is enabled for all applications linked to the given *Vcc*. A value of ***perFlow*** means each TCP application has individual control over whether to enable or disable WRED. If the value of the *txPacketWiseDiscard* attribute is ***disabled***, or if the value of this attribute is ***disabled***, WRED functionality is disabled. For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC12SmLrAtm*** cards, the value of this attribute must be

disabled.

If WRED is active, it is visible in the *Vcc/Vpc Tm txPacketWiseDiscard* operational attribute.

This attribute is not applicable for *Vpt*s or *Vpt Vcc*s.

Mib: AtmCore

Values:
disabled
enabled
perFlow

Default: disabled

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm abrConnectionType (abrType)

Access: Read and write

Criticality: Component

Description: This attribute specifies the type of ABR behavior which is to be enforced at this connection. This attribute is only applicable if the value of the *atmServiceCategory* attribute is ***availableBitRate***. If the value of the *atmServicecategory* attribute is not ***availableBitRate***, this attribute is ignored.

The value ***sameAsCa*** is used to request the default behavior as specified in the *CA Abr* component for this *Vcc*. Otherwise, this attribute overrides the default behavior.

The value ***virtualSourceDest*** is used to request that this connection point function as a virtual source/virtual destination.

The value ***sourceDest*** requires that this connection point function as a S/D for RM cells. S/D mode is automatically invoked at this connection point either if this is a connection end point, or if the next hop connection point is configured as ***nonAbrInterworking***.

The value ***nonAbrInterworking*** is used to request that this connection point function as an interworking between ABR and non-ABR service categories. This means that there are no RM cells on the link side of this connection, and that the next hop

connection point is performing as an ABR ***sourceDest***.

The value ***abrSwitch*** is used to request ABR switch behavior for this connection point. The ABR switch behavior is first, to conform to ***virtualSourceDest*** or ***nonAbrInterworking*** setting on the next hop, and otherwise to implement ABR ER switch behavior.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, the only allowable values are ***sameAsCa***, ***nonAbrInterworking*** or ***abrSwitch***. If ***abrSwitch*** is selected, EFCI marking behavior is implemented.

For ***1pOC12SmLrAtm*** cards, the only allowable values are ***sameAsCa*** or ***abrSwitch.*** If ***abrSwitch*** is selected, EFCI marking behavior is implemented.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the only allowable value is ***sameAsCa***.

The actual ABR functionality which is in effect is visible in the *Vcc/Vpc/Vpt Tm abrConnectionType* operational attribute.

Mib: AtmCore

Values:
abrSwitch
virtualSourceDest
sourceDest
nonAbrInterworking
sameAsCa

Default: sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm txTrafficDescParm (txTdp)

Access: Read and write

Criticality: Component

Description: This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute.

The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR, MCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *txTrafficDescType* is 1 or 2, all of the parameters must be set to zero.

When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is 6, parameter 1 represents the PCR for

CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5, must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 4 and parameter 5 represent are not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter 3. Parameter 3 may be optionally zero.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as

the peak cell rate in calculations of CAC and shaping rate. When the *atmServiceCategory* is ***availableBitRate*** (ABR), the shaping rate is dynamically chosen, based on the ABR flow control mechanism, as a value between the MCR and the PCR or the requested shaping rate if applicable.

For *txTrafficDescType* 3, 4 and 5, the transmit traffic is shaped at the next available shaping rate less than the PCR.

For *txTrafficDescType* 6, 7 and 8 if linear traffic shaping is selected, the transmit traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

For *txTrafficDescType* 6, 7 and 8 if inverse-UPC traffic shaping is selected, the transmit traffic is shaped at a variable rate which conforms to the PCR, SCR and MBS of the connection traffic descriptor.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm rxTrafficDescParm (rxTdp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. If the value of the *rxTrafficDescType* attribute is ***sameAsTx***, the values provisioned in this attribute are ignored. The traffic parameters for the receive direction are taken from the *txTrafficDescParm* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), and Minimum Cell Rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. The value of CDVT is

expressed in microseconds. The values of PCR, SCR, MCR, MBS and CDVT are used for usage parameter control (UPC).

When *rxTrafficDescType* is 1 or 2, all of the parameters must be set to zero (unused).

When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused).

When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; and parameter 4 represents the CDVT. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for

CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; and parameter 4 represents the CDVT. Parameter 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must be non-zero and must be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

If the value of CDVT either in parameter 2 or in parameter 4 is zero, the CDVT is taken from the *CA* defaults for the particular *atmServiceCategory* of this connection.

Parameter 5 of the *rxTrafficDescParm* is always unused.

When *rxTrafficDescriptorType* is 3 through 8, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware. The *check prov* command detects such cases and generates an error message. If this happens, adjust the parameters until they fall within the supported limits.
To calculate the limits, use the following formulae:
I1 = 1,000,000,000 / PCR
L1 = CDVT * 1000
I2 = 1,000,000,000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is 6 through 8.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, I1 and I2 must be less than or equal to 335,523,840. I1 + L1 must be less than or equal to 1,342,156,800. I2 + L2 must be less than or equal to 1,342,156,800. If the values of I1, L1, I2 or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41,940,480 or
I2 > 41,940,480 or
I1 + L1 > 167,769,600 or

I2 + L2 > 167,769,600
then both I1 and I2 must be greater than 20,480.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, L2 must be less than or equal to 2,674,011,406.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, L2 must be less than or equal to 17,179,869,180.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm fwdQosParameters (fqp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The *cdv* element specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR the CDV is irrelevant, and its value is forced to the default. The *ctd* specifies the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end to end transit delay information element. For nrt-VBR and UBR the CTD is irrelevant, and its value is forced to the default. The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.

Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm bwdQosParameters (bqp)

Access	Read and write
Criticality	Component
Description	This attribute is a vector of two elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The *cdv* specifies the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. For nrt-VBR and UBR, the CDV is irrelevant, and its value is forced to the default. The *clr* specifies the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element. For UBR the CLR is irrelevant, and its value is forced to the default.
Mib	AtmCore
Vector of	Decimal (0..16777215)
Index	cdv clr
Default	(cdv: 16777215, clr: 255)

COMPONENT AtmIf Vpt Vcc Vcd Tm AvailableBitRate (Abr)

Groups	"GROUP AtmIf Vpt Vcc Vcd Tm Abr Provisioned (Prov)"
Scope	Device

Description

AtmIf/n Vcc/vpi.vci Vcd Tm AvailableBitRate,
AtmIf/n Vpc/vci Vpd Tm AvailableBitRate,
AtmIf/n Vpt/vpi Vpd Tm AvailableBitRate,
AtmIf/n Vpt/vpi Vcc/vci Vcd Tm AvailableBitRate
This component contains provisioned ABR-related attributes of a connection. It is an optional subcomponent of the *Vcd Tm* and *Vpd Tm* component. It is used to override DGCRA-related defaults in the *CA Abr* component. It contains the specific configuration for the ABR connection at this connection point. If this is the source of an SPVC connection, this component also contains the ABR parameters required for the SPVC call request.

Mib

AtmCore

Common Verbs

Help
List
Display
Add
DELete

GROUP AtmIf Vpt Vcc Vcd Tm Abr Provisioned (Prov)

Properties

Provisioned

Description

This group contains provisioned attributes for the ABR ATM connections configured on an ATM interface.

Mib

AtmCore

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm Abr initialCellRate (icr)

Access

Read and write

Criticality

Component

Description

This attribute specifies the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period.

The value ***sameAsCa*** means the initial cell rate is determined by the *AtmIf CA Abr*/0 *icr* attribute.

The value ***useMcr*** means ICR is set to the same value as the Minimum Cell Rate (MCR) for the connection.

The value ***usePcr*** means ICR is set to the same value as the Peak Cell Rate (PCR) for the connection.

If the value is less than the MCR of the connection, then the MCR is used as the ICR. If the value is more than PCR of the connection, then PCR is used as the ICR.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.

Mib	AtmCore
Values	Decimal (0..16777215) sameAsCa useMcr usePcr
Units	cell/s
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm Abr transientBufferExposure (tbe)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the source to send during start-up periods, before the first Resource Management (RM) cell returns. TBE divided by *fixedRoundTripTime* determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. TBE divided by *maxCellsPerRmCell* specifies the operational value of *forwardRmCellLimit*, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells.

	This attribute is ignored under all conditions where the operational attribute *abrConnectionType* is set to ***erSwitch***.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	16777215

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm Abr fixedRoundTripTime (frtt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. The value of *transientBufferExposure* divided by the value of FRTT (in seconds) determines an upper bound for the operational value of *initialCellRate*, the rate at which a source should send initially and after an idle period. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	5000000

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm Abr rateDecreaseFactor (rdf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the provisioned

value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256.

RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

Mib	AtmCore
Values	Decimal (0..15) sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm Abr rateIncreaseFactor (rif)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the provisioned value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64. RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.
Mib	AtmCore

Values	Decimal (0..15) sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm Abr maxCellPerRmCell (nrm)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of cells an ABR source may transmit for each forward Resource Management (RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell. A value of 2 is not recommended although it is permitted according to the ATM Forum standard. When this attribute is set to a value of 2, it is possible that only one forward and one backward RM cell are repeatedly transmitted, and all data traffic is queued up indefinitely. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.
Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256) sameAsCa
Units	cells
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm Abr maxTimeBetweenRmCells (trm)

Access	Read and write
Criticality	Component
Description	This attribute specifies the TRM parameter for this connection. TRM provides an lower bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has

elapsed since and at least two other cells have been sent, then the next cell to be transmitted would be a forward RM cell.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* has the value ***erSwitch***.

The provisioned value of 781 is signaled as TRM = 0, in the ABR Additional Parameters Information Element.
1563 is signaled as TRM = 1.
3125 is signaled as TRM = 2.
6250 is signaled as TRM = 3.
12500 is signaled as TRM = 4
25000 is signaled as TRM = 5.
50000 is signaled as TRM = 6.
100000 is signaled as TRM = 7.

Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm Abr cutoffDecreaseFactor (cdf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero. CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the CRM parameter, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum

Cell Rate (MCR), in which case the ACR is set to MCR.

The value of CRM is indicated by the *forwardRmCellLimit* attribute.

This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.

Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64) sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm Abr acrDecreaseTimeFactor (adtf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the maximum time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. This attribute is ignored under all conditions where the operational attribute *abrConnectionType* indicates ***erSwitch*** or ***efciSwitch***.
Mib	AtmCore
Values	Decimal (0..1023) sameAsCa
Units	centiseconds
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm Abr dgcraMaximumDelay (dgcraMaxDelay)

Access	Read and write
Criticality	Component
Description	This attribute specifies an upper bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in the forward direction). This upper bound may be approximated as the sum of the round trip fixed and propagation delays and the maximum queuing delays between the ABR source and this interface. The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When there is a reduction in the Allowed Cell Rate (ACR), the policer waits for a correspondingly longer period of time before it enforces at the new cell rate. The value of this attribute must not be less than the *dgcraMinimumDelay* attribute.
Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm Abr dgcraMinimumDelay (dgcraMinDelay)

Access	Read and write
Criticality	Component
Description	This attribute specifies a lower bound on the delay after which the rate change induced by a backward Resource Management (RM) cell departing from this connection point (in the backward direction) is expected to be observed at this connection point (in

the forward connection).

This lower bound may be approximated as the sum of the round trip fixed and propagation delays between the ABR source and this interface.

The value of this attribute is used in policing an ABR connection using the Dynamic General Cell Rate Algorithm (DGCRA). A smaller value for this attribute implies a more lenient policer. When there is a increase in the Allowed Cell Rate (ACR), the policer waits for a correspondingly shorter period of time before it enforces at the new cell rate.

Mib	AtmCore
Values	Decimal (1..16700000) sameAsCa
Units	microsec
Default	sameAsCa

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm Abr farEndAcrDecreaseTimeFactor (feAdtf)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Allowed Cell Rate Decrease Time Factor (ADTF) of the far end ABR source. The value specified should be the same as the ADTF parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the value of this attribute, the policer begins to limit enforce the incoming traffic at the initial cell rate (ICR) of the far end, as specified by the *farEndInitialCellRate* attribute.
Mib	AtmCore

Values	Decimal (0..1023)
Units	centiseconds
Default	50

ATTRIBUTE AtmIf Vpt Vcc Vcd Tm Abr farEndInitialCellRate (feIcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Initial Cell Rate (ICR) of the far end ABR source. The value specified should be the same as the ICR parameter at the far end of this ABR connection. The value of this attribute is used in policing an ABR connection using the Dynamic Generic Cell Rate Algorithm (DGCRA). A larger value for this attribute implies a more lenient policer. When the delay between two consecutive forward Resource Management (RM) cells received at this interface corresponds to a value greater than the *farEndAcrDecreaseTimeFactor* attribute, the policer begins to enforce the incoming traffic at the value of this attribute. If this attribute is specified less than the MCR of the connection, then the MCR is used as the *feIcr*. If this attribute is more than the PCR of the connection, then PCR is used as the *feIcr*.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cell/s
Default	0

COMPONENT AtmIf Vpt Vcc Vcd PerformanceMonitoring (Pm)

Groups	"GROUP AtmIf Vpt Vcc Vcd Pm Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vcc/x.y Vcd PerformanceMonitoring* *AtmIf/n Vpc/x Vpd PerformanceMonitoring* This component represents the Performance Monitoring (Pm)

function on a provisioned connection. No Performance Monitoring is done unless this component is present. The attribute values override corresponding values in the *AtmIf Pm* component. There can be a maximum of 255 *Pm*s on one LP.

Mib: AtmCore

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpt Vcc Vcd Pm Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioned attributes which specify Performance Monitoring (PM) measurements, namely, Availability Ratio (AR) and Cell Loss Ratio (CLR), and control modes for the connection. The values specified in this group override those specified by the *AtmIf Pm* component.

Mib: AtmCore

ATTRIBUTE AtmIf Vpt Vcc Vcd Pm segSwitchSideMeasurement (segSwitchSide)

Access: Read and write

Description: This attribute specifies the set of Performance Monitoring (PM) measurements on the switch side configuration for the connection.

A value of ***sameAsInterface*** means that the measurements specified by the *segSwitchSideMeasurement* attribute of the *AtmIf Pm* component will be performed. No other values may be specified if ***sameAsInterface*** is selected. If the value is empty, no switch side PM measurements are done.

Mib: AtmCore

Set of:
- availabilityRatio (ar)
- cellLossRatio (clr)
- sameAsInterface (sameAsIf)

Default	(sameAsInterface)

ATTRIBUTE AtmIf Vpt Vcc Vcd Pm segLinkSideMeasurement (segLinkSide)

Access	Read and write
Description	This attribute specifies the set of Performance Monitoring (PM) measurements on the link side configuration for the connection. A value of ***sameAsInterface*** means that the measurements specified by the *segLinkSideMeasurement* attribute of the *AtmIf Pm* component will be performed. No other values may be specified if ***sameAsInterface*** is selected. If the value is empty, no link side PM measurements are done.
Mib	AtmCore
Set of	availabilityRatio (ar) cellLossRatio (clr) sameAsInterface (sameAsIf)
Default	(sameAsInterface)

ATTRIBUTE AtmIf Vpt Vcc Vcd Pm controlMode (mode)

Access	Read and write
Criticality	Component
Description	This attribute specifies the control mode of Performance Monitoring (PM) measurements for the connection. A value of ***autoStart*** means that PM activation procedures will start when the provisioned data is activated. A value of ***onDemand*** means that PM activation procedures will start when the operator issues the *Start* command. The PM measurements in this mode will continue until the operator issues the *Stop* command. A value of ***sameAsInterface*** means that the behavior will be as specified by the *controlMode* attribute of the *AtmIf Pm* component.
Mib	AtmCore

Values	autoStart (auto) onDemand (onDemand) sameAsInterface (sameAsIf)
Default	sameAsInterface

ATTRIBUTE AtmIf Vpt Vcc Vcd Pm switchSideClrType (clrType)

Access	Read and write
Description	This attribute specifies how the Cell Loss Ratio (CLR) Performance Monitoring (PM) is measured on a switch-side configuration for the connection. A value of ***complete*** indicates that egress discards at the segment end points are included in the CLR measurement as per ITU standards. A value of ***partial*** indicates that egress discards do not contribute to the CLR measurement. A value of ***sameAsInterface*** means that the behavior is as specified by the *switchSideClrType* attribute of the *AtmIf Pm* component.
Mib	AtmCore
Values	complete partial sameAsInterface (sameAsIf)
Default	sameAsInterface

COMPONENT AtmIf Vpt Vcc Loop (Loop)

Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Loop* The *Loop* component configures an ATM connection so that cells received from the ATM interface are retransmitted back to the interface through that connection. The *Loop* component requires

exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Nrp*, and *Test*).

Mib: AtmCore

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Vpt Vcc NailedUpRelayPoint (Nrp)

Groups: "GROUP AtmIf Vpt Vcc Nrp Provisioned (Prov)"

Scope: Device

Description: *AtmIf/n Vcc/vpi.vci Nrp*
This component is used to establish a single hop of a nailed-up ATM Bearer Service (ABS) connection. By linking together two *Nrp*s within a module, the associated connections are configured to relay ATM cells to one another. The *Nrp* component requires exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Test*, and *Loop*).

Mib: AtmBearerService

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Vpt Vcc Nrp Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the *Nrp* component.

Mib: AtmBearerService

ATTRIBUTE AtmIf Vpt Vcc Nrp nextHop (nextHop)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *Nrp* component with which this *Nrp* is associated. A sample value is *AtmIf/31 Vcc/0.32 Nrp*.
Mib	AtmBearerService
Values	Link (Service, nextHop)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Nrp oamSegmentBoundary (sb)

Access	Read and write
Criticality	Component
Description	This attribute specifies the OAM segment boundary desired for a *Nrp* component. It affects the connection point type value visible in the parent component's *connectionPointType* attribute. The desired OAM segment boundary can be specified directly as ***yes***, ***no*** or ***sameAsInterface***. If ***sameAsInterface*** is specified, the OAM segment boundary is same as the *oamSegmentBoundary* attribute of the associated *AtmIf* and the switch will set the *connectionPointType*, choosing ***segmentEndPoint*** for a segment-boundary ATM interface and ***connectingPoint*** for a non-segment-boundary ATM interface.
Mib	AtmBearerService
Values	no yes sameAsInterface
Default	sameAsInterface

ATTRIBUTE AtmIf Vpt Vcc Nrp bandwidthElastic (bwElastic)

Access	Read and write
Criticality	Component

Description	This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced will be displayed in the *bandwidthReduction* attribute. A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection will not be released. Currently, this attribute should only be set to ***yes*** for situations where this *Nrp* is functioning as a loopback on one side of an IMA link. There are no other situations where this setting is valid. A value of ***no*** indicates that the bandwidth for this connection will not be reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority.*
Mib	AtmBearerService
Values	no yes
Default	no

ATTRIBUTE AtmIf Vpt Vcc Nrp overrideHoldingPriority (ohpri)

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. Holding priority is used when there is an IMA group where some physical links have failed. Holding priority determines the order in which connections are released. 4 is the lowest holding priority and is released first. 0 is a higher priority and is released last. The value specified in this attribute will override whatever *holdingPriority* that has been provisioned at the *Vcd* (or *Vpd*). If

the value is left at the default of ***noOverride***, the *holdingPriority* provisioned at the *Vcd* (or *Vpd*) will be used.

Mib: AtmBearerService

Values:
0
1
2
3
4
noOverride

Default: noOverride

COMPONENT AtmIf Vpt Vcc NailedUpEndPoint (Nep)

Groups: "GROUP AtmIf Vpt Vcc Nep Provisioned (Prov)"

Scope: Device

Description: *AtmIf/n Vcc/vpi.vci Nep*
The *NailedUpEndPoint* component is used to link a VCC to an application that sends and receives frames using the connection. The *Nep* component requires exclusive use of its parent *Vcc* and cannot co-exist with other ATM service components (such as *Nrp*, *Test*, and *Loop*).

Mib: AtmCore

Common Verbs:
Help
List
Display
Add
DELete

GROUP AtmIf Vpt Vcc Nep Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisionable attributes for the *Nep* component.

Mib: AtmCore

ATTRIBUTE AtmIf Vpt Vcc Nep applicationName (appName)

Access	Read only
Description	This attribute specifies the application that sends and receives frames using the VCC. This attribute is set, for example, by provisioning the *Trunk AtmAccess AtmConnection* attribute. If it is properly configured, this attribute will show a value such as “Trk/22 AtmAccess”.
Mib	AtmCore
Values	Link (Service, atmConnection)
Default	No default

COMPONENT AtmIf Vpt Vcc Test (Test)

Groups	"GROUP AtmIf Vpt Vcc Test OsiState (State)" "GROUP AtmIf Vpt Vcc Test Setup (Setup)" "GROUP AtmIf Vpt Vcc Test Results (Results)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci Test* The *Test* component allows test traffic to be sent over an ATM connection. It is used to verify the integrity of hardware carrying ATM traffic, and provides test capabilities similar to those provided by non-ATM port and line tests. The *Test* component requires exclusive use of its parent *Vcc* and cannot co-exist with other ATM service components (such as *Nep*, *Nrp*, and *Loop*). An ATM connection test circulates traffic through a VCC having a *Test* component at one end and the other end configured to loop back ATM cells. The *Test* component generates test frames, transforms them into ATM cells using AAL5 segmentation, and transmits them through the VCC; the returned cells are received by the *Test* component, reassembled back into frames, and the frames are consumed. The test frames generated by the test are grouped into two independent streams. 1) The loading frame stream circulates a set of “loading frames” through the connection as rapidly as possible. The intent of this

stream is to verify the operation of the connection under a controlled load.
2) The verification stream transmits a series of “verification frames” through the connection; as each frame is returned, the *Test* component verifies its contents and the next verification frame in the series is transmitted. The intent of this stream is to verify that frames are not being corrupted.
The test can be configured to send frames from either or both streams. The size and content of the test frames can also be controlled.

Mib: AtmCore

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB START AtmIf Vpt Vcc Test

Impact: Service

Description: *START AtmIf/n Vcc/vpi.vci Test*
This verb invokes an ATM connection test. It has no effect when the test is already running.

VERB STOP AtmIf Vpt Vcc Test

Impact: Service

Description: *STOP AtmIf/n Vcc/vpi.vci Test*
This verb stops an ATM connection test. It has no effect when the test is not running.

GROUP AtmIf Vpt Vcc Test OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib AtmCore

ATTRIBUTE AtmIf Vpt Vcc Test adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib AtmCore

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE AtmIf Vpt Vcc Test operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmCore

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmIf Vpt Vcc Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: AtmCore

Values: idle
active (activ)
busy

Default: idle

GROUP AtmIf Vpt Vcc Test Setup (Setup)

Properties: Operational

Description: This group contains attributes that govern the operation of an ATM connection test. These attributes cannot be changed while the test is running.

Mib: AtmCore

ATTRIBUTE AtmIf Vpt Vcc Test frmTypes (types)

Access	Read and write
Description	This attribute specifies the types of the test frames to be transmitted during the ATM connection test. It must contain at least one of the following: ***loading***: A set of “loading frames” is circulated over the link as rapidly as possible. This frame type should be selected when the test is intended to verify the operation of the connection under a specified load. These frames are not checked for bit errors. ***verification***: A single “verification frame” is transmitted over the link; when the frame is returned, its contents are verified and the next verification frame in the series is transmitted. This frame type should be selected when the test is intended to verify that frames are not being corrupted as they pass over the connection.
Mib	AtmCore
Set of	loading verification
Default	(loading, verification)

ATTRIBUTE AtmIf Vpt Vcc Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test frames used in an ATM connection test.
Mib	AtmCore
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE AtmIf Vpt Vcc Test frmPatternType (fpt)

Access	Read and write
Description	This attribute specifies the bit sequence used to fill the frames used in the ATM connection test. It must contain one of the following values:

	ccitt32kBitPattern: a pseudo-random sequence of 32 Kbit is used ***ccitt8MBitPattern***: a pseudo-random sequence of 8Mbit is used ***customizedPattern***: the pattern defined in the *customizedPattern* attribute is used
Mib	AtmCore
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE AtmIf Vpt Vcc Test customizedPattern (cp)

Access	Read and write
Description	This attribute specifies a 32 bit sequence to be used to fill frames when the *framePatternType* attribute is set to ***customizedPattern***. The default value gives a pattern of alternating 0 and 1 bits.
Mib	AtmCore
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE AtmIf Vpt Vcc Test duration

Access	Read and write
Description	This attribute specifies the maximum number of minutes that the ATM connection test is allowed to run. The maximum allowed value permits the test to be run for up to 21 days.
Mib	AtmCore
Values	Decimal (1..30240)
Units	minutes
Default	1

ATTRIBUTE AtmIf Vpt Vcc Test bandwidthElastic (bwElastic)

Access	Read and write

Description	This attribute specifies whether the connection (*VCC*) should be configured with elastic bandwidth or not. Elastic bandwidth is of importance in conjunction with IMA links, where some links fail and the resulting bandwidth is less than the requested bandwidth for all connections. In that case, some connections may be reduced in bandwidth based on the setting of the *bwElastic* attribute. If this attribute is set to ***yes***, the Test application signals to the connection that the bandwidth for this connection is elastic, and may be reduced in the case of IMA link failures. If the bandwidth is reduced, the rate of test cells which can be handled by the connection will also be reduced. If this attribute is set to ***no***, the Test application signals to the connection that the bandwidth for this connection must be maintained at the requested level. If the connection cannot maintain the full bandwidth, the connection may be released (cleared) based on the holding priority of the connection.
Mib	AtmCore
Values	no yes
Default	no

ATTRIBUTE AtmIf Vpt Vcc Test overrideHoldingPriority (ohpri)

Access	Read and write
Description	This attribute specifies the override holding priority which should be signaled to the *VCC* connection at the start of the test. Holding priority is of importance in conjunction with IMA links, where some links fail and the resulting bandwidth is less than the requested bandwidth for all connections. In that case, some connections may be released based on the connection's holding priority. ***Zero*** (0) is the highest holding priority, and ***four*** (4) is the lowest priority. A setting of ***zero*** to ***four*** overrides whatever holding priority that has been configured at the connection (*VCC*). A

setting of ***noOverride*** means that the connection should use its internally configured holding priority.

Mib: AtmCore

Values:
0
1
2
3
4
noOverride

Default: noOverride

GROUP AtmIf Vpt Vcc Test Results (Results)

Properties: Operational

Description: This group contains attributes that show the result of an ATM connection test; if no test is running, the attribute group contains the results of the most recently completed test. The attributes of the *Results* group are reset to their initial values whenever a test is started or any attribute of the *Setup* group is set.

Mib: AtmCore

ATTRIBUTE AtmIf Vpt Vcc Test elapsedTime

Access: Read only

Description: This attribute displays the number of minutes that the test has been running.

Mib: AtmCore

Values: Decimal (0..30240)

Units: minutes

Default: 0

ATTRIBUTE AtmIf Vpt Vcc Test timeRemaining

Access: Read only

Description: This attribute displays the number of minutes that the test will continue to run before stopping automatically.

Mib	AtmCore
Values	Decimal (0..30240)
Units	minutes
Default	0

ATTRIBUTE AtmIf Vpt Vcc Test causeOfTermination

Access	Read only
Description	This attribute displays the reason the test ended. It contains one of the following values. ***testTimeExpired***: the test ran for the specified duration ***stoppedByOperator***: a *STOP* command was issued ***neverStarted***: the test has not been started ***testRunning***: the test is currently running
Mib	AtmCore
Values	testTimeExpired stoppedByOperator neverStarted testRunning
Default	neverStarted

ATTRIBUTE AtmIf Vpt Vcc Test bytesTx

Access	Read only
Description	This attribute displays the number of bytes sent during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Test bytesRx

Access	Read only

Description	This attribute displays the number of bytes received during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Test loadingFrmTx

Access	Read only
Description	This attribute displays the number of loading frames sent during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Test loadingFrmRx

Access	Read only
Description	This attribute displays the number of loading frames received during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Test loadingFrmLost

Access	Read only
Description	This attribute displays the number of loading frames that were lost during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore

Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Test verificationFrmTx

Access	Read only
Description	This attribute displays the number of verification frames sent during the test. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Test verificationFrmRx

Access	Read only
Description	This attribute displays the number of verification frames received during the test (including errored verification frames). The counter wraps to zero if it exceeds its maximum value of (2**64)-1. Note that the number of verification frames lost during the test can be computed by the expression *verificationFrmTx - verificationFrmRx*.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Test verificationFrmBad

Access	Read only
Description	This attribute displays the number of errored verification frames received during the test. A verification frame is considered to be errored if it contains a recognizable verification frame header, but does not match the transmitted frame bit for bit. (Thus, a verification frame that returns after the succeeding verification frame has been transmitted is considered to be errored.) The

	counter wraps to zero if it exceeds its maximum value of (2**64)-1. Note that the number of correct verification frames received during the test can be computed by the expression *verificationFrmRx - verificationFrmBad*.
Mib	AtmCore
Values	Long Integer
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Test unrecognizableFrmRx

Access	Read only
Description	This attribute displays the number of frames received during the test which do not contain a valid loading frame header or verification frame header. The counter wraps to zero if it exceeds its maximum value of (2**64)-1.
Mib	AtmCore
Values	Long Integer
Default	No default

COMPONENT AtmIf Vpt Vcc TrafficManagement (Tm)

Groups	"GROUP AtmIf Vpt Vcc Tm Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vpc/vpi TrafficManagement,* *AtmIf/n Vcc/vpi.vci TrafficManagement,* *AtmIf/n Vpt/vpi TrafficManagement,* *AtmIf/n Vpt/vpi Vcc/vci TrafficManagement* The *Tm* subcomponent contains the operational traffic

	management attributes of a connection. It is created dynamically for each activated *Vcc*, *Vpc*, or *Vpt* component.
Mib	AtmCore
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Vcc Tm AvailableBitRate (Abr)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Vcc Tm Operational (Oper)

Properties	Operational
Description	This group contains attributes for the *Tm* component to reflect operational traffic attributes.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt Vcc Tm txTrafficDescType (txTdt)

Access	Read only
Description	T his attribute indicates the type of traffic management which is applied to the transmit direction of this connection as defined in the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm txQosClass (txQos)

Access	Read only
Description	This attribute indicates the quality of service for the calling to called direction for this connection. This is only applicable to Soft PVC and SVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified QOS class; no objective is specified for the performance parameters. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	0 1 2 3 4 notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm txQueueLength (txQLen)

Access	Read only
Description	This attribute indicates the current number of cells in the transmit queue for this connection. If this connection has *unshapedTransmitQueueing* attribute

displayed as ***common***, this attribute displays the length of the common queue which is used for this ATM service category.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***fifo***, this attribute indicates the number of cells for this connection which are enqueued in a first-in-first-out queuing method for this ATM service category. This will only occur for connections on ATM IP cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the length of the per-VC queue.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current number of cells in the link class queue used by this connection to buffer its traffic.

This attribute does not apply to basic *Vpt*s.

Mib	AtmCore
Values	Decimal (0..1011840)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm txQueueCongestionState (txQCong)

Access	Read only
Description	This attribute indicates the congestion state of the transmit queue for this connection. If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the congestion state of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the congestion state of the per-VC queue. The congestion state of a queue is indicated by a numeric value

ranging from 0 to 3. When a queue is in a congested state x, only traffic with discard priority (DP) 0 to x are enqueued. Traffic with DP > x is discarded.

For example, if the congestion state is 3, there is no congestion and all traffic is enqueued. Likewise, when the congestion state is 0, there is maximum congestion and only traffic with DP=0 is enqueued on that queue.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the current congestion state of the link class queue used by this connection to buffer its traffic.

This attribute does not apply to basic *Vpt*s.

Mib	AtmCore
Values	Decimal (0..3)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm holdingPriority (hpri)

Access	Read only
Description	This attribute indicates the actual holding priority in effect for this connection. In a situation where the link bandwidth fluctuates, such as over an IMA link, holding priority is used to determine which connections are held and which are released. Holding priority 4 connections are the first to be released. Holding priority 0 connections are the last to be released. Some applications, for example *Vcc Test*, may override the provisioned holding priority. A value of ***notApplicable*** is displayed when this is an elastic connection. Holding priority does not apply to bandwidth elastic connections. Holding priority has no effect if the equivalent cell rate (ECR) for a connection is zero. This attribute does not apply to *Vpt Vcc*s.

Mib	AtmCore
Values	0 1 2 3 4 notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm rxTrafficDescType (rxTdt)

Access	Read only
Description	This attribute indicates the type of traffic management which is applied to the receive direction of this connection as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute.
Mib	AtmCore
Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm rxQosClass (rxQos)

Access	Read only
Description	This attribute indicates the quality of service for the called to calling direction for this connection. This is only applicable to Soft PVC and SVC connections. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video).

Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video).

Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer).

Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class 0 is the unspecified QOS class; no objective is specified for the performance parameters.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
0
1
2
3
4
notApplicable
sameAsFwd

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm atmServiceCategory (service)

Access: Read only

Description: This attribute indicates the ATM service category used for traffic in both directions of the connection.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to have significantly reduced value for the application.

The ***rtVariableBitRate*** service category is intended for real time applications; that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by Cell Transfer Delay are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***availableBitRate*** service is an ATM layer service category for which the limiting ATM layer transfer characteristics provided by the network may change subsequent to connection establishment. ABR service has a flow control mechanism which supports several types of feedback to control the source rate in response to changing ATM layer transfer characteristics. ABR service is not intended to support real-time applications.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmCore
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtVbr)

nrtVariableBitRate (nrtVbr)
availableBitRate (abr)

Default — No default

ATTRIBUTE AtmIf Vpt Vcc Tm trafficShaping (trShaping)

Access — Read only

Description — This attribute indicates the traffic shaping state of the connection.

A value of ***notApplicable*** indicates that traffic shaping is not applicable or not supported for this connection. This is the case:
- when the *txTrafficDescType* is 1 or 2.
- for standard *Vpt Vcc*s and basic *Vpt*s.
- for ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, when the *atmServiceCategory* is ***constantBitRate***.

In these cases, the value of ***notApplicable*** is indicated regardless of whether traffic shaping is enabled or disabled in the provisioning data.

A value of ***disabled*** indicates that traffic shaping is applicable and supported for the type of connection but has been turned off in the provisioning data.

A value of ***linear*** or ***inverseUpc*** indicates that traffic shaping is applicable and supported for the type of connection and has been turned on in the provisioning data. This is the only case that indicates that traffic shaping is performed on the connection. In this case, the actual shaping rate is reflected in the *txTrafficDescParm* attribute, parameter number 4. A value of ***linear*** indicates that traffic is being shaped at the constant rate indicated in *txTrafficDescParm* 4. A value of ***inverseUpc*** indicates that the shaper strictly conforms to the requirements of a dual leaky bucket UPC enforcer. This value is indicated if traffic shaping is enabled, and the *txTrafficDescType* for this connection is 6, 7 or 8.

For ***1pOC12SmLrAtm*** and ***1pOC48ChSmIrAtm*** cards, traffic shaping is not available, therefore this attribute is always

disabled.

Traffic shaping for connections with *atmServiceCategory* as ***availableBitRate*** (*txTrafficDescType* 9) depends upon the *abrConnectionType* attribute. If *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, the value of this attribute is ***linear***. If *abrConnectionType* is ***erSwitch*** or ***efciSwitch***, this attribute is ***notApplicable***.

Mib: AtmCore

Values:
disabled
linear
inverseUpc
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm bearerClassBbc (bcBbc)

Access: Read only

Description: This attribute indicates the bearer capability for this connection.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is displayed, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements.When ***c*** is displayed, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***cbr*** or ***vbr***), and timing requirements are user defined (that is, transparent to the network). When the value of this attribute is ***x***, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.

Class vp service is used to indicate a transparent VP service when the user is requesting an ATM only service from the network. In this case, the network does not process any higher layer protocol. This service differs from class x service in that with the class vp service both the VCI field (except for VCI values 0, 3, 4, and 6 through 15) and Payload Type field are transported transparently by the network. This attribute value is only applicable to SPVP and SVP connections.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
a
c
x
vp
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm transferCapabilityBbc (tcBbc)

Access: Read only

Description: This attribute indicates the transfer capability for this connection. Uni 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows:
<transferCapability: TrafficType, Timing>
0: NoIndication, NoIndication
1: NoIndication, yes
2: NoIndication, no
5: CBR, yes
8: VBR, NoIndication
9: VBR, yes
10: VBR, no

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance, or in the case that the transfer capability in the call request was set to NoIndication.

The CBR traffic type refers to traffic offered on services such as a constant bit rate video service or a circuit emulation.

The VBR traffic type refers to traffic offered on services such as packetized audio and video, or data.

The value NoIndication for traffic type is used if the user has not set the traffic type; similarly for end-to-end timing.

The value yes for end-to-end timing indicates that end-to-end timing is required for the connection.

The value no for end-to-end timing indicates that end-to-end timing is not required for the connection.

Mib: AtmCore

Values:
0
1
2
5
8
9
10
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm clippingBbc (cBbc)

Access: Read only

Description: This attribute indicates the value of the clipping susceptibility parameter in the broadband bearer capability (BBC) Information Element.

Clipping is an impairment in which the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.

A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.

Mib: AtmCore

Values:
no
yes
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm unshapedTransmitQueueing (unshap)

Access: Read only

Description: This attribute indicates the unshaped transmit queuing state of the connection.

A value of ***common*** indicates that transmit traffic is being enqueued onto the common transmit queue for this service category.
The *txQueueLength* attribute indicates the current length of the common transmit queue.

A value of ***fifo*** indicates that transmit traffic is being queued in a first-in-first-out basis for this service category. This is similar to ***common*** queuing, but the *txQueueLength* attribute indicates the number of cells in this connection queue. A value of ***fifo*** will only be indicated for connections on ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, and MSA32 cards with *atmServiceCategory* of ***nrtVbr*** or ***ubr***.

A value of ***perVc*** indicates that transmit traffic is being enqueued onto a per-VC queue for this connection.

A value of ***notApplicable*** indicates that transmit traffic is being shaped for this connection, or that unshaped transmit queuing is not applicable for this type of connection. Transmit traffic for a shaped connection is enqueued onto a per-VC queue, but this attribute is only applicable for unshaped connections. Unshaped transmit queuing is not applicable for basic *Vpt*s.

Mib	AtmCore
Values	perVc common notApplicable fifo
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm bestEffort

Access	Read only
Description	This attribute indicates value of best effort parameter in the ATM Traffic Descriptor Information Element. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	AtmCore
Values	indicated notIndicated notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm forceTagging (tagging)

Access	Read only
Description	This attribute indicates the state of force tagging option for this connection. Force tagging refers to setting the CLP bit for all cells on a connection. A value of ***enabled*** indicates that the CLP bit is being set to 1 for all cells in the transmit direction on this connection. A value of ***disabled*** indicates that the CLP bit is unchanged for

cells in the transmit direction on this connection. The value ***disabled*** is always displayed for *Vpt*s since forced tagging is applied on a per *Vpt Vcc* basis.

Mib: AtmCore

Values:
disabled
enabled

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm weight

Access: Read only

Description: This attribute indicates the relative weight of this unshaped connection. Connections with a larger weight get a larger proportion of the link bandwidth or in the case of standard *Vpt Vcc*s, the *Vpt* bandwidth.

For all but standard *Vpt Vcc*s, the default connection weight is determined by the weight policy for a service category and the traffic descriptor for a connection. For standard *Vpt Vcc*s, the default connection weight is determined by the *Vcc*'s service category.

A value from 1 to 4095 indicates an actual weight. The value ***upToQueueLimit*** indicates that the weight of a connection is up to the transmit queue limit for this connection and is used for connections which have the value of the *unshapedTransmitQueueing* attribute displayed as ***fifo***.

This attribute has a displayed value of ***notApplicable*** in the following cases:
- This connection has the value of the *trafficShaping* attribute displayed as either ***linear*** or ***inverseUpc***.
- This connection has the value of the *trafficShaping* attribute displayed as ***disabled***, but the connection's service category has the *trafficShaping* attribute provisioned as either ***enabled*** or ***inverseUpc***.
- This connection has the value of the *unshapedTransmitQueueing* attribute displayed as ***common***.
- This is a basic *Vpt* connection.

- For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm*** cards, since per-connection weight is not supported.

Mib: AtmCore

Values:
Decimal (1..4095)
upToQueueLimit
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm usageParameterControl (upc)

Access: Read only

Description: This attribute indicates the UPC state of the connection.

A value of ***notApplicable*** indicates that UPC is not applicable or not supported for the connection. This is the case:
- when the connection's *rxTrafficDescType* is 1 or 2.
- for standard *Vpt Vcc*s and basic *Vpt*s.

A value of ***notApplicable*** is set regardless of whether UPC is disabled or enabled in provisioning data.

A value of ***disabled*** indicates that UPC is applicable and supported for the type of connection but has been turned off in the provisioning data.

A value of ***enforced*** indicates that UPC is actively checking conformance for the connection and is discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. On some ATM cards, the counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

A value of ***monitored*** indicates that UPC is actively checking conformance for the connection and counting the violations, but is not discarding or tagging cells which do not conform to the connection traffic contract. The traffic descriptor parameters used

for UPC conformance are reflected in the *rxTrafficDescParms* of the connection. The counts of UPC violations are visible in the *Vcc*, *Vpc* or *Vpt*. *rxUpcViolationsOnEnforcer1* or *rxUpcViolationsOnEnforcer2* attributes.

If the *atmServiceCategory* for this connection is ***availableBitRate***, a value of ***enforced*** indicates that Dynamic Generic Cell Rate Algorithm (DGCRA) is active for the connection. The traffic descriptor parameters used for DGCRA enforcement are reflected in the *rxTrafficDescParm* of the connection.

Mib: AtmCore

Values:
enforced
disabled
monitored
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm txPacketWiseDiscard (txpd)

Access: Read only

Description: This attribute indicates the current set of packet-wise discard functions in effect in the transmit data direction at this connection point.

A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point.

A value of ***wred*** indicates that Weighted Random Early Detection is in effect at this connection point. W-RED can be enabled by provisioning for PVCs and SPVCs.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Packet-wise functions are not applicable to virtual path connections (VPCs) on these cards.

On all other ATM cards, all packet-wise discard functions also apply to virtual path connections (VPCs).

This attribute is not applicable for *Vpt*s.

Mib: AtmCore

Set of: ppd
epd
wred

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm rxPacketWiseDiscard (rxpd)

Access: Read only

Description: This attribute indicates the current set of packet-wise discard functions in effect in the receive data direction at this connection point.

A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning for PVCs and SPVCs, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.

A value of ***epd*** indicates that the Early Packet Discard (EPD) function is in effect at this connection point. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, and ***2pJ6MAtm*** cards, packet-wise functions are not applicable to virtual path

connections (VPCs).

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, packet-wise discard functions are not available for the receive data direction of a connection. PPD and EPD are enabled by default at a connection endpoint which is performing AAL5 segmentation and assembly. Note that a provisioned value of ***enabled*** for the *Vcc/Vpc Vcd/Vpd Tm rxPacketWiseDiscard* provisionable attribute is used only for signaling SPVC/SPVP setup across the network, and does not result in actually enabling packet-wise discard functions in the receive data direction of a connection locally on these cards, thus does not affect the operational value displayed.

On all other ATM cards, all packet-wise discard functions also apply to virtual path connections (VPCs).

This attribute is not applicable for *Vpt*s.

Mib: AtmCore

Set of: ppd
epd

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm bandwidthElastic (bwElastic)

Access: Read only

Description: This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application (for example, *Trunk*) running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced is displayed in the *bandwidthReduction* attribute.

A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection is not released.

A value of ***no*** indicates that the bandwidth for this connection is not reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority.*

Bandwidth elasticity has no effect for connections which have an equivalent cell rate (ECR) of zero.

This attribute is not applicable for *Vpt*s and *Vpt Vcc*s.

Mib: AtmCore

Values: no
yes

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm bandwidthReduction (bwReduction)

Access: Read only

Description: This attribute shows the amount by which the bandwidth has been reduced for this connection. This value is non-zero only for connections which have *bandwidthElastic* displayed as ***yes***, and which are also operating in a reduced bandwidth mode. This is typically the case for selected connections running over an IMA link. This attribute takes a value from 0 (no reduction) up to the ECR. For all connections which are running at their full allocated bandwidth, *bwReduction* has the value 0. Connections which have been reduced in allocated bandwidth have a positive number for this attribute. The *bwReduction* may be subtracted from the ECR (which is displayed as *txTrafficDescParm* 5) to determine the actual bandwidth allocated to this connection.

Mib: AtmCore

Values: Decimal (0..2147483647)

Units: cell/s

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm abrConnectionType (abrType)

Access: Read only

Description

This attribute indicates the type of ABR behavior which is in effect at this connection. This attribute is only applicable if the *atmServiceCategory* attribute is ***availableBitRate***. If the *atmServiceCategory* attribute is not ***availableBitRate***, this attribute value is set to ***notApplicable***.

For ATM cards which do not support ABR connections, the possible values for this attribute are ***notApplicable***, ***efciSwitch***, or ***nonAbrInterworking***. In EFCI marking mode, the Explicit Forward Congestion Indication (EFCI) field in the data cell headers is used to indicate transmit queue congestion.

For ATM cards which do support ABR connections, if the *connectionPointType* is ***connectionEndPoint***, the value of this attribute is ***sourceDest***. In this mode, the ABR Source and Destination behavior is in effect at this connection. This attribute is also ***sourceDest*** in the case where the next hop connection is specified as ***nonAbrInterworking***. The next hop connection is the *Vcc* or *Vpc* identified by the *nextHop* attribute of the *Nrp* or *Rp* component.

If the *connectionPointType* is not ***connectionEndPoint***, the value of this attribute depends upon the *abrConnectionType* provisioning and the card type to which the traffic is forwarded on the backplane. The default *abrConnectionType* is provisioned at the *CA Abr abrConnectionType* attribute, and may be overridden for a provisioned connection in the *Vcd Tm abrConnectionType* or *Vpd Tm abrConnectionType* attribute. If the *CA Abr abrConnectionType* attribute is ***virtualSourceDest*** at either one of the two connection points, and if both the connection points are defined on ATM cards which support ABR connections, virtual source and destination behavior is applied to the connection. In this instance, the attribute displays the value ***virtualSourceDest***.

This attribute has the value ***erSwitch*** if ABR explicit rate functionality is in effect at this connection. In this mode, the switch may modify the Explicit Rate (ER) field of backward Resource Management (RM) cells to indicate the status of congestion at this connection point.

This attribute has the value ***nonAbrInterworking*** in the case where this connection point is functioning as an SPVC origin for an ABR connection where the link side of this connection is configured as a non-ABR ATM service category. This means that there are no RM cells on the link side of this connection, and that the next hop connection point is performing as an ABR ***sourceDest***.

Mib: AtmCore

Values:
erSwitch
efciSwitch
virtualSourceDest
sourceDest
nonAbrInterworking
notApplicable

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm txTrafficDescParm (txTdp)

Access: Read only

Description: This attribute is a vector of five transmit traffic parameters whose mapping is defined by the *txTrafficDescType* attribute.

The values of peak cell rate (PCR), sustained cell rate (SCR), Minimum Cell Rate (MCR), actual cell rate (ACR), explicit rate (ER), equivalent cell rate (ECR), and actual shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds.

When *txTrafficDescType* is 1 or 2, parameters 1 through 5 are unused.

In this description, PCR is the greater of either the PCR or the requested shaping rate (parameter 1 or parameter 5) specified in the *txTrafficDescParm* attribute under the *Vcd Tm* or *Vpd Tm* component.

When *txTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 or 1 traffic; parameters 2 and 3 are unused.

When *txTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard.

When *txTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging.

When *txTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic.

When *txTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic.

When *txTrafficDescType* is 3, 4, 5, 6, 7, or 8, parameter 4 reflects the actual shaping rate in cell/s for this connection. For CQC-based ATM cards, the set of available shaping rates is based on the number of interfaces doing shaping (attribute *perVcQueueInterfaces*), and the *shapingScalingFactor* attribute of the *Arc Cqc Override* component. A rate of zero (0) indicates that shaping is not performed, or that the interface is down.

When *txTrafficDescType* is 9**,** parameter 1 represents the PCR; parameter 2 represents the Cell Delay Variation Toleration (CDVT); parameter 3 represents the Minimum Cell Rate (MCR); the meaning of parameter 4 depends upon the value of the *abrConnectionType* attribute. if *abrConnectionType* is ***sourceDest*** or ***virtualSourceDest***, parameter 4 represents the Allowed Cell Rate (ACR); If *abrConnectionType* is ***erSwitch***, parameter 4 represents the Explicit Rate (ER); and if *abrConnectionType* is ***efciSwitch***, parameter 4 reflects the actual shaping rate in cell/s for this connection.

When *txTrafficDescType* is 3, 4, 5, 6, 7, 8, or 9, parameter 5 reflects the equivalent cell rate in cell/s for this connection as determined by the Connection Admission Control (CAC) algorithm. The equivalent cell rate is useful in determining the admission characteristics of this connection.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm txQueueThresholds (txQThresh)

Access	Read only
Description	This attribute indicates the queue limit and the discard thresholds for the transmit queue of this connection.

If this connection has *unshapedTransmitQueueing* attribute displayed as ***common***, this attribute displays the thresholds of the common queue. If this connection has *unshapedTransmitQueueing* attribute displayed as ***perVc*** or as ***notApplicable***, this attribute displays the thresholds of the per-VC queue.

The first element indicates the queue limit. The provisioned value of the transmit queue limit is derived from the *txQueueLimit* attribute under the service category subcomponents of the *CA* component for the service category of this connection.

The second element is the threshold that marks the transition from congestion state 1 to congestion state 0. This is the threshold at which traffic with discard priority (DP) = 1 is discarded. This threshold is set at approximately 90 percent of the first parameter, the operational queue limit.

The third element is the threshold that marks the transition from congestion state 2 to congestion state 1. This is the threshold at which traffic with DP = 2 is discarded. This threshold is set at

approximately 75 percent of the first parameter, the operational queue limit.

The fourth element is the threshold that marks the transition from congestion state 3 to congestion state 2. This is the threshold at which traffic with DP = 3 is discarded. This threshold is set at approximately 35 percent of the first parameter, the operational queue limit.

For ***1pOC48ChSmIrAtm*** cards, this attribute displays the thresholds of the link class queue used by this connection to buffer it traffic.

This attribute does not apply to basic *Vpt*s.

Mib	AtmCore
Vector of	Decimal (0..1011840)
Units	cells
Index	Decimal (0..3)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm rxTrafficDescParm (rxTdp)

Access	Read only
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. Cell delay variation tolerance (CDVT) is expressed in microseconds. When *rxTrafficDescType* is 1 or 2, none of the parameters are used. When *rxTrafficDescType* is 3, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT. When *rxTrafficDescType* is 4, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for

CLP equal to 0 traffic with cell discard; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 5, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 6, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 7, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 8, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT.

When *rxTrafficDescType* is 9, parameter 1 represents the PCR; parameter 2 represents CDVT; parameter 3 represents the MCR; parameter 4 is not used.

If *upc* is ***disabled*** for this connection, the values of PCR, SCR, MBS and CDVT are the provisioned parameters.

If *upc* is ***enabled***, the values of PCR, SCR, MBS, and CDVT are exactly the values used by the usage parameter control hardware in policing the arriving traffic. These may vary slightly from the provisioned values due to granularity of the hardware. In the case where the PCR is equal to the SCR, the effective MBS is zero.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm txQosParameters (tqp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface. The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR). The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR). The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.
Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm rxQosParameters (rqp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC and SVC connections on a PNNI interface.

The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR).

The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR).

The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.

Mib	AtmCore
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

COMPONENT AtmIf Vpt Vcc Tm AvailableBitRate (Abr)

Groups	"GROUP AtmIf Vpt Vcc Tm Abr Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vpc/vpi Tm AvailableBitRate,* *AtmIf/n Vcc/vpi.vci Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Tm AvailableBitRate,* *AtmIf/n Vpt/vpi Vcc/vci Tm AvailableBitRate* This component contains ABR-related operational attributes of a connection. It is dynamically created for connections where the value of the *atmServiceCategory* attribute is ***availableBitRate***, and where the value of the *abrConnectionType* attribute is ***sourceDest***, or ***virtualSourceDest***.
Mib	AtmCore
Common Verbs	Help List Display

GROUP AtmIf Vpt Vcc Tm Abr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for connections using ABR service category.
Mib	AtmCore

ATTRIBUTE AtmIf Vpt Vcc Tm Abr initialCellRate (icr)

Access	Read only
Description	This attribute indicates the Initial Cell Rate (ICR) parameter for this connection. ICR is the rate at which a source should send initially and after an idle period. For nailed-up connections, this attribute is determined by the provisioned value of the *initialCellRate* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element. The ICR for a connection is a value between the MCR and the PCR. Furthermore, ICR has an upper bound determined by the *transientBufferExposure* divided by *fixedRoundTripTime*.
Mib	AtmCore
Values	Decimal (0..16777215)
Units	cell/s
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm Abr transientBufferExposure (tbe)

Access	Read only
Description	This attribute indicates the Transient Buffer Exposure (TBE) for this connection. TBE is the negotiated number of cells that the network would like to limit the resource to send during start-up periods, before the first Resource Management (RM) cell returns. For nailed-up connections, this attribute is determined by the provisioned value of the *transientBufferExposure* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.

Mib	AtmCore
Values	Decimal (0..16777215)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm Abr fixedRoundTripTime (frtt)

Access	Read only
Description	This attribute indicates the Fixed Round-Trip Time (FRTT) parameter for this connection. FRTT is the sum of the fixed and propagation delays from the source to a destination and back. For nailed-up connections, this attribute is determined by the provisioned value of the *fixedRoundTripTime* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.
Mib	AtmCore
Values	Decimal (0..16700000)
Units	microsec
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm Abr rateDecreaseFactor (rdf)

Access	Read only
Description	This attribute indicates the Rate Decrease Factor (RDF) for this connection. The RDF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 8, RDF is 2E-8 = 1/256. RDF controls the amount by which the cell transmission rate may decrease upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) field set to 1, the Allowed Cell Rate (ACR) value would be reduced by the amount (RDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR.

For nailed-up connections, this attribute is determined by the provisioned value of the *rateDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.

Mib: AtmCore

Values: Decimal (0..15)

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm Abr rateIncreaseFactor (rif)

Access: Read only

Description: This attribute indicates the Rate Increase Factor (RIF) for this connection. The RIF value is computed by using the operational value of this attribute, n, as 2 to the inverse power n. For example, if the value of this attribute is 6, RIF is 2E-6 = 1/64.

RIF controls the amount by which the cell transmission rate may increase upon receipt of a backward Resource Management (RM) cell. For example, if a backward RM cell is received with the Congestion Indication (CI) and the No Increase (NI) fields both set to 0, the Allowed Cell Rate (ACR) value would be increased by the amount (RIF*ACR). The ACR is not allowed to exceed the Peak Cell Rate (PCR), in which case the ACR is set to PCR.

For nailed-up connections, this attribute is determined by the provisioned value of the *rateIncreaseFactor* attribute. For signaled connections, it is indicated in the ABR Setup Parameters Information Element.

Mib: AtmCore

Values: Decimal (0..15)

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Tm Abr maxCellPerRmCell (nrm)

Access: Read only

Description: This attribute indicates the maximum number of cells an ABR source may transmit for each forward Resource Management

(RM) cell. The count of the cells transmitted includes data cells, OAM cells, backward RM cells, and the forward RM cell.

For nailed-up connections, this attribute is determined by the provisioned value of the *maxCellsPerRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.

Mib	AtmCore
Values	Decimal (2; 4; 8; 16; 32; 64; 128; 256)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm Abr maxTimeBetweenRmCell (trm)

Access	Read only
Description	This attribute indicates the TRM parameter for this connection. TRM provides an upper bound on the time interval between forward Resource Management (RM) cells for an ABR source. Since the last forward RM cell was sent, if at least TRM time has elapsed since and at least 2 other cells have been sent, the next cell to be transmitted would be a forward RM cell. For nailed-up connections, this attribute is determined by the provisioned value of the *maxTimeBetweenRmCell* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (781; 1563; 3125; 6250; 12500; 25000; 50000; 100000)
Units	microsec
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm Abr cutoffDecreaseFactor (cdf)

Access	Read only

Description	This attribute indicates the Cutoff Decrease Factor (CDF) parameter for this connection. When the value of this attribute is non-zero, CDF is computed as the inverse of the value. For example, if the value is 32, the value of CDF is 1/32. When the value of this attribute is 0, CDF is also zero. CDF controls the decrease in the Allowed Cell Rate (ACR) associated with the *forwardRmCellLimit* attribute, the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the ACR value would be decreased by the amount (CDF*ACR). The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. For nailed-up connections, this attribute is determined by the provisioned value of the *cutoffDecreaseFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.
Mib	AtmCore
Values	Decimal (0; 1; 2; 4; 8; 16; 32; 64)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm Abr acrDecreaseTimeFactor (adtf)

Access	Read only
Description	This attribute indicates the Allowed Cell Rate Decrease Time Factor (ADTF) parameter for this connection. ADTF is the time interval permitted between sending forward Resource Management (RM) cells before the Allowed Cell Rate (ACR) is decreased to *initialCellRate*. In other words, if the source does not transit a forward RM cell for the period specified by *adtf*, it reduces its ACR to the value of its *initialCellRate*. For nailed-up connections, this attribute is determined by the provisioned value of the *acrDecreaseTimeFactor* attribute. For signaled connections, it is indicated in the ABR Additional Parameters Information Element.

Mib	AtmCore
Values	Decimal (0..1023)
Units	centiseconds
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm Abr forwardRmCellLimit (crm)

Access	Read only
Description	This attribute indicates the CRM parameter for this connection. CRM is the limit of the number of forward Resource Management (RM) cells which may be sent in the absence of received backward RM cells. When this limit is crossed, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor*. The ACR is not allowed to fall below the Minimum Cell Rate (MCR), in which case the ACR is set to MCR. The value of CRM is obtained as *transientBufferExposure* divided by *maxCellsPerRmCell*.
Mib	AtmCore
Values	Decimal (1; 3; 7; 15; 31; 63; 127; 255; 511; 1023; 2047; 4095)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm Abr txRateChangeInfo (txrci)

Access	Read only
Description	This attribute indicates the rate change information put into the last forward Resource Management (RM) cell turned around as a backward-RM cell. For connections configured as an ABR Source or Destination, the turned around backward-RM cell is sent over the interface. For connections configured as an ABR Virtual Source or Virtual Destination, the turned around backward-RM cell is sent over the backplane.

Mib	AtmCore
Values	congestionIndicated noIncreaseIndicated explicitRateIndicated
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm Abr acrRateChangeInfo (arci)

Access	Read only
Description	This attribute indicates the type of change in the Allowed Cell Rate (ACR) as a result of the information in the last backward Resource Management (B-RM) cell received from the interface. This attribute value is only applicable when the *Vcc Tm* or *Vpc Tm abrConnectionType* attribute is ***sourceDest*** or ***VirtualSourceDest***. In all other cases, this attribute value is ***notApplicable***. A value of ***noChange*** indicates that the rate did not change as a result of the last backward RM cell received. A value of ***decreasedByRdf*** or ***increasedByRif*** indicates that the ACR was increased or decreased by the corresponding factor. This change is as a result of the CI or NI bit setting in the last backward RM cell, or an ADTF timeout. A value of ***setToExplicitRate*** indicates that the ACR was set to the ER value in the last backward RM cell.
Mib	AtmCore
Values	noChange decreasedByRdf increasedByRif setToExplicitRate notApplicable
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm Abr txFwdRmCells

Access	Read only

Description	This attribute counts the number of forward Resource Management (RM) cells sent over the interface since the last backward RM-cell was received from the interface. If the value of this attribute is greater than or equal to the value of *forwardRmCellLimit*, the Allowed Cell Rate (ACR) value would be decreased by the amount (CDF*ACR), where CDF is determined by the *cutoffDecreaseFactor*. This counter is reset to zero each time a backward-RM cell is received. This counter does not wrap to zero if it reaches its maximum value of 4095 in order to indicate that no backward RM cell has been received.
Mib	AtmCore
Values	Decimal (0..4095)
Units	cells
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Tm Abr rxEfci

Access	Read only
Description	This attribute indicates the value of the Explicit Forward Congestion Indication (EFCI) bit of the last data cell received from the interface. When a forward Resource Management (RM) cell is turned around as a backward-RM cell, the Congestion Indication (CI) field of the backward-RM cell is set to 1, if the value of this attribute is ***indicated***. This attribute is set to ***notIndicated*** each time a backward-RM cell is transmitted.
Mib	AtmCore
Values	notIndicated indicated

Default	No default

COMPONENT AtmIf Vpt Vcc SourcePvc (Src)

Groups	"GROUP AtmIf Vpt Vcc Src Provisioned (Prov)" "GROUP AtmIf Vpt Vcc Src Operational (Oper)" "GROUP AtmIf Vpt Vcc Src OsiState (State)" "GROUP AtmIf Vpt Vcc Src CallRedirectionOper (RedirectOp)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc* This component represents the source end of a soft PVC.
Mib	AtmNetworking
Opt. Subcomp.	"COMPONENT AtmIf Vpt Vcc Src CallRedirection (Redirect)" "COMPONENT AtmIf Vpt Vcc Src ManualDtl (Mdtl)" "COMPONENT AtmIf Vpt Vcc Src RerouteOverride (RerOv)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP AtmIf Vpt Vcc Src Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *SourcePvc* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Src callingAddress

Access	Read: All Write: All
Criticality	Component

Description	This attribute represents the calling address of the soft PVC. If it is a null string, then the calling address is the address of the current interface (that is, where the soft PVC originates).
Mib	AtmNetworking
Values	String (0..20, Hex)
Default	""

ATTRIBUTE AtmIf Vpt Vcc Src calledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the called (remote) address of the soft PVC.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Src calledVpiVci

Access	Read: All Write: All
Criticality	Component
Description	This attribute represents the remote VPI and VCI of the soft PVC.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 1..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Src adminControl

Access	Read: All Write: All

Description	This attribute specifies the initial state of the connection. If this attribute is set to ***permLocked***, the connection initially remains down following activation. Setting this attribute to ***unlocked*** causes the connection to be established when it is activated.
Mib	AtmNetworking
Values	permLocked unlocked
Default	unlocked

ATTRIBUTE AtmIf Vpt Vcc Src aisGeneration (ais)

Access	Read and write
Description	This attribute specifies whether OAM-AIS generation occurs on the connection towards this interface when the SPVC is down. If this attribute is ***enabled***, OAM-AIS cells are generated for this SPVC when the SPVC is not up. The only exception is that when the source SPVC attribute *adminControl* is set to ***permLocked***, OAM-AIS cells are not generated for the source SPVC. If this attribute is set to ***disabled***, OAM-AIS cells are not generated.
Mib	AtmNetworking
Values	enabled disabled
Default	disabled

GROUP AtmIf Vpt Vcc Src Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SrcPvp* or *SrcPvc* component.

Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Src retryCount

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed attempts to set up the soft PVP or soft PVC since the last time the connection failed.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Vpt Vcc Src lastFailureCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages. The default value for this attribute is set to 0.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Src lastFailureDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmNetworking

Values	String (0..8, ASCII)
Default	No default

GROUP AtmIf Vpt Vcc Src OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Src adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Vpt Vcc Src operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf Vpt Vcc Src usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmNetworking
Values	idle active (activ) busy
Default	idle

GROUP AtmIf Vpt Vcc Src CallRedirectionOper (RedirectOp)

Properties	Operational
Description	This group contains the operational attributes associated with the *CallRedirection* subcomponent.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Src currentDestination

Access	Read: All Write: Illegal
Description	This attribute indicates the current destination of the soft PVC or soft PVP. A ***notConnected*** status indicates that the connection is not established. A ***primary*** status indicates that the connection is established to the remote destination specified by *calledAddress* and *calledVpiVci/calledVpi* attributes under *Atmif Vcc Src* or *Atmif Vpc Src* or *Atmif Vpt Vcc Src* Component. A ***secondary*** status indicates that the connection is established to the remote destination specified by *secondaryCalledAddress* and *secondaryCalledVpiVci/secondaryCalledVpi* attributes under *Atmif Vcc Src CallRedirection* or *Atmif Vpc Src CallRedirection* or *Atmif Vpt Vcc Src CallRedirection* Component.
Mib	AtmNetworking
Values	notConnected primary secondary
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Src primaryAdminState

Access	Read: All Write: Illegal
Description	This attribute indicates the OSI Administrative State of the primary destination. The value ***locked*** indicates that the primary destination is precluded from call setup attempts.

The value ***unlocked*** indicates that the primary destination is considered in call setup attempts.

Mib: AtmNetworking

Values: locked
unlocked

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Src secondaryAdminState

Access: Read: All
Write: Illegal

Description: This attribute indicates the OSI Administrative State of the secondary destination.
The value ***locked*** indicates that the secondary destination is precluded from call setup attempts.
The value ***unlocked*** indicates that the secondary destination is considered in call setup attempts.

Mib: AtmNetworking

Values: locked
unlocked

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Src lastSecondaryFailureCauseCode

Access: Read: All
Write: Illegal

Description: This attribute indicates the cause code value of the last signalling message to the secondary destination which contained the CAUSE information element. If there has been no previous failure, the value for this attribute is 0.

Mib: AtmNetworking

Values: Decimal (0..255)

Default: No default

ATTRIBUTE AtmIf Vpt Vcc Src lastSecondaryFailureDiagCode

Access	Read: All Write: Illegal
Description	This attribute indicates the diagnostic code associated with the *lastSecondaryFailureCauseCode* attribute. If the diagnostic code was not provided with that CAUSE information element or if there has been no previous failure, this attribute is empty.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Vpt Vcc Src CallRedirection (Redirect)

Groups	"GROUP AtmIf Vpt Vcc Src Redirect Provisioned (Prov)"
Scope	Device
Description	*Atmif/n Vcc/vpi.vci SrcPvc CallRedirection* *Atmif/n Vpt/vpi Vcc/vci SrcPvc CallRedirection* This component represents the secondary destination information for the source end of a soft PVC. The addition of this subcomponent is not critical to the parent SPVC. Deletion of this subcomponent or changes to its attributes will impact service of the SPVC if it is established to the secondary destination.
Mib	AtmNetworking
Common Verbs	Help List Display Add DELete

VERB LOCK AtmIf Vpt Vcc Src Redirect

Impact: Service

Description:

Lock Atmif Vcc Src CallRedirection
Lock -primary Atmif Vcc Src CallRedirection
Lock -secondary Atmif Vcc Src CallRedirection

Lock Atmif Vpt Vcc Src CallRedirection
Lock -primary Atmif Vpt Vcc Src CallRedirection
Lock -secondary Atmif Vpt Vcc Src CallRedirection

This verb selectively precludes a provisioned destination address from consideration during call setup attempts for a Src PVC.

If [-*primary*] option is present, then the primary destination address is precluded from call setup attempts. If the connection is established to the primary destination address at the time of issuing the command, the connection is torn down and an immediate attempt is made to re-establish the connection to the secondary destination address.

If [-*secondary*] option is present, then the secondary destination address is precluded from call setup attempts. If the connection is established to the secondary destination address at the time of issuing the command, the connection is torn down and an immediate attempt is made to re-establish the connection to the primary destination address.

If no option is present, the secondary destination is locked. This command will have the same effect as providing the *secondary* option.

Only one of the primary or the secondary addresses may be locked at any given time.

VERB UNLOCK AtmIf Vpt Vcc Src Redirect

Impact	Service
Description	*Unlock Atmif Vcc Src CallRedirection* *Unlock -primary Atmif Vcc Src CallRedirection* *Unlock -secondary Atmif Vcc Src CallRedirection* *Unlock -primary -secondary Atmif Vcc Src CallRedirection* *Unlock Atmif Vpt Vcc Src CallRedirection* *Unlock -primary Atmif Vpt Vcc Src CallRedirection* *Unlock -secondary Atmif Vpt Vcc Src CallRedirection* *Unlock -primary -secondary Atmif Vpt Vcc Src CallRedirection* This verb selectively unlocks a destination address. The indicated address will be considered in subsequent call setup attempts. If [*-primary*] option is present, then the primary destination address is unlocked and it is considered for subsequent call setup attempts. This action does not have any impact on established connections. If [*-secondary*] option is present, then the secondary destination address is unlocked and it is considered in subsequent call setup attempts. This action does not have any impact on established connections. If no option is present the secondary destination address is unlocked. This command will have the same effect as providing the *secondary* option. If both options are provided, either of the primary or the secondary address which may have been locked will be unlocked.

GROUP AtmIf Vpt Vcc Src Redirect Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Source PVC *CallRedirection* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Src Redirect secondaryCalledAddress

Access	Read: All Write: All
Description	This attribute specifies the secondary called address of the soft PVC.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Src Redirect secondaryCalledVpiVci

Access	Read: All Write: All
Description	This attribute specifies the secondary called VPI and VCI of the soft PVC.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 1..65535)
Default	No default

COMPONENT AtmIf Vpt Vcc Src ManualDtl (Mdtl)

Groups	"GROUP AtmIf Vpt Vcc Src Mdtl Provisioned (Prov)" "GROUP AtmIf Vpt Vcc Src Mdtl Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc ManualDtl* *AtmIf/n Vpc/vpi SrcPvp ManualDtl* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc ManualDtl* This component represents the ability to specify the PNNI path on a per connection basis for provisioned SPVC and SPVP connections. The addition or deletion of this component is critical to the parent

SPVC or SPVP. Changes to the attributes contained under this component are not critical.

Mib AtmNetworking

Common Verbs

Help
List
Display
Add
DELete

VERB REConnect AtmIf Vpt Vcc Src Mdtl

Impact Service

Description

REConnect AtmIf/n Vcc/vpi.vci Src Mdtl
REConnect -primary AtmIf/n Vcc/vpi.vci Src Mdtl
REConnect -alternate AtmIf/n Vcc/vpi.vci Src Mdtl
REConnect -automatic AtmIf/n Vcc/vp.vci Src Mdtl

This command is used to trigger a connection to attempt to connect using the requested path. The behavior of this command differs for connections which do and do not subscribe to Path Optimization capabilities provided by rerouting services. To summarize:

1. Non-reroute Subscribed connections
A reconnect comand will result in the connection being taken down and re-establishment attempts being made. By default (if no option is specified), the primary path is attempted first otherwise the path specified by the option is first attempted. In the event of reconnect failure, subsequent re-establishment attempts will be progressed through a sequence of primary, alternate and automatic (traditional PNNI routing) paths.

2. Reroute Subscribed connections
A reconnect comand will utilize make-before-break functionality.

If an option is specified then only that path will be attempted. If a connection can be established, then datapath switching will be used to replace the existing connection minimizing cell loss. If no option is specified, the connection establishment attempts will be progressed through a sequence of primary, alternate and automatic (traditional PNNI routing) paths only until such time that a successfully established connection would be deemed more optimal than the incumbent. For instance, if a reconnect command is issued for a connection which is on it's alternate path and establishment on the primary path fails then the reconnect operation is considered complete and the connection will remain on the alternate path.

GROUP AtmIf Vpt Vcc Src Mdtl Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Manual DTL selection paths for provisioned connections. The normal sequence for connection retry is: First try to establish the connection using the *primaryPath*. If the connection is not successful and if the *alternatePath* has been provisioned, try to connect using the *alternatePath*. If the connection is still unsuccessful, use the PNNI routing protocol to generate the path.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Src Mdtl primaryPath (priPath)

Access	Read and write
Description	This attribute specifies the name of the primary MDTL path. The value must match the instance value of one of the *Mdtl* components under *Artg Pnni*.
Mib	AtmNetworking
Values	String (1..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Src Mdtl alternatePath (altPath)

Access	Read and write

Description	This attribute specifies the name of the alternate MDTL path. The value must match the instance value of one of the *Mdtl* components under *Artg Pnni.* An empty string disables the alternate path.
Mib	AtmNetworking
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Src Mdtl automaticFallback (auto)

Access	Read and write
Description	This attribute specifies whether PNNI routing is to be used to establish a connection if connection attempts using the primary and alternate paths fail. If the value is ***enable***, PNNI routing will be attempted; if the value is ***disable***, it will not.
Mib	AtmNetworking
Values	disable enable
Default	enable

ATTRIBUTE AtmIf Vpt Vcc Src Mdtl mdtlVersion (vers)

Access	Read and write
Description	This attribute indicates a version number for Specified Paths and will ensure that the reroute behaviors (not subscribed) are maintained following a software migration to a software version where global rerouting is supported for Specified Path connections. This is an internal attribute intended for the above purpose only and should not be altered.
Mib	AtmNetworking
Values	notRerouteCapable rerouteCapable
Default	notRerouteCapable

GROUP AtmIf Vpt Vcc Src Mdtl Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *atmSrcMdtl* component
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Src Mdtl currentPath (curPath)

Access	Read: All Write: Illegal
Description	This attribute indicates the current connection status of the Specified Path connection. A ***not connected*** status indicates that the connection is not established. The retry sequence did not succeed. The network operator can issue the *Reconnect* command to restart the retry sequence. A ***primary*** status indicates that the connection is using the path specified by the *primaryPath* attribute. An ***alternate*** status indicates that the connection is using the path specified by the *alternatePath* attribute. An ***automatic*** status indicates that the connection is using the path generated by the PNNI routing protocol. An ***unknown*** status indicates that the provisioning data for the path upon which the connection is established has been altered. A ***waiting connection*** status indicates that the connection is in a retry phase.
Mib	AtmNetworking
Values	not connected primary alternate automatic unknown waiting connection
Default	"not connected"

ATTRIBUTE AtmIf Vpt Vcc Src Mdtl primaryPathFailCause (priPathFail)

Access	Read: All Write: Illegal

Description	This attribute indicates the last failure cause code for the primary path. The value is reset to zero when trying to re-establish the connection.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Src Mdtl alternatePathFailCause (altPathFail)

Access	Read: All Write: Illegal
Description	This attribute indicates the last failure cause code for the alternate path. The value is reset to zero when trying to re-establish the connection.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

COMPONENT AtmIf Vpt Vcc Src RerouteOverride (RerOv)

Groups	"GROUP AtmIf Vpt Vcc Src RerOv Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci SrcPvc RerouteOverride* *AtmIf/n Vpc/vpi SrcPvp RerouteOverride* *AtmIf/n Vpt/vpi Vcc/vci SrcPvc RerouteOverride* *FrAtm/n Dlci/x Siwf RerouteOverride* This component represents the ability to override rerouting capability subscription options on a per connection basis for provisioned SPVC and SPVP connections. The addition of this component and changes to the attributes contained in this component are critical to the parent SPVC or SPVP. However, the deletion of this component is not a critical change for the connection. If this component is deleted, the connection remains active with the last provisioned subscription

options. Subscription is lost when the connection goes down and re-establishes.

Mib AtmNetworking

Common Verbs
Help
List
Display
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VERB OPTIMIZE AtmIf Vpt Vcc Src RerOv

Impact Service

Description *OPTimize AtmIf/n Vcc/<vpi.vci> Src RerOv*
OPTimize AtmIf/n Vpc/<vpi> Src RerOv
OPTimize AtmIf/n Vpt/<vpi> Vcc/<vci> Src RerOv
OPTimize FrAtm/n Dlci/x Siwf RerOv

This command triggers path optimization for the connection segment. If the interface is already processing a path optimization request, then the *Optimize* command is cancelled.

Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP AtmIf Vpt Vcc Src RerOv Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attributes related to rerouting subscription options for provisioned connections.

Mib AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Src RerOv protocol

Access Read and write

Description This attribute specifies the rerouting protocols that are requested by the connection segment. A subset of the requested protocols is

granted by the last rendezvous node, according to its software level and provisioning.

One of the following values can be specified:
sameAsInterface: The requested rerouting protocols are specified by the *protocol* attribute under the *Reroute Ov* component for the interface.
localGlobal: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature.
localOnly: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
globalOnly: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib: AtmNetworking

Values:
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsInterface (sameAs)

Default: sameAsInterface

ATTRIBUTE AtmIf Vpt Vcc Src RerOv localConnectionRecoverySubscr (lRecSub)

Access: Read and write

Description: This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting

protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local connection recovery subscription.

If the connection segment requests ***localEbr***, this attribute controls the local connection recovery subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *localConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local connection recovery, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to local connection recovery.
no: The connection segment does not request subscription to local connection recovery.

Mib: AtmNetworking

Values:
no
yes
sameAsInterface (sameAs)

Default: sameAsInterface

ATTRIBUTE AtmIf Vpt Vcc Src RerOv localPathOptimizationSubscr (lOptSub)

Access: Read and write

Description: This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local path optimization

subscription.

If the connection segment requests ***localEbr***, this attribute controls the local path optimization subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *localPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local path optimization, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to local path optimization.
no: The connection segment does not request subscription to local path optimization.

Mib: AtmNetworking

Values:
no
yes
sameAsInterface (sameAs)

Default: sameAsInterface

ATTRIBUTE AtmIf Vpt Vcc Src RerOv globalConnectionRecoverySubscr (gRecSub)

Access: Read and write

Description: This attribute specifies whether the connection segment requests subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

If the connection segment requests ***ebrOnly***, this attribute controls EBR connection recovery subscription.

If the connection segment requests ***localEbr***, this attribute controls the EBR connection recovery subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR connection recovery, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR connection recovery.
no: The connection segment does not request subscription to global or EBR connection recovery.

Mib: AtmNetworking

Values:
no
yes
sameAsInterface (sameAs)

Default: sameAsInterface

ATTRIBUTE AtmIf Vpt Vcc Src RerOv globalPathOptimizationSubscr (gOptSub)

Access: Read and write

Description: This attribute specifies whether the connection segment requests subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

If the connection segment requests ***ebrOnly***, this attribute controls EBR path optimization subscription.

If the connection segment requests ***localEbr***, this attribute controls the EBR path optimization subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR path optimization, otherwise the

connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR path optimization.
no: The connection segment does not request subscription to global or EBR path optimization.

Mib: AtmNetworking

Values:
no
yes
sameAsInterface (sameAs)

Default: sameAsInterface

COMPONENT AtmIf Vpt Vcc EndPoint (Ep)

Groups: "GROUP AtmIf Vpt Vcc Ep Operational (Oper)"

Scope: Device

Description:
AtmIf/n Vcc/vpi.vci Ep
AtmIf/n Vpt/vpi Vcc/vci Ep

The *EndPoint* component of the application associated with the VCC is used to link a switched VCC to an application that sends and receives frames using the connection.

Mib: AtmNetworking

Common Verbs:
Help
List
Display

GROUP AtmIf Vpt Vcc Ep Operational (Oper)

Properties: Operational

Description: This attribute group contains the operational attributes for the AtmEndPoint component.

Mib: AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Ep applicationName

Access: Read only

Description	This attribute indicates the component name associated with the application associated with the switched VCC.
Mib	AtmNetworking
Values	The name of the component
Default	No default

COMPONENT AtmIf Vpt Vcc RelayPoint (Rp)

Scope	Device
Description	*AtmIf/n Vpc/vpi Rp* *AtmIf/n Vcc/vpi.vci Rp* *AtmIf/n Vpt/vpi Vcc/vci Rp* The *RelayPoint* component is used to establish a single hop of a Switched connection. When linked together, two *Rp*s within a module, the associated connections are configured to relay ATM cells to one another.
Mib	AtmNetworking
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Vcc Rp NextHop"
Common Verbs	Help List Display

COMPONENT AtmIf Vpt Vcc Rp NextHop

Instance	Decimal (1..300)
Groups	"GROUP AtmIf Vpt Vcc Rp NextHop Operational (Oper)"
Scope	Device
Description	*AtmIf/n Vpc/vpi Rp nextHop/n* *AtmIf/n Vcc/vpi.vci Rp nextHop/n* *AtmIf/n Vpt/vpi Vcc/vci Rp nextHop/n* The *RelayPointNextHop* component indicates the hops associated with this Rp component. There can be more than one component

listed if the Vcc *"distributionType"* is ***"pointToMultipoint"*** and the *"callDirection"* is ***"fromLink"***.

Mib AtmNetworking

Common Verbs
Help
List
Display

GROUP AtmIf Vpt Vcc Rp NextHop Operational (Oper)

Properties Operational

Description This attribute group contains an operational attribute for the AtmRelayPointNextHop component.

Mib AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Rp NextHop nextHopValue

Access Read only

Description This attribute indicates the component name of the Rp component with which this Rp component is associated.

Mib AtmNetworking

Values The name of the component

Default No default

COMPONENT AtmIf Vpt Vcc DestinationPvc (Dst)

Groups "GROUP AtmIf Vpt Vcc Dst Operational (Oper)"
"GROUP AtmIf Vpt Vcc Dst OsiState (State)"

Scope Device

Description *AtmIf/n Vcc/vpi.vci DstPvc*
AtmIf/n Vpt/vpi Vcc/vci DstPvc

This component represents the destination end of a soft PVC.

This component can be dynamically created or provisioned.

When this component is dynamically created, it implicitly

indicates that a connection has been established. This dynamically created component does not exist when there is no connection.

When this component is provisioned, it does not imply that a connection has been established. The existence of a provisioned *destinationPVC* component allows the possibility of generating OAM-AIS cells when the SPVC is down. The attribute *aisGeneration* under component *Configuration* is used to specify AIS generation at the destination end of a soft PVC.

Mib	AtmNetworking
Subcomponents	"COMPONENT AtmIf Vpt Vcc Dst Configuration (Config)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Vpt Vcc Dst Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *DestinationPvc* component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Dst calledAddress

Access	Read: All Write: Illegal
Description	This attribute represents the called address of the soft PVC.
Mib	AtmNetworking
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Dst callingAddress

Access	Read: All Write: Illegal
Description	This attribute represents the remote address of the soft PVC. If the address in not known, then the value of this address is ***Unknown***.
Mib	AtmNetworking
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc Dst callingVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute represents the remote VPI and VCI of the soft PVC. If the VPI and VCI values are not known, this attribute is set to ***Unknown***.
Mib	AtmNetworking
Values	String (7..9, ASCII)
Default	No default

GROUP AtmIf Vpt Vcc Dst OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Dst adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Vpt Vcc Dst operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmNetworking

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmIf Vpt Vcc Dst usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmNetworking
Values	idle active (activ) busy
Default	idle

COMPONENT AtmIf Vpt Vcc Dst Configuration (Config)

Groups	"GROUP AtmIf Vpt Vcc Dst Config DstProv"
Scope	Device
Description	*Atmif/n Vcc/x.y Dst Override* This *Override* component contains provisioned attributes for this destination SPVC. If this component does not exist, the destination SPVC behaves

as if this component had been provisioned with default values for all its attributes.

Mib: AtmNetworking

Common Verbs: Help, List, Display

GROUP AtmIf Vpt Vcc Dst Config DstProv

Properties: Provisioned

Description: This group contains provisionable attributes for destination SPVC/Ps.

Mib: AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc Dst Config aisGeneration (ais)

Access: Read and write

Description: This attribute specifies whether OAM-AIS generation occurs on the connection towards this interface when the SPVC or SPVP is down.

If this attribute is ***enabled***, OAM-AIS cells are generated for this SPVC or SPVP when the SPVC or SPVP is not up.

If this attribute is set to ***disabled***, OAM-AIS cells are not generated.

Mib: AtmNetworking

Values: enabled, disabled

Default: disabled

COMPONENT AtmIf Vpt Vcc MulticastNailedUpRelayPoint (Mnrp)

Groups: "GROUP AtmIf Vpt Vcc Mnrp Provisioned (Prov)"

Scope: Device

Description

AtmIf/n Vcc/vpi.vci Mnrp
This component is used to establish a root of a multicast nailed-up ATM Bearer Service (ABS) connection. By linking a *Mnrp* to a *Nrp*, the associated connections are configured to relay ATM cells from *Mnrp* to *Nrp*. The *Mnrp* component requires exclusive use of its parent *Vcc* or *Vpc* and cannot co-exist with other ATM service components (such as *Nep*, *Test*, *Nrp* and *Loop*). This component is supported only on 4pOC3SmIrAtm and 4pOC3MmAtm cards.This component is not supported under *Vpt Vcc* and *Vpt Vpc*.

Mib

AtmBearerService

Common Verbs

Help
List
Display
Add
DELete

GROUP AtmIf Vpt Vcc Mnrp Provisioned (Prov)

Properties

Provisioned

Description

This group contains the provisionable attributes for the *Mnrp* component.

Mib

AtmBearerService

ATTRIBUTE AtmIf Vpt Vcc Mnrp oamSegmentBoundary (sb)

Access

Read and write

Criticality

Component

Description

This attribute specifies the OAM segment boundary desired for a *Mnrp* component. It affects the connection point type value visible in the parent component's *connectionPointType* attribute. The desired OAM segment boundary can be specified directly as ***yes***, ***no*** or ***sameAsInterface***. If ***sameAsInterface*** is specified, the OAM segment boundary is same as the *oamSegmentBoundary* attribute of the associated *AtmIf* and the switch will set the *connectionPointType*, choosing ***segmentEndPoint*** for a segment-

boundary ATM interface and ***connectingPoint*** for a non-segment-boundary ATM interface.

Mib: AtmBearerService

Values:
no
yes
sameAsInterface

Default: sameAsInterface

ATTRIBUTE AtmIf Vpt Vcc Mnrp bandwidthElastic (bwElastic)

Access: Read and write

Criticality: Component

Description: This attribute is only of importance for connections which are carried on a link with a variable bandwidth. For example, the bandwidth may be reduced in the event that one or more physical links in the IMA group fail, such that the originally requested bandwidth cannot be maintained. This attribute shows whether the application running on this connection can continue to operate if the bandwidth is reduced. If the bandwidth is reduced, the amount by which it is reduced will be displayed in the *bandwidthReduction* attribute.
A value of ***yes***, indicates that this connection is elastic, and the bandwidth may be reduced but the connection will not be released. Currently, this attribute should only be set to ***yes*** for situations where this *Mnrp* is functioning as a loopback on one side of an IMA link. There are no other situations where this setting is valid.
A value of ***no*** indicates that the bandwidth for this connection will not be reduced in the event of link bandwidth reduction. However, this connection may be released based on its *holdingPriority.*

Mib: AtmBearerService

Values:
no
yes

Default: no

ATTRIBUTE AtmIf Vpt Vcc Mnrp overrideHoldingPriority (ohpri)

Access	Read and write
Criticality	Component
Description	This attribute specifies the holding priority of this connection. Holding priority is used when there is an IMA group where some physical links have failed. Holding priority determines the order in which connections are released. 4 is the lowest holding priority and is released first. 0 is a higher priority and is released last. The value specified in this attribute will override whatever *holdingPriority* that has been provisioned at the *Vcd* (or *Vpd*). If the value is left at the default of ***noOverride***, the *holdingPriority* provisioned at the *Vcd* (or *Vpd*) will be used.
Mib	AtmBearerService
Values	0 1 2 3 4 noOverride
Default	noOverride

ATTRIBUTE AtmIf Vpt Vcc Mnrp nextHop (nextHop)

Access	Read and write
Description	This attribute specifies the list of *Nrp* components with which this *Mnrp* is associated. A sample value is *AtmIf/31 Vcc/0.32 Nrp*. This attribute must be provisioned with at least one Nrp component under a compatible connection type.
Mib	AtmBearerService
List of	Link (Service, nextHop)
Default	No default

COMPONENT AtmIf Vpt Vcc PathTraceRecord (PTRecord)

Groups	"GROUP AtmIf Vpt Vcc PTRecord Operational (Oper)"
Scope	Device

Description	*AtmIf/n Vcc/x.y PTRecord* *AtmIf/n Vpc/n PTRecord* *AtmIf/n Vpt/n Vcc/x.y PTRecord* This component represents the path trace records for this connection. If the connection is deleted, this component is also deleted.
Mib	AtmNetworking
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Vcc PTRecord Hop"
Common Verbs	Help List Display

GROUP AtmIf Vpt Vcc PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmNetworking

Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord timeStamp

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord srcPortId

Access	Read: All Write: Illegal
Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmNetworking
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord srcPortName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.

Mib	AtmNetworking
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord causeCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord diagCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmNetworking
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Vpt Vcc PTRecord Hop

Instance	Decimal (0..200)
Groups	"GROUP AtmIf Vpt Vcc PTRecord Hop Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record. Depending on the hops, different attributes are present.
Mib	AtmNetworking
Dyn. Subcomp.	"COMPONENT AtmIf Vpt Vcc PTRecord Hop VendorSpecificInfo (Vsi)"
Common Verbs	Help List Display

GROUP AtmIf Vpt Vcc PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop ingressDlci (dlci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop ingressCallReference (callref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmNetworking
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop ingressEndPointReference (epref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmNetworking
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop nodeId

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop nodeName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop portId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop portName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop pnniTraceContRefusalIndPresent (refusal)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop crankbackDestNodeIndPresent (dest)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator

	indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop pnniCrankbackGapIndPresent (gap)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmNetworking
Values	absent present
Default	absent

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop crankBackCause (cause)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmNetworking
Values	Decimal (0..1000)

Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop blockedTransitType (type)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmNetworking
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop blockedNodeId (bNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop blockedLinkPrecedingNodeId (pNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop blockedLinkPortId (bPortId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop blockedLinkSucceedingNodeId (sNodeId)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmNetworking
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop dstVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmNetworking
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop dstDlci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm

interfaces.

The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.

Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop dstCallReference (dcr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmNetworking
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop dstEndPointReference (depr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.

Mib	AtmNetworking
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop specifiedPath

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmNetworking
Values	no yes
Default	no

COMPONENT AtmIf Vpt Vcc PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	"GROUP AtmIf Vpt Vcc PTRecord Hop Vsi Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m* This component stores the vendor-specific information of a node

other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.

Mib	AtmNetworking
Common Verbs	Help List Display

GROUP AtmIf Vpt Vcc PTRecord Hop Vsi Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop Vsi length

Access	Read: All Write: Illegal
Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmNetworking
Values	Decimal (0..11)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop Vsi organizationUniqueId (oui)

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.

Mib	AtmNetworking
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc PTRecord Hop Vsi data

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmNetworking
Values	String (1..8, Hex)
Default	No default

COMPONENT AtmIf Vpt Vcc RerouteInfo (RerInfo)

Groups	"GROUP AtmIf Vpt Vcc RerInfo Operational (Oper)" "GROUP AtmIf Vpt Vcc RerInfo EbrOperational (EOper)" "GROUP AtmIf Vpt Vcc RerInfo LocalOperational (LOper)" "GROUP AtmIf Vpt Vcc RerInfo GlobalOperational (GOper)" "GROUP AtmIf Vpt Vcc RerInfo EbrStatistics (EStats)" "GROUP AtmIf Vpt Vcc RerInfo LocalStatistics (LStats)" "GROUP AtmIf Vpt Vcc RerInfo GlobalStatistics (GStats)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci RerouteInfo* *AtmIf/n Vpc/vpi RerouteInfo* *AtmIf/n Vpt/vpi Vcc/vci RerouteInfo* *Aal1Ces/n RerouteInfo* *Fratm/n Dlci/n Siwf RerouteInfo* This component represents the rerouting capabilities of a connection segment. The component is present at the DTL originator of the connection segment. It is also present at each

	local domain rerouting node, if the local rerouting protocol has been granted to the connection segment.
Mib	AtmNetworking
Common Verbs	Help List Display

GROUP AtmIf Vpt Vcc RerInfo Operational (Oper)

Properties	Operational
Description	This group contains the common operational attributes that indicate rerouting activities at the connection level.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc RerInfo lastOptimizationMetric (lOptMet)

Access	Read only
Description	This attribute indicates which optimization metric was last used to select a path for the connection segment.
Mib	AtmNetworking
Values	cdv maxCtd aw specifiedPath
Default	No default

GROUP AtmIf Vpt Vcc RerInfo EbrOperational (EOper)

Properties	Operational
Description	This group contains attributes that indicate the EBR rerouting characteristics of a connection segment. This group is only present if the connection segment has been granted the EBR rerouting protocol.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc RerInfo ebrRecoverySubscribed (eRecSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo ebrOptimizationSubscribed (eOptSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR path optimization. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo ebrOptimizationMetricValue (eOptVal)

Access	Read only
Description	This attribute indicates the EBR optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections.

This attribute is only present if the connection segment has been granted the EBR protocol.

Mib: AtmNetworking

Values: Decimal (0..4294967292)
primary
alternate

Default: No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo ebrOptimalMetricValue (eOptMetVal)

Access: Read only

Description: This attribute indicates the EBR optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections.

This attribute is only present if the connection segment has been granted the EBR protocol.

Mib: AtmNetworking

Values: Decimal (0..4294967292)
primary
alternate

Default: No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo ebrOptimizationState (eOptSt)

Access: Read only

Description: This attribute indicates the current EBR optimization state of the connection segment.

One of the following values is indicated:
optimal: This is the initial value when the connection segment is

first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value.
recovered: This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value.
optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

This attribute is only present if the connection segment has been granted the EBR protocol.

Mib	AtmNetworking
Values	optimal recovered optimized
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo ebrTimeOfLastRecovery (eTime)

Access	Read only
Description	This attribute indicates the date and time of the last EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

GROUP AtmIf Vpt Vcc RerInfo LocalOperational (LOper)

Properties	Operational
Description	This group contains attributes that indicate the local rerouting characteristics of a connection segment.

	This group is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc RerInfo localRecoverySubscribed (lRecSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to local connection recovery. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo localOptimizationSubscribed (lOptSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to local path optimization. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	no yes
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo localOptimizationMetricValue (lOptVal)

Access	Read only
Description	This attribute indicates the local optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. A value of

undefined indicates that the local optimization metric value is undetermined.

This attribute is only present if the connection segment has been granted the local rerouting protocol.

Mib: AtmNetworking

Values: Decimal (0..4294967294)
undefined

Default: No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo localOptimalMetricValue (lOptMetVal)

Access: Read only

Description: This attribute indicates the local optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.A value of ***undefined*** indicates that the local optimal optimization metric value is undetermined.

This attribute is only present if the connection segment has been granted the local rerouting protocol.

Mib: AtmNetworking

Values: Decimal (0..4294967294)
undefined

Default: No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo localOptimizationState (lOptSt)

Access: Read only

Description: This attribute indicates the current local optimization state of the connection segment.

One of the following values is indicated:

optimal: This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value.
recovered: This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value.
optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

This attribute is only present if the connection segment has been granted the local rerouting protocol.

Mib	AtmNetworking
Values	optimal recovered optimized
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo localTimeOfLastRecovery (lTime)

Access	Read only
Description	This attribute indicates the date and time of the last local connection recovery. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

GROUP AtmIf Vpt Vcc RerInfo GlobalOperational (GOper)

Properties	Operational
Description	This group contains attributes that indicate the global rerouting characteristics of a connection.

This group is only present if the connection segment has been granted the global rerouting protocol.

Mib AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc RerInfo globalRecoverySubscribed (gRecSub)

Access Read only

Description This attribute indicates whether the connection segment is subscribed to global connection recovery.

This attribute is only present if the connection segment has been granted the global rerouting protocol.

Mib AtmNetworking

Values no
yes

Default No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo globalOptimizationSubscribed (gOptSub)

Access Read only

Description This attribute indicates whether the connection segment is subscribed to global path optimization.

This attribute is only present if the connection segment has been granted the global rerouting protocol.

Mib AtmNetworking

Values no
yes

Default No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo globalOptimizationMetricValue (gOptVal)

Access Read only

Description This attribute indicates the global optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection

between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections.

This attribute is only present if the connection segment has been granted the global rerouting protocol.

Mib: AtmNetworking

Values: Decimal (0..4294967292)
primary
alternate

Default: No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo globalOptimalMetricValue (gOptMetVal)

Access: Read only

Description: This attribute indicates the global optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***globalOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.The ***primary*** and ***alternate*** values are used to denote the optimization values for Specified Path connections.

This attribute is only present if the connection segment has been granted the global rerouting protocol.

Mib: AtmNetworking

Values: Decimal (0..4294967292)
primary
alternate

Default: No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo globalOptimizationState (gOptSt)

Access: Read only

Description	This attribute indicates the current global optimization state of the connection segment. One of the following values is indicated: ***optimal:*** This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value. ***recovered:*** This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value. ***optimized:*** This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	optimal recovered optimized
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo globalTimeOfLastRecovery (gTime)

Access	Read only
Description	This attribute indicates the date and time of the last global connection recovery. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Time (DHMS)
Default	No default

GROUP AtmIf Vpt Vcc RerInfo EbrStatistics (EStats)

Properties	Operational
Description	This group contains statistics related to Ebr rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc RerInfo totalEbrConnectionRecoveries (eConnRec)

Access	Read only
Description	This attribute counts successful EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo totalEbrPathOptimizations (ePathOpt)

Access	Read only
Description	This attributes counts successful EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo totalEbrOptimizationAttempts (eOptAtt)

Access	Read only
Description	This attribute counts the total number of EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded.

	This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vpt Vcc RerInfo LocalStatistics (LStats)

Properties	Operational
Description	This group contains statistics related to local rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc RerInfo totalLocalConnectionRecoveries (lConnRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo totalLocalPathOptimizations (lPathOpt)

Access	Read only
Description	This attributes counts successful local path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo totalLocalOptimizationAttempts (lOptAtt)

Access	Read only
Description	This attribute counts the total number of local path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Vpt Vcc RerInfo GlobalStatistics (GStats)

Properties	Operational
Description	This group contains statistics related to global rerouting for the connection segment.
Mib	AtmNetworking

ATTRIBUTE AtmIf Vpt Vcc RerInfo totalGlobalConnectionRecoveries (gConnRec)

Access	Read only
Description	This attribute counts successful global connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo totalGlobalPathOptimizations (gPathOpt)

Access	Read only
Description	This attributes counts successful global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Vpt Vcc RerInfo totalGlobalOptimizationAttempts (gOptAtt)

Access	Read only
Description	This attribute counts the total number of global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	AtmNetworking
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf EmissionPriority (Ep)

Instance	Decimal (2..7)
Groups	"GROUP AtmIf Ep Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n EmissionPriority/n* This component controls the characteristics of an emission priority for an *AtmIf* component. This component is optional for an *AtmIf* component.

For ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE3Atm***, ***3pDS3Atm***, ***3pE1Atm***, ***3pDS1Atm***, ***8pE1Atm***, ***8pDS1Atm***, ***2pJ6MAtm***, and ***1pOC48ChSmIrAtm*** cards, this component is not permitted.

There are eight emission priorities (EP). EP 0 is the highest priority and EP 7 is the lowest priority. Normally, link bandwidth is allocated in strict precedence of emission priority. All traffic at EP 0 is transmitted on the link first. Then, when there is an unused cell opportunity, a cell from EP 1 is transmitted. When EP 0 and 1 have nothing to send, then EP 2 gets the transmit cell opportunities. Each emission priority 2 through 7 has a corresponding *Ep* component with instance number 2 through 7. Emission priorities 0 and 1 do not have corresponding *Ep* components since there is no configuration which is relevant for those EPs.

Traffic is associated with an EP in the following way. Each *Vcc* or *Vpc* has an associated *atmServiceCategory.* Under the *AtmIf* component there is a service category component which provides default characteristics for that service category. For example, *AtmIf*/n *CA Cbr*/0 defines the default characteristics for connections of the CBR service category. Each service category has an *emissionPriority* (*ep*) attribute, for example *AtmIf*/n *CA Cbr*/0 *ep*. The value provisioned in that *ep* attribute maps to the corresponding *Ep* component. If the value of the *AtmIf*/n *CA Cbr*/0 *ep* attribute is ***2***, the CBR service category is associated with *AtmIf*/n *Ep*/2.

EP 0 and EP 1 are in the absolute priority range. Traffic in the absolute priority range always gets first choice for a transmit cell opportunity. EP 2 through EP 7 are in the guaranteed bandwidth range. Traffic at EP 3 through EP 7, in the guaranteed bandwidth range, may achieve a priority which is different from the strict hierarchical priority, if a minimum bandwidth guarantee is provisioned for the *Ep*.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, EPs 5 and 6 are not supported.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, EP 0 and EP 1 are

in the absolute priority range while EP 2 through EP 7 are allocated link bandwidth using a conventional Weighted Fair Queue (WFQ) discipline. EP 2 through EP 7 have their service preference over one another determined by their minimum bandwidth guarantee. Link bandwidth is first allocated to EP 0 and EP 1 in absolute priority fashion. Any remaining bandwidth is distributed to EP 2 through EP 7 in proportion to the minimum bandwidth guarantee provisioned for the *Ep*. The default values of the *minimumBandwidthGuarantee* attribute for the *Ep* components emulate the strict precedence of emission priority.

Mib: AtmCore

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Ep Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioned attributes which specify the behavior of an emission priority for the ATM interface.

Mib: AtmCore

ATTRIBUTE AtmIf Ep minimumBandwidthGuarantee (minBw)

Access: Read and write

Criticality: Process

Description: This attribute specifies the minimum bandwidth guarantee associated with this *EmissionPriority.* A minimum bandwidth guarantee is designed to prevent starvation of traffic at this EP by traffic at higher EPs. Minimum bandwidth guarantees only operate for EPs within the guaranteed bandwidth range 2 through 7.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, EPs 5 and 6 are not supported.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***, ***3pDS3Atm2***, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, and ***16pOC3SmIrAtm*** cards, the following description applies:

The minimum bandwidth guarantee specified is a percentage of the bandwidth which remains after all traffic at EP 0 and EP 1 is served. For example, if EP 0 and EP 1 traffic consumes 20% of the link bandwidth, the minimum bandwidth guarantee applies to the remaining 80% of the link bandwidth. A minimum bandwidth guarantee of 2% would actually result in this EP getting 2% of 80% for a total 1.6% of the link bandwidth. If this EP uses less than this link bandwidth, the extra opportunities are allocated to the other EPs in priority. Due to scheduling and cell arrival times, traffic at this EP may not necessarily achieve full utilization of its minimum bandwidth guarantee.

The value ***priority*** specifies that this *Ep* gets bandwidth based solely on the hierarchy of emission priorities. In this case, there is no minimum bandwidth guarantee.

For ***16pOC3PosAtm*** and ***4pMRPosAtm*** cards, the following description applies:

The minimum bandwidth guarantee specified is the proportion of the bandwidth which remains after all traffic at EP 0 and EP 1 is served. In other words, the bandwidth allocated to an EP is:

$$\frac{\text{(bandwidth unused by EP 0 and 1)} * \textit{minimumBandwidthGuarantee}}{\text{(the sum of the values of the } \textit{minimumBandwidthGuarantee} \text{ attributes for all active EPs)}}$$

For example, if EP 0 and EP 1 traffic consumes 20% of the link bandwidth, the minimum bandwidth guarantee applies to the remaining 80% of the link bandwidth. Assume *Ep/2*, *Ep/3*, and *Ep/4* have a *minimumBandwidthGuarantee* attribute value of ***70***, ***20***, and ***10*** respectively.

If all EPs are actively sending traffic, then the bandwidth is

allocated as follows:
- EP 2 = 80% * 70/(70+20+10) = 56% of the link bandwidth
- EP 3 = 80% * 20/(70+20+10) = 16% of the link bandwidth
- EP 4 = 80% * 10/(70+20+10) = 8% of the link bandwidth

If some time later EP 3 has no traffic to send, then its share of the bandwidth is allocated to EP 2 and EP 4 in proportion to their *minimumBandwidthGuarantee* attribute values as follows:
- EP 2 = 80% * 70/(70+10) = 70% of the link bandwidth
- EP 4 = 80% * 10/(70+10) = 10% of the link bandwidth

If some time later only one out the EP 2, EP 3, and EP 4 has traffic to send, then it would be allocated the entire 80% of the link bandwidth. Additionally, if both EP 0, and EP 1 have no traffic to send, the remaining active EP would be allocated 100% of the link bandwidth irrespective of the value of its *minimumBandwidthGuarantee* attribute.

The value ***priority*** emulates the strict precedence of emission priority by assigning default values to the *minimumBandwidthGuarantee* attribute. Depending on how many EPs are in use in the guaranteed bandwidth range 2 through 7, these default values change:
- For one EP, the value is ***100***.
- For two EPs, the values are ***99***, and ***1***.
- For three EPs, the values are ***90***, ***9***, and ***1***.
- For four EPs, the values are ***77***, ***18***, ***4***, and ***1***.

For all cards, when specifying a value for the *minimumBandwidthGuarantee* attribute, consider the effect on cell delay variation (CDV) of traffic which would normally be of higher priority. For example, if *RtVbr* service category traffic is assigned to *Ep*/2 and *Ubr* traffic is assigned on *Ep*/7 where *Ep*/7 has a *minimumBandwidthGuarantee* of ***25***, there can be a large impact on the CDV of the *RtVbr* traffic. Traffic of the *Cbr* or *RtVbr* service category which is sensitive to CDV, and is of known volume, can be assigned on EP 0 or EP 1 which are independent of the effects of minimum bandwidth guarantee.

For ***2pOC3MmAtm2***, ***2pOC3SmAtm2***, ***2pSTM1eAtm***, ***2pSTM1eCh***, ***4pOC3MmAtm***, ***4pOC3SmIrAtm***, ***4pDS3ChAtm***,

3pDS3Atm2, ***3pE3Atm2***, ***12pDS3Atm***, ***12pE3Atm***, MSA32, and ***1pOC12SmLrAtm*** cards, the allowed values of this attribute are ***priority***, or a numeric value between ***1*** and ***48***.

For ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***16pOC3SmIrAtm***, ***16pOC3PosAtm,*** and ***4pMRPosAtm*** cards, the allowed values of this attribute are ***priority***, or a numeric value between ***1*** and ***100***.

For all cards, the sum of the values of the *minimumBandwidthGuarantee* attribute for all *Ep*s under an *AtmIf* component must not exceed 100%.

Mib	AtmCore
Values	Decimal (1..100) priority
Units	%
Default	priority

COMPONENT AtmIf PerformanceMonitoring (Pm)

Groups	"GROUP AtmIf Pm Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n PerformanceMonitoring* This component provides the default Performance Monitoring (PM) measurements and control modes for all *AtmIf Vcc* and *AtmIf Vpc* connections on the ATM interface. For provisioned connections, PM is done only if a PM component is provisioned under the *Vcc Vcd* or *Vpc Vpd* component. For all switched connections, PM will be done as specified by this component subject to resource limits. Only the following card types support Performance Monitoring: ***2pOC3SmAtm2, 2pOC3MmAtm2, 2pSTM1eAtm, 3pDS3Atm2, 3pE3Atm2, 32pDS1MsaMt, 32pDS1MsaSt, 32pE1MsaMt,***

32pE1MsaSt, 32pDS1MsaMtp, 32pDS1MsaStp, 32pE1MsaMtp, 32pE1MsaStp, 32pDS1Msa, 32pE1Msa.

Mib: AtmCore

Common Verbs: Help, List, Display

GROUP AtmIf Pm Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioned attributes which specify the default Performance Monitoring (PM) measurements, namely, Cell Loss Ratio (CLR) and Availability Ratio (AR), and control modes for all *AtmIf Vcc* and *AtmIf Vpc* connections on the ATM interface.

Mib: AtmCore

ATTRIBUTE AtmIf Pm segSwitchSideMeasurement (segSwitchSide)

Access: Read and write

Description: This attribute specifies the default Performance Monitoring (PM) measurements on the switch side configuration for all *AtmIf Vcc* and *AtmIf Vpc* connections on the ATM interface.

Mib: AtmCore

Set of: availabilityRatio (ar)
cellLossRatio (clr)

Default: No default

ATTRIBUTE AtmIf Pm segLinkSideMeasurement (segLinkSide)

Access: Read and write

Description: This attribute specifies the default Performance Monitoring (PM) measurements on the link side configuration for all *AtmIf Vcc* and *AtmIf Vpc* connections, on the ATM interface.

Mib	AtmCore
Set of	availabilityRatio (ar) cellLossRatio (clr)
Default	No default

ATTRIBUTE AtmIf Pm controlMode (mode)

Access	Read and write
Criticality	Component
Description	This attribute specifies the default control mode of Performance Monitoring (PM) measurements for all *AtmIf Vcc* and *AtmIf Vpc* connections on the ATM interface. ***autoStart*** means Performance Monitoring (PM) measurements start when the provisioned data is activated. ***onDemand*** means PM measurements start when the operator issues the *Start* command. The PM measurements in this mode continue until the operator issues the *Stop* command.
Mib	AtmCore
Values	autoStart (auto) onDemand (onDemand)
Default	autoStart

ATTRIBUTE AtmIf Pm switchSideClrType (clrType)

Access	Read and write
Description	This attribute specifies how the Cell Loss Ratio (CLR) Performance Monitoring (PM) is measured on a switch side configuration for all *AtmIf Vcc* and *AtmIf Vpc* connections on the ATM interface. ***complete*** indicates that egress discards at the segment end points are included in the CLR measurement as per ITU standards. ***partial*** indicates that egress discards do not contribute to the CLR measurement.

Mib	AtmCore
Values	complete partial
Default	complete

COMPONENT AtmIf LinkTxUtilization (Ltu)

Groups	"GROUP AtmIf Ltu Provisioned (Prov)" "GROUP AtmIf Ltu Operational (Oper)"
Scope	Device
Description	*AtmIf/n LinkTxUtilization* This component allows the users to specify whether alarms should be generated when the ATM link transmit utilization exceeds provisioned threshold *criticalTxUtilAlarmThreshold*. The ATM link transmit utilization is calculated once per minute over the preceding one minute interval. The decision to set or clear an alarm is made at every sample period except the first 2 minutes right after the measurement starts. When three consecutive measurements of the ATM link transmit utilization are above the provisioned threshold, a SET alarm is generated if there is no outstanding SET alarm. When three consecutive measurements of the ATM link transmit utilization are at or below the provisioned threshold, and there is an outstanding SET alarm, a CLEAR alarm is generated.
Mib	AtmCore
Common Verbs	Help List Display Add DELete

GROUP AtmIf Ltu Provisioned (Prov)

Properties	Provisioned

Description	This group contains provisioned attributes to control ATM link transmit utilization alarms.
Mib	AtmCore

ATTRIBUTE AtmIf Ltu criticalTxUtilAlarmThreshold (critThresh)

Access	Read and write
Description	This attribute specifies the critical alarm threshold for the ATM link transmit utilization. A value of ***disabled*** means the ATM link transmit utilization is not measured and no alarms are generated. A change from ***disabled*** to a numeric value resets the value of the *lastAlarmPeakTxUtilization* attribute to zero and starts the ATM link transmit utilization measurement. When three consecutive samples of the ATM link transmit utilization, over the 3-minute sliding window, are above the provisioned threshold and there is no outstanding alarm, a critical alarm is generated. While the alarm is outstanding, the value of the *lastAlarmPeakTxUtilization* attribute indicates the peak sample of the ATM link transmit utilization. When three consecutive samples of the ATM link transmit utilization, over the 3-minute sliding window, are at or below the provisioned threshold, any outstanding alarm is cleared. The value of the *lastAlarmPeakTxUtilization* attribute is not reset when the alarm is cleared. A change from one numeric value to another restarts the ATM link transmit utilization measurement with a new 3-minute probation period. The value of the *lastAlarmPeakTxUtilization* attribute is not affected by this change. A change from a numeric value to ***disabled*** causes any outstanding alarm to be cleared immediately. The value of the *lastAlarmPeakTxUtilization* attribute is not affected by this change.

Mib	AtmCore
Values	Decimal (1..99) disabled
Units	%
Default	80

GROUP AtmIf Ltu Operational (Oper)

Properties	Operational
Description	This group of attributes contains statistics on the ATM link transmit utilization.
Mib	AtmCore

ATTRIBUTE AtmIf Ltu lastAlarmPeakTxUtilization (lastAlarmPeakTxUtil)

Access	Read only
Description	This attribute indicates the peak value of the ATM link transmit utilization during the most recent (or current) period in which the transmit utilization alarm has been active. The value of this attribute is reset to zero when the ATM link transmit utilization measurement is initiated.
Mib	AtmCore
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT AtmIf Aini

Groups	"GROUP AtmIf Aini Provisioned (Prov)" "GROUP AtmIf Aini AccountingOptions (AcctOpt)"
Scope	Device
Description	*AtmIf/n Aini* This component represents an ATM Inter-Network Interface (AINI) signaling interface. If this component is provisioned, the *Uni*, *Iisp*, or *Pnni* component can not be provisioned under the

	same *AtmIf* component. If this component is deleted, then all associated *Vcc* components are deleted.
Mib	AtmAini
Subcomponents	"COMPONENT AtmIf Aini Signalling (Sig)"
Opt. Subcomp.	"COMPONENT AtmIf Aini CallingAddressScreening (CallingAScr)" "COMPONENT AtmIf Aini CalledAddressScreening (CalledAScr)" "COMPONENT AtmIf Aini PathTraceFilter (Ptf)" "COMPONENT AtmIf Aini ServiceTrace (SrvTrace)" "COMPONENT AtmIf Aini Reroute"
Dyn. Subcomp.	"COMPONENT AtmIf Aini PathTraceTestConnection (Ptt)"
Dyn. Subcomp.	"COMPONENT AtmIf Aini Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Aini Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Aini* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini side

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates which side the interface is, user or network.
Mib	AtmAini

Values	networkSide userSide
Default	networkSide

ATTRIBUTE AtmIf Aini softPvpAndPvcRetryPeriod (sRetryPeriod)

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	AtmAini
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE AtmIf Aini softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmAini
Values	Decimal (0; 50..20000)
Units	msec
Default	0

ATTRIBUTE AtmIf Aini passAlongRequest

Access	Read: All Write: All
Description	This attribute specifies whether unrecognized messages and information elements with the pass along request set are accepted when received at the interface. If they are not allowed, then they are discarded and the procedures specified by the message or information element's action indicator field are followed.
Mib	AtmAini
Values	allowed discarded
Default	allowed

GROUP AtmIf Aini AccountingOptions (AcctOpt)

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmAini

ATTRIBUTE AtmIf Aini accountCollection (aco)

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit***, or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled; - on every call clear (a call record with final cell counts). If none of the reasons is present, then accounting will be suppressed. The reason for collection is recorded in the accounting record, in

the attribute *callingCollectReason* or *calledCollectReason* as appropriate.

Mib: AtmAini

Set of:
bill
test
study
audit
force

Default: No default

ATTRIBUTE AtmIf Aini accountConnectionType (act)

Access:
Read: All
Write: All

Description: This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records.

If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***.

If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.

Mib: AtmAini

Values:
origTerm
intermediate

Default: intermediate

ATTRIBUTE AtmIf Aini accountClass (acl)

Access:
Read: All
Write: All

Description	This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.
Mib	AtmAini
Values	Decimal (0..255)
Default	0

ATTRIBUTE AtmIf Aini serviceExchange (sre)

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	AtmAini
Values	Decimal (0..255)
Default	0

COMPONENT AtmIf Aini Signalling (Sig)

Groups	"GROUP AtmIf Aini Sig Provisioned (Prov)" "GROUP AtmIf Aini Sig OsiState (State)" "GROUP AtmIf Aini Sig Operational (Oper)" "GROUP AtmIf Aini Sig Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Aini Signalling* *AtmIf/n Iisp Signalling* *AtmIf/n Uni Signalling* *AtmIf/n Pnni Signalling* *AtmIf/n Vpt/m Aini Signalling*

AtmIf/n Vpt/m Iisp Signalling
AtmIf/n Vpt/m Uni Signalling
AtmIf/n Vpt/m Pnni Signalling

This component represents the signaling entities for the interface.

Mib	AtmAini
Opt. Subcomp.	"COMPONENT AtmIf Aini Sig VirtualChannelDescriptor (Vcd)"
Common Verbs	Help List Display

GROUP AtmIf Aini Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmAini
Values	Decimal (0..65535)
Default	5

ATTRIBUTE AtmIf Aini Sig addressConversion

Access	Read: All Write: All

Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	AtmAini
Values	none nativeE164 nsap
Default	none

ATTRIBUTE AtmIf Aini Sig operatingMode

Access	Read: All Write: All
Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmAini
Values	normal provisionedOnly
Default	normal

GROUP AtmIf Aini Sig OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmAini
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmIf Aini Sig operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmAini

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmIf Aini Sig usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: AtmAini

Values: idle
active (activ)
busy

Default: idle

GROUP AtmIf Aini Sig Operational (Oper)

Properties: Operational

Description	This attribute contains the operational attributes for the AtmSignalling component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Sig lastTxCauseCode

Access	Read: All Write: Illegal
Description	This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Aini Sig lastTxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmAini
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE AtmIf Aini Sig lastRxCauseCode

Access	Read: All Write: Illegal

Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Aini Sig lastRxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmAini
Values	Hex (H.0..H.ff)
Default	No default

GROUP AtmIf Aini Sig Statistics (Stats)

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Sig peakConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.

Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Sig successfulConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Sig failedConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Sig txPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Sig rxPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Sig currentPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Sig peakPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Sig successfulPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Sig failedPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Sig currentConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of currently active point-to- point connections.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Aini Sig VirtualChannelDescriptor (Vcd)

Groups	"GROUP AtmIf Aini Sig Vcd Provisioned (Prov)"

Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor* This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).
Mib	AtmAini
Common Verbs	Help List Display Add DELete

GROUP AtmIf Aini Sig Vcd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable traffic attributes for a control channel.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Sig Vcd trafficDescType (tdt)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType*

determines the number and meaning of the parameters in the *trafficDescParm* attribute.

Mib: AtmAini

Values:
3
6
7
8

Default: 6

ATTRIBUTE AtmIf Aini Sig Vcd atmServiceCategory (service)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the ATM service category for both directions of the connection.

The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and

which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmAini
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	rtVariableBitRate

ATTRIBUTE AtmIf Aini Sig Vcd weight

Access	Read and write
Criticality	Component
Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m. This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs.

When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***.

When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT.

When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.

Mib	AtmAini
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE AtmIf Aini Sig Vcd qosClass (qos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance

requirements (Connection-Oriented Data Transfer).

Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib: AtmAini

Values:
0
1
2
3
4

Default: 2

ATTRIBUTE AtmIf Aini Sig Vcd trafficShaping (trShaping)

Access: Read and write

Criticality: Component

Description: This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface.

When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components.

When ***disabled*** is selected, traffic shaping for this connection is disabled.

Mib: AtmAini

Values:
disabled
sameAsCa

Default	disabled

ATTRIBUTE AtmIf Aini Sig Vcd unshapedTransmitQueueing (unshap)

Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute. When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator.* When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmAini
Values	common sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Aini Sig Vcd usageParameterControl (upc)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service

category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component.

When ***disabled*** is selected, UPC for this connection is disabled.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib	AtmAini
Values	disabled sameAsCa
Default	disabled

ATTRIBUTE AtmIf Aini Sig Vcd trafficDescParm (tdp)

Access	Read: All Write: All
Criticality	Component
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled. When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1.

This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)

COMPONENT AtmIf Aini Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate default]
Groups	"GROUP AtmIf Aini Addr Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Address/address,type* *AtmIf/n Iisp Address/address,type* *AtmIf/n Uni Address/address,type* *AtmIf/n Pnni Address/address,type* *AtmIf/n Vpt/m Aini Address/address,type* *AtmIf/n Vpt/m Iisp Address/address,type* *AtmIf/n Vpt/m Uni Address/address,type* *AtmIf/n Vpt/m Pnni Address/address,type*

This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wildcard (‘?’), and a type. The type identifies whether the *Address* component is for a ***primary***, ***alternate***, ***registered***, or ***default*** address.

The types ***primary*** and ***alternate*** are used for provisioned addresses. The type ***registered*** is used for dynamic addresses

registered through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses.Virtual interfaces do not have addresses of
type ***default***.

The wildcard is only valid for provisioned addresses. If the address is a single wildcard, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wildcard static address, then the choice is driven through a round robin algorithm.

The round robin algorithm tries the primary routes and then the alternate routes if none of the primary routes succeed.
If this node participates in a PNNI hierarchy, then a *PnniInfo* subcomponent can be provisioned under the *AtmAddress* component to specify the level to which this address will be advertised.

Mib	AtmAini
Opt. Subcomp.	"COMPONENT AtmIf Aini Addr TerminateSPvpAndSPvc (TermSP)" "COMPONENT AtmIf Aini Addr PnniInfo"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Aini Addr Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *Address* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Addr scope

Access	Read: All Write: Illegal
Description	This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. If this node does not participate in a PNNI hierarchy, then this attribute will have the value of -1.
Mib	AtmAini
Values	Signed (-1..104)
Default	No default

ATTRIBUTE AtmIf Aini Addr reachability (reach)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmAini
Values	internal exterior
Default	No default

COMPONENT AtmIf Aini Addr TerminateSPvpAndSPvc (TermSP)

Scope	Device
Description	*AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc*

AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc

The presence of this subcomponent indicates that SPvp and SPvc call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.

Mib: AtmAini

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Aini Addr PnniInfo

Groups: "GROUP AtmIf Aini Addr PnniInfo Provisioned (Prov)"

Scope: Device

Description:

AtmIf/n Aini Addr/address,type PnniInfo
AtmIf/n Iisp Addr/address,type PnniInfo
AtmIf/n Uni Addr/address,type PnniInfo
AtmIf/n Pnni Addr/address,type PnniInfo
AtmIf/n Vpt/m Aini Addr/address,type PnniInfo
AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo
AtmIf/n Vpt/m Uni Addr/address,type PnniInfo
AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo

This component contains provisioned information associated with

	the ATM address related to PNNI. This component appears only under provisioned *Address* components.
Mib	AtmAini
Common Verbs	Help List Display Add DELete

GROUP AtmIf Aini Addr PnniInfo Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Addr PnniInfo scope

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.
Mib	AtmAini
Values	Signed (-1..104)
Default	-1

ATTRIBUTE AtmIf Aini Addr PnniInfo reachability (reach)

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmAini
Values	internal exterior
Default	internal

COMPONENT AtmIf Aini CallingAddressScreening (CallingAScr)

Groups	"GROUP AtmIf Aini CallingAScr Provisioned (Prov)" "GROUP AtmIf Aini CallingAScr Statistics (Stat)"
Scope	Device
Description	*AtmIf/n Aini CallingAddressScreening* *AtmIf/n Uni CallingAddressScreening* *AtmIf/n Iisp CallingAddressScreening* This component represents the screening of incoming ATM SVC call requests against provisioned ATM calling addresses (that is, screening SVC calls coming from specific addresses). If this component is not provisioned, all call requests are accepted and no calling address screening takes place.
Mib	AtmAini
Opt. Subcomp.	"COMPONENT AtmIf Aini CallingAScr Address (Addr)"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Aini CallingAScr Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *CallingAScr* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini CallingAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the calling address screening feature is ***enabled*** or ***disabled***. If ***enabled***, incoming SVC calls are screened against provisioned addresses. If ***enabled*** and the calling address in the ATM SVC call request is provisioned to be accepted, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled***, and the calling address in the address request is not provisioned, the call is rejected If the value is ***disabled***, no calling address screening is performed.
Mib	AtmAini
Values	enabled disabled
Default	disabled

ATTRIBUTE AtmIf Aini CallingAScr defaultInsertionAddress (defInsAddr)

Access	Read: All Write: All
Description	This attribute specifies the address to be inserted into the SVC connection request if *adminStatus* is ***enabled*** and the connection request does not contain a calling address. If the *adminStatus* attribute is ***enabled*** and this attribute is empty, all incoming SVC calls which do not contain a calling address are rejected.

Mib	AtmAini
Values	String (0..20, Hex)
Default	""

GROUP AtmIf Aini CallingAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmAini

ATTRIBUTE AtmIf Aini CallingAScr acceptedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Aini CallingAScr rejectedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE AtmIf Aini CallingAScr unmatchedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Aini CallingAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device
Description	*AtmIf/n Aini CallingAScr Address/addr,action* *AtmIf/n Uni CallingAScr Address/addr,action* *AtmIf/n Iisp CallingAScr Address/addr,action* *AtmIf/n Aini CalledAScr Address/addr,action* *AtmIf/n Uni CalledAScr Address/addr,action* *AtmIf/n Iisp CalledAScr Address/addr,action* This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address. For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected. For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected.

For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib: AtmAini

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Aini CalledAddressScreening (CalledAScr)

Groups: "GROUP AtmIf Aini CalledAScr Provisioned (Prov)"
"GROUP AtmIf Aini CalledAScr Statistics (Stat)"

Scope: Device

Description: *AtmIf/n Aini CalledAddressScreening*
AtmIf/n Uni CalledAddressScreening
AtmIf/n Iisp CalledAddressScreening
This component represents the screening of incoming ATM SVC call requests against provisioned ATM called addresses (that is, going to specific destinations). If this component is not provisioned, all call requests are accepted and no called address screening takes place.

Mib: AtmAini

Opt. Subcomp.: "COMPONENT AtmIf Aini CalledAScr Address (Addr)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Aini CalledAScr Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisionable attributes for the *CalledAScr* component.

Mib	AtmAini

ATTRIBUTE AtmIf Aini CalledAScr adminStatus

Access	Read: All Write: All
Description	This attribute specifies whether the called address screening feature is ***enabled*** or ***disabled***. If the value is ***enabled***, incoming SVC calls will be screened against provisioned called addresses. If the value is ***enabled*** and the called address in the ATM SVC call request has been provisioned, the call is accepted or rejected according to the action specified for that address. If the value is ***enabled*** and the called address in the call request is not provisioned, the call is rejected. If the value is ***disabled***, no called address screening is performed.
Mib	AtmAini
Values	enabled disabled
Default	disabled

GROUP AtmIf Aini CalledAScr Statistics (Stat)

Properties	Operational
Description	This attribute group contains statistics related to the incoming SVC call requests received while the *adminStatus* attribute is set to ***enabled***.
Mib	AtmAini

ATTRIBUTE AtmIf Aini CalledAScr acceptedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were accepted because the address specified in the call request matched a provisioned ATM address and the associated action was ***accept***. When the counter exceeds the maximum, it wraps to 0.

Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Aini CalledAScr rejectedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because the address specified in the call request matched a provisioned ATM address, but the associated action was ***reject***. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmIf Aini CalledAScr unmatchedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the incoming SVC calls which were rejected because none of the provisioned ATM addresses matched the applicable address in the incoming SVC call request. When the counter exceeds the maximum, it wraps to 0.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	0

COMPONENT AtmIf Aini CalledAScr Address (Addr)

Instance	address [String (1..40, ASCII)] addressAction [accept reject]
Scope	Device

Description

AtmIf/n Aini CallingAScr Address/addr,action
AtmIf/n Uni CallingAScr Address/addr,action
AtmIf/n Iisp CallingAScr Address/addr,action
AtmIf/n Aini CalledAScr Address/addr,action
AtmIf/n Uni CalledAScr Address/addr,action
AtmIf/n Iisp CalledAScr Address/addr,action

This component specifies a calling (or called) address with an action to accept or reject a connection request which contains a matching calling (or called) address.

For the Calling Address Screening feature, if the specified action is ***accept***, any call whose calling address matches that address is accepted. If the specified action is ***reject***, any call whose calling address matches that address is rejected.

For the Called Address Screening feature, if the specified action is ***accept***, any call whose called address matches that address, is accepted. If the specified action is ***reject***, any call whose called address matches that address is rejected.

For both features, the incoming SVC call request is rejected if the address is not provisioned and the feature is ***enabled***.

Mib

AtmAini

Common Verbs

Help
List
Display
Add
DELete

COMPONENT AtmIf Aini PathTraceFilter (Ptf)

Groups

"GROUP AtmIf Aini Ptf Criteria"
"GROUP AtmIf Aini Ptf Operational (Oper)"
"GROUP AtmIf Aini Ptf RecordControl (Record)"

Scope

Device

Description

AtmIf/n Aini PathTraceFilter
AtmIf/n Iisp PathTraceFilter
AtmIf/n Uni PathTraceFilter
AtmIf/n Pnni PathTraceFilter
AtmIf/n Vpt/vpi Aini PathTraceFilter
AtmIf/n Vpt/vpi Iisp PathTraceFilter

AtmIf/n Vpt/vpi Uni PathTraceFilter
AtmIf/n Vpt/vpi Pnni PathTraceFilter

This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced.

When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop*, and *Clear* verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When *AtmPathTraceFilter* component is deleted, all records are cleared.

Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted.

The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.

Mib	AtmAini
Dyn. Subcomp.	"COMPONENT AtmIf Aini Ptf PathTraceRecord (PTRecord)"
Common Verbs	Help List Display Add DELete

VERB START AtmIf Aini Ptf

Impact: Service

Description:

START AtmIf/n Aini PathTraceFilter
START AtmIf/n Iisp PathTraceFilter
START AtmIf/n Uni PathTraceFilter
START AtmIf/n Pnni PathTraceFilter
START AtmIf/n Vpt/vpi Aini PathTraceFilter
START AtmIf/n Vpt/vpi Iisp PathTraceFilter
START AtmIf/n Vpt/vpi Uni PathTraceFilter
START AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

VERB STOP AtmIf Aini Ptf

Impact: Service

Description:

STOP AtmIf/n Aini PathTraceFilter
STOP AtmIf/n Iisp PathTraceFilter
STOP AtmIf/n Uni PathTraceFilter
STOP AtmIf/n Pnni PathTraceFilter
STOP AtmIf/n Vpt/vpi Aini PathTraceFilter
STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter
STOP AtmIf/n Vpt/vpi Uni PathTraceFilter
STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command causes the filter to stop, but keeps the trace records.

VERB CLEAR AtmIf Aini Ptf

Impact	Service
Description	*CLEAR AtmIf/n Aini PathTraceFilter* *CLEAR AtmIf/n Iisp PathTraceFilter* *CLEAR AtmIf/n Uni PathTraceFilter* *CLEAR AtmIf/n Pnni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP AtmIf Aini Ptf Criteria

Properties	Operational
Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Ptf traceInfo (tInfo)

Access	Read: All Write: All
Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference

	and end point reference are both included. Basic trace information, such as node and port identifiers, are always included.
Mib	AtmAini
Set of	crankBack connId callRef
Default	(crankBack, connId, callRef)

ATTRIBUTE AtmIf Aini Ptf calledPartyPrefix (cldPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmAini
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Aini Ptf callingPartyPrefix (clgPref)

Access	Read: All Write: All
Description	This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced. An empty string matches any address.
Mib	AtmAini

Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Aini Ptf connectionType (type)

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmAini
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE AtmIf Aini Ptf connectionConfiguration (config)

Access	Read: All Write: All
Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmAini
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE AtmIf Aini Ptf serviceCategory (svcCat)

Access	Read: All Write: All

Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	AtmAini
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP AtmIf Aini Ptf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Ptf state

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active. ***inactive:*** Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.
Mib	AtmAini
Values	active inactive
Default	inactive

ATTRIBUTE AtmIf Aini Ptf recordCount

Access	Read: All Write: Illegal
Description	This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords*, which ever is less.
Mib	AtmAini
Values	Decimal (0..200)
Default	No default

ATTRIBUTE AtmIf Aini Ptf matchedConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the number of connections that match the criteria of this filter.
Mib	AtmAini
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE AtmIf Aini Ptf elapsedTime

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	AtmAini
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE AtmIf Aini Ptf timeRemaining

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmAini
Values	Decimal (0..70560)
Units	minutes
Default	No default

GROUP AtmIf Aini Ptf RecordControl (Record)

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Ptf traceTimeout

Access	Read: All Write: All
Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmAini
Values	Decimal (1..70560)
Units	minutes
Default	60

ATTRIBUTE AtmIf Aini Ptf maxTraceRecords (mRecords)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter.

	Once the maximum has been reached, the oldest record is removed.
Mib	AtmAini
Values	Decimal (1..200)
Default	2

COMPONENT AtmIf Aini Ptf PathTraceRecord (PTRecord)

Groups	"GROUP AtmIf Aini Ptf PTRecord Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord* *AtmIf/n Iisp Ptf PTRecord* *AtmIf/n Uni Ptf PTRecord* *AtmIf/n Pnni Ptf PTRecord* *AtmIf/n Vpt/n Aini Ptf PTRecord* *AtmIf/n Vpt/n Iisp Ptf PTRecord* *AtmIf/n Vpt/n Uni Ptf PTRecord* *AtmIf/n Vpt/n Pnni Ptf PTRecord* This component represents the path trace record for the last failed connection against this filter.
Mib	AtmAini
Dyn. Subcomp.	"COMPONENT AtmIf Aini Ptf PTRecord Hop"
Common Verbs	Help List Display

GROUP AtmIf Aini Ptf PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Ptf PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmAini
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord timeStamp

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmAini
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord srcPortId

Access	Read: All Write: Illegal

Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmAini
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord srcPortName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmAini
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord causeCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord diagCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmAini
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Aini Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	"GROUP AtmIf Aini Ptf PTRecord Hop Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record.

	Depending on the hops, different attributes are present.
Mib	AtmAini
Dyn. Subcomp.	"COMPONENT AtmIf Aini Ptf PTRecord Hop VendorSpecificInfo (Vsi)"
Common Verbs	Help List Display

GROUP AtmIf Aini Ptf PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop ingressDlci (dlci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop ingressCallReference (callref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmAini
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop ingressEndPointReference (epref)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmAini
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop nodeId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop nodeName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmAini
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop portId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop portName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmAini
Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop pnniTraceContRefusalIndPresent (refusal)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.

Mib	AtmAini
Values	absent present
Default	absent

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop crankbackDestNodeIndPresent (dest)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmAini
Values	absent present
Default	absent

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop pnniCrankbackGapIndPresent (gap)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmAini
Values	absent present
Default	absent

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop crankBackCause (cause)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmAini
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop blockedTransitType (type)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmAini
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop blockedNodeId (bNodeId)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop blockedLinkPrecedingNodeId (pNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop blockedLinkPortId (bPortId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier.

	This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop blockedLinkSucceedingNodeId (sNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmAini
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop dstVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.

Mib	AtmAini
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop dstDlci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop dstCallReference (dcr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmAini
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop dstEndPointReference (depr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmAini
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop specifiedPath

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmAini
Values	no yes
Default	no

COMPONENT AtmIf Aini Ptf PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	"GROUP AtmIf Aini Ptf PTRecord Hop Vsi Operational (Oper)"
Scope	Device

Description

AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m

This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.

Mib

AtmAini

Common Verbs

Help
List
Display

GROUP AtmIf Aini Ptf PTRecord Hop Vsi Operational (Oper)

Properties

Operational

Description

This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.

Mib

AtmAini

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop Vsi length

Access

Read: All
Write: Illegal

Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmAini
Values	Decimal (0..11)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop Vsi organizationUniqueId (oui)

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmAini
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE AtmIf Aini Ptf PTRecord Hop Vsi data

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmAini
Values	String (1..8, Hex)
Default	No default

COMPONENT AtmIf Aini PathTraceTestConnection (Ptt)

Groups	"GROUP AtmIf Aini Ptt Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini PathTraceTestConnection* *AtmIf/n Iisp PathTraceTestConnection* *AtmIf/n Uni PathTraceTestConnection* *AtmIf/n Pnni PathTraceTestConnection*

AtmIf/n Vpt/vpi Aini PathTraceTestConnection
AtmIf/n Vpt/vpi Iisp PathTraceTestConnection
AtmIf/n Vpt/vpi Uni PathTraceTestConnection
AtmIf/n Vpt/vpi Pnni PathTraceTestConnection

This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface.

The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test connection responds with the trace results collected during a complete or partial trace.

Mib: AtmAini

Common Verbs:
- Help
- List
- Display

VERB TRACE AtmIf Aini Ptt

Impact: Passive

Description:

TRACE AtmIf/n Aini AtmPathTraceTest
TRACE AtmIf/n Iisp AtmPathTraceTest
TRACE AtmIf/n Uni AtmPathTraceTest
TRACE AtmIf/n Pnni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest

This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node.

Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP AtmIf Aini Ptt Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *AtmPathTraceTest* component.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Ptt traceCrankback

Access	Read: All Write: All
Description	This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.
Mib	AtmAini
Values	no yes
Default	no

ATTRIBUTE AtmIf Aini Ptt txTrafficDescType (txTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmAini
Values	1 2 3 4 5 6

	7 8 9
Default	1

ATTRIBUTE AtmIf Aini Ptt rxTrafficDescType (rxTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.
Mib	AtmAini
Values	1 2 3 4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE AtmIf Aini Ptt atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection.

If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications.

The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.

Mib AtmAini

Values
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
derivedFromBBC (derived)

Default	unspecifiedBitRate

ATTRIBUTE AtmIf Aini Ptt fwdQosClass (fwdQos)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmAini
Values	0 1 2 3 4
Default	0

ATTRIBUTE AtmIf Aini Ptt bwdQosClass (bwdQos)

Access	Read: All Write: All
Criticality	Component

Description	This attribute specifies the quality of service for the backward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters. The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.
Mib	AtmAini
Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE AtmIf Aini Ptt bearerClassBbc (bcBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested

broadband connection-oriented bearer service to be provided by the network.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib	AtmAini
Values	a c x derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Aini Ptt transferCapabilityBbc (tcBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the transfer capability for this connection. UNI 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> ***0***: NoIndication, NoIndication ***1***: NoIndication, yes ***2***: NoIndication, no ***5***: CBR, yes ***8***: VBR, NoIndication ***9***: VBR, yes ***10***: VBR, no ***NotApplicable*** specifies that the user does not want to specify the transfer capability. The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data. The value ***NoIndication*** for traffic type is used if the user has not set the traffic type. This is also the case for end-to-end timing. The value ***yes*** for end-to-end timing indicates that end-to-end timing is required. The value ***no*** for end-to-end timing indicates that end-to-end timing is not required. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmAini

Values	0 1 2 5 8 9 10 notApplicable derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Aini Ptt clippingBbc (cBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.
Mib	AtmAini
Values	no yes
Default	no

ATTRIBUTE AtmIf Aini Ptt bestEffort

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer

Capability attributes.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory.* Either this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib	AtmAini
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Aini Ptt testCalledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmAini
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Aini Ptt testCalledVpiVci

Access	Read: All Write: All
Criticality	Component

Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmAini
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Aini Ptt testSpecifiedPath

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmAini
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Aini Ptt bwdQosParameters (bqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the

extended QoS information element.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Aini Ptt fwdQosParameters (fqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Aini Ptt txTrafficDescParm (txTdp)

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled. When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero. When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero

value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A

non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE AtmIf Aini Ptt rxTrafficDescParm (rxTdp)

Access	Read: All Write: All
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC). When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused).

When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused).

When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or
I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

Mib	AtmAini
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

COMPONENT AtmIf Aini ServiceTrace (SrvTrace)

Groups	"GROUP AtmIf Aini SrvTrace Operational"

Scope	Application
Description	*AtmIf/n [Vpt/m] Uni ServiceTrace* *AtmIf/n [Vpt/m] Iisp ServiceTrace* *AtmIf/n [Vpt/m] Pnni ServiceTrace* *AtmIf/n [Vpt/m] Aini ServiceTrace* The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service. Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.
Mib	AtmAiniTrace
Common Verbs	Help List Display Add DELete

VERB Start AtmIf Aini SrvTrace

Impact	Service
Description	*Start AtmIf/n [Vpt/m] Uni ServiceTrace* *Start AtmIf/n [Vpt/m] Iisp ServiceTrace* *Start AtmIf/n [Vpt/m] Pnni ServiceTrace* *Start AtmIf/n [Vpt/m] Aini ServiceTrace* This command starts a service trace session.

VERB Stop AtmIf Aini SrvTrace

Impact	Service
Description	*Stop AtmIf/n [Vpt/m] Uni ServiceTrace* *Stop AtmIf/n [Vpt/m] Iisp ServiceTrace* *Stop AtmIf/n [Vpt/m] Pnni ServiceTrace* *Stop AtmIf/n [Vpt/m] Aini ServiceTrace* This command stops a service trace session.

GROUP AtmIf Aini SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	AtmAiniTrace

ATTRIBUTE AtmIf Aini SrvTrace receiverName (rcvr)

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmAiniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE AtmIf Aini SrvTrace duration

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmAiniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE AtmIf Aini SrvTrace queueLimit

Access	Read and write

Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmAiniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE AtmIf Aini SrvTrace session

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmAiniTrace
Values	The name of the component
Default	No default

COMPONENT AtmIf Aini Reroute

Groups	"GROUP AtmIf Aini Reroute LocalOperational (LOper)" "GROUP AtmIf Aini Reroute GlobalOperational (GOper)" "GROUP AtmIf Aini Reroute Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Iisp Reroute* *AtmIf/n Aini Reroute* *AtmIf/n Uni Reroute* *AtmIf/n Vpt/vpi Iisp Reroute* *AtmIf/n Vpt/vpi Aini Reroute* *AtmIf/n Vpt/vpi Uni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg*

Pnni component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.

Mib: AtmAini

Subcomponents: "COMPONENT AtmIf Aini Reroute Ov"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB OPTIMIZE AtmIf Aini Reroute

Impact: Service

Description: *Optimize [-all] AtmIf/n Uni outeouteouteouteouteoute*sBy default, only connection segsforation. The best known optimization metric value for the connection segment is indicated by the localOptimalMetricValue attribute under the RerouteInfo component for the connection.
The -all option causes all connection segments subscribed to path optimization to be considered.s

GROUP AtmIf Aini Reroute LocalOperational (LOper)

Properties: Operational

Description: This group contains the operational attributes that indicate the local rerouting activities at the interface level.

Mib: AtmAini

ATTRIBUTE AtmIf Aini Reroute localSubscribedConnections (lsub)

Access: Read only

Description: This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.

Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Reroute localEligibleRecoveredCon (lerc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Reroute localIneligibleRecoveredCon (lirc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Reroute localLastRrCauseCode (lrrcc)

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	AtmAini
Values	Decimal (0..255)

Default	No default

ATTRIBUTE AtmIf Aini Reroute localPathsOptimized (lPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Aini Reroute GlobalOperational (GOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Reroute globalSubscribedConnections (gsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Reroute globalEligibleRecoveredCon (gerc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.

Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Reroute globalIneligibleRecoveredCon (girc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Reroute globalLastRrCauseCode (grrcc)

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	AtmAini
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Aini Reroute globalPathsOptimized (gPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmAini
Values	Decimal (0..4294967295)

Default	No default

GROUP AtmIf Aini Reroute Statistics (Stats)

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Reroute totalLocalConnectionRecoveries (tLConRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Reroute totalLocalFailedRecoveries (lFailedRec)

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Reroute totalLocalPathOptimizations (tLPathOpt)

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.

Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Reroute totalGlobalConnectionRecoveries (tGConRec)

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Reroute totalGlobalFailedRecoveries (gFailedRec)

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Aini Reroute totalGlobalPathOptimizations (tGPathOpt)

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE AtmIf Aini Reroute totalOptimizationPasses (optPass)

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmAini
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Aini Reroute Ov

Groups	"GROUP AtmIf Aini Reroute Ov Provisioned (Prov)" "GROUP AtmIf Aini Reroute Ov LocalProvisioned (LProv)" "GROUP AtmIf Aini Reroute Ov GlobalProvisioned (GProv)"
Scope	Device
Description	*AtmIf/n Iisp Reroute Ov* *AtmIf/n Aini Reroute Ov* *AtmIf/n Uni Reroute Ov* *AtmIf/n Vpt/vpi Iisp Reroute Ov* *AtmIf/n Vpt/vpi Aini Reroute Ov* *AtmIf/n Vpt/vpi Uni Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.
Mib	AtmAini
Common Verbs	Help List Display

GROUP AtmIf Aini Reroute Ov Provisioned (Prov)

Properties	Provisioned

Description	This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.
Mib	AtmAini

ATTRIBUTE AtmIf Aini Reroute Ov protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsARtgPnniReroute***: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature. ***ebrOnly***: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.
Mib	AtmAini
Values	localGlobal localOnly globalOnly

	localEbr ebrOnly sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE AtmIf Aini Reroute Ov numOptAttempts

Access	Read and write
Description	This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization. If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization. If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.
Mib	AtmAini
Values	Decimal (0..15) sameAsARtgPnniReroute (sameAs)
Default	sameAs

ATTRIBUTE AtmIf Aini Reroute Ov moduleOptimizationConnections

Access	Read and write

Description	This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component. One of the following values can be specified: ***sameAsARtgPnniReroute***: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute. ***none***: No connection segments are considered for path optimization. ***recoveredOnly***: Only connection segments that are foration. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection ***allSubscribed***: All connection segments subscribed to path optimization are considered.
Mib	AtmAini
Values	none recoveredOnly allSubscribed sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE AtmIf Aini Reroute Ov switchoverMechanism

Access	Read and write
Description	This attribute specifies the mechanism used for switchover of a rerouted connection segment. One of the following values can be specified: ***sameAsARtgPnniReroute***: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute. ***standard***: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”. ***rcl***: The Reduced Cell Loss mechanism is used for switchover.

RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib: AtmAini

Values:
standard
rcl
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

GROUP AtmIf Aini Reroute Ov LocalProvisioned (LProv)

Properties: Provisioned

Description: This group contains the provisionable attributes for EBR and local rerouting protocols.

Mib: AtmAini

ATTRIBUTE AtmIf Aini Reroute Ov localConnectionRecoverySubscr (lConRec)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one will be granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values.

svcSvp: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery.
sourceSpvcSpvp: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery.
transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.

Mib: AtmAini

Set of: sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Aini Reroute Ov localPathOptimizationSubscr (lPathOpt)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection

segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib: AtmAini

Set of: sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

GROUP AtmIf Aini Reroute Ov GlobalProvisioned (GProv)

Properties: Provisioned

Description: This group contains the provisionable attributes for the global and EBR rerouting protocol.

Mib: AtmAini

ATTRIBUTE AtmIf Aini Reroute Ov globalConnectionRecoverySubscr (gConRec)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global connection recovery.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery.

Connection segments of the specified types that request ***localEbr***

request subscription to both local connection recovery and EBR connection recovery. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib: AtmAini

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Aini Reroute Ov globalPathOptimizationSubscr (gPathOpt)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

Mib: AtmAini

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

COMPONENT AtmIf Pnni

Groups:
"GROUP AtmIf Pnni Provisioned (Prov)"
"GROUP AtmIf Pnni AdminWeights"
"GROUP AtmIf Pnni AccountingOptions (AcctOpt)"
"GROUP AtmIf Pnni Operational"
"GROUP AtmIf Pnni Threshold"
"GROUP AtmIf Pnni TraceProv (Trace)"

Scope: Device

Description:
AtmIf/n Pnni
This component represents an ATM Private Network-Network Interface (PNNI) interface. If this component is provisioned, the

Uni, *Aini*, or *Iisp* component cannot be provisioned under the same *AtmIf* component. Also, the *Artg Pnni* component and the *ConfiguredNode* component corresponding to the participation of the this node in a lowest level peer group must already exist before provisioning *Pnni* under an *AtmIf* component. If this component is deleted, then all associated Vcc components are deleted.

Mib	AtmPnni
Subcomponents	"COMPONENT AtmIf Pnni Signalling (Sig)" "COMPONENT AtmIf Pnni RoutingControlChannel (Rcc)"
Opt. Subcomp.	"COMPONENT AtmIf Pnni PathTraceFilter (Ptf)" "COMPONENT AtmIf Pnni ServiceTrace (SrvTrace)"
Dyn. Subcomp.	"COMPONENT AtmIf Pnni PathTraceTestConnection (Ptt)"
Dyn. Subcomp.	"COMPONENT AtmIf Pnni Address (Addr)" "COMPONENT AtmIf Pnni Reroute"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Pnni Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Pnni component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni softPvpAndPvcRetryPeriod

Access	Read: All Write: All
Description	This attribute represents the time in seconds to wait between soft PVP or soft PVC call setup retries. Due to the group timer

	implementation, it can take from 100% to 150% of the provisioned timer value for the retry to be triggered.
Mib	AtmPnni
Values	Decimal (20..999999)
Units	seconds
Default	60

ATTRIBUTE AtmIf Pnni softPvpAndPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off retries following the release of a connection. Due to the way group timers are implemented, it can take from 100% to 150% of the provisioned timer to trigger the desired action. Since SPVC retries are paced, in cases where there are many connections, the entire process can take more than 150% of the provisioned timer value.
Mib	AtmPnni
Values	Decimal (0; 50..20000)
Units	msec
Default	0

GROUP AtmIf Pnni AdminWeights

Properties	Provisioned
Description	This group contains the provisionable administrative weights for the *Pnni* component. These weights will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni cbrWeight (cbrWt)

Access	Read: All Write: All

Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Constant Bit Rate (CBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

ATTRIBUTE AtmIf Pnni rtVbrWeight (rtVbrWt)

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Real-Time Variable Bit Rate (RT-VBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

ATTRIBUTE AtmIf Pnni nrtVbrWeight (nrtVbrWt)

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Non Real-Time Variable Bit Rate (NRT-VBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.

Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

ATTRIBUTE AtmIf Pnni ubrWeight (ubrWt)

Access	Read: All Write: All
Description	This attribute specifies the administrative weight assigned for setting up switched calls with a service category of Unspecified Bit Rate (UBR) for this PNNI interface. The value specified will be used by Generic Connection Admission Control (GCAC) if administrative weight is the selected optimization criterion; the higher the value, the less desirable the link will be in path selection.
Mib	AtmPnni
Values	Decimal (1..16777215)
Default	5040

GROUP AtmIf Pnni AccountingOptions (AcctOpt)

Properties	Provisioned
Description	This group contains the provisionable attributes for accounting.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni accountCollection (aco)

Access	Read: All Write: All
Description	This attribute is used to turn accounting on or off for SVC and SPVC connections. It also specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit***, or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA changeover if TODA is enabled; - every 12 hours (per connection) if TODA is disabled;

- on every call clear (a call record with final cell counts).

If none of the reasons is present, then accounting will be suppressed.

The reason for collection is recorded in the accounting record, in the attribute *callingCollectReason* or *calledCollectReason* as appropriate.

Mib: AtmPnni

Set of:
bill
test
study
audit
force

Default: No default

ATTRIBUTE AtmIf Pnni accountConnectionType (act)

Access:
Read: All
Write: All

Description: This attribute specifies whether accounting records generated by this interface should be marked as originating, terminating or intermediate. This attribute, in combination with the direction of the call, determines the value of attribute *connPointType* of the accounting record and may be used by downstream accounting processes to correlate the records.

If the value is ***origTerm*** then records generated for incoming calls will be marked as ***originating*** and records generated for outgoing calls will be marked as ***terminating***.

If the value is ***intermediate*** then records generated for all calls will be marked as ***intermediate***.

Mib: AtmPnni

Values:
origTerm
intermediate

Default: intermediate

ATTRIBUTE AtmIf Pnni accountClass (acl)

Access	Read: All Write: All
Description	This attribute specifies the accounting class associated with the interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingServiceType* or *calledServiceType* as appropriate.
Mib	AtmPnni
Values	Decimal (0..255)
Default	0

ATTRIBUTE AtmIf Pnni serviceExchange (sre)

Access	Read: All Write: All
Description	This attribute specifies the data service exchange associated with this interface. Its meaning is determined by the network operator. Its value is simply recorded in the accounting records generated by this interface, in the attribute *callingDse* or *calledDse* as appropriate.
Mib	AtmPnni
Values	Decimal (0..255)
Default	0

GROUP AtmIf Pnni Operational

Properties	Operational
Description	This group contains the operational attributes for a *Pnni* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni portId

Access	Read: All Write: Illegal
Description	This attribute indicates the port id of the PNNI interface, which is the parent *AtmIf*'s instance number.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Pnni Threshold

Properties	Provisioned
Description	This group contains the provisionable attributes for the change threshold for the *Atmif Pnni* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni avcrMt

Access	Read: All Write: All
Description	This attribute, multiplied by the Maximum Cell Rate, specifies the minimum threshold used in the algorithms that determine significant change for average cell rate parameters for this interface. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni avcrMt*.
Mib	AtmPnni
Values	Decimal (1..99) sameAsPnni
Units	%
Default	sameAsPnni

ATTRIBUTE AtmIf Pnni avcrPm

Access	Read: All Write: All

Description	This attribute multiplied by the current Available Cell Rate (AvCr) specifies the threshold used in the algorithms that determine significant change for AvCR parameters for this interface. If the resulting threshold is lower than the AvCr, the minimum threshold (*Atmif pnni avcrMt*) is used. Increasing the value of the attribute increases the range of insignificance and reduces the amount of PTSP flooding due to changes in resource availability. If the value of this attribute is ***sameAsPnni***, then the actual value is taken from *ARtg Pnni avcrPm*.
Mib	AtmPnni
Values	Decimal (1..99) sameAsPnni
Units	%
Default	sameAsPnni

GROUP AtmIf Pnni TraceProv (Trace)

Properties	Provisioned
Description	This group contains the provisionable trace attributes for the Pnni component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni traceDestination (tDst)

Access	Read: All Write: All
Description	This attribute specifies if this node is a trace destination. A PNNI interface may be a trace destination interface. By default, it's not. If an operator wants to trace only until this PNNI interface, this interface can be set to trace destination by setting this attribute.
Mib	AtmPnni
Values	no yes

Default	no

COMPONENT AtmIf Pnni Signalling (Sig)

Groups	"GROUP AtmIf Pnni Sig Provisioned (Prov)" "GROUP AtmIf Pnni Sig OsiState (State)" "GROUP AtmIf Pnni Sig Operational (Oper)" "GROUP AtmIf Pnni Sig Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Aini Signalling* *AtmIf/n Iisp Signalling* *AtmIf/n Uni Signalling* *AtmIf/n Pnni Signalling* *AtmIf/n Vpt/m Aini Signalling* *AtmIf/n Vpt/m Iisp Signalling* *AtmIf/n Vpt/m Uni Signalling* *AtmIf/n Vpt/m Pnni Signalling* This component represents the signaling entities for the interface.
Mib	AtmPnni
Opt. Subcomp.	"COMPONENT AtmIf Pnni Sig VirtualChannelDescriptor (Vcd)"
Common Verbs	Help List Display

GROUP AtmIf Pnni Sig Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes for the *Signalling* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Sig vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the signaling channel number.
Mib	AtmPnni
Values	Decimal (0..65535)
Default	5

ATTRIBUTE AtmIf Pnni Sig addressConversion

Access	Read: All Write: All
Description	This attribute specifies the address conversion on the outgoing signaling PDUs. The options are ***none***, ***nativeE164***, or ***nsap***. The ***none*** option is the default and if this option is chosen then nothing is done to the address information element (IE) in the outgoing signaling message. If ***nativeE164*** option is chosen, then only NSAP encapsulated E.164 addresses with zeros in the ESI are converted to native E.164 format in the outgoing signaling message. If the NSAP address is not encapsulated E.164 or the ESI field is not zeros and the ***nativeE164*** option is chosen, then the call is cleared. If the ***nsap*** option is chosen, then native E.164 addresses are converted to NSAP E.164 with zeros in the ESI field; otherwise the address is in NSAP format and is not changed.
Mib	AtmPnni
Values	none nativeE164 nsap
Default	none

ATTRIBUTE AtmIf Pnni Sig operatingMode

Access	Read: All Write: All

Description	This attribute specifies the operating mode of the signaling channel ***provisionedOnly*** indicates that only SPVCs and SPVPs are supported on the interface and SVCs are not supported. This value is permitted only on UNI interfaces. ***normal*** indicates that SVCs, SPVCs, and SPVPs are supported on the interface.
Mib	AtmPnni
Values	normal provisionedOnly
Default	normal

GROUP AtmIf Pnni Sig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: AtmPnni

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE AtmIf Pnni Sig operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmPnni

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmIf Pnni Sig usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has

spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: AtmPnni

Values:
idle
active (activ)
busy

Default: idle

GROUP AtmIf Pnni Sig Operational (Oper)

Properties: Operational

Description: This attribute contains the operational attributes for the AtmSignalling component.

Mib: AtmPnni

ATTRIBUTE AtmIf Pnni Sig lastTxCauseCode

Access:
Read: All
Write: Illegal

Description: This attribute indicates the cause code in the last transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.

Mib: AtmPnni

Values: Decimal (0..255)

Default: No default

ATTRIBUTE AtmIf Pnni Sig lastTxDiagCode

Access:
Read: All
Write: Illegal

Description: This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information

	element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmPnni
Values	Hex (H.0..H.ff)
Default	No default

ATTRIBUTE AtmIf Pnni Sig lastRxCauseCode

Access	Read: All Write: Illegal
Description	This attribute contains the cause code in the last received signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Pnni Sig lastRxDiagCode

Access	Read: All Write: Illegal
Description	This attribute contains the diagnostic code in the last received signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to 0.
Mib	AtmPnni
Values	Hex (H.0..H.ff)
Default	No default

GROUP AtmIf Pnni Sig Statistics (Stats)

Properties	Operational
Description	This attribute group contains the statistics associated with the AtmSignalling component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Sig peakConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-point connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Sig successfulConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-point connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Sig failedConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-point connections. The counter wraps to 0 when the maximum value is exceeded.

Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Sig txPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of transmitted signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Sig rxPdus

Access	Read: All Write: Illegal
Description	This attribute counts the number of received signaling PDUs.The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Sig currentPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active point-to-multipoint connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE AtmIf Pnni Sig peakPmpConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the high water mark of active point-to-multipoint connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Sig successfulPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of switched point-to-multipoint connections that were successfully established. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Sig failedPmpConnections

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful attempts to establish switched point-to-multipoint connections. The counter wraps to 0 when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Sig currentConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of currently active point-to- point connections.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Pnni Sig VirtualChannelDescriptor (Vcd)

Groups	"GROUP AtmIf Pnni Sig Vcd Provisioned (Prov)"
Scope	Device
Description	*AtmIf/n Uni Sig VirtualChannelDescriptor* *AtmIf/n Uni Ilmi VirtualChannelDescriptor* *AtmIf/n Aini Sig VirtualChannelDescriptor* *AtmIf/n Iisp Sig VirtualChannelDescriptor* *AtmIf/n Pnni Sig VirtualChannelDescriptor* *AtmIf/n Pnni Rcc VirtualChannelDescriptor* *AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor* *AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor* This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).
Mib	AtmPnni
Common Verbs	Help List Display Add DELete

GROUP AtmIf Pnni Sig Vcd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable traffic attributes for a control channel.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Sig Vcd trafficDescType (tdt)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType* determines the number and meaning of the parameters in the *trafficDescParm* attribute.
Mib	AtmPnni
Values	3 6 7 8
Default	6

ATTRIBUTE AtmIf Pnni Sig Vcd atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells

which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib	AtmPnni
Values	unspecifiedBitRate (ubr) constantBitRate (cbr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	rtVariableBitRate

ATTRIBUTE AtmIf Pnni Sig Vcd weight

Access	Read and write
Criticality	Component
Description	This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m. This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs. When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***. When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT. When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.
Mib	AtmPnni
Values	Decimal (1..4095) sameAsCa upToQueueLimit

Default	sameAsCa

ATTRIBUTE AtmIf Pnni Sig Vcd qosClass (qos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmPnni
Values	0 1 2 3 4
Default	2

ATTRIBUTE AtmIf Pnni Sig Vcd trafficShaping (trShaping)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface.

When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components.

When ***disabled*** is selected, traffic shaping for this connection is disabled.

Mib	AtmPnni
Values	disabled sameAsCa
Default	disabled

ATTRIBUTE AtmIf Pnni Sig Vcd unshapedTransmitQueueing (unshap)

Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute. When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator.* When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib	AtmPnni
Values	common sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Pnni Sig Vcd usageParameterControl (upc)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component. When ***disabled*** is selected, UPC for this connection is disabled. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmPnni
Values	disabled sameAsCa
Default	disabled

ATTRIBUTE AtmIf Pnni Sig Vcd trafficDescParm (tdp)

Access	Read: All Write: All
Criticality	Component

Description

This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)

COMPONENT AtmIf Pnni RoutingControlChannel (Rcc)

Groups	"GROUP AtmIf Pnni Rcc Provisioned (Prov)" "GROUP AtmIf Pnni Rcc HelloParms (HlParms)" "GROUP AtmIf Pnni Rcc OsiState (State)" "GROUP AtmIf Pnni Rcc Operational (Oper)" "GROUP AtmIf Pnni Rcc Statistics (Stats)"
Scope	Device

Description	*AtmIf/n Pnni RoutingControlChannel* *AtmIf/n Vpt/m Pnni RoutingControlChannel* This component represents the Routing Control Channel (RCC) associated with a PNNI interface. The RCC is used to exchange routing information between nodes in a peer group.
Mib	AtmPnni
Opt. Subcomp.	"COMPONENT AtmIf Pnni Rcc VirtualChannelDescriptor (Vcd)"
Common Verbs	Help List Display

GROUP AtmIf Pnni Rcc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the generic provisionable attributes of an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Rcc vci

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the VCI for the Routing Control Channel (RCC). The value should not be changed from the default of 18 unless absolutely necessary. If a different VCI is specified, ensure that the RCC at the far end is provisioned to use the same VCI, otherwise the RCC will not come up.
Mib	AtmPnni
Values	Decimal (0..65535)
Default	18

ATTRIBUTE AtmIf Pnni Rcc aggregationToken

Access	Read: All Write: All
Description	This attribute specifies the aggregation token for this interface at the local end of the link. The aggregation tokens at both ends are use to form the *derivedAggregationToken* for the link. The aggregation token controls how links are aggregated together. Except for the lowest level nodes, links between two logical nodes are aggregated together if they have the same aggregation token. Link aggregation is not done at the lowest level node, except in the degenerate node situation, where the lowest level node is a neighbor to an LGN. The value is ignored for links having a type value of ***unknown*** or ***lowestLevelHorizLink***.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	0

GROUP AtmIf Pnni Rcc HelloParms (HlParms)

Properties	Provisioned
Description	This group contains the provisionable Hello protocol parameters for an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Rcc helloHoldDown (hhd)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the rate at which this node sends out Hello packets. It specifies the default minimum length of time between successive Hellos used by routing control channels on this node. A provisioning check is made to ensure that this value cannot be greater than *helloInterval*. A value of 0 specifies that the value provisioned for the *helloHoldDown* attribute of the *ARtg Pnni* component should be used.

Mib	AtmPnni
Values	Decimal (0.0..65535.0)
Units	seconds
Default	0.0

ATTRIBUTE AtmIf Pnni Rcc helloInterval (hli)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the default duration of the Hello Timer for routing control channels on this node. Every *helloInterval* seconds, this node sends out a Hello packet to the neighbor node, subject to the *helloHoldDown* timer having expired at least once since the last Hello packet was sent. A provisioning check is made to ensure that this value cannot be less than *helloHoldDown*. A value of 0 specifies that the value provisioned for the *helloInterval* attribute of the *ARtg Pnni* component should be used.
Mib	AtmPnni
Values	Decimal (0..65535)
Units	seconds
Default	0

ATTRIBUTE AtmIf Pnni Rcc helloInactivityFactor (hif)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the number of Hello intervals allowed to pass without receiving a Hello from a neighbor, before an attempt is made to stage the RCC to that neighbor. The hello inactivity timer is enabled when the *helloState* is one of ***oneWayInside***,

twoWayInside, ***oneWayOutside***, ***twoWayOutside*** or ***commonOutside***.

A value of 0 specifies that the value provisioned for the *helloInactivityFactor* attribute of the *ARtg Pnni* component should be used.

Mib: AtmPnni

Values: Decimal (0..65535)

Default: 0

GROUP AtmIf Pnni Rcc OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: AtmPnni

ATTRIBUTE AtmIf Pnni Rcc adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: AtmPnni

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE AtmIf Pnni Rcc operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmPnni

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmIf Pnni Rcc usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: AtmPnni

Values:
idle
active (activ)
busy

Default: idle

GROUP AtmIf Pnni Rcc Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for an *Rcc* component.

Mib: AtmPnni

ATTRIBUTE AtmIf Pnni Rcc type

Access:
Read: All
Write: Illegal

Description: This attribute indicates the role of this link in the PNNI hierarchy. The following values are possible:

unknown: the Hello protocol has not yet determined the role of the link.

lowestLevelHorizLink: the link is a horizontal link between two lowest level nodes.

lowestLevelOutsideLink: the link is an outside link between two border nodes.

horizontalLinkToLgn: the link is a horizontal link to a Logical Group Node (LGN).

uplink: the link is a uplink to a higher level LGN.

Mib: AtmPnni

Values	unknown lowestLevelHorizLink lowestLevelOutsideLink horizontalLinkToLGN uplink
Default	No default

ATTRIBUTE AtmIf Pnni Rcc negotiatedVersion

Access	Read: All Write: Illegal
Description	This attribute indicates the PNNI version negotiated with the neighbor node.
Mib	AtmPnni
Values	unsupported version1point0
Default	No default

ATTRIBUTE AtmIf Pnni Rcc helloState

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the Hello protocol exchange over this link. The following are the possible values for this attribute: ***down***: the link is down. No PNNI routing packets are sent or received over such a link. This is the initial state of the Hello Finite State Machine, and can also be reached when lower-level protocols have indicated that the link is not usable. ***attempt***: no Hello packets or Hello packets, with mismatched information, have been received recently from the neighbor. Attempts are made to contact the neighbor node by sending out Hello packets every *helloInterval* seconds. ***oneWayInside***: Hello packets have been recently received from the neighbor and it has been established that both nodes are

members of the same peer group, but the remote node ID and remote port ID in the neighbor's Hello packets were set to zero. A Hello packet is sent to the neighbor and the Hello timer is restarted.

twoWayInside: Bidirectional communication over this link between this node and the neighbor node has been achieved.

oneWayOutside: Hello packets have been recently received from the neighbor and it has been established that both nodes are members of a different peer group, but the remote node ID and remote port ID in the neighbor's Hello packets were set to zero.

twoWayOutside: Hello packets have recently been received from the neighbor indicating that the neighbor node belongs to a different peer group. The correct remote node ID and remote port ID fields were included in the Hello packet, but the nodal hierarchy list did not include any common peer group. This state can also be reached if a hierarchy mismatch occurs while in the ***commonOutside*** state.

commonOutside: A common level of the routing hierarchy has been found, in addition to achieving full bidirectional communication between the two nodes.

Mib	AtmPnni
Values	notApplicable down attempt oneWayInside twoWayInside oneWayOutside twoWayOutside commonOutside
Default	No default

ATTRIBUTE AtmIf Pnni Rcc remoteNodeId

Access	Read: All Write: Illegal
Description	This attribute indicates the node id at the far end of the link.
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Pnni Rcc remotePortId

Access	Read: All Write: Illegal
Description	This attribute indicates the Port ID of the neighboring node, which is an unsigned integer of 32 bits. When the remote end of a PNNI physical link is terminated by a Nortel Networks Multiservice Switch, the first 16 bits of the hex encoded format represent the *AtmIf* instance of the PNNI link of the remote node, the next 12 bits correspond to the VPI of the PNNI link and the last 4 bits are unspecified (that is, it provide no value for physical interpretation).
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Rcc derivedAggregationToken

Access	Read: All Write: Illegal
Description	This attribute indicates the derived aggregation token value used on this link. The algorithm for computing the value of the derived aggregation token is: 1. If neighbors exchange identical values of the configured aggregation token, that value is the derived aggregation token value. 2. If the configured aggregation token value of one neighbor is zero (default), and that of the other neighbor is non-zero, the non-

zero value is the derived aggregation token value.
3. If the configured aggregation token values of the neighbors are different and both non-zero, the derived aggregation token value is zero.
The attribute is not displayed for links having a type value of ***unknown*** or ***lowestLevelHorizLink***.

Mib: AtmPnni

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE AtmIf Pnni Rcc remoteNodeName

Access: Read: All
Write: Illegal

Description: This attribute indicates the node name and the hierarchy level for the node at the far end of the link.

A typical value for this attribute has the following form: ***OBELIX@96***.

Here, ***OBELIX*** is the node name and ***96*** is the hierarchy level for the up node. The **@** symbol is used to separate the node name from the hierarchy level in the display.

The value of this attribute is an empty string if the far end is not a Nortel Networks Multiservice Switch.

Mib: AtmPnni

Values: String (1..16, ASCII)

Default: No default

ATTRIBUTE AtmIf Pnni Rcc remoteInterfaceName

Access: Read: All
Write: Illegal

Description: This attribute indicates the interface name of the node at the far end of the link.

When the far end of the link is a Nortel Networks Multiservice Switch, this attribute's value can take one of the following forms:
(a) ***AtmIf/<1-4095>*** - If the far end is an ATM interface.
(b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the far end is a VPT interface.
(c) Values ***0-4294967295*** - If the link is a logical link.

The value of this attribute is an empty string if the far end is not a Nortel Networks Multiservice Switch.

Mib	AtmPnni
Values	String (0..19, ASCII)
Default	No default

GROUP AtmIf Pnni Rcc Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes for an *Rcc* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Rcc helloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of Hello packets received across this RCC, including bad and mismatched Hello packets. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Rcc helloPacketsTx

Access	Read: All Write: Illegal

Description	This attribute counts the total number of Hello packets transmitted across this RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Rcc mismatchedHelloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of mismatched Hello packets received over this RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Rcc badHelloPacketsRx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bad Hello packets received over this RCC. The counter wraps to zero when it exceeds the maximum value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Pnni Rcc VirtualChannelDescriptor (Vcd)

Groups	"GROUP AtmIf Pnni Rcc Vcd Provisioned (Prov)"
Scope	Device

Description

AtmIf/n Uni Sig VirtualChannelDescriptor
AtmIf/n Uni Ilmi VirtualChannelDescriptor
AtmIf/n Aini Sig VirtualChannelDescriptor
AtmIf/n Iisp Sig VirtualChannelDescriptor
AtmIf/n Pnni Sig VirtualChannelDescriptor
AtmIf/n Pnni Rcc VirtualChannelDescriptor
AtmIf/n Vpt/m Uni Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Aini Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Iisp Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Pnni Sig VirtualChannelDescriptor
AtmIf/n Vpt/m Pnni Rcc VirtualChannelDescriptor

This component contains the provisionable traffic parameters for a control channel (Sig, *Ilmi* or *Rcc* component).

Mib: AtmPnni

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP AtmIf Pnni Rcc Vcd Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable traffic attributes for a control channel.

Mib: AtmPnni

ATTRIBUTE AtmIf Pnni Rcc Vcd trafficDescType (tdt)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the type of traffic management which is applied to both the transmit and receive direction of this connection as defined in the ATM Forum. The *trafficDescType*

determines the number and meaning of the parameters in the *trafficDescParm* attribute.

Mib: AtmPnni

Values:
3
6
7
8

Default: 6

ATTRIBUTE AtmIf Pnni Rcc Vcd atmServiceCategory (service)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the ATM service category for both directions of the connection.

The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for CBR service. Cells which are delayed beyond the value specified by CellTransfer Delay are assumed to be of significantly reduce value to the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells which are delayed beyond the value specified by CTD are assumed to be of significantly reduced value to the application. Real time VBR service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and

which can be characterized in terms of a PCR, SCR, and MBS. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. Non-real time VBR service may support statistical multiplexing of connections.

The ***unspecifiedBitRate*** service is intended for non-real time applications; that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. UBR service supports a high degree of statistical multiplexing among sources. UBR service does not specify traffic related service guarantees. No numerical commitments are made with respect to the cell loss ratio experienced by a UBR connection, or as to the cell transfer delay experienced by cells on the connection.

Mib: AtmPnni

Values:
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)

Default: rtVariableBitRate

ATTRIBUTE AtmIf Pnni Rcc Vcd weight

Access: Read and write

Criticality: Component

Description: This VCD component has an attribute that is called atmServiceCategory. This attribute specifies the service category that is used by the sig, rcc or ilmi channel. The *weight* attribute is related to two other attributes which are *weightPolicy* and *txQueueLimit*, as mentioned in the following description. These attributes can be found under the atmif/n ca <atmServiceCategory>/ m.

This attribute specifies an override for the *weight* of this unshaped connection. This attribute is ignored for shaped connections, for ABR connections, for connections on a CQC-based ATM FPs and basic VPTs.

When the value is set to ***sameAsCa***, the *weight* is determined by the *weightPolicy* attribute under the CA service category component for all but standard VPT VCCs. For standard VPT VCCs, the *weight* is determined by the VCC's service category, when the value is set to ***sameAsCa***.

When this attribute is set to a value from ***1*** to ***4095***, that value is used for the *weightPolicy* of this connection relative to other connections. For all but standard VPT VCCs, *weightPolicy* determines the proportion of transit cell opportunities which are allocated to this connection, compared to other connections in the same service category. For standard VPT VCCs, *weightPolicy* determines the proportion of transmit cell opportunities which are allocated to this connection, compared to other connections associated with the VPT.

When the value is set to ***upToQueueLimit***, the *weightPolicy* is limited only by the *txQueueLimit*.

Mib	AtmPnni
Values	Decimal (1..4095) sameAsCa upToQueueLimit
Default	sameAsCa

ATTRIBUTE AtmIf Pnni Rcc Vcd qosClass (qos)

Access	Read and write
Criticality	Component
Description	This attribute specifies the quality of service for both the forward and backward direction for this connection. Class ***1*** supports a QOS that meets Service Class A performance requirements (Circuit emulation, constant bit rate video). Class ***2*** supports a QOS that meets Service Class B performance requirements (Variable bit rate audio and video). Class ***3*** supports a QOS that meets Service Class C performance

requirements (Connection-Oriented Data Transfer).

Class ***4*** supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer).

Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.

Mib: AtmPnni

Values:
0
1
2
3
4

Default: 2

ATTRIBUTE AtmIf Pnni Rcc Vcd trafficShaping (trShaping)

Access: Read and write

Criticality: Component

Description: This attribute specifies whether this connection uses traffic shaping when transmitting traffic to the ATM interface.

When ***sameAsCa*** is selected, traffic shaping for this connection is based on the *trafficShaping* attribute of the connection's service category component under the *AtmIf CA*. If the service category has traffic shaping enabled, then traffic shaping is enabled for the connection. Note that enabling traffic shaping may have no effect under certain cases. These cases are listed in the description of the *trafficShaping* operational attribute, which is under the *Vcc Tm* and *Vpc Tm* components.

When ***disabled*** is selected, traffic shaping for this connection is disabled.

Mib: AtmPnni

Values:
disabled
sameAsCa

Default	disabled

ATTRIBUTE AtmIf Pnni Rcc Vcd unshapedTransmitQueueing (unshap)

Access	Read and write
Criticality	Component
Description	This attribute only applies when this connection is unshaped. This attribute specifies the transmit queuing method for this connection if it is unshaped. Refer to the *unshapedTransmitQueueing* attribute under the *AtmIf CA* service category subcomponent for more details on the meaning of this attribute. When this attribute is set to ***sameAsCa***, the transmit queuing method for the connection is based on the *unshapedTransmitQueueing* attribute of the connection's service category component under the *ConnectionAdministrator.* When this attribute is set to ***common***, transmit traffic on this unshaped connection is destined for the common queue. The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used
Mib	AtmPnni
Values	common sameAsCa
Default	sameAsCa

ATTRIBUTE AtmIf Pnni Rcc Vcd usageParameterControl (upc)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this connection enforces usage parameter control when receiving traffic from the ATM interface. When ***sameAsCa*** is selected, UPC for the connection is based on the *usageParameterControl* attribute of the connection's service

category component under the *ConnectionAdministrator*. If the service category has UPC enabled, then UPC is enabled for the connection. Note that enabling UPC may have no effect under certain cases. These cases are listed in the description of the *usageParameterControl* operational attribute, which is under the *Vcc Tm* or *Vpc Tm* component.

When ***disabled*** is selected, UPC for this connection is disabled.

The value ***sameAsInterface*** is for migration from previous software releases, but should no longer be used

Mib: AtmPnni

Values: disabled
sameAsCa

Default: disabled

ATTRIBUTE AtmIf Pnni Rcc Vcd trafficDescParm (tdp)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute is a vector of five traffic parameters whose meanings are defined by the *trafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR) and requested shaping rate are expressed in cell/s. Maximum burst size (MBS) is expressed in cells. CDVT is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for connection admission control (CAC). The value of CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, CDVT is ignored. The values of PCR, SCR and requested shaping rate are used to determine the actual shaping rate where traffic shaping is enabled.

When *trafficDescType* is ***3***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1.

This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero.

When *trafficDescType* is ***6***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 and 1 traffic; parameter 3 represents the MBS for CLP equal to 0 and 1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***7***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *trafficDescType* is ***8***, parameter 1 represents the PCR for CLP equal to 0 and 1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in calculations of CAC and shaping rate.

For *trafficDescType* ***3*** the traffic is shaped at the next rate less than the PCR.

For *trafficDescType* ***6***, ***7***, and ***8***, the traffic is shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic is shaped at the next rate above the PCR.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	(250, 160, 5, 0, 0)

COMPONENT AtmIf Pnni Address (Addr)

Instance	address [String (1..40, ASCII)] addressType [primary alternate registered default]
Groups	"GROUP AtmIf Pnni Addr Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Address/address,type* *AtmIf/n Iisp Address/address,type* *AtmIf/n Uni Address/address,type* *AtmIf/n Pnni Address/address,type* *AtmIf/n Vpt/m Aini Address/address,type* *AtmIf/n Vpt/m Iisp Address/address,type* *AtmIf/n Vpt/m Uni Address/address,type* *AtmIf/n Vpt/m Pnni Address/address,type*

This component represents an address (dynamic or static) associated with the interface. The index is a string of 1 to 40 hex digits or a single wildcard (‘?’), and a type. The type identifies whether the *Address* component is for a ***primary***, ***alternate, registered***, or ***default*** address.

The types ***primary*** and ***alternate*** are used for provisioned

addresses. The type ***registered*** is used for dynamic addresses registered through ILMI. The type ***default*** is used for Soft PVP and Soft PVC addresses.Virtual interfaces do not have addresses of
type ***default***.

The wildcard is only valid for provisioned addresses. If the address is a single wildcard, then that indicates that the interface supports all addresses. If there is no better match, then this interface may be chosen in the routing. If there is more than one interface with a single wildcard static address, then the choice is driven through a round robin algorithm.

The round robin algorithm tries the primary routes and then the alternate routes if none of the primary routes succeed.
If this node participates in a PNNI hierarchy, then a *PnniInfo* subcomponent can be provisioned under the *AtmAddress* component to specify the level to which this address will be advertised.

Mib	AtmPnni
Opt. Subcomp.	"COMPONENT AtmIf Pnni Addr TerminateSPvpAndSPvc (TermSP)" "COMPONENT AtmIf Pnni Addr PnniInfo"
Common Verbs	Help List Display Add DELete

GROUP AtmIf Pnni Addr Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *Address* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Addr scope

Access	Read: All Write: Illegal
Description	This attribute indicates the scope of the ATM address, which is the highest level to which this address will be advertised in the PNNI hierarchy. If no *PnniInfo* subcomponent has been provisioned, then the scope will default to the level of this node in the PNNI hierarchy. If this node does not participate in a PNNI hierarchy, then this attribute will have the value of -1.
Mib	AtmPnni
Values	Signed (-1..104)
Default	No default

ATTRIBUTE AtmIf Pnni Addr reachability (reach)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmPnni
Values	internal exterior
Default	No default

COMPONENT AtmIf Pnni Addr TerminateSPvpAndSPvc (TermSP)

Scope	Device
Description	*AtmIf/n Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Iisp Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Uni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Pnni Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Aini Address/address,type TerminateSPvpAndSPvc* *AtmIf/n Vpt/m Iisp Address/address,type TerminateSPvpAndSPvc*

AtmIf/n Vpt/m Uni Address/address,type TerminateSPvpAndSPvc
AtmIf/n Vpt/m Pnni Address/address,type TerminateSPvpAndSPvc

The presence of this subcomponent indicates that SPvp and SPvc call setups terminate at this node if the destination address of the SPVP or SPVC matches the *Address* instance.

Mib: AtmPnni

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT AtmIf Pnni Addr PnniInfo

Groups: "GROUP AtmIf Pnni Addr PnniInfo Provisioned (Prov)"

Scope: Device

Description:

AtmIf/n Aini Addr/address,type PnniInfo
AtmIf/n Iisp Addr/address,type PnniInfo
AtmIf/n Uni Addr/address,type PnniInfo
AtmIf/n Pnni Addr/address,type PnniInfo
AtmIf/n Vpt/m Aini Addr/address,type PnniInfo
AtmIf/n Vpt/m Iisp Addr/address,type PnniInfo
AtmIf/n Vpt/m Uni Addr/address,type PnniInfo
AtmIf/n Vpt/m Pnni Addr/address,type PnniInfo

This component contains provisioned information associated with

	the ATM address related to PNNI. This component appears only under provisioned *Address* components.
Mib	AtmPnni
Common Verbs	Help List Display Add DELete

GROUP AtmIf Pnni Addr PnniInfo Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisioned attributes relating to PNNI for a *PnniInfo* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Addr PnniInfo scope

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the scope of the ATM address, which is the highest level up to which this address will be advertised in the PNNI hierarchy. The scope must be set to a value numerically less than or equal to the level of the lowest level peer group containing this node. Setting the scope to 0 will cause the address to be advertised globally within this PNNI routing domain.
Mib	AtmPnni
Values	Signed (-1..104)
Default	-1

ATTRIBUTE AtmIf Pnni Addr PnniInfo reachability (reach)

Access	Read: All Write: All
Criticality	Component
Description	This attribute indicates whether the address is internal or exterior. An internal reachable address is an address of a destination that is directly attached to the logical node advertising the address. An exterior reachable address is an address that can be reached through a PNNI routing domain, but which is not located in that PNNI routing domain.
Mib	AtmPnni
Values	internal exterior
Default	internal

COMPONENT AtmIf Pnni PathTraceFilter (Ptf)

Groups	"GROUP AtmIf Pnni Ptf Criteria" "GROUP AtmIf Pnni Ptf Operational (Oper)" "GROUP AtmIf Pnni Ptf RecordControl (Record)"
Scope	Device
Description	*AtmIf/n Aini PathTraceFilter* *AtmIf/n Iisp PathTraceFilter* *AtmIf/n Uni PathTraceFilter* *AtmIf/n Pnni PathTraceFilter* *AtmIf/n Vpt/vpi Aini PathTraceFilter* *AtmIf/n Vpt/vpi Iisp PathTraceFilter* *AtmIf/n Vpt/vpi Uni PathTraceFilter* *AtmIf/n Vpt/vpi Pnni PathTraceFilter* This component represents the path trace filtering capability on the ATM signaling interface. This capability allows the user to trace connections during the call setup phase against the criteria associated with this component. Only the connections that match all the criteria are traced. When this component is provisioned, the network operator can control tracing activities by using the *Start*, *Stop*, and *Clear*

verbs. When the *Start* verb is issued, the *traceTimeout* timer restarts. Once the timer times out, filtering stops and records are not removed. When the *Stop* verb is issued, the filter stops and the trace records are kept until the user clears them. When the *Clear* verb is issued, the trace records are cleared. When *AtmPathTraceFilter* component is deleted, all records are cleared.

Once the maximum specified by *maxTraceRecords* attribute under the *PathTraceFilter* component or *maxTraceRecords* attribute under the *Lp/n Eng PTrace* component has been reached, the oldest record is deleted.

The *AtmPathTraceFilter* component is not permitted to be added when the *Lp/n Eng PTrace Ov maxTraceRecords* attribute is set to zero.

Mib	AtmPnni
Dyn. Subcomp.	"COMPONENT AtmIf Pnni Ptf PathTraceRecord (PTRecord)"
Common Verbs	Help List Display Add DELete

VERB START AtmIf Pnni Ptf

Impact: Service

Description:

START AtmIf/n Aini PathTraceFilter
START AtmIf/n Iisp PathTraceFilter
START AtmIf/n Uni PathTraceFilter
START AtmIf/n Pnni PathTraceFilter
START AtmIf/n Vpt/vpi Aini PathTraceFilter
START AtmIf/n Vpt/vpi Iisp PathTraceFilter
START AtmIf/n Vpt/vpi Uni PathTraceFilter
START AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command starts the path tracing based on the specified filtering criteria.

When the command is issued, the *traceTimeout* timer is reset.

VERB STOP AtmIf Pnni Ptf

Impact: Service

Description:

STOP AtmIf/n Aini PathTraceFilter
STOP AtmIf/n Iisp PathTraceFilter
STOP AtmIf/n Uni PathTraceFilter
STOP AtmIf/n Pnni PathTraceFilter
STOP AtmIf/n Vpt/vpi Aini PathTraceFilter
STOP AtmIf/n Vpt/vpi Iisp PathTraceFilter
STOP AtmIf/n Vpt/vpi Uni PathTraceFilter
STOP AtmIf/n Vpt/vpi Pnni PathTraceFilter

This command causes the filter to stop, but keeps the trace records.

VERB CLEAR AtmIf Pnni Ptf

Impact	Service
Description	*CLEAR AtmIf/n Aini PathTraceFilter* *CLEAR AtmIf/n Iisp PathTraceFilter* *CLEAR AtmIf/n Uni PathTraceFilter* *CLEAR AtmIf/n Pnni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Aini PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Iisp PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Uni PathTraceFilter* *CLEAR AtmIf/n Vpt/vpi Pnni PathTraceFilter* This command clears the path trace records associated with this filter. This command is rejected on an active filter.

GROUP AtmIf Pnni Ptf Criteria

Properties	Operational
Description	This group contains the operational criteria for the *PathTraceFilter* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Ptf traceInfo (tInfo)

Access	Read: All Write: All
Description	This attribute specifies the trace information that is included in the trace records. ***crankBack***: Crankback information is included if the connection is cranked back during the connection setup phase. If the option is turned on, all attempted paths including the final one are recorded. If the option is turned off, only the information of the final path is recorded. If the connection fails to reach the destination, no path information is returned. ***connId***: Connection Identifier information is included. ***callRef***: For point-to-point connections, the call reference is included. For point-to-multipoint connections, the call reference

and end point reference are both included.

Basic trace information, such as node and port identifiers, are always included.

Mib: AtmPnni

Set of: crankBack
connId
callRef

Default: (crankBack, connId, callRef)

ATTRIBUTE AtmIf Pnni Ptf calledPartyPrefix (cldPref)

Access: Read: All
Write: All

Description: This attribute specifies an NSAP address prefix, which is compared with the called party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced.

An empty string matches any address.

Mib: AtmPnni

Values: String (0..20, Hex)

Default: No default

ATTRIBUTE AtmIf Pnni Ptf callingPartyPrefix (clgPref)

Access: Read: All
Write: All

Description: This attribute specifies an NSAP address prefix, which is compared with the calling party IE in the connection setup request. When all the criteria in the filter match successfully, the call is traced.

An empty string matches any address.

Mib: AtmPnni

Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf connectionType (type)

Access	Read: All Write: All
Description	This attribute specifies a connection type (SVC, SPVC, SVP, SPVP), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmPnni
Set of	svc spvc svp spvp
Default	(svc, spvc, svp, spvp)

ATTRIBUTE AtmIf Pnni Ptf connectionConfiguration (config)

Access	Read: All Write: All
Description	This attribute specifies a type of topology (point-to-point or point-to-multipoint), which is compared against the connection setup request. When all the criteria in the filter match successfully, the call is traced.
Mib	AtmPnni
Set of	ptp ptmp
Default	(ptp, ptmp)

ATTRIBUTE AtmIf Pnni Ptf serviceCategory (svcCat)

Access	Read: All Write: All

Description	This attribute specifies the service categories, which is compared against the connection setup request. When the all criteria in the filter match successfully, the call is traced.
Mib	AtmPnni
Set of	cbr rtVbr nrtVbr ubr
Default	(cbr, rtVbr, nrtVbr, ubr)

GROUP AtmIf Pnni Ptf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *PathTraceFilter* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Ptf state

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the filter. ***active***: Indicates the filter is active. ***inactive:*** Indicates the filter is inactive. The records are available if the filter is stopped by the user using the *Stop* verb or if the filter has timed out.
Mib	AtmPnni
Values	active inactive
Default	inactive

ATTRIBUTE AtmIf Pnni Ptf recordCount

Access	Read: All Write: Illegal
Description	This attribute indicates the number of records that have been acquired so far for this filter. The maximum number of records that can be stored is specified by *Lp/n Eng PathTrace maxTraceRecords* or *AtmPathTraceFilter maxTraceRecords*, which ever is less.
Mib	AtmPnni
Values	Decimal (0..200)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf matchedConnections

Access	Read: All Write: Illegal
Description	This attribute indicates the number of connections that match the criteria of this filter.
Mib	AtmPnni
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf elapsedTime

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes that have elapsed since the start of the filter.
Mib	AtmPnni
Values	Decimal (0..70560)
Units	minutes
Default	No default

ATTRIBUTE AtmIf Pnni Ptf timeRemaining

Access	Read: All Write: Illegal
Description	This attribute indicates the number of minutes remaining before the filter terminates itself.
Mib	AtmPnni
Values	Decimal (0..70560)
Units	minutes
Default	No default

GROUP AtmIf Pnni Ptf RecordControl (Record)

Properties	Operational
Description	This group contains the operational attributes for the record control of the *PathTraceFilter* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Ptf traceTimeout

Access	Read: All Write: All
Description	This attribute specifies how long this filter remains active. At the end of this time, the filter is stopped and all trace records associated with this filter are available.
Mib	AtmPnni
Values	Decimal (1..70560)
Units	minutes
Default	60

ATTRIBUTE AtmIf Pnni Ptf maxTraceRecords (mRecords)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored with the filter.

	Once the maximum has been reached, the oldest record is removed.
Mib	AtmPnni
Values	Decimal (1..200)
Default	2

COMPONENT AtmIf Pnni Ptf PathTraceRecord (PTRecord)

Groups	"GROUP AtmIf Pnni Ptf PTRecord Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord* *AtmIf/n Iisp Ptf PTRecord* *AtmIf/n Uni Ptf PTRecord* *AtmIf/n Pnni Ptf PTRecord* *AtmIf/n Vpt/n Aini Ptf PTRecord* *AtmIf/n Vpt/n Iisp Ptf PTRecord* *AtmIf/n Vpt/n Uni Ptf PTRecord* *AtmIf/n Vpt/n Pnni Ptf PTRecord* This component represents the path trace record for the last failed connection against this filter.
Mib	AtmPnni
Dyn. Subcomp.	"COMPONENT AtmIf Pnni Ptf PTRecord Hop"
Common Verbs	Help List Display

GROUP AtmIf Pnni Ptf PTRecord Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the path trace record component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Ptf PTRecord status

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the trace. The string is one of the following: ***Completed normally****:* The trace completed normally. ***Incomplete****:* Partial trace returned. ***Exceeded information element length limitations****:* The number of traced nodes exceeded the maximum number of hops. ***Exceeded message length limitations****:* The message length exceeded the maximum allowed size.
Mib	AtmPnni
Values	Completed normally Incomplete Exceeded information element length limitations Exceeded message length limitations
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord timeStamp

Access	Read: All Write: Illegal
Description	This attribute records the date and time of when the trace is completed.
Mib	AtmPnni
Values	Time (DHMS)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord srcPortId

Access	Read: All Write: Illegal

Description	This attribute indicates the trace's source port identifier used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmPnni
Values	Decimal (1..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord srcPortName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.
Mib	AtmPnni
Values	String (40, ASCII)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord causeCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord diagCode

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute contains the diagnostic code in the transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Mib	AtmPnni
Values	String (0..8, ASCII)
Default	No default

COMPONENT AtmIf Pnni Ptf PTRecord Hop

Instance	Decimal (0..200)
Groups	"GROUP AtmIf Pnni Ptf PTRecord Hop Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini Ptf PTRecord Hop/n* *AtmIf/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Uni Ptf PTRecord Hop/n* *AtmIf/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n* *AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n* *AtmIf/n Vcc/x.y PTRecord Hop/n* *AtmIf/n Vpc/n PTRecord Hop/n* *AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n* This component stores the result of a hop from a trace. An instance of this component is dynamically created for each hop in a trace record.

	Depending on the hops, different attributes are present.
Mib	AtmPnni
Dyn. Subcomp.	"COMPONENT AtmIf Pnni Ptf PTRecord Hop VendorSpecificInfo (Vsi)"
Common Verbs	Help List Display

GROUP AtmIf Pnni Ptf PTRecord Hop Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the component *AtmPathTraceFilterRecordHop*.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop ingressVpiVci (vpiVci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only. The VPI.VCI values are included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmPnni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop ingressDlci (dlci)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. This attribute is displayed for FrAtm interfaces only. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop ingressCallReference (callref)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup message. The call reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value
Mib	AtmPnni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop ingressEndPointReference (epref)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. The end point reference is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmPnni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop nodeId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the lowest level node ID traversed for this hop.
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop nodeName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the *nodeName* under the *ModuleData* component for this hop. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmPnni
Values	String (12, ASCII)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop portId

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop portName

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmPnni
Values	String (55, ASCII)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop pnniTraceContRefusalIndPresent (refusal)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. The “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.

Mib	AtmPnni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop crankbackDestNodeIndPresent (dest)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Received at the Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node, receiving a crankback for this call from a non-PNNI interface.
Mib	AtmPnni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop pnniCrankbackGapIndPresent (gap)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call experienced a crankback, where no Trace Transit List IE was returned by the node initiating the crankback.
Mib	AtmPnni
Values	absent present
Default	absent

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop crankBackCause (cause)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the crankback cause. Please refer to Private-Network-to-Network-Interface Specification Version 1.0 for more information. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmPnni
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop blockedTransitType (type)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked transit type. This attribute is present when the *traceInfo* attribute sets the ***crankBack*** value and the connection has initiated the crankback procedure.
Mib	AtmPnni
Values	Succeeding end blocked Blocked node Blocked link
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop blockedNodeId (bNodeId)

Access	Read: All Write: Illegal
Criticality	Component

Description	This attribute indicates the blocked node ID during the call setup request. The blocked node ID identifies the logical node where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked node.***
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop blockedLinkPrecedingNodeId (pNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's preceding node ID during the call setup request. The blocked link's preceding node ID identifies the logical node preceding a link, where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop blockedLinkPortId (bPortId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's port identifier used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier.

	This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop blockedLinkSucceedingNodeId (sNodeId)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the blocked link's succeeding node ID during the call setup request. The blocked link's succeeding node ID identifies the logical node succeeding a link where the connection or party has been blocked. This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***
Mib	AtmPnni
Values	String (22, Hex)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop dstVpiVci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for ATM interfaces. The VPI.VCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.

Mib	AtmPnni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop dstDlci

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces. The DLCI is included in the trace when the *traceInfo* attribute sets the ***connId*** value.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop dstCallReference (dcr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value.
Mib	AtmPnni
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop dstEndPointReference (depr)

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node. The call reference value is included in the trace when the *traceInfo* attribute sets the ***callRef*** value and the connection is point-to-multipoint.
Mib	AtmPnni
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop specifiedPath

Access	Read: All Write: Illegal
Criticality	Component
Description	This attribute indicates whether this hop is the originator of this manually configured path. The Nortel Networks Multiservice Switch provides this information by including it in the vendor-specific information group.
Mib	AtmPnni
Values	no yes
Default	no

COMPONENT AtmIf Pnni Ptf PTRecord Hop VendorSpecificInfo (Vsi)

Instance	Decimal (0..10)
Groups	"GROUP AtmIf Pnni Ptf PTRecord Hop Vsi Operational (Oper)"
Scope	Device

Description

AtmIf/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Aini Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Iisp Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Uni Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Pnni Ptf PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpc/n PTRecord Hop/n VendorSpecificInfo/m
AtmIf/n Vpt/n Vcc/x.y PTRecord Hop/n VendorSpecificInfo/m

This component stores the vendor-specific information of a node other than a Nortel Networks Multiservice Switch for a hop. An instance of this component is dynamically created for the vendor-specific information group of a hop in a trace. Several instances of this component are created if the trace has several groups of vendor-specific information.

All the trace information for a Nortel Networks Multiservice Switch is stored in the *PTRecord Hop/** component.

Mib

AtmPnni

Common Verbs

Help
List
Display

GROUP AtmIf Pnni Ptf PTRecord Hop Vsi Operational (Oper)

Properties

Operational

Description

This group contains the operational attributes for the component *AtmPathTraceFilterRecordHopVen*.

Mib

AtmPnni

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop Vsi length

Access

Read: All
Write: Illegal

Description	This attribute indicates the length of the vendor-specific information group.
Mib	AtmPnni
Values	Decimal (0..11)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop Vsi organizationUniqueId (oui)

Access	Read: All Write: Illegal
Description	This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.
Mib	AtmPnni
Values	String (3, Dashed Hex)
Default	No default

ATTRIBUTE AtmIf Pnni Ptf PTRecord Hop Vsi data

Access	Read: All Write: Illegal
Description	This attribute indicates the contents of the vendor-specific information group.
Mib	AtmPnni
Values	String (1..8, Hex)
Default	No default

COMPONENT AtmIf Pnni PathTraceTestConnection (Ptt)

Groups	"GROUP AtmIf Pnni Ptt Operational (Oper)"
Scope	Device
Description	*AtmIf/n Aini PathTraceTestConnection* *AtmIf/n Iisp PathTraceTestConnection* *AtmIf/n Uni PathTraceTestConnection* *AtmIf/n Pnni PathTraceTestConnection*

AtmIf/n Vpt/vpi Aini PathTraceTestConnection
AtmIf/n Vpt/vpi Iisp PathTraceTestConnection
AtmIf/n Vpt/vpi Uni PathTraceTestConnection
AtmIf/n Vpt/vpi Pnni PathTraceTestConnection

This component provides the capability to control the Path Trace Test Connection. A test connection is one way to find the logical nodes and ports that a connection traverses to a destination interface.

The *Trace* verb is used to initiate the test connection. The test connection is always released once it reaches the trace destination. The test connection responds with the trace results collected during a complete or partial trace.

Mib: AtmPnni

Common Verbs:
- Help
- List
- Display

VERB TRACE Atmlf Pnni Ptt

Impact: Passive

Description:

TRACE AtmIf/n Aini AtmPathTraceTest
TRACE AtmIf/n Iisp AtmPathTraceTest
TRACE AtmIf/n Uni AtmPathTraceTest
TRACE AtmIf/n Pnni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Aini AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Iisp AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Uni AtmPathTraceTest
TRACE AtmIf/n Vpt/vpi Pnni AtmPathTraceTest

This command is used to initiate a Path Trace Test Connection and then responds with a list of logical nodes and ports from the trace source node to the trace destination node.

Only one *Trace* command is allowed at a time per signaling interface. If the test connection times out, the command fails.

GROUP AtmIf Pnni Ptt Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *AtmPathTraceTest* component.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Ptt traceCrankback

Access	Read: All Write: All
Description	This attribute controls what trace information the trace records include. If the option is turned on, all attempted paths are recorded including the final one. If the option is turned off, only the information of the final path is recorded. If the connection fails to reached the destination, no path information is returned.
Mib	AtmPnni
Values	no yes
Default	no

ATTRIBUTE AtmIf Pnni Ptt txTrafficDescType (txTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management applied to the transmit direction, as defined by the ATM Forum. The *txTrafficDescType* determines the number and meaning of the parameters in the *txTrafficDescParm* attribute.
Mib	AtmPnni
Values	1 2 3 4 5 6

	7 8 9
Default	1

ATTRIBUTE AtmIf Pnni Ptt rxTrafficDescType (rxTdt)

Access	Read: All Write: All
Description	This attribute specifies the type of traffic management, which is applied to the receive direction of this connection, as defined in the ATM Forum. The *rxTrafficDescType* determines the number and meaning of the parameters in the *rxTrafficDescParm* attribute When ***sameAsTx*** is selected, the *rxTrafficDescType* and the *rxTrafficDescParm* are taken from the transmit values.
Mib	AtmPnni
Values	1 2 3 4 5 6 7 8 9 sameAsTx
Default	sameAsTx

ATTRIBUTE AtmIf Pnni Ptt atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the ATM service category for both directions of the connection.

If this attribute is set to ***derivedFromBBC***, the Broadband Bearer Capability (BBC) and *bestEffort* attributes are used to determine the *atmServiceCategory* of this connection.

If this attribute is set to a possible attribute other than ***derivedFromBBC***, the value of this attribute is used to override the provisioned BBC IE parameters. In those cases, the BBC attributes are not used.

The ***constantBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation such as for voice and video applications.

The ***rtVariableBitRate*** service category is intended for real time applications, that is, those requiring tightly constrained delay and delay variation, such as for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as “bursty”. Cells, which are delayed beyond the value specified by CTD, are assumed to be of significantly reduced value to the application. The VBR real time service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and can be characterized in terms of a PCR, SCR, and MBS.

The ***unspecifiedBitRate*** service is intended for non-real time applications, that is, those not requiring tightly constrained delay and delay variation. UBR sources are expected to be bursty. The UBR service supports a high degree of statistical multiplexing among sources.

Mib — AtmPnni

Values
unspecifiedBitRate (ubr)
constantBitRate (cbr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
derivedFromBBC (derived)

Default	unspecifiedBitRate

ATTRIBUTE AtmIf Pnni Ptt fwdQosClass (fwdQos)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the quality of service for the forward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters.
Mib	AtmPnni
Values	0 1 2 3 4
Default	0

ATTRIBUTE AtmIf Pnni Ptt bwdQosClass (bwdQos)

Access	Read: All Write: All
Criticality	Component

Description	This attribute specifies the quality of service for the backward direction for this connection. Class ***1*** supports a QOS that will meet Service Class A performance requirements (circuit emulation, constant bit rate video). Class ***2*** supports a QOS that will meet Service Class B performance requirements (variable bit rate audio and video). Class ***3*** supports a QOS that will meet Service Class C performance requirements (connection-oriented data transfer). Class ***4*** supports a QOS that will meet Service Class D performance requirements (connection-less data transfer). Class ***0*** is the unspecified bit rate QOS class; no objective is specified for the performance parameters. The ***sameAsFwd*** selection sets the backward quality of service to be the same as the forward quality of service.
Mib	AtmPnni
Values	0 1 2 3 4 sameAsFwd
Default	sameAsFwd

ATTRIBUTE AtmIf Pnni Ptt bearerClassBbc (bcBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the bearer capability. It is one of the Broadband Bearer Capability (BBC) attributes. The purpose of the BBC information element is to indicate a requested

broadband connection-oriented bearer service to be provided by the network.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection and is derived from the value of the *atmServiceCategory*. Either this attribute must be set to ***derivedFromServiceCategory***, or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end-to-end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is set, the user is requesting more than an ATM only service. The network may look at the AAL to provide inter-working based on its contents.

Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements. When ***c*** is set, the user is requesting more than an ATM only service. The network inter-working function may look at the AAL and provide service based on it.

Class ***x*** service is a connection-oriented ATM transport service where the AAL, *trafficType* (***vbr*** or ***cbr***), and timing requirements are user defined (that is, transparent to the network).When ***x*** is set, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocols.

Mib	AtmPnni
Values	a c x derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Pnni Ptt transferCapabilityBbc (tcBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the transfer capability for this connection. UNI 3.0/3.1 traffic type and end-to-end timing parameters are mapped into this parameter as follows: <transferCapability: TrafficType, Timing> ***0***: NoIndication, NoIndication ***1***: NoIndication, yes ***2***: NoIndication, no ***5***: CBR, yes ***8***: VBR, NoIndication ***9***: VBR, yes ***10***: VBR, no ***NotApplicable*** specifies that the user does not want to specify the transfer capability. The CBR traffic type refers to the traffic offered on services such as a constant bit rate video service or a circuit emulation. The VBR traffic type refers to the traffic offered on services such as packetized audio and video, or data. The value ***NoIndication*** for traffic type is used if the user has not set the traffic type. This is also the case for end-to-end timing. The value ***yes*** for end-to-end timing indicates that end-to-end timing is required. The value ***no*** for end-to-end timing indicates that end-to-end timing is not required. The value ***derivedFromServiceCategory*** specifies that the actual value which is used for this connection and is derived from the value of the *atmServiceCategory*. Either, this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.
Mib	AtmPnni

Values	0 1 2 5 8 9 10 notApplicable derivedFromServiceCategory
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Pnni Ptt clippingBbc (cBbc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value for the clipping susceptibility parameter in the BBC IE. This attribute is only used for SPVC connections. It is one of the Broadband Bearer Capability attributes. Clipping is an impairment where the first fraction of a second of information to be transferred is lost. It occurs after a call is answered and before an associated connection is switched through.
Mib	AtmPnni
Values	no yes
Default	no

ATTRIBUTE AtmIf Pnni Ptt bestEffort

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the value of the best effort parameter in the ATM Traffic Descriptor IE. It is one of the Broadband Bearer

Capability attributes.

The value ***indicated*** implies that the quality of service for this connection is not guaranteed.

The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.

The value ***derivedFromServiceCategory*** specifies that the actual value, which is used for this connection, is derived from the value of the *atmServiceCategory.* Either this attribute must be set to ***derivedFromServiceCategory*** or the *atmServiceCategory* attribute must be set to ***derivedFromBBC***, but not both.

Mib	AtmPnni
Values	indicated notIndicated derivedFromServiceCategory (derived)
Default	derivedFromServiceCategory

ATTRIBUTE AtmIf Pnni Ptt testCalledAddress

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the destination address of this test connection.
Mib	AtmPnni
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmIf Pnni Ptt testCalledVpiVci

Access	Read: All Write: All
Criticality	Component

Description	This attribute specifies the called VPI.VCI values for this test connection on the destination interface.
Mib	AtmPnni
Values	Integer Sequence (0..4095; 0..65535)
Default	No default

ATTRIBUTE AtmIf Pnni Ptt testSpecifiedPath

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the path that will be used to get to the destination of this test connection.
Mib	AtmPnni
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE AtmIf Pnni Ptt bwdQosParameters (bqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the backward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the

extended QoS information element.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Pnni Ptt fwdQosParameters (fqp)

Access	Read and write
Description	This attribute is a vector of three elements that specify the quality of service parameters for the forward direction for this connection. This attribute is used for SPVC connections. The ***cdv*** element specifies the acceptable peak-to-peak cell delay variation (CDV) of the real-time connections (CBR and rt-VBR). It is signaled through the extended QoS information element. The ***ctd*** specifies the acceptable maximum cell transfer delay (maxCtd) of the real-time connections (CBR and rt-VBR). It is signaled through the end-to-end transit delay information element. The ***clr*** specifies the acceptable cell loss ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections. It is signaled through the extended QoS information element.
Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	(cdv: 16777215, ctd: 16777215, clr: 255)

ATTRIBUTE AtmIf Pnni Ptt txTrafficDescParm (txTdp)

Access	Read: All Write: All
Description	This attribute is a vector of five traffic parameters whose meanings are defined by the *txTrafficDescType* attribute. The values of peak cell rate (PCR), sustained cell rate (SCR), minimum cell rate (MCR) and requested shaping rate are expressed in cells/second. THe maximum burst size (MBS) is expressed in cells. The cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS, MCR and CDVT are used for the connection admission control (CAC). The value of the CDVT is only used for connections where the *atmServiceCategory* is ***constantBitRate***. For all other values of *atmServiceCategory*, the CDVT is ignored. The values of PCR, SCR, and the requested shaping rate are used to determine the actual shaping rate, where traffic shaping is enabled. When *txTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero. When *txTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be non-zero. Parameters 2 and 3 must be zero. When *txTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic with cell discard; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero. When *txTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic with cell tagging; parameter 2 represents the PCR for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero

value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must be greater than or equal to parameter 2. Parameters 1 and 2 must be non-zero. Parameter 3 must be zero.

When *txTrafficDescType* is ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic; parameter 4 represents the CDVT; and parameter 5 represents the requested shaping rate. A non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2. Parameter 5 must either be zero (unused) or greater than or equal to parameter 2.

When *txTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR; parameter 5 represents the requested shaping rate; and parameter 4 is not used and must be zero. A

non-zero value in parameter 5 overrides any value in parameter 1. This result is used as the PCR. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may be optionally zero. Parameter 5 must either be zero (unused) or greater than or equal to parameter 3.

Whenever it is valid for PCR to be specified, parameter 5 may also be used to specify a requested shaping rate. A non-zero value in parameter 5 overrides the value in parameter 1 and is used as the peak cell rate in the calculations of CAC and the shaping rate.

For *txTrafficDescType* ***3***, ***4***, ***5*** and ***9***, the transmit traffic should be shaped at the next rate less than the PCR.

For *txTrafficDescType* ***6***, ***7,*** and ***8***, the transmit traffic should be shaped at the highest available rate which is between PCR and SCR. However, if there is no available shaping rate between PCR and SCR, traffic should be shaped at the next rate above the PCR.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

ATTRIBUTE AtmIf Pnni Ptt rxTrafficDescParm (rxTdp)

Access	Read: All Write: All
Description	This attribute is a vector of four traffic parameters whose meanings are defined by the *rxTrafficDescType* attribute. The values of the peak cell rate (PCR) and sustained cell rate (SCR) are expressed in cells/second. The maximum burst size (MBS) is expressed in cells. The value of the cell delay variance tolerance (CDVT) is expressed in microseconds. The values of PCR, SCR, MBS and CDVT are used for the usage parameter control (UPC). When *rxTrafficDescType* is ***1*** or ***2***, all of the parameters must be set to zero (unused).

When *rxTrafficDescType* is ***3***, parameter 1 represents the PCR for CLP0+1 traffic. Parameter 1 must be non-zero. Parameters 2 and 3 must be set to zero (unused).

When *rxTrafficDescType* is ***4***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell discard. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***5***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the PCR for CLP equal to 0 traffic with cell tagging. Parameters 1 and 2 must be non-zero. Parameter 3 must be set to zero (unused). Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is a ***6***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP0+1 traffic; parameter 3 represents the MBS for CLP0+1 traffic. Parameters 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to Parameter 2.

When *rxTrafficDescType* is ***7***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell discard; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameters 1, 2 and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***8***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the SCR for CLP equal to 0 traffic with cell tagging; parameter 3 represents the MBS for CLP equal to 0 traffic. Parameter 1, 2, and 3 must be non-zero. Parameter 1 must be greater than or equal to parameter 2.

When *rxTrafficDescType* is ***9***, parameter 1 represents the PCR for CLP0+1 traffic; parameter 2 represents the CDVT; parameter 3 represents the MCR. Parameter 4 is not used and must be zero. Parameter 1 must either be zero or be greater than or equal to parameter 3. Parameter 3 may optionally be zero.

When *rxTrafficDescType* is any value from ***3*** through ***8***, parameter 4 represents the CDVT. If this value is zero, the CDVT is taken from the *ConnectionAdministrator* defaults for the particular *atmServiceCategory* of this connection.

When *rxTrafficDescriptorType* is ***3*** through ***9***, there are certain extreme combinations of *rxTrafficDescParm* which are outside the capabilities of the UPC hardware.

To calculate the limits, use the following formulae:
I1 = 1 000 000 000 / PCR
L1 = CDVT * 1000
I2 = 1 000 000 000 / SCR
L2 = CDVT + (MBS - 1) * (I2 - I1)
I1 and I2 must be less than or equal to 335 523 840. I1 + L1 must be less than or equal to 1 342 156 800. I2 + L2 must be less than or equal to 1 342 156 800. Note that I2 and L2 only apply when the *rxTrafficDescriptorType* is ***6*** through ***8***.

If the values of I1, L1, I2, or L2 are closer to the limits described above, a further restriction applies. Specifically, if either:
I1 > 41 940 480 or
I2 > 41 940 480 or
I1 + L1 > 167 769 600 or
I2 + L2 > 167 769 600
then both I1 and I2 must be greater than 20 480.

Parameter 5 of the *rxTrafficDescParm* is always unused.

If the *rxTrafficDescType* is ***sameAsTx***, the values in this attribute are taken from the *txTrafficDescParm*.

Mib	AtmPnni
Vector of	Decimal (0..2147483647)
Index	Decimal (1..5)
Default	([5] 0)

COMPONENT AtmIf Pnni Reroute

Groups	"GROUP AtmIf Pnni Reroute DomainOperational (DOper)" "GROUP AtmIf Pnni Reroute LocalOperational (LOper)" "GROUP AtmIf Pnni Reroute GlobalOperational (GOper)" "GROUP AtmIf Pnni Reroute Statistics (Stats)"
Scope	Device
Description	*AtmIf/n Pnni Reroute* *AtmIf/n Vpt/vpi Pnni Reroute* This component represents the rerouting capabilities of the ATM Signaling interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	AtmPnni
Subcomponents	"COMPONENT AtmIf Pnni Reroute Ov"
Common Verbs	Help List Display Add DELete

VERB OPTIMIZE AtmIf Pnni Reroute

Impact	Service
Description	*Optimize [-all] AtmIf/n Pnni Reroute* *Optimize [-all] AtmIf/n Vpt/vpi Pnni Reroute* This command triggers path optimization for the connection segments managed by the *Reroute* component. By default, only connection segsforation. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection. The *-all* option causes all connection segments subscribed to path optimization to be considered. Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP AtmIf Pnni Reroute DomainOperational (DOper)

Properties	Operational
Description	This group contains the operational attributes specific to rerouting activities on a PNNI interface.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Reroute localDomainLink (domain)

Access	Read only
Description	This attribute indicates the local PNNI domain link type. One of the following values is indicated: ***intraDomainLink***: The PNNI interface is not a local domain edge node. ***interDomainLink***: The PNNI interface acts as a local domain edge node.
Mib	AtmPnni

Values	intraDomainLink interDomainLink
Default	No default

GROUP AtmIf Pnni Reroute LocalOperational (LOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Reroute localSubscribedConnections (lsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute localEligibleRecoveredCon (lerc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute localIneligibleRecoveredCon (lirc)

Access	Read only

Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute localLastRrCauseCode (lrrcc)

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute localPathsOptimized (lPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Pnni Reroute GlobalOperational (GOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.

Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Reroute globalSubscribedConnections (gsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute globalEligibleRecoveredCon (gerc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute globalIneligibleRecoveredCon (girc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute globalLastRrCauseCode (grrcc)

Access	Read only

Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	AtmPnni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute globalPathsOptimized (gPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmIf Pnni Reroute Statistics (Stats)

Properties	Operational
Description	This group contains the rerouting statistics for the interface.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Reroute totalLocalConnectionRecoveries (tLConRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute totalLocalFailedRecoveries (lFailedRec)

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute totalLocalPathOptimizations (tLPathOpt)

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute totalGlobalConnectionRecoveries (tGConRec)

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute totalGlobalFailedRecoveries (gFailedRec)

Access	Read only

Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute totalGlobalPathOptimizations (tGPathOpt)

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmIf Pnni Reroute totalOptimizationPasses (optPass)

Access	Read only
Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	AtmPnni
Values	Decimal (0..4294967295)
Default	No default

COMPONENT AtmIf Pnni Reroute Ov

Groups	"GROUP AtmIf Pnni Reroute Ov DomainProvisioned (DProv)" "GROUP AtmIf Pnni Reroute Ov Provisioned (Prov)" "GROUP AtmIf Pnni Reroute Ov LocalProvisioned (LProv)" "GROUP AtmIf Pnni Reroute Ov GlobalProvisioned (GProv)"

Scope	Device
Description	*AtmIf/n Pnni Reroute Ov* *AtmIf/n Vpt/vpi Pnni Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the ATM Signaling interface.
Mib	AtmPnni
Common Verbs	Help List Display

GROUP AtmIf Pnni Reroute Ov DomainProvisioned (DProv)

Properties	Provisioned
Description	This group contains the provisionable attributes specific to rerouting on a PNNI interface.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Reroute Ov localDomainLink (domain)

Access	Read and write
Description	This attribute specifies the method used to identify the type of local domain link. One of the following values can be specified: ***sameAsARtgPnniReroute***: The type of the local domain link is determined by the exchange of the *ARtg Pnni Reroute localDomain* value with the PNNI neighbor. ***intraDomainLink***: The result of the exchange of the *localDomain* is ignored. The local domain link type is set to intra-domain link. ***interDomainLink***: The result of the exchange of the *localDomain* is ignored. The local domain link type is set to inter-domain link.
Mib	AtmPnni

Values	sameAsARtgPnniReroute (sameAs) intraDomainLink (intra) interDomainLink (inter)
Default	sameAsARtgPnniReroute

GROUP AtmIf Pnni Reroute Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.
Mib	AtmPnni

ATTRIBUTE AtmIf Pnni Reroute Ov protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsARtgPnniReroute***: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***globalOnly***: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. ***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the

DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib: AtmPnni

Values:
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE AtmIf Pnni Reroute Ov numOptAttempts

Access: Read and write

Description: This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib: AtmPnni

Values	Decimal (0..15) sameAsARtgPnniReroute (sameAs)
Default	sameAs

ATTRIBUTE AtmIf Pnni Reroute Ov moduleOptimizationConnections

Access	Read and write
Description	This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component. One of the following values can be specified: ***sameAsARtgPnniReroute***: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute. ***none***: No connection segments are considered for path optimization. ***recoveredOnly***: Only connection segments that are foration. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection ***allSubscribed***: All connection segments subscribed to path optimization are considered.
Mib	AtmPnni
Values	none recoveredOnly allSubscribed sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE AtmIf Pnni Reroute Ov switchoverMechanism

Access	Read and write
Description	This attribute specifies the mechanism used for switchover of a rerouted connection segment. One of the following values can be specified: ***sameAsARtgPnniReroute***: The switchover mechanism is

specified by the *ARtg Pnni Reroute switchoverMechanism* attribute.
standard: The mechanism described in the ATM Forum "Domain based Rerouting" specification is used for switchover. This value ensures interoperability with other vendors' equipment running ATM Forum "Domain based Rerouting".
rcl: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib: AtmPnni

Values: standard
rcl
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

GROUP AtmIf Pnni Reroute Ov LocalProvisioned (LProv)

Properties: Provisioned

Description: This group contains the provisionable attributes for EBR and local rerouting protocols.

Mib: AtmPnni

ATTRIBUTE AtmIf Pnni Reroute Ov localConnectionRecoverySubscr (lConRec)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR

connection recovery. Only one will be granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local connection recovery subscription rule is determined by the *ARtg Pnni Reroute localConnectionRecoverySubscr* attribute. This value takes precedence over any other values.
svcSvp: If this value is set, all SVC and SVP connection segments request subscription to local connection recovery.
sourceSpvcSpvp: If this value is set, all source SPVC and SPVP connection segments request subscription to local connection recovery.
transitSpvcSpvp: If this value is set, all transit SPVC and SPVP connection segments request subscription to local connection recovery.

Mib: AtmPnni

Set of:
sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Pnni Reroute Ov localPathOptimizationSubscr (lPathOpt)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***localOnly*** protocols request subscription to local path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the local path optimization subscription rule is determined by the *ARtg Pnni Reroute localPathOptimizationSubscr* attribute. This setting takes precedence over the any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to local path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to local path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to local path optimization.

Mib: AtmPnni

Set of: sameAsARtgPnniReroute (sameAs)
svc
sourceSpvcSpvp (source)
transitSpvcSpvp (transit)

Default: (sameAsARtgPnniReroute)

GROUP AtmIf Pnni Reroute Ov GlobalProvisioned (GProv)

Properties: Provisioned

Description: This group contains the provisionable attributes for the global and EBR rerouting protocol.

Mib: AtmPnni

ATTRIBUTE AtmIf Pnni Reroute Ov globalConnectionRecoverySubscr (gConRec)

Access: Read and write

Description: This attribute specifies which connection segments on the interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request

localGlobal or ***globalOnly*** protocols request subscription to global connection recovery.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR connection recovery.

Connection segments of the specified types that request ***localEbr*** request subscription to both local connection recovery and EBR connection recovery. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR connection recovery subscription rule is determined by the *ARtg Pnni Reroute globalConnectionRecoverySubscr* attribute.This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR connection recovery.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR connection recovery.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR connection recovery.

Mib	AtmPnni
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

ATTRIBUTE AtmIf Pnni Reroute Ov globalPathOptimizationSubscr (gPathOpt)

Access	Read and write
Description	This attribute specifies which connection segments on the interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

Connection segments of the specified types that request ***localGlobal*** or ***globalOnly*** protocols request subscription to global path optimization.

Connection segments of the specified types that request ***ebrOnly*** request subscription to EBR path optimization.

Connection segments of the specified types that request ***localEbr*** request subscription to both local path optimization and EBR path optimization. Only one is granted.

One or more of the following values can be specified:
sameAsARtgPnniReroute: If this value is set, the global or EBR path optimization subscription rule is determined by the *ARtg Pnni Reroute globalPathOptimizationSubscr* attribute. This setting takes precedence over any other values.
svcSvp: If this value is set, then all SVC and SVP connection segments request subscription to global or EBR path optimization.
sourceSpvcSpvp: If this value is set, then all source SPVC and SPVP connection segments request subscription to global or EBR path optimization.
transitSpvcSpvp: If this value is set, then all transit SPVC and SPVP connection segments request subscription to global or EBR path optimization.

Mib	AtmPnni
Set of	sameAsARtgPnniReroute (sameAs) svc sourceSpvcSpvp (source) transitSpvcSpvp (transit)
Default	(sameAsARtgPnniReroute)

COMPONENT AtmIf Pnni ServiceTrace (SrvTrace)

Groups	"GROUP AtmIf Pnni SrvTrace Operational"
Scope	Application

Description

AtmIf/n [Vpt/m] Uni ServiceTrace
AtmIf/n [Vpt/m] Iisp ServiceTrace
AtmIf/n [Vpt/m] Pnni ServiceTrace
AtmIf/n [Vpt/m] Aini ServiceTrace
The *ServiceTrace* component of the ATM service determines if the trace capability is allowed on this service. If it is not provisioned, then a service trace session cannot be started on this service.

Currently, the ATM Trace features only support ***frAtmTraceRcvr*** and ***atmTraceRcvr*** features, if the name of a X25 or FR receiver is set to the *receiver* attribute of this component, the *Start* command responses with a “Receiver Not Supported” message.

Mib

AtmPnniTrace

Common Verbs

Help
List
Display
Add
DELete

VERB Start AtmIf Pnni SrvTrace

Impact

Service

Description

Start AtmIf/n [Vpt/m] Uni ServiceTrace
Start AtmIf/n [Vpt/m] Iisp ServiceTrace
Start AtmIf/n [Vpt/m] Pnni ServiceTrace
Start AtmIf/n [Vpt/m] Aini ServiceTrace
This command starts a service trace session.

VERB Stop AtmIf Pnni SrvTrace

Impact

Service

Description

Stop AtmIf/n [Vpt/m] Uni ServiceTrace
Stop AtmIf/n [Vpt/m] Iisp ServiceTrace
Stop AtmIf/n [Vpt/m] Pnni ServiceTrace
Stop AtmIf/n [Vpt/m] Aini ServiceTrace
This command stops a service trace session.

GROUP AtmIf Pnni SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	AtmPnniTrace

ATTRIBUTE AtmIf Pnni SrvTrace receiverName (rcvr)

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	AtmPnniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE AtmIf Pnni SrvTrace duration

Access	Read and write
Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	AtmPnniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE AtmIf Pnni SrvTrace queueLimit

Access	Read and write

Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	AtmPnniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE AtmIf Pnni SrvTrace session

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	AtmPnniTrace
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component AtmIf

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component AtmMpe

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component AtmMpe

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COMPONENT AtmMultiprotocolEncapsulation (AtmMpe)

Instance	Decimal (0..2047)
Groups	"GROUP AtmMpe CustomerIdentifierData (CidData)" "GROUP AtmMpe IfEntryProv (IfEntry)" "GROUP AtmMpe Provisioned (Prov)" "GROUP AtmMpe MediaProvisioned (MediaProv)" "GROUP AtmMpe OsiState (State)" "GROUP AtmMpe OperationalStatus (OperStatus)"
Scope	Application
Description	*AtmMpe/n* This component represents a logical interface between the Virtual Router and an ATM media (*AtmIf*). Multiprotocol Encapsulation as specified in RFC1483 is used to transfer higher-layer protocol data across virtual channels in an ATM network. *AtmMpe* components provide a means to associate multiple ATM virtual channel connections with a single *VirtualRouter ProtocolPort*. The *AtmMpe* component is associated with a *ProtocolPort* via a

	linkage attribute and virtual channel connections via a linkage attribute in each *AtmConnection* subcomponent.
Mib	AtmMpe
Subcomponents	"COMPONENT AtmMpe AtmConnection (Ac)"
Opt. Subcomp.	"COMPONENT AtmMpe SpvcTerminationPoint (Stp)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP AtmMpe CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	AtmMpe

ATTRIBUTE AtmMpe customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

	An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	AtmMpe
Values	Decimal (0; 1..8191)
Default	0

GROUP AtmMpe IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	AtmMpe

ATTRIBUTE AtmMpe ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	AtmMpe
Values	up down testing
Default	up

ATTRIBUTE AtmMpe ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.

Mib	AtmMpe
Values	Decimal (1..65535)
Default	No default

GROUP AtmMpe Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *AtmMpe* component.
Mib	AtmMpe

ATTRIBUTE AtmMpe maxTransmissionUnit (mtu)

Access	Read and write
Description	This attribute sets the size of the largest datagram which can be sent on the interface. This includes the size of the Logical Link Control header (if applicable) as well as the protocol data unit.
Mib	AtmMpe
Values	Decimal (256..9188)
Units	octets
Default	9188

ATTRIBUTE AtmMpe encapType (etype)

Access	Read and write
Criticality	Component
Description	This attribute specifies the RFC-1483 encapsulation type to be used for the *AtmConnections* under this *AtmMpe*. Specifying ***llcEncap*** allows multiplexing of multiple protocols over the *VCCs*. The protocol of the carried PDU will be identified by an IEEE 802.2 Logical Link Control header. If Inverse ARP is to be carried over a VCC, ***llcEncap*** must be used. If the *Stp* component exists under the *AtmMpe*, ***llcEncap*** must be used.

Specifying ***ipVcEncap*** indicates that all the VCCs (that is, *AtmConnection*s) under an *AtmMpe* component will use VC-based multiplexing and will carry IP PDUs only.

Specifying ***llcBridgeEncap*** indicates that the VCC (that is, the *AtmConnection*) under an *AtmMpe* component will use the bridged Ethernet encapsulation format specified in RFC-1483. Note that when setting the *encapType* attribute to ***llcBridgeEncap***, the *maxTransmissionUnit* must be set within the ***[256 .. 1524]*** range.

Mib	AtmMpe
Values	llcEncap ipVcEncap llcBridgeEncap
Default	llcEncap

ATTRIBUTE AtmMpe ilsForwarder

Access	Read and write
Criticality	Component
Description	This attribute specifies the *IlsForwarder* component this *AtmMpe* component is using. This attribute is only applicable when all *AtmConnection* components under the *AtmMpe* component are associated with PVC VCCs residing on a CQC-based ATM FP.
Mib	AtmMpe
Values	Link (Service, linkToTrafficSource)
Default	No default

GROUP AtmMpe MediaProvisioned (MediaProv)

Properties	Provisioned
Description	This group contains the base provisioning data for the *AtmMpe* component.

Mib	AtmMpe

ATTRIBUTE AtmMpe linkToProtocolPort

Access	Read and write
Criticality	Component
Description	This attribute contains a protocol port component name. The attribute associates an *AtmMpe* application with a protocol port.
Mib	AtmMpe
Values	Link (Service, linkToMedia)
Default	No default

GROUP AtmMpe OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmMpe

ATTRIBUTE AtmMpe adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: AtmMpe

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE AtmMpe operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AtmMpe

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE AtmMpe usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

	The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmMpe
Values	idle active (activ) busy
Default	idle

GROUP AtmMpe OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	AtmMpe

ATTRIBUTE AtmMpe snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	AtmMpe
Values	up down testing
Default	up

COMPONENT AtmMpe AtmConnection (Ac)

Instance	Decimal (1..255)

Groups	"GROUP AtmMpe Ac Provisioned (Prov)" "GROUP AtmMpe Ac OsiState (State)" "GROUP AtmMpe Ac Operational (Oper)" "GROUP AtmMpe Ac Statistics (Stats)" "GROUP AtmMpe Ac IpIfLink"
Scope	Application
Description	*AtmMpe/n AtmConnection/n* *Rtr/<string> If/<IP addr> AtmMpe AtmConnection/n* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe AtmConnection/n* This component represents a virtual channel through which internetworking frames are transported using RFC 1483 encapsulation. The *AtmConnection* component contains OSI state information, frame based statistics, and the linkage to an ATM virtual channel connection. This component's instance value is used by higher-layer protocols when referring to a specific ATM connection.
Mib	AtmMpe
Opt. Subcomp.	"COMPONENT AtmMpe Ac SourcePvc (SrcPvc)" "COMPONENT AtmMpe Ac DestinationPvc (DstPvc)"
Dyn. Subcomp.	"COMPONENT AtmMpe Ac AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP AtmMpe Ac Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *AtmConnection* component.

Mib	AtmMpe

ATTRIBUTE AtmMpe Ac atmConnection (link)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM nailed up endpoint, *AtmIf/n Vcc/vpi.vci Nep*, that this connection is associated with. It must not be provisioned for an SPVC connection.
Mib	AtmMpe
Values	Link (Service, applicationName)
Default	No default

ATTRIBUTE AtmMpe Ac ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the *AtmConnection.* This value is used to distinguish the connection from others for the purpose of IP and MPLS forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers. If a packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one *AtmConnection*, then one of the connections is selected for transmitting the packet. For IP packets the selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet. For MPLS packets the selection is based on either the DSCP field of the IP packet or the EXP field of the MPLS packet. DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component. EXP based selection of the the outgoing connection is explained

in the description of the *MplsServiceMap* component. Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component.

Modifying this attribute will reset the *AtmConnection*.

If the *AtmConnection* is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the *AtmConnection*. See the description of *Vr Ip CosPolicyGroup* for more information.

Mib	AtmMpe
Values	Decimal (0..3)
Default	0

ATTRIBUTE AtmMpe Ac mplsSignaling (mplsSig)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this AtmMpe Ac is dedicated for MPLS signaling (LDP or CR-LDP), or shared between MPLS and IP. If the value is ***dedicated***, the *Ac* is dedicated for MPLS signaling; the route is not found in IP ARP. If the value is ***shared***, the *Ac* is accessible by IP. The checking of this provisionable attribute is done through semantic checking. The attribute takes on the value ***shared*** by default, and can only be ***dedicated*** if there are more than one *Ac* under the *AtmMpe*.
Mib	AtmMpe
Values	shared dedicated
Default	shared

GROUP AtmMpe Ac OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AtmMpe

ATTRIBUTE AtmMpe Ac adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AtmMpe
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE AtmMpe Ac operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AtmMpe
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE AtmMpe Ac usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AtmMpe
Values	idle active (activ) busy

Default	idle

GROUP AtmMpe Ac Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *AtmConnection* component.
Mib	AtmMpe

ATTRIBUTE AtmMpe Ac speed

Access	Read only
Description	This attribute indicates the approximate bit rate for the connection. The bit rate is determined from the cell rate provisioned for the *Vcc* linked to this connection. The cell rate is multiplied by 53 bytes per cell and 8 bits per byte to obtain the bit rate. The *ifSpeed* of the entry in the ifTable corresponding to the *AtmMpe* component is the lowest speed of all the connections associated with the *AtmMpe* component. This attribute is always equal to 0 for an SPVC.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

GROUP AtmMpe Ac Statistics (Stats)

Properties	Operational
Description	This group contains the frame based statistics maintained for the *AtmConnection* component. For cell based statistics, see the *Vcc* component.
Mib	AtmMpe

ATTRIBUTE AtmMpe Ac outPackets

Access	Read only

Description	This attribute counts the total number of packets sent on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmMpe Ac outOctets

Access	Read only
Description	This attribute counts the total number of octets sent on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmMpe Ac outDiscards

Access	Read only
Description	This attribute counts the total number of packets which were supposed to be sent on this connection but were discarded due to congestion or the connection being down. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmMpe Ac inPackets

Access	Read only
Description	This attribute counts the total number of packets received on this connection. This counter will wrap around to 0 when it exceeds its maximum count.

Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmMpe Ac inOctets

Access	Read only
Description	The attribute counts the total number of octets received on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmMpe Ac inUnknownProtos

Access	Read only
Description	This attribute counts the total number of packets received on this connection which were discarded because they contained an unknown or unsupported protocol (includes packets received for protocols not currently bound to the associated *ProtocolPort* component). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE AtmMpe Ac inErrors

Access	Read only
Description	This attribute counts the total number of packets received on the connection which contained errors preventing them from being delivered to a higher-layer protocol (includes short frames). This counter will wrap around to 0 when it exceeds its maximum count.

Mib	AtmMpe
Values	Decimal (0..4294967295)
Default	No default

GROUP AtmMpe Ac IpIfLink

Properties	Provisioned
Description	This group contains the link between this component and an *IpLogicalInterface*.
Mib	AtmMpe

ATTRIBUTE AtmMpe Ac linkToIpLogicalInterface (ipIf)

Access	Read and write
Description	This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ipAddress*, that this connection is associated with. This attribute is not applicable and cannot be set when the *AtmConection* component is added under an *Rtr If AtmMpe* or an *Rtr Vrf If AtmMpe* component. When set, the value of this attribute must be consistent with the *linkToPrototocolPort* attribute value of the parent *AtmMpe* component. That is, they must both point to the same *PrototocolPort* component.
Mib	AtmMpe
Values	Link (Service, linkToMediaConnection)
Default	No default

COMPONENT AtmMpe Ac SourcePvc (SrcPvc)

Groups	"GROUP AtmMpe Ac SrcPvc Provisioned (Prov)" "GROUP AtmMpe Ac SrcPvc Operational (Oper)"
Scope	Application
Description	*AtmMpe/n Ac/m SrcPvc* *Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc*

Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc
This component contains addressing and control information used by the calling SPVC endpoint to set up an SPVC connection to a remote called SPVC endpoint. An *Stp* component must exist under the *Ac* component if a *SrcPvc* component exists.

Mib: AtmMpeSpvc

Subcomponents: "COMPONENT AtmMpe Ac SrcPvc TrafficManagement (Tm)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB Clear (Clr) AtmMpe Ac SrcPvc

Impact: Service

Description:
Clear AtmMpe/n Ac/m SrcPvc
Clear Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc
Clear Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc
This command tears down the active SPVC connection under the *Ac* component and attempts to reestablish it.

If there is no active SPVC, the clear command has no effect.

GROUP AtmMpe Ac SrcPvc Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisionable attributes of the *SourcePvc* component.

Mib: AtmMpeSpvc

ATTRIBUTE AtmMpe Ac SrcPvc remoteAddress (raddr)

Access: Read: All
Write: All

Criticality: Component

Description	This attribute specifies the NSAP address of the called SPVC endpoint (this must be a remote *AtmMpe* component).
Mib	AtmMpeSpvc
Values	String (20, Hex)
Default	No default

ATTRIBUTE AtmMpe Ac SrcPvc remoteConnectionIdentifier (rci)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the remote connection identifier of the SPVC. It is provisioned with the *Ac* instance of the *AtmMpe Ac* component at the called SPVC endpoint.
Mib	AtmMpeSpvc
Values	Decimal (1..255)
Default	1

GROUP AtmMpe Ac SrcPvc Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SrcPvc* component.
Mib	AtmMpeSpvc

ATTRIBUTE AtmMpe Ac SrcPvc state

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the connection.
Mib	AtmMpeSpvc
Values	active inactive

Default	No default

ATTRIBUTE AtmMpe Ac SrcPvc retryCount (retry)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed connection attempts.
Mib	AtmMpeSpvc
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE AtmMpe Ac SrcPvc lastClearCause (cause)

Access	Read: All Write: Illegal
Description	This attribute indicates the last clear cause signalled by the connection due to a release. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The set of possible values and their meaning can be found in the ATM Forum Private Network-Network Interface Specification Version 1.0, Section 6.4.5.19.
Mib	AtmMpeSpvc
Values	Decimal (0..255)
Default	No default

COMPONENT AtmMpe Ac SrcPvc TrafficManagement (Tm)

Groups	"GROUP AtmMpe Ac SrcPvc Tm Provisioned (Prov)"
Scope	Application
Description	*AtmMpe/n Ac/m SrcPvc Tm* *Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc Tm* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc Tm* This component contains ATM QoS information used by the

calling endpoint of an SPVC connection to request a particular QoS from ATM.

Mib AtmMpeSpvc

Common Verbs
Help
List
Display

GROUP AtmMpe Ac SrcPvc Tm Provisioned (Prov)

Properties Provisioned

Description This attribute group contains the provisionable attributes of the *TrafficManagement* component.

Mib AtmMpeSpvc

ATTRIBUTE AtmMpe Ac SrcPvc Tm atmServiceCategory (service)

Access Read: All
Write: All

Criticality Component

Description This attribute specifies the desired ATM service category for this connection.

Mib AtmMpeSpvc

Values unspecifiedBitRate (ubr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
constantBitRate (cbr)

Default unspecifiedBitRate

ATTRIBUTE AtmMpe Ac SrcPvc Tm peakCellRate (pcr)

Access Read: All
Write: All

Criticality Component

Description	This attribute specifies the desired peak cell rate (PCR) in both directions for this connection. Refer to NTP NN10600-705 for more information on ATM Traffic Management.
Mib	AtmMpeSpvc
Values	Decimal (0..2147483647)
Default	0

COMPONENT AtmMpe Ac DestinationPvc (DstPvc)

Groups	"GROUP AtmMpe Ac DstPvc Operational (Oper)"
Scope	Application
Description	*AtmMpe/n Ac/m DstPvc* *Rtr/<string> If/<IP addr> AtmMpe Ac/m DstPvc* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m DstPvc* The *DestinationPvc* component represents the called endpoint of an SPVC connection.
Mib	AtmMpeSpvc
Common Verbs	Help List Display Add DELete

VERB Clear (Clr) AtmMpe Ac DstPvc

Impact	Service
Description	*Clear AtmMpe/n Ac/m DstPvc* *Clear Rtr/<string> If/<IP addr> AtmMpe Ac/m DstPvc* *Clear Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m DstPvc* This command tears down the active SPVC connection under the *Ac* component and attempts to reestablish it. If there is no active SPVC, the clear command has no effect.

GROUP AtmMpe Ac DstPvc Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *DstPvc* component.
Mib	AtmMpeSpvc

ATTRIBUTE AtmMpe Ac DstPvc state

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the connection.
Mib	AtmMpeSpvc
Values	active inactive
Default	No default

ATTRIBUTE AtmMpe Ac DstPvc remoteAddress (raddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the NSAP address of the remote (calling) endpoint. If a connection is not established, *remoteAddress* is an ***empty string***.
Mib	AtmMpeSpvc
Values	String (0..20, Hex)
Default	""

ATTRIBUTE AtmMpe Ac DstPvc remoteConnectionIdentifier (rci)

Access	Read: All Write: Illegal
Description	This attribute indicates the remote connection identifier of the remote (calling) SPVC endpoint (that is, the *Ac* instance of the remote *AtmMpe Ac* component). If the connection is not established, the *remoteConnectionIdentifier* is an ***empty string***.

Mib	AtmMpeSpvc
Values	Decimal (1..255)
Default	No default

ATTRIBUTE AtmMpe Ac DstPvc lastClearCause (cause)

Access	Read: All Write: Illegal
Description	This attribute indicates the last clear cause signalled by the connection due to a release. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The set of possible values and their meaning can be found in the ATM Forum Private Network-Network Interface Specification Version 1.0, Section 6.4.5.19.
Mib	AtmMpeSpvc
Values	Decimal (0..255)
Default	No default

COMPONENT AtmMpe Ac AtmConnection (AtmCon)

Groups	"GROUP AtmMpe Ac AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	AtmMpeSpvc
Common Verbs	Help List Display

GROUP AtmMpe Ac AtmCon Operational (Oper)

Properties	Operational

Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	AtmMpeSpvc

ATTRIBUTE AtmMpe Ac AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	AtmMpeSpvc
Values	The name of the component
Default	No default

COMPONENT AtmMpe SpvcTerminationPoint (Stp)

Groups	"GROUP AtmMpe Stp Provisioned (Prov)" "GROUP AtmMpe Stp Operational (Oper)"
Scope	Application
Description	*AtmMpe/n Stp* *Rtr/<string> If/<IP addr> AtmMpe Stp* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Stp* This component specifies the SPVC related provisioning for the *AtmMpe* component. Its presence identifies an *AtmMpe* component that contains one or more SPVC connections.
Mib	AtmMpeSpvc
Common Verbs	Help List Display Add DELete

GROUP AtmMpe Stp Provisioned (Prov)

Properties	Provisioned

Description	This attribute group contains the provisionable attributes of the *SpvcTerminationPoint* component.
Mib	AtmMpeSpvc

ATTRIBUTE AtmMpe Stp localAddress (laddr)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the NSAP address of this *AtmMpe* component. The default is an empty string. If no NSAP address is provisioned, a default NSAP address is provided. To view the generated default address refer to the *opLocalAddress* attribute under this component after the *act prov* command is executed.
Mib	AtmMpeSpvc
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE AtmMpe Stp softPvcRetryPeriod (retry)

Access	Read: All Write: All
Description	This attribute specifies the interval at which an SPVC connection attempts establishment after a failed setup attempt occurs. The *softPvcRetryPeriod* attribute applies to all connections managed by the parent *AtmMpe* component.
Mib	AtmMpeSpvc
Values	Decimal (10..3600)
Units	seconds
Default	20

ATTRIBUTE AtmMpe Stp softPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All

Description	This attribute specifies how long to hold off before attempting to reestablish a connection after an established SPVC connection is cleared/released. The *softPvcHoldOffTime* attribute applies to all connections managed by the parent *AtmMpe* component.
Mib	AtmMpeSpvc
Values	Decimal (0; 50..3600000)
Units	msec
Default	20000

GROUP AtmMpe Stp Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SpvcTerminationPoint* component.
Mib	AtmMpeSpvc

ATTRIBUTE AtmMpe Stp opLocalAddress (addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the NSAP address of this *AtmMpe* component. The value is the same as the provisioned *laddr*. If the *laddr* is not provisioned, the value of *addr* is automatically generated by the software.
Mib	AtmMpeSpvc
Values	String (0..20, Hex)
Default	""

Nortel Networks Multiservice Switch 7400/15000/20000

Component AtmMpe

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Btds

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Btds

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COMPONENT BitTransparentDataService (Btds)

Instance	Decimal (1..65535)
Groups	"GROUP Btds CustomerIdentifierData (CidData)" "GROUP Btds IfEntryProv (IfEntry)" "GROUP Btds OperationalStatus (OperStatus)" "GROUP Btds OsiState (State)" "GROUP Btds Operational"
Scope	Application
Description	*BitTransparentDataService/n* The Bit Transparent Data Service (BTDS) component defines an instance of the Bit transparent data service. One instance of this component is required by each DS1, E1, V.35 or V.11 channel that is offering bit transparent traffic.

	The instance number is arbitrary.
Mib	BitTransparent
Subcomponents	"COMPONENT Btds Framer (Framer)" "COMPONENT Btds PermanentLogicalConnection (Plc)"
Opt. Subcomp.	"COMPONENT Btds Dpnss1" "COMPONENT Btds Mcdn"
Dyn. Subcomp.	"COMPONENT Btds LogicalConnection (LCo)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Btds CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	BitTransparent

ATTRIBUTE Btds customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only

	the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	BitTransparent
Values	Decimal (0; 1..8191)
Default	0

GROUP Btds IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	BitTransparent

ATTRIBUTE Btds ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	BitTransparent
Values	up down testing
Default	up

ATTRIBUTE Btds ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component

Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	BitTransparent
Values	Decimal (1..65535)
Default	No default

GROUP Btds OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	BitTransparent

ATTRIBUTE Btds snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	BitTransparent
Values	up down testing
Default	up

GROUP Btds OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific

information and the valid state combinations, refer to the appropriate NTP.

Mib BitTransparent

ATTRIBUTE Btds adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib BitTransparent

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Btds operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

	The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BitTransparent
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Btds usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BitTransparent
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Btds availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: BitTransparent

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Btds proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	BitTransparent
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Btds controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	BitTransparent
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Btds alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently

being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: BitTransparent

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Btds standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	BitTransparent
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Btds unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	BitTransparent
Values	false true
Default	false

GROUP Btds Operational

Properties	Operational
Description	This group contains operational attributes related to a *Btds*.
Mib	BitTransparent

ATTRIBUTE Btds serviceFailureReason

Access	Read: Passive Write: Illegal
Description	This attribute indicates the result of end to end negotiation with the remote end across the subnet. If *serviceFailureReason* is ***undetermined***, this *Btds* component has not performed end to end negotiation with the remote end, and may or may not be up. *serviceFailureReason* is ***undetermined*** if this *Btds* just became enabled, if there is not enough available bandwidth to perform negotiation or if the remote end cannot perform negotiation with this *Btds* component. If *serviceFailureReason* is ***none***, end to end negotiation passed. If *serviceFailureReason* is ***mismatchedService***, end to end negotiation failed because the remote end service is not a *Btds*. If *serviceFailureReason* is ***mismatchedTimeSlotAlignment***, end to end negotiation failed because the local *Btds Framer timeSlotAlignment* does not match the remote *Btds Framer timeSlotAlignment*. If *serviceFailureReason* is ***mismatchedCallDiscriminator***, the local *Btds* call discrimination subcomponents (*Btds Mcdn* and *Btds Dpnss1*) do not match the remote *Btds* call discrimination subcomponents. If *serviceFailureReason* is ***compDecodeFailed***, end to end negotiation failed because the information received from the remote end was not recognized as valid data.

Mib	BitTransparent
Set of	none undetermined logicalConnection mismatchedService mismatchedTimeSlotAlignment mismatchedCallDiscriminator compDecodeFailed
Default	No default

COMPONENT Btds Framer (Framer)

Groups	"GROUP Btds Framer Provisioned (Prov)" "GROUP Btds Framer ChannelOptions (Channel)" "GROUP Btds Framer OsiState (State)" "GROUP Btds Framer Statistics (Stats)"

"COLLECTED STATS BitTransparentDataService Framer"

Scope	Application
Description	*Btds/n Framer* The Framer component controls link layer framing for application components sending and receiving data on a link interface. It is also through Framer, that an application component is associated with a specific hardware link interface. The Framer component provides provisionable attributes related to datapath aspects of the hardware interface rather than interface specific attributes which are associated with specific hardware components (such as V35/n or DS1/n). The Framer component also provides a provisionable attribute which binds the application component to a specific hardware component. The Framer component contains operational attributes for link interface datapath statistics (such as frame counts).
Mib	BitTransparent
Common Verbs	Help List Display

GROUP Btds Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	BitTransparent

ATTRIBUTE Btds Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	BitTransparent
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Btds Framer ChannelOptions (Channel)

Properties	Provisioned
Description	This group contains attributes defining the framing of data on the link interface or n*64kbps channel.
Mib	BitTransparent

ATTRIBUTE Btds Framer protocol

Access	Read and write
Criticality	Process

Description	This attribute specifies the ingress frames suppressed by this *Btds*. If *protocol* is ***none***, this *Btds* does not suppress any ingress frames. If *protocol* is ***hdlc***, this *Btds* suppresses ingress frames where each byte is an identical non-inverted HDLC idle pattern, but only after two or more consecutive frames meet this description. If *protocol* is ***nrziHdlc***, this *Btds* suppresses ingress frames where each byte is an identical NRZI encoded HDLC idle pattern, but only after two or more consecutive frames meet this description. If *protocol* is ***universal***, this *Btds* suppresses ingress frames where each 16-bit word is identical, but only after a provisionable number of consecutive frames meet this description. The number of consecutive frames is determined by *numOfIdleBytesToMonitor*. Note that the number of idle bytes suppressed at the ingress side does not necessarily equal the number of idle bytes generated at the egress side. It is a semantic check warning if *protocol* is ***hdlc***, ***nrziHdlc*** or ***universal*** and this *Btds* is running on a ***1pE1Mvp***, ***1pDS1Mvp*** or ***1pTTC2mMvp*** card.
Mib	BitTransparent
Values	none hdlc nrziHdlc universal
Default	none

ATTRIBUTE Btds Framer numOfIdleBytesToMonitor

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of consecutive repeated ingress 16-bit words this *Btds* must encounter before suppressing universal ingress idle frames. This attribute is only used if *protocol* is ***universal***.

	numOfIdleBytesToMonitor should be larger than the largest frame size that can be sent into this *Btds*.
Mib	BitTransparent
Values	Decimal (0..32000)
Default	0

ATTRIBUTE Btds Framer idlePattern

Access	Read and write
Criticality	Process
Description	This attribute specifies how to fill a local egress frame when the remote *Btds* suppressed an ingress frame.
Mib	BitTransparent
Values	Hex (H.0..H.ff)
Units	Hex
Default	H.ff

ATTRIBUTE Btds Framer timeSlotAlignment (tsa)

Access	Read and write
Criticality	Process
Description	This attribute specifies the time slot alignment of this *Btds*. With time slot alignment, data sent out on a particular time slot to a link is received on the same time slot. A value of unaligned specifies the regular Btds application. A value of ***frameAligned*** enables frame aligned Btds. When framed aligned Btds is specified, only one channel may be provisioned since only one fraction of N x 64kbit/s is presently available. timeSlotAlignment can not be set to frameAligned unless this Btds is running on a ***DS1V***, ***E1V***, ***1pDS1V*** or ***1pE1V*** card *timeSlotAlignment* must have the same value at both ends of a *Btds*. If *timeSlotAlignment* does not have the same value at both ends of a *Btds*, the *Btds* will be out of service. In this case, *Btds serviceFailureReason* is ***mismatchedTimeSlotAlignment***.

Mib	BitTransparent
Values	unaligned frameAligned
Default	unaligned

ATTRIBUTE Btds Framer insertedOutputDelay

Access	Read and write
Criticality	Process
Description	This attribute defines the amount of added output delay to compensate for cross network delay variations. Cross network delay variations is a function of the network topology. Setting this attribute will allow the Btds service to deal with cross network delay variations. This attribute provides for delay in addition to the elastic buffer. Total egress delay is approximately the *insertedOutputDelay* plus the elastic buffer. The elastic buffer is the packetization timex5 cells in the buffer. Packetization time per cell is calculated by taking the inverse of [line speed (kbit/s) x (byte/8bits) x (1/cell size (bytes))]. The value for *insertedOutputDelay* should be increased if the *frmUnderRuns* is increasing and *frmLostInNetwork* is not increasing.
Mib	BitTransparent
Values	Decimal (0..50)
Units	msec
Default	12

ATTRIBUTE Btds Framer btdsCellSize

Access	Read and write
Criticality	Process
Description	This attribute allows selection of larger BTDS cell sizes. Larger BTDS cell sizes improve efficiency but increase the minimum egress queue delay. If the associated channel is using less than 5

timeslots (320kbit/s), the default *btdsCellSize* will be used. Setting *btdsCellSize* to **84** is only allowed on DS1 and E1 FPs.

Mib: BitTransparent

Values: 44
84

Units: bytes

Default: 44

GROUP Btds Framer OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: BitTransparent

ATTRIBUTE Btds Framer adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: BitTransparent

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Btds Framer operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: BitTransparent

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Btds Framer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	BitTransparent
Values	idle active (activ) busy
Default	idle

GROUP Btds Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	BitTransparent

ATTRIBUTE Btds Framer frmFromIf

Access	Read only
Description	This attribute counts the number of frames received from the link interface by Framer. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Framer suppressedFrames

Access	Read only
Description	This attribute counts the number of frames dropped at the interface due to the idle pattern being detected. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Btds Framer frmToIf

Access	Read only
Description	This attribute counts the number of frames transmitted to the link interface by Framer. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Framer lrcErrors

Access	Read only
Description	This attribute counts the number of frames received from the network with LRC errors. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Framer frmLostInNetwork

Access	Read only
Description	This attribute counts the number of frames which the service knows it did not receive from the network although they were sent in to the network from the far end. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Framer frmUnderRuns

Access	Read only
Description	This attribute counts the number of times that a frame was needed but was not available because it had been delayed too long in the network. This error may occur repeatedly if the interface clocks at the two access points to the network are operating at different rates. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Framer frmDumped

Access	Read only
Description	This attribute counts the number of frames which have been dumped because the local interface output queue grew too large. This can occur if the clock rate on the local interface is faster than the clock rate on the remote interface and there are no silence periods to absorb the difference. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

COLLECTED STATS BitTransparentDataService Framer

Description	The statistics record generated by the BitTransparentDataService Framer component.

ATTRIBUTE Btds Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Btds Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Btds Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Btds Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Btds Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT Btds PermanentLogicalConnection (Plc)

Groups	"GROUP Btds Plc Provisioning (Prov)"
Scope	Application

Description	*Btds/n PLC* This is the description of the PLC Component for the BTDS service.
Mib	BitTransparent
Common Verbs	Help List Display

GROUP Btds Plc Provisioning (Prov)

Properties	Provisioned
Description	This group contains all provisionable attributes for a permanent logical connection. Note that all of the attributes are valid and provisionable on both ends of a connection. However with the exception of *remoteName*, all operational attributes are derived from the originating end provisioning, which may be either end unless *remoteName* is not provisioned on one end.
Mib	BitTransparent

ATTRIBUTE Btds Plc remoteName (rName)

Access	Read and write
Criticality	Process
Description	This attribute specifies the PLC's remote end point's address in the format of a component name. The syntax of a component is: "em/node type/instance". For an alternative representation of end point's addresses, see *addressToCall* and l*ocalAddress PLC* attributes. When using the component name representation, end points are identified using a node name and a service name. As an example, the end point component for a third Btds service on node MoonBase is: "*EM/MoonBase BTDS/3*". If the *remoteName* is provisioned, it must match the name of the remote end or the connection will not be established even if the remote end is provisioned correctly. If no *remoteName* is provisioned, then this *LC* will accept connections from any other remote *LC* and it will not originate calls. Connections establish faster and are unique if

	both ends are provisioned with *remoteName*. *RemoteName* should be used when the remote end of the connection resides within the same topology region. If it resides in a different topology region, then *addressToCall* and *localAddress PLC* attributes should be used. When both *remoteName* and *addressToCall* are provisioned, *addressToCall* takes precedence. That is, connection will be established to the service specified by *addressToCall*. These strings are case insensitive, but the complete component name must be input.
Mib	BitTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Btds Plc setupPriority (spri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the priority at which a path is established. Zero is the highest priority and four is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The *holdingPriority*, a complementary attribute of this attribute, indicates the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority.*
Mib	BitTransparent
Values	Decimal (0..4)
Default	2

ATTRIBUTE Btds Plc holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the priority that a path holds once it is established. Zero(0) is the highest priority and four(4) is the lowest. A path's *holdingPriority* determines its likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority.*
Mib	BitTransparent
Values	Decimal (0..4)
Default	2

ATTRIBUTE Btds Plc requiredTxBandwidth (tbw)

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth (in bits per second) reserved by a path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced and is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that Transmit at this end represents Receive at the remote end. Note that when the values do not correspond the originating end of the connection determines the value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Units	bit/s

Default	64000

ATTRIBUTE Btds Plc requiredRxBandwidth (rbw)

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth (in bits per second) reserved by a path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced and is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that transmit at this end represents receive at the remote end. Note that when the values do not correspond, the originating end of the connection determines the value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Units	bit/s
Default	64000

ATTRIBUTE Btds Plc requiredTrafficType (rttyp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of traffic transmitted over the path. There are eight(8) possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five(5) other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1,*** then only trunks that include

trafficType1 in *supportedTrafficType***,** will be candidates for this connection.

Mib: BitTransparent

Values:
voice
data
video
trafficType1 (tt1)
trafficType2 (tt2)
trafficType3 (tt3)
trafficType4 (tt4)
trafficType5 (tt5)

Default: video

ATTRIBUTE Btds Plc permittedTrunkTypes (pttyp)

Access: Read and write

Criticality: Process

Description: This attribute specifies up to eight(8) types of trunk that can be used on the route. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six(6) remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.

Mib: BitTransparent

Set of:
terrestrial
satellite
trunkType1 (tt1)
trunkType2 (tt2)
trunkType3 (tt3)
trunkType4 (tt4)
trunkType5 (tt5)
trunkType6 (tt6)

Default: (terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Btds Plc requiredSecurity (rsec)

Access	Read and write
Criticality	Process
Description	This attribute specifies the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	BitTransparent
Values	Decimal (0..7)
Default	4

ATTRIBUTE Btds Plc requiredCustomerParm (rcparm)

Access	Read and write
Criticality	Process
Description	This attribute specifies the allowed customer defined parameter of the trunks on the route. Its value, a number from zero to seven, is chosen by network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	BitTransparent
Values	Decimal (0..7)
Default	4

ATTRIBUTE Btds Plc pathAttributeToMinimize (pamin)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether a route is selected on the basis of minimizing the cost or the delay. Each trunk has a cost and a delay metric associated with it. The cost of a selected route is the sum of the trunk cost metrics for all trunks included in the route. The delay of a selected route is the sum of the trunk delay metric for all trunks included in the route.
Mib	BitTransparent
Values	cost delay
Default	cost

ATTRIBUTE Btds Plc maximumAcceptableCost (maxCost)

Access	Read and write
Criticality	Process
Description	This attribute specifies an upper bound on the cost metric of a route, which is the sum of the cost metrics of all trunks on the route. The cost metric is the *trunkCost* attribute of the Trunk component. If for any trunk the *trunkCost* is larger than the *maximumAcceptableCost*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route cost is being compared with the *maximumAcceptableCost* attribute, and this is done for any minimization criterion. No route is selected if the cost metric of the shortest route is larger than the *maximumAcceptableCost*.
Mib	BitTransparent
Values	Decimal (0..65535)
Default	1280

ATTRIBUTE Btds Plc maximumAcceptableDelay (maxDelay)

Access	Read and write
Criticality	Process
Description	This attribute specifies an upper bound on the delay of a route, which is the sum of the delay of all trunks on the route. It should be provisioned with a reasonable maximum acceptable delay for the end to end one way delay of a 512-byte packet. Remember, that the trunk during its staging measures a *measuredRoundTripDelay.* This delay is divided by two and truncated to an integer number of milliseconds to provide a one way delay which is used to populate the delay in this trunk object in the topological database. The value includes emission, propagation, and queuing delays. A 512-byte packet is used to perform the measurement. If for any trunk the half of the trunk's *measuredRoundTripDelay* is larger than the *maximumAcceptableDelay*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route delay is being compared with the *maximumAcceptableDelay* attribute, and this is done for any minimization criterion. No route is selected if the delay metric of the shortest route is larger than the *maximumAcceptableDelay.*
Mib	BitTransparent
Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Btds Plc emissionPriority (epri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the urgency with which packets on the path are emitted by the trunks on the route. *EmissionPriority* of Zero(0) indicates the highest emission priority, while two (2) indicates the lowest emission priority. Packets with a higher

	emissionPriority (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	BitTransparent
Values	Decimal (0..2)
Default	0

ATTRIBUTE Btds Plc discardPriority (dpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the importance of the packets on the path. One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority* (numerically) are discarded after packets with a higher *discardPriority* (numerically).
Mib	BitTransparent
Values	Decimal (1..3)
Default	1

ATTRIBUTE Btds Plc pathType (pType)

Access	Read and write
Criticality	Process
Description	This attribute specifies if the path for this PLC is determined automatically or by static provisioning. The default (***normal***) is to automatically choose a route with Route Selection. ***Normal*** *pathTypes* require less provisioning and can dynamically handle path failures. The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is

also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs).
The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.

Mib	BitTransparent
Values	normal manual forced
Default	normal

ATTRIBUTE Btds Plc pathFailureAction (pfa)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the application can tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is chosen, the application is informed as soon as possible about a failure by disconnection. If the attribute is set to ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends.

Mib	BitTransparent
Values	reRoutePath disconnectConnection
Default	reRoutePath

ATTRIBUTE Btds Plc bumpPreference (bpref)

Access	Read and write
Criticality	Process
Description	This attribute specifies when bumping occurs in the route selection process. A connection with higher (numerically less) *setupPriority* may bump a connection with lower (numerically higher) *holdingPriority* in order to acquire its bandwidth and be established. By default, bumping occurs only when it is necessary. That is, a connection will bump another connection only if there is no other way for the connection to be established. A connection may be set to always bump in order to find the best route it may have.
Mib	BitTransparent
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	bumpWhenNecessary

ATTRIBUTE Btds Plc optimization (opt)

Access	Read and write
Criticality	Process
Description	This attribute is specifies whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	BitTransparent

Values	disabled enabled
Default	enabled

ATTRIBUTE Btds Plc addressToCall (addrToCall)

Access	Read and write
Criticality	Process
Description	This attribute specifies the PLC's remote end point's address in the format of a NSAP address. As such it must consist of a string of hex digits although not all 40 digits must be specified. For an alternative representation of end point's addresses, see *remoteName* attribute. If the *addressToCall* is provisioned, it must match *localAddress* provisioned on the remote end or the connection will not be established. Connections establish faster and are unique if both ends are provisioned with *addressToCall*. *AddressToCall* must be used when the remote end of the connection resides in different topology region. If it resides in the same topology region, then *remoteName* may be used. When both *remoteName* and *addressToCall* are provisioned, *addressToCall* takes precedence. That is, connection will be established to the service specified by *addressToCall*.
Mib	BitTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Btds Plc localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the PLC's end point address in the format of an NSAP address. As such it must consist of a string of hex digits although not all 40 digits must be specified. *LocalAddress* must share a prefix with MOD nodePrefix or one of MOD alternatePorsPrefixes for this node, otherwise PORS will not be able to route calls to this service. *LocalAddress* is used in conjunction with *addressToCall*. That is, the end responsible for

originating calls must have *addressToCall* provisioned, while the end responsible for terminating calls must have *localAddress* provisioned. In such a case, *addressToCall* on the originating end must match exactly the *localAddress* of the terminating end. Note that both ends may be originating and terminating at the same time. That is, both ends may have *addressToCall* and *localAddress* provisioned as long as *addressToCall* and *localAddress* on different ends are identical.

Mib	BitTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Btds Plc maximumAcceptableGatewayCost (maxGateCost)

Access	Read and write
Criticality	Process
Description	This attribute specifies an upper bound on the gateway cost metric of a route, which is the sum of the gateway cost metrics of all gateway links on the route. It has the same semantics as the *maximumAcceptableCost* except that gateway cost metrics are used instead of trunk cost metrics. Gateway cost metrics are provisioned under *Trunk Address* component of a gateway link specifying a gateway costs of reaching an address through the link.
Mib	BitTransparent
Values	Decimal (0..65535)
Default	2048

ATTRIBUTE Btds Plc manualPath (mpath)

Access	Read and write
Criticality	Process
Description	This attribute is specifies the sequence of trunks to be used as the route for the path, thus bypassing PORS' automatic route selection. If the path fails the validation, no other path can be

selected[1]. This attribute should only be used in special cases since the route selection algorithm is able to find and maintain the best routes. A related path attribute, the *pathType*, determines if this route will be used as a manual or forced path type.

As an example, the trunk component name for the third trunk on node MoonBase is "*EM/MoonBase Trk/3*". Note that only the first end of the trunk that the packet would encounter is provisioned. These strings are case insensitive but the complete component name must be input.

Note 1: the trunk designation must be a 3-letter form, e.g., 'trk'. Note 2: only the outbound trunks component names are used to provision the ***manualPath***.

Note 3: It is recommended to have two independent routes specified for a manual path by specifying a different ***manualPath*** (non-symmetric) for each end. In this case, there is no way to select which route will be used (first up wins) but if one path is torn down due to a failure then the other ***manualPath*** may be used to reroute the path.

Mib	BitTransparent
Vector of	String (0..40, ASCII)
Index	Decimal (0..9)
Default	([10] "")

COMPONENT Btds LogicalConnection (LCo)

Groups	"GROUP Btds LCo PathData" "GROUP Btds LCo Statistics (Stats)"
Scope	Application

Description ...*Lc*
This component contains all of the operation attributes for a Path Oriented Logical Connection.

Mib BitTransparent

Common Verbs
Help
List
Display

VERB RERoute Btds LCo

Impact Service

Description RERoute ..Lc
This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *REReute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified.
This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively.

When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path.

If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP Btds LCo PathData

Properties Operational

Description This group contains all operational attributes for the path oriented LCo.

Mib	BitTransparent

ATTRIBUTE Btds LCo state

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.
Mib	BitTransparent
Values	pathDown selectingRoute connecting pathUp pathDownRetrying
Default	No default

ATTRIBUTE Btds LCo overrideRemoteName (orn)

Access	Read: All Write: All
Description	If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.
Mib	BitTransparent
Values	String (0..40, ASCII)

Default	""

ATTRIBUTE Btds LCo end

Access	Read only
Description	This attribute identifies whether this is the calling or called end of the path.
Mib	BitTransparent
Values	calling called
Default	No default

ATTRIBUTE Btds LCo costMetric (cost)

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	BitTransparent
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Btds LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.
Mib	BitTransparent
Values	Decimal (0..100000)

Units	msec
Default	No default

ATTRIBUTE Btds LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	BitTransparent
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE Btds LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	BitTransparent

Values	Decimal (0..4)
Default	No default

ATTRIBUTE Btds LCo holdingPriority (hpri)

Access	Read only
Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	BitTransparent
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Btds LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Btds LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value

Mib	BitTransparent
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Btds LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType***,** will be candidates for this connection.
Mib	BitTransparent
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Btds LCo permittedTrunkTypes (pttyp)

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection

	determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.
Mib	BitTransparent
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Btds LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	BitTransparent
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Btds LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection

	determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	BitTransparent
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Btds LCo emissionPriority (epri)

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority*. *EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	BitTransparent
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Btds LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority*. One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).

Mib	BitTransparent
Values	Decimal (1..3)
Default	No default

ATTRIBUTE Btds LCo pathType (pType)

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	BitTransparent
Values	normal manual forced
Default	No default

ATTRIBUTE Btds LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count

should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology.
This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.

Mib	BitTransparent
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Btds LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	BitTransparent
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Btds LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This

reason is also issued when there is no physical connectivity between two end nodes.

Mib BitTransparent

Values
none
destinationNameTooLong
destinationNotSpecified
unknownDestinationName
incorrectDestination
incorrectDestinationEndPoint
unknownSource
unknownDestination
sameNode
routeCostTooMuch
routesDelayTooLong
attributesNotMet
anError
attributeProfileProblem
manualPathIndexProblem

Default none

ATTRIBUTE Btds LCo lastTearDownReason

Access Read only

Description This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons:
none - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up.
normalShutDown - This path has gone down due to normal call termination.
insufficientTxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction.
insufficientRxLcOrBandwidth - At present there is either no

available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction.
trunkFailure- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute.
trunkCardFailure- A trunk FP card has failed along the path.
accessCardFailure- The FP on which the peer access service was running has failed.
operatorForced- The path has terminated due to the operator locking a trunk along the path.
lostLcnClash- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get

bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib BitTransparent

Values
none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound
farEndNotFound
wrongModuleReached
farEndBusy
callLoopedBack
unknownReason
farEndNotReady
remoteNameMismatch
serviceTypeMismatch
reconnectFromFarEnd
bumped
accessCardFailure

	optimized overrideRemoteName trunkOrFarEndDidNotSupportMode
Default	none

ATTRIBUTE Btds LCo pathFailureAction

Access	Read only
Description	This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends
Mib	BitTransparent
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE Btds LCo bumpPreference (bpref)

Access	Read only
Description	This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is

	lower (numerically higher) than the connection's *setupPriority*. A connection may also always bump in order to obtain the best route.
Mib	BitTransparent
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE Btds LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	BitTransparent
Values	disabled enabled
Default	No default

ATTRIBUTE Btds LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	BitTransparent
Values	Time (DHMS)
Default	No default

ATTRIBUTE Btds LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.
Mib	BitTransparent
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP Btds LCo Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	BitTransparent

ATTRIBUTE Btds LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	BitTransparent
Values	Long Integer
Default	No default

ATTRIBUTE Btds LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	BitTransparent
Values	Long Integer

Default	No default

ATTRIBUTE Btds LCo pktsFromNetwork

Access	Read only
Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	BitTransparent
Values	Long Integer
Default	No default

ATTRIBUTE Btds LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	BitTransparent
Values	Long Integer
Default	No default

COMPONENT Btds Dpnss1

Groups	"GROUP Btds Dpnss1 Provisioned (Prov)" "GROUP Btds Dpnss1 PriTimeSlotOpModes (Pri)" "GROUP Btds Dpnss1 VdcdStatistics (Vdcd)" "GROUP Btds Dpnss1 FrameStatistics (Frames)" "GROUP Btds Dpnss1 HdlcStatistics (Hdlc)"
Scope	Application
Description	*Btds/n Dpnss1* The *Dpnss1* component handles Digital Private Network Signaling System No1 (DPNSS 1) messages for the purpose of voice/data call discrimination. Discrimination between a voice call and a data call causes adjustment of the *VoiceService* operational mode. A single instance of *Dpnss1* component can be provisioned under a *Btds/*n component.

The operational mode of any *VoiceService* provisioned within one Primary Rate Interface (PRI) is controlled by the same *Dpnss1* component.

To perform call discrimination, both ends of a *Btds* connection require the same call discrimination subcomponent (*Mcdn* or *Dpnss1*). *Btds serviceFailureReason* is ***mismatchedCallDiscriminator*** if the ends of a *Btds* connection have different call discrimination subcomponents.

Mib: BitTransparent

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Btds Dpnss1 Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attribute for the *Dpnss1* component to handle DPNSS 1 messages.

Mib: BitTransparent

ATTRIBUTE Btds Dpnss1 timeslotsX (x)

Access: Read and write

Description: This attribute specifies the list of time slots that are provisioned X for call collision resolution. A time slot not provisioned as X is assumed to be Y.

Mib: BitTransparent

Set of: Decimal (1..31)

Default: No default

GROUP Btds Dpnss1 PriTimeSlotOpModes (Pri)

Properties	Operational
Description	This group contains replicated attribute which displays operational mode of time slots.
Mib	BitTransparent

ATTRIBUTE Btds Dpnss1 timeSlotOpMode (tSlot)

Access	Read only
Description	This attribute displays the operational mode of every time slot which is serviced by a voice service. The value ***idle*** means that the time slot is not used to service a call, hence the concerned voice service's bandwidth in the subnet is available for other uses. The value ***voice*** means that a phone call is in progress. All provisioned voice service's value added features have been activated (features such as voice compression, silence suppression, echo cancellation). The value ***data*** means that a data call is in progress. All provisioned voice service's value added features have been de-activated, so that a clear 64kbit/s data connection is provided across the subnet.
Mib	BitTransparent
Values	idle voice data
Replication	Decimal (1..31)
Default	No default

GROUP Btds Dpnss1 VdcdStatistics (Vdcd)

Properties	Operational

Description	This group contains attributes that count the protocol messages indicating changes to operational modes of *VoiceServices*.
Mib	BitTransparent

ATTRIBUTE Btds Dpnss1 newVoiceCalls

Access	Read only
Description	This attribute counts the messages indicating beginning of establishment of a voice call. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 newDataCalls

Access	Read only
Description	This attribute counts the messages indicating beginning of establishment of a data call. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 voiceToData

Access	Read only
Description	This attribute counts the messages indicating a change of a call operational mode from voice transmission to data transmission. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Btds Dpnss1 dataToVoice

Access	Read only
Description	This attribute counts the messages indicating a change of a call operational mode from data transmission to voice transmission. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 callClears

Access	Read only
Description	This attribute counts the CCS messages indicating the end of a call. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

GROUP Btds Dpnss1 FrameStatistics (Frames)

Properties	Operational
Description	This group contains attributes which count layer 2 frames potentially significant for voice/data call discrimination. See also the description of the *HdlcStatistics* group.
Mib	BitTransparent

ATTRIBUTE Btds Dpnss1 frmProcessed

Access	Read only

Description	This attribute counts the valid layer 2 frames containing an Information Field with a protocol message. Changes to operational mode of a *VoiceService* are triggered only by a subset of processed frames. Many frames refer to the call progress and are ignored from the standpoint of voice/data call discrimination. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 frmInvalid

Access	Read only
Description	This attribute counts the invalid layer 2 frames. For DPNSS 1, a frames is counted as invalid if: - it is shorter than 3 octets or longer than 48 octets (excluding two octets of Cyclic Redundancy Check), or - it has an invalid bit combination in the Address Field, or - the Control Field is inconsistent with the Address Field, or - the type of data is invalid, or - it relates to time slot 0. For MCDN, a frame is counted as invalid if: - it is shorter than 4 or longer than 264 octets (excluding two octets of Cyclic Redundancy Check), or - it has an invalid bit combination in the Address Field, or - it has missing or incorrect mandatory information elements. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

GROUP Btds Dpnss1 HdlcStatistics (Hdlc)

Properties	Operational
Description	This group contains attributes which count the signaling frame events.
Mib	BitTransparent

ATTRIBUTE Btds Dpnss1 frmFromIf

Access	Read only
Description	This attribute counts the HDLC frames, correct or not, received from the PRI. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 aborts

Access	Read only
Description	This attribute counts the frame receptions aborted before completion, due to incoming frame format errors. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 crcErrors

Access	Read only
Description	This attribute counts the frames received with CRC errors. The counter wraps to zero when it exceeds its maximum value.

Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 nonOctetErrors

Access	Read only
Description	This attribute counts the frames received that were non octet aligned. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 overruns

Access	Read only
Description	This attribute counts the frames received for which overruns occurred. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Dpnss1 largeFrmErrors

Access	Read only
Description	This attribute counts the received frames that were longer than 1024 octets. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent

Values	Decimal (0..4294967295)
Default	0

COMPONENT Btds Mcdn

Groups	"GROUP Btds Mcdn Provisioned (Prov)" "GROUP Btds Mcdn PriTimeSlotOpModes (Pri)" "GROUP Btds Mcdn VdcdStatistics (Vdcd)" "GROUP Btds Mcdn FrameStatistics (Frames)" "GROUP Btds Mcdn HdlcStatistics (Hdlc)"
Scope	Application
Description	*Btds/n Mcdn* The *Mcdn* component handles the MCDN protocol, or Meridian 1 ISDN Primary Rate Interface, messages for the purpose of voice/data call discrimination. Discrimination between a voice call and a data call causes adjustment of the *VoiceService* operational mode. A single instance of the *Mcdn* component can be provisioned under a *Btds/*n component. The operational mode of any *VoiceService* provisioned within one Primary Rate Interface (PRI) is controlled by the same *Mcdn* component. To perform call discrimination, both ends of a *Btds* connection require the same call discrimination subcomponent (*Mcdn* or *Dpnss1*). *Btds serviceFailureReason* is ***mismatchedCallDiscriminator*** if the ends of a *Btds* connection have different call discrimination subcomponents.
Mib	BitTransparent
Common Verbs	Help List Display Add DELete

GROUP Btds Mcdn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attribute for the *Mcdn* component.
Mib	BitTransparent

ATTRIBUTE Btds Mcdn adjPbxSide

Access	Read and write
Description	This attribute holds the provisioning related to call collision resolution. Its value must be that same as in the adjacent PBX, at the other end of the PRI. To provision the call collision resolution in Nortel's SL1 and Meridian 1 PBXs, the network operator responds to the prompt SIDE by entering either MAS or SLAV. So if the SLAV was entered, then the *adjPbxSide* has to be provisioned ***slave***.
Mib	BitTransparent
Values	slave master
Default	slave

GROUP Btds Mcdn PriTimeSlotOpModes (Pri)

Properties	Operational
Description	This group contains replicated attribute which displays operational mode of time slots.
Mib	BitTransparent

ATTRIBUTE Btds Mcdn timeSlotOpMode (tSlot)

Access	Read only
Description	This attribute displays the operational mode of every time slot which is serviced by a voice service. The value ***idle*** means that the time slot is not used to service a call, hence the concerned voice service's bandwidth in the subnet

	is available for other uses. The value ***voice*** means that a phone call is in progress. All provisioned voice service's value added features have been activated (features such as voice compression, silence suppression, echo cancellation). The value ***data*** means that a data call is in progress. All provisioned voice service's value added features have been de-activated, so that a clear 64kbit/s data connection is provided across the subnet.
Mib	BitTransparent
Values	idle voice data
Replication	Decimal (1..31)
Default	No default

GROUP Btds Mcdn VdcdStatistics (Vdcd)

Properties	Operational
Description	This group contains attributes that count the protocol messages indicating changes to operational modes of *VoiceServices*.
Mib	BitTransparent

ATTRIBUTE Btds Mcdn newVoiceCalls

Access	Read only
Description	This attribute counts the messages indicating beginning of establishment of a voice call. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn newDataCalls

Access	Read only
Description	This attribute counts the messages indicating beginning of establishment of a data call. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn voiceToData

Access	Read only
Description	This attribute counts the messages indicating a change of a call operational mode from voice transmission to data transmission. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn dataToVoice

Access	Read only
Description	This attribute counts the messages indicating a change of a call operational mode from data transmission to voice transmission. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn callClears

Access	Read only
Description	This attribute counts the CCS messages indicating the end of a call. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

GROUP Btds Mcdn FrameStatistics (Frames)

Properties	Operational
Description	This group contains attributes which count layer 2 frames potentially significant for voice/data call discrimination. See also the description of the *HdlcStatistics* group.
Mib	BitTransparent

ATTRIBUTE Btds Mcdn frmProcessed

Access	Read only
Description	This attribute counts the valid layer 2 frames containing an Information Field with a protocol message. Changes to operational mode of a *VoiceService* are triggered only by a subset of processed frames. Many frames refer to the call progress and are ignored from the standpoint of voice/data call discrimination. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn frmInvalid

Access	Read only

Description	This attribute counts the invalid layer 2 frames. For DPNSS 1, a frames is counted as invalid if: - it is shorter than 3 octets or longer than 48 octets (excluding two octets of Cyclic Redundancy Check), or - it has an invalid bit combination in the Address Field, or - the Control Field is inconsistent with the Address Field, or - the type of data is invalid, or - it relates to time slot 0. For MCDN, a frame is counted as invalid if: - it is shorter than 4 or longer than 264 octets (excluding two octets of Cyclic Redundancy Check), or - it has an invalid bit combination in the Address Field, or - it has missing or incorrect mandatory information elements. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

GROUP Btds Mcdn HdlcStatistics (Hdlc)

Properties	Operational
Description	This group contains attributes which count the signaling frame events.
Mib	BitTransparent

ATTRIBUTE Btds Mcdn frmFromIf

Access	Read only
Description	This attribute counts the HDLC frames, correct or not, received from the PRI. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Btds Mcdn aborts

Access	Read only
Description	This attribute counts the frame receptions aborted before completion, due to incoming frame format errors. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn crcErrors

Access	Read only
Description	This attribute counts the frames received with CRC errors. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn nonOctetErrors

Access	Read only
Description	This attribute counts the frames received that were non octet aligned. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn overruns

Access	Read only
Description	This attribute counts the frames received for which overruns occurred. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Btds Mcdn largeFrmErrors

Access	Read only
Description	This attribute counts the received frames that were longer than 1024 octets. The counter wraps to zero when it exceeds its maximum value.
Mib	BitTransparent
Values	Decimal (0..4294967295)
Default	0

Nortel Networks Multiservice Switch 7400/15000/20000

Component Btds

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component CB

NN10600-060

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COMPONENT ClusterBridge (CB)

Groups	"GROUP CB IfEntryProv (IfEntry)" "GROUP CB MediaProv (Mp)" "GROUP CB Operational (Oper)" "GROUP CB OsiState (State)" "GROUP CB OperationalStatus (OperStatus)"
Scope	Application
Description	*ClusterBridge* The ClusterBridge component represents one ClusterBridge application. It allows a set of bridged ports to be treated as one routed port.
Mib	Bridge
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP CB IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Bridge

ATTRIBUTE CB ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

ATTRIBUTE CB ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

GROUP CB MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the media base component.
Mib	Bridge

ATTRIBUTE CB linkToProtocolPort (pp)

Access	Read and write
Criticality	Component

Description	This attribute specifies the *ProtocolPort* to which this interface is linked to. The protocol port is the logical interface to the network. The protocol port component describes the logical characteristics of this interface.
Mib	Bridge
Values	Link (Service, linkToMedia)
Default	No default

GROUP CB Operational (Oper)

Properties	Operational
Description	This group includes the operational attibutes which are specific to the ClusterBridge component.
Mib	Bridge

ATTRIBUTE CB macAddress (addr)

Access	Read only
Description	The medium access controller (MAC) address is an address that is only recognized by one station on the attached bus. This address is automatically assigned by the system.
Mib	Bridge
Values	String (6, Hex)
Default	No default

GROUP CB OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE CB adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE CB operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Bridge

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE CB usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Bridge

Values: idle
active (activ)
busy

Default: idle

GROUP CB OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: Bridge

ATTRIBUTE CB snmpOperStatus

Access: Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

Nortel Networks Multiservice Switch 7400/15000/20000

Component CB

Release 6.1

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COMPONENT Collector (Col)

Instance	accounting (acc) alarm (ala) log debug (deb) scn trap stats rtStats (rts) applicationSpecific (appl)
Groups	"GROUP Col Provisioned (Prov)" "GROUP Col Statistics (Stats)"

"COLLECTED STATS Collector"

Scope	Device
Description	*Collector/<dataType>* There is a *Collector* for each data stream. It is a permanent component that resides on the active CP. Its main function is to coordinate the collection of data from all its *Agent* subcomponents and distribute that data to the downstream applications which have requested it (for example, one or more *Session*s or its *Spooler* subcomponent). It also coordinates the

	time-of-day accounting (TODA) schedules and spooled statistics probes.
Mib	DataCollection
Subcomponents	"COMPONENT Col Spooler (Sp)"
Dyn. Subcomp.	"COMPONENT Col Agent (Ag)"
Common Verbs	Help List Display Add

GROUP Col Provisioned (Prov)

Properties	Provisioned
Description	This group specifies all of the provisioning data for a DCS *Collector.*
Mib	DataCollection

ATTRIBUTE Col collectionTimes (times)

Access	Read and write
Description	This attribute specifies the scheduled times at which data should be collected. Only accounting applications need the capability to generate data in this way. Setting this attribute for other streams has no effect. The user can enter the times in any order and duplicates are prevented at data entry. There is a limit of 24 entries, which is imposed at semantic check time. The collection times are triggered in chronological order. A semantic check error is issued if any 2 entries are less than 1 hour apart or if any 2 entries are more than 12 hours apart (which implies that if any entries are provided, there must be at least 2 entries). Note that by default (that is, in the absence of a provisioned

schedule), a Virtual Circuit (VC) starts its own 12-hour accounting timer. If any collection times are provisioned here, then the Time-Of-Day-Accounting (TODA) method is used in place of 12-hour accounting. This is applicable to both Switched VCs and Permanent VCs.

Mib	DataCollection
List of	Time (HM)
List Size	24
Default	No default

ATTRIBUTE Col peakWaterMarkInterval (peak)

Access	Read and write
Description	This attribute specifies the length of the accounting peak water mark interval. It is at least one minute and at most 15 minutes long. An accounting peak water mark within a given accounting interval is the accounting count which occurred during a peak water mark interval with the highest traffic. Peak water marks are used to determine traffic bursts. If no value is provisioned for this attribute, a value of 5 minutes is assumed. Peak water mark is only measured if the attribute *collectionTimes* in *Collector/ account* is provisioned.
Mib	DataCollection
List of	Decimal (1..15)
Units	minutes
List Size	1
Default	No default

GROUP Col Statistics (Stats)

Properties	Operational
Description	This group specifies the statistics operational attributes of the DCS *Collector, Agent* and *Spooler* components.

Mib	DataCollection

ATTRIBUTE Col currentQueueSize

Access	Read only
Description	This gauge contains the current number of records held by this DCS component.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Col recordsRx

Access	Read only
Description	This counter contains the cumulative number of records received by a DCS component, from applications that send data to it, since the processor last restarted. This counter wraps to 0 when the maximum value is exceeded.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Col recordsDiscarded

Access	Read only
Description	This is the cumulative number of records discarded by this DCS component since the processor last restarted. This counter wraps to 0 when the maximum value is exceeded.
Mib	DataCollection
Values	Decimal (0..4294967295)

Default No default

COLLECTED STATS Collector

Description The statistics record generated by the Collector component.

ATTRIBUTE Col oldDateTime

Description This attribute shows the old date/time immediately prior to the time change.

Values Time (DHMS)

ATTRIBUTE Col newDateTime

Description This attribute shows the new date/time immediately after the time change.

Values Time (DHMS)

COMPONENT Col Spooler (Sp)

Groups "GROUP Col Sp Provisioned (Prov)"
"GROUP Col Sp OsiState (State)"
"GROUP Col Sp Operational (Oper)"
"GROUP Col Sp Statistics (Stats)"

Scope Device

Description *Col/<dataType> Spooler*
A *Spooler* is a required subcomponent of the *Collector* and also resides on the active CP, managing all the spooling of a particular type of data.
Spooler for the applicationSpecific stream manages multiple files. For security reasons, a user is restricted from locking a *Spooler* of log data type.

Mib DataCollection

Common Verbs
Help
List
Display
LOCK
Unlock

VERB Newfile Col Sp

Impact	Service
Description	*Newfile Col/<datatype> Sp* This command causes the *Spooler* to open a new file to continue spooling. Typically, this is done because the user wants to retrieve the latest set of records for this type of data. If the new file can be opened, the existing spooling file is closed and moved into the standard “closed” disk directory; otherwise, the existing file is not closed and it remains in the directory containing the open spooling files. This command operates on all opened files being used in the applicationSpecific stream. The command succeeds if the new file can be opened; otherwise, the command fails. As long as the file system is available, spooling can continue in the existing open file. Of course, any time the file system is unavailable, spooling stops.

GROUP Col Sp Provisioned (Prov)

Properties	Provisioned
Description	This group specifies all of the provisioning data for a DCS *Spooler.*
Mib	DataCollection

ATTRIBUTE Col Sp spooling (spool)

Access	Read and write
Description	This attribute specifies whether or not this type of data is spooled to the disk. If set to ***off***, it is roughly equivalent to Locking the *Spooler* (except this will survive processor restarts). The following defaults are used: - alarm: on - accounting: on - log: on

- debug: off
- scn: on
- trap: off (see Note below)
- stats: on
- rtStats: off (see Note below)
- applicationSpecific: on

Note that SNMP Traps and rtStats cannot be spooled. A semantic check prevents the user from setting the value to ***on*** for the trap stream.

Spooling is always turned on for the log stream. A user is prevented from setting the value to ***off*** for the log stream.

Mib: DataCollection

Values: on
off

Default: No default

ATTRIBUTE Col Sp maximumNumberOfFiles (maxFile)

Access: Read and write

Description

This attribute specifies the maximum number of files that should be kept on the disk in the directory containing the closed files of this type. The value 0 is defined to mean “unlimited”.

A different default for each type of *Spooler* is defined as follows:
- alarm: 30
- accounting: 200
- debug: 2
- log: 0 (see Note below)
- scn: 10
- trap: 2 (this value is meaningless and is ignored)
- stats: 200
- rtStats: 2 (this value is meaningless and is ignored)
- applicationSpecific: 200

Note that the value of this attribute cannot be modified for the log stream.

Mib	DataCollection
Values	Decimal (0..200)
Default	No default

ATTRIBUTE Col Sp daysToRetainFiles

Access	Read and write
Description	This attribute specifies the number of days a spooled file should be kept on the disk in the directory containing the closed files of this type. The value 0 is defined to mean “unlimited”. The spooled files are purged, if the age of a file in days exceeds the value of the *daysToRetainFiles* attribute or the number of spooled files exceeds the value of the *maximumNumberOfFiles* attribute for a particular data type. The default for each type of *Spooler* except log is 0. The default for the log stream is 5. The value of this attribute cannot be modified for all types of *Spooler* except log. Note that the value of this attribute cannot be set to 0 for the log stream. A semantic check prevents the user from setting the value to 0 for the log stream. For security reasons, only a system administrator is allowed to set the value of this attribute for the log stream.
Mib	DataCollection
Values	Decimal (0..30)
Default	No default

GROUP Col Sp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each

attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib DataCollection

ATTRIBUTE Col Sp adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib DataCollection

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Col Sp operationalState (osiOper)

Access Read only

Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	DataCollection
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Col Sp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	DataCollection

Values	idle active (activ) busy
Default	idle

ATTRIBUTE Col Sp availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	DataCollection
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Col Sp proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	DataCollection
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Col Sp controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	DataCollection
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Col Sp alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	DataCollection
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Col Sp standbyStatus (osiStby)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	DataCollection
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Col Sp unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

	The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	DataCollection
Values	false true
Default	false

GROUP Col Sp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes specific to a DCS *Spooler.*
Mib	DataCollection

ATTRIBUTE Col Sp spoolingFileNames

Access	Read only
Description	When *spooling* is ***on***, this attribute contains the names of the open files into which data is currently being spooled. When *spooling* is ***off***, the value of this attribute is the empty list.
Mib	DataCollection
List of	String (0..128, ASCII)
Default	No default

GROUP Col Sp Statistics (Stats)

Properties	Operational
Description	This group specifies the statistics operational attributes of the DCS *Collector, Agent* and *Spooler* components.
Mib	DataCollection

ATTRIBUTE Col Sp currentQueueSize

Access	Read only

Description	This gauge contains the current number of records held by this DCS component.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Col Sp recordsRx

Access	Read only
Description	This counter contains the cumulative number of records received by a DCS component, from applications that send data to it, since the processor last restarted. This counter wraps to 0 when the maximum value is exceeded.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Col Sp recordsDiscarded

Access	Read only
Description	This is the cumulative number of records discarded by this DCS component since the processor last restarted. This counter wraps to 0 when the maximum value is exceeded.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Col Agent (Ag)

Instance	Decimal (0..15)

Groups	"GROUP Col Ag Statistics (Stats)" "GROUP Col Ag AgentStatistics (AgentStats)"
Scope	Device
Description	*Col/<dataType> Agent/<cardNumber>* A DCS *Agent* is an operational subcomponent of a *Collector*. One *Agent* instance exists for each *Card* that is running as active or standby.
Mib	DataCollection
Common Verbs	Help List Display

GROUP Col Ag Statistics (Stats)

Properties	Operational
Description	This group specifies the statistics operational attributes of the DCS *Collector, Agent* and *Spooler* components.
Mib	DataCollection

ATTRIBUTE Col Ag currentQueueSize

Access	Read only
Description	This gauge contains the current number of records held by this DCS component.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Col Ag recordsRx

Access	Read only

Description	This counter contains the cumulative number of records received by a DCS component, from applications that send data to it, since the processor last restarted. This counter wraps to 0 when the maximum value is exceeded.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Col Ag recordsDiscarded

Access	Read only
Description	This is the cumulative number of records discarded by this DCS component since the processor last restarted. This counter wraps to 0 when the maximum value is exceeded.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

GROUP Col Ag AgentStatistics (AgentStats)

Properties	Operational
Description	This group contains the statistical attributes specific to the DCS *Agent* components.
Mib	DataCollection

ATTRIBUTE Col Ag recordsNotGenerated

Access	Read only
Description	This attribute counts the records of a particular event type on this *Card* that could not be generated by some application due to some problem such as insufficient resources. One cannot tell

	exactly which event could not be generated, nor which application instance tried to generate it, but when this count increases, it is an indicator that some re-engineering may be required and will provide some idea as to why a record is missing. This counter wraps to 0 when the maximum value is exceeded.
Mib	DataCollection
Values	Decimal (0..4294967295)
Default	No default

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Component Col

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Nortel Networks Multiservice Switch

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Component Cpds

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COMPONENT CpdsNode (Cpds)

Scope	Network
Description	*CpdsNode* This component represents system level information related to a Passport configured as a Cpds.
Mib	no_mib
Common Verbs	Help List Display

Nortel Networks Multiservice Switch 7400/15000/20000

Component Cpds

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Component Crs

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COMPONENT CallRedirectionServer (Crs)

Groups	"GROUP Crs Provisioned (Prov)" "GROUP Crs OsiState (State)" "GROUP Crs Statistics (Stat)"
Scope	Network
Description	*CallRedirectionServer* The *CallRedirectionServer* component provides a set of alternate destinations for an original address. The alternate destination could be DPRS routing information (that is, RID/MID) or up to seven addresses.
Mib	CallRedirection
Opt. Subcomp.	"COMPONENT Crs PrimaryAddress (PAddr)" "COMPONENT Crs AlternateRid (AltRid)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Crs Provisioned (Prov)

Properties	Provisioned

Description	The *Provisioned* group contains provisionable attributes of the *CallRedirectionServer* component.
Mib	CallRedirection

ATTRIBUTE Crs logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the logical processor on which the call redirection server process is to run.
Mib	CallRedirection
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP Crs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	CallRedirection

ATTRIBUTE Crs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is

administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	CallRedirection
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Crs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	CallRedirection
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Crs usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

	The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	CallRedirection
Values	idle active (activ) busy
Default	idle

GROUP Crs Statistics (Stat)

Properties	Operational
Description	The *Statistics* operational group defines the statistics associated with the *CallRedirectionServer* component.
Mib	CallRedirection

ATTRIBUTE Crs totalAddresses

Access	Read only
Description	The *totalAddresses* attribute indicates the number of *PrimaryAddress* components associated with the *CallRedirectionServer* component.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs requestsReceived (reqRx)

Access	Read only

Description	The *requestsReceived* attribute counts the number of redirection requests received by the *CallRedirectionServer* component. This counter wraps to 0 when it exceeds its maximum value.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs primaryMatches (pMatch)

Access	Read only
Description	The *primaryMatches* attribute counts the Call Redirection Server attempts to find a matching *PrimaryAddress* where the lookup attempt was successful. This counter wraps to 0 when it exceeds its maximum value.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs secAddressListExhausted (sAddrEx)

Access	Read only
Description	The *secAddressListExhausted* attribute counts the Call Redirection Server attempts to find a *SecondaryAddress* component given a *PrimaryAddress* component where the lookup attempt resulted in the exhaustion of the secondary redirection list. This counter wraps to 0 when it exceeds its maximum value.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs maxAddrLenExceeded (maxAddrExc)

Access	Read only
Description	The *maxAddrLenExceeded* attribute counts how often the concatenation of the secondary address and the suffix digits from

	the original called address have exceeded the maximum of 15 digits. The suffix digits can be determined by removing the primary address digits from the front of the original called address. If appending the suffix digits to a secondary address causes the resulting address to exceed 15 digits, this secondary member is skipped and the next secondary member is tried.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs secRidMidUnsuccessful (sRidMidUnsuc)

Access	Read only
Description	The *secRidMidUnsuccessful* attribute counts the number of RID/MID redirections resulting in the destination address not being reached. This situation could occur when the destination address does not exist on the specified module or the specified module could not be reached.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs secAddrUnsuccessful (sAddrUnsuc)

Access	Read only
Description	The *secAddrUnsuccessful* attribute counts the number of Address redirections resulting in the destination user not being reached. This situation could occur when the destination user line is disabled, the destination address does not exist on the specified module, or the specified module could not be reached.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs ridRedirected (ridRed)

Access	Read only
Description	The *ridRedirected* attribute counts requests received by the Call Redirection Server resulting in the request being redirected to another RID specified by the *AlternateRid* component. This counter wraps to 0 when it exceeds its maximum value.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs ridMidRedirected (ridMidRed)

Access	Read only
Description	The *ridMidRedirected* attribute counts requests received by the Call Redirection Server resulting in the request being redirected to another RID/MID specified by the *SecondaryRidMid* component. This counter wraps to 0 when it exceeds its maximum value.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs addressRedirected (addrRed)

Access	Read only
Description	The *addressRedirected* attribute counts requests received by the Call Redirection Server resulting in the request being redirected to another Address specified by the *SecondaryAddress* component. This counter wraps to 0 when it exceeds its maximum value.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Crs altRidUnsuccessful (aRidUnsuc)

Access	Read only
Description	The *altRidUnsuccessful* attribute counts the number of RID redirections resulting in the destination address not being reached. This situation could occur when the alternate RID cannot be reached, the module hosting the destination address is isolated, or the port associated with the secondary address is unavailable at the alternate RID.
Mib	CallRedirection
Values	Decimal (0..4294967295)
Default	0

COMPONENT Crs PrimaryAddress (PAddr)

Instance	String (1..17, NativeAddressWith15DigitX121)
Scope	Network
Description	*Crs PrimaryAddress*/<address> The *PrimaryAddress* component defines a primary address for which a list of alternate destinations are specified. This primary address has either a secondary RID/MID destination or up to seven secondary addresses associated with it. A primary address matches the original destination address if, beginning with the most significant digit, all digits are identical and the primary address is less than or equal to the original destination address in length. The “best match” is the longest such primary address.

	The PrimaryAddress component instance value takes the form: x.<X.121 address> or e.<E.164 address>
Mib	CallRedirection
Opt. Subcomp.	"COMPONENT Crs PAddr SecondaryRidMid (SRidMid)" "COMPONENT Crs PAddr SecondaryAddress (SAddr)"
Common Verbs	Help List Display Add DELete

COMPONENT Crs PAddr SecondaryRidMid (SRidMid)

Groups	"GROUP Crs PAddr SRidMid RidMidProv"
Scope	Network
Description	*Crs Paddr/<address> SecondaryRidMid* The *SecondaryRidMid* component identifies an alternate destination module on which the primary address is also supported. RID/MID redirection allows the call redirection server to effectively override the original destination identified by the call routing system and forward the call to a different module.
Mib	CallRedirection
Common Verbs	Help List Display Add DELete

GROUP Crs PAddr SRidMid RidMidProv

Properties	Provisioned
Description	The *SecRidMidProv* group defines the secondary RID/MID pair associated with a specific primary address.
Mib	CallRedirection

ATTRIBUTE Crs PAddr SRidMid routingId (rid)

Access	Read and write
Description	This attribute specifies a group of one or more interconnected nodes (called a subnet) to which the primary address is redirected.
Mib	CallRedirection
Values	Decimal (1..126)
Default	No default

ATTRIBUTE Crs PAddr SRidMid moduleId (mid)

Access	Read and write
Description	This attribute specifies a node to which the primary address is redirected.
Mib	CallRedirection
Values	Decimal (1..1909)
Default	No default

COMPONENT Crs PAddr SecondaryAddress (SAddr)

Instance	Decimal (1..7)
Groups	"GROUP Crs PAddr SAddr SecAddrProv"
Scope	Network
Description	Crs Paddr/<address> SecondaryAddress/n The SecondaryAddress component identifies an alternate destination address. Address redirection allows the call redirection server to effectively override the original destination

address and forward the call to a different destination within the network.

Mib	CallRedirection
Common Verbs	Help List Display Add DELete

GROUP Crs PAddr SAddr SecAddrProv

Properties	Provisioned
Description	The *SecAddrProv* group defines one of the secondary addresses associated with a specific primary address.
Mib	CallRedirection

ATTRIBUTE Crs PAddr SAddr address (addr)

Access	Read and write
Description	This attribute specifies a secondary address to which the primary address is redirected. The *address* attribute includes the Numbering Plan Indicator (NPI) and the digits which form a unique identifier of the customer interface. The address may belong to the X.121 or E.164 addressing plan. Address digits are selected and assigned by network operators. The *address* attribute takes the form: x.<X.121 address> or e.<E.164 address>
Mib	CallRedirection
Values	String (1..17, NativeAddressWith15DigitX121)
Default	No default

COMPONENT Crs AlternateRid (AltRid)

Groups	"GROUP Crs AltRid AltRidProv"
Scope	Network

Description	*Crs AlternateRid* The *AlternateRid* component defines the routing identifier value that is used as the alternate DPRS routing information when routing to the RID specified by the Call Router (CR) is unsuccessful. This component should only be provisioned as a temporary measure.When activated the RID redirection feature as significant impact on the normal redirection operation, since RID redirection is always attempted first. One of the possible application of this feature being RID splitting, the *AlternateRid* component should be deleted as soon as all module have been migrated from their original RID and the Call Router (CR) throughout the network have been updated with the new RID information.
Mib	CallRedirection
Common Verbs	Help List Display Add DELete

GROUP Crs AltRid AltRidProv

Properties	Provisioned
Description	The *AltRidProv* group defines the alternate RID associated with the *Crs* component.
Mib	CallRedirection

ATTRIBUTE Crs AltRid routingId (rid)

Access	Read and write
Description	This attribute specifies a group of one or more interconnected nodes (called a subnet) to which the request is redirected.
Mib	CallRedirection
Values	Decimal (1..126)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Crs

Release 6.1

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7400/15000/20000

Component CR

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COMPONENT CallRouter (CR)

Scope	Network
Description	CallRouter This component performs the call routing function. It is a database containing prefix-DNAs. Unlike the DNAs under the NumberingPlanIndicator component which are only local DNAs, the DNAs under this component can refer to local DNAs and DNAs resident on other nodes. This component represents a database that is used to translate a DNA in a call setup packet into a ModuleId or a RoutingId so that the call setup packet can be routed to the correct node within the subnet or to the correct subnet. This call router can only be used for a network composed of Nortel Networks Multiservice Switches. This call router only provides service when there is no CSRM attached to the subnet. If a CSRM is connected to the subnet, the CSRM will provide the call routing service.
Mib	CallServer
Opt. Subcomp.	"COMPONENT CR NumberingPlanId (Npi)"
Common Verbs	Help List Display Add DELete

COMPONENT CR NumberingPlanId (Npi)

Instance	x121 e164
Groups	"GROUP CR Npi Statistics (Stats)"
Scope	Network
Description	CallRouter NumberingPlanId/<x121,e164> This component collects all the prefix DNAs provisioned for a particular numbering plan indicator. There are two numbering plans allowed, E.164 and X.121.
Mib	CallServer
Opt. Subcomp.	"COMPONENT CR Npi DataNetworkAddress (Dna)"
Common Verbs	Help List Display Add DELete

GROUP CR Npi Statistics (Stats)

Properties	Operational
Description	This group of attributes contains the statistics kept for a particular numbering plan indicator.
Mib	CallServer

ATTRIBUTE CR Npi totalDnas

Access	Read: All Write: Illegal
Description	This attribute contains the total number of prefix-DNAs provisioned.
Mib	CallServer
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE CR Npi callsRouted

Access	Read: All Write: Illegal
Description	This attribute contains the total number of call setup packets routed. When the counter reaches the maximum, it wraps back to zero.
Mib	CallServer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE CR Npi callsFailed

Access	Read: All Write: Illegal
Description	This attribute contains the total number of call setup packets that failed to route. This could be caused by the MID or RID being unreachable or by the DNA failing to translate to a MID or RID. Check the prefix-DNA provisioning data and the DNAs associated to the endpoints of the connection. When the counter reaches the maximum, it wraps back to zero.
Mib	CallServer
Values	Decimal (0..4294967295)
Default	0

COMPONENT CR Npi DataNetworkAddress (Dna)

Instance	BCD (1..15, Wildcarded)
Groups	"GROUP CR Npi Dna Provisioned (Prov)"
Scope	Network
Description	Cr Npi/<x121,e164> Dna/<BCD(1..15, WILDCARDED)> This subcomponent represents a prefix-DNA in the numbering plan. The instance value must be 1 to 15 digits each of value 0

through 9 or wildcard.Wild digits may be used so that the digit position specified by the wild digit is ignored when making a routing decision. This will reduce the number of prefix-DNAs needed to properly route the calls. The wild digit is represented by “?”. Wildcarding inconsistencies can not exist. If a prefix-DNA already exists in the database with a specific digit in position 3, new prefix-DNAs may not be added with a wildcard in position 3. Similarly, if the prefix-DNA already exists with a wildcard in a particular position, a similar prefix-DNA cannot be added with a specific digit in the same position.

Mib	CallServer
Common Verbs	Help List Display Add DELete

GROUP CR Npi Dna Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes represents what the prefix-DNA maps to.
Mib	CallServer

ATTRIBUTE CR Npi Dna routingId

Access	Read: All Write: All
Description	This attribute identifies the routingId that the prefix-DNA maps to. If the value is set to zero, then the routingId is not used. Note that at least one and only one of the attributes in this group must be set to a non-zero value.
Mib	CallServer
Values	Decimal (0..126)
Default	0

ATTRIBUTE CR Npi Dna moduleId

Access	Read: All Write: All
Description	This attribute contains the module identifier value that the DNA maps to. If the value is set to zero, then the moduleId is not used. Note that at least one and only one of the attributes in this group must be set to a non-zero value.
Mib	CallServer
Values	Decimal (0..1909)
Default	0

Nortel Networks Multiservice Switch 7400/15000/20000

Component CR

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component DataSigC

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component DataSigC

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COMPONENT DataSignallingChannel (DataSigChan)

Instance	Decimal (1..255)
Groups	"GROUP DataSigChan Provisioned (Prov)" "GROUP DataSigChan CustomerIdentifierData (CidData)" "GROUP DataSigChan IfEntryProv (IfEntry)" "GROUP DataSigChan OsiState (State)" "GROUP DataSigChan OperationalStatus (OperStatus)"
Scope	Application
Description	*DataSignallingChannel/n* The *DataSignallingChannel* component defines the operational characteristics of the connection to the external ISDN PRI

equipment. A *DataSignallingChannel* must be provisioned for each D-Channel.

Mib	DataIsdn
Subcomponents	"COMPONENT DataSigChan CallControl (Cc)"
Opt. Subcomp.	"COMPONENT DataSigChan TS014 (TS014)" "COMPONENT DataSigChan Etsi (Etsi)" "COMPONENT DataSigChan JapanIns (Ins)" "COMPONENT DataSigChan NationalIsdn2 (Ni2)" "COMPONENT DataSigChan Nis (Nis)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP DataSigChan Provisioned (Prov)

Properties	Provisioned
Description	This group represents the provisionable attributes of a *DataSigChan*.
Mib	DataIsdn

ATTRIBUTE DataSigChan commentText

Access	Read: All Write: All
Description	This attribute specifies the name of the customer that is using this *DataSigChan*. Typical use of this attribute is to store customer name.
Mib	DataIsdn
Values	String (0..40, ASCII)
Default	No default

GROUP DataSigChan CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	DataIsdn

ATTRIBUTE DataSigChan customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	DataIsdn
Values	Decimal (0; 1..8191)
Default	0

GROUP DataSigChan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	DataIsdn

ATTRIBUTE DataSigChan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	DataIsdn
Values	up down testing
Default	up

ATTRIBUTE DataSigChan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	DataIsdn
Values	Decimal (1..65535)
Default	No default

GROUP DataSigChan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DataIsdn

ATTRIBUTE DataSigChan adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	DataIsdn
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DataSigChan operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: DataIsdn

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE DataSigChan usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: DataIsdn

Values: idle
active (activ)
busy

Default: idle

GROUP DataSigChan OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: DataIsdn

ATTRIBUTE DataSigChan snmpOperStatus

Access: Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	DataIsdn
Values	up down testing
Default	up

COMPONENT DataSigChan CallControl (Cc)

Groups	"GROUP DataSigChan Cc Statistics (Stats)"
Scope	Application
Description	*DataSigChan/n CallControl* *This component defines the Call Control parameters and displays the statistics of the D-channel.*
Mib	DataIsdn
Subcomponents	"COMPONENT DataSigChan Cc ChannelGroup (Cg)"
Opt. Subcomp.	"COMPONENT DataSigChan Cc Trace (Tr)"
Dyn. Subcomp.	"COMPONENT DataSigChan Cc Bchannel (Bch)"
Common Verbs	Help List Display

GROUP DataSigChan Cc Statistics (Stats)

Properties	Operational
Description	This group contains the statistics of the CallControl
Mib	DataIsdn

ATTRIBUTE DataSigChan Cc totalValidInCalls (ic)

Access	Read only
Description	This attribute counts the total number of incoming calls (with valid mandatory IE contents and received in a valid ISDN state) from the interface. This counter wraps to zero after reaching its maximum value.
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc successfullInCalls (isc)

Access	Read only
Description	This attribute counts the total number of successfull valid incoming calls from the interface. Unsuccessful calls include those that have disallowed Capability (BC, LLC), screening indicator, or calling party number, and calls that are rejected due to requested channel busy. This counter wraps to zero after reaching its maximum value.
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc inInvalidCapability (iicap)

Access	Read only
Description	This attribute counts the number of valid incoming calls rejected due to an unsupported service capability, such as Information Transfer Rate, Class of Service, Protocol Standard. This counter wraps to zero after reaching its maximum value.
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc inInvalidScreen (iis)

Access	Read only
Description	This attribute counts the number of valid incoming calls rejected due to a screening indicator value not provisioned in the channel group's screeningIndicator attribute. This counter wraps to zero after reaching its maximum value.
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc inInvalidCgpn (iicgpn)

Access	Read only
Description	This attribute counts the number of valid incoming calls rejected due to the calling party number not beeing provisioned in any *channelGroup component of this call control. This counter wraps to zero after reaching its maximum value.*
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc inChannelBusy (icb)

Access	Read only
Description	This attribute counts the number of valid incoming calls rejected due to no available B-Channels. This counter wraps to zero after reaching its maximum value.
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc lastClearCause (lcc)

Access	Read only

Description	This attribute indicates the Q931 clear cause of the last valid call that is rejected or cleared.
Mib	DataIsdn
Values	Decimal (0..255)
Default	No default

ATTRIBUTE DataSigChan Cc lastClearedCallingPartyNumber (lccgpn)

Access	Read only
Description	This attribute shows the calling party number of the last valid call that is rejected or cleared.
Mib	DataIsdn
Values	BCD (1..14)
Default	No default

COMPONENT DataSigChan Cc ChannelGroup (Cg)

Instance	Decimal (1..31)
Groups	"GROUP DataSigChan Cc Cg CustomerIdentifierData (CidData)" "GROUP DataSigChan Cc Cg Provisioned (Prov)" "GROUP DataSigChan Cc Cg Statistics (Stats)"
Scope	Application

Description	*DataSigChan/n Cc ChannelGroup/n* *A ChannelGroup defines the call allocation parameters and the channel list for a subgroup of users.*
Mib	DataIsdn
Opt. Subcomp.	"COMPONENT DataSigChan Cc Cg CallingPartyNumber (Cgpn)"
Dyn. Subcomp.	"COMPONENT DataSigChan Cc Cg Bchannel (Bch)"
Common Verbs	Help List Display Add DELete

GROUP DataSigChan Cc Cg CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	DataIsdn

ATTRIBUTE DataSigChan Cc Cg customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

	An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	DataIsdn
Values	Decimal (0; 1..8191)
Default	0

GROUP DataSigChan Cc Cg Provisioned (Prov)

Properties	Provisioned
Description	This group defines the call admission parameters applied to the group of B-Channels.
Mib	DataIsdn

ATTRIBUTE DataSigChan Cc Cg commentText

Access	Read: All Write: All
Description	This attribute specifies the name of the customer that is using this *ChannelGroup. Typical use of this attribute is to store customer name.*
Mib	DataIsdn
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE DataSigChan Cc Cg screeningIndicator (si)

Access	Read and write
Description	This attribute defines the acceptable set of screening modes. The screening mode is carried by the Calling Party Number information element (IE) of the B-Channel request packet. There are four types of mode: upns - User provided, not screened upvp - User provided, verified and passed

	upvf - User provided, verified and failed np - Network provided When a call is received with a screening indicator not provisioned in the list, the call is cleared.
Mib	DataIsdn
Set of	upns upvp upvf np
Default	(upvp, np)

ATTRIBUTE DataSigChan Cc Cg channelAssignmentOrder (cao)

Access	Read and write
Description	This attribute defines the order (ascending or descending) in which the B-Channels are allocated. This attribute is used only when it is not signalled in the call setup message.
Mib	DataIsdn
Values	ascending descending
Default	ascending

ATTRIBUTE DataSigChan Cc Cg channelList (cl)

Access	Read and write
Description	This attribute contains the list of B-Channel numbers forming the channel group. At least one channel must be specified.
Mib	DataIsdn
Set of	Decimal (1..31)
Default	No default

GROUP DataSigChan Cc Cg Statistics (Stats)

Properties	Operational
Description	This group contains the statistics for a *ChannelGroup*

Mib	DataIsdn

ATTRIBUTE DataSigChan Cc Cg totalInCalls (tic)

Access	Read only
Description	This attribute counts the total number of incoming calls (with valid mandatory IE contents and received in a valid ISDN state) from the interface for this *channelGroup. This counter wraps to zero after reaching its maximum value.*
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc Cg successfullInCalls (sic)

Access	Read only
Description	This attribute counts the number of valid incoming calls for this *channelGroup. This counter wraps to zero after reaching its maximum value.*
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc Cg rejectedNoChanAvail (rnca)

Access	Read only
Description	This attribute counts the number of rejected call because no channel were available under the selected channel group. This counter wraps to zero after reaching its maximum value.
Mib	DataIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Cc Cg idleChannelCount (icc)

Access	Read only
Description	This attribute shows the number of B-channels in the channel group that are in idle state.
Mib	DataIsdn
Values	Decimal (0..255)
Default	0

ATTRIBUTE DataSigChan Cc Cg busyChannelCount (bcc)

Access	Read only
Description	This attribute shows the number of B-Channels in this channel group that are in busy state.
Mib	DataIsdn
Values	Decimal (0..255)
Default	0

COMPONENT DataSigChan Cc Cg CallingPartyNumber (Cgpn)

Instance	BCD (1..14)
Scope	Application
Description	*DataIsdn/n Cc Cg/n Cgpn/n* *This component identifies the acceptable calling party number by its instance number, which can consist up to a maximum of 14 decimal digits. These are the numbers that are allowed to use the channels of this ChannelGroup.*
Mib	DataIsdn
Common Verbs	Help List Display Add DELete

COMPONENT DataSigChan Cc Cg Bchannel (Bch)

Instance	Decimal (1..31)
Groups	"GROUP DataSigChan Cc Cg Bch BchannelOpData (BchanOpData)"
Scope	Application
Description	*DataSigChan/n Cc Bchannel/n* *DataSigChan/n Cc Cg/n Bchannel/n* *This component identifies the B-channels associated with a CallControl or a ChannelGroup.*
Mib	DataIsdn
Common Verbs	Help List Display

GROUP DataSigChan Cc Cg Bch BchannelOpData (BchanOpData)

Properties	Operational
Description	This group contains the operational data of a B-Channel.
Mib	DataIsdn

ATTRIBUTE DataSigChan Cc Cg Bch state

Access	Read only
Description	This attribute indicates the state of the B-channel. A B-channel is in idle state when it is available for a call. The busy state indicate that the B-channel is presently in use. The disabled state means that the access service is not enabled because it is locked or the port is down. The state noProtocolProvisioned means that the call control did not yet received the registration for this B-channel.
Mib	DataIsdn
Values	idle busy disabled noProtocolProvisioned

Default	No default

ATTRIBUTE DataSigChan Cc Cg Bch callingPartyNumber (cgpn)

Access	Read only
Description	This attribute indicates the calling party number of the last valid call request for this channel.
Mib	DataIsdn
Values	BCD (1..14)
Default	No default

ATTRIBUTE DataSigChan Cc Cg Bch lastQ931ClearCause (cause)

Access	Read only
Description	The clear cause of the last call on this B-channel.
Mib	DataIsdn
Values	Decimal (0..255)
Default	No default

ATTRIBUTE DataSigChan Cc Cg Bch runningApplication (app)

Access	Read only
Description	The name of the application running on this B-channel.
Mib	DataIsdn
Values	String (0..20, ASCII)
Default	""

ATTRIBUTE DataSigChan Cc Cg Bch callRefNumber (cref)

Access	Read only
Description	This attribute indicates the call reference number for this B-channel. The call reference value is assigned by the originating side of the call and remains fixed for the lifetime of a call (except in the case of call suspension).
Mib	DataIsdn

Values	Decimal (0..65535)
Default	No default

COMPONENT DataSigChan Cc Trace (Tr)

Scope	Application
Description	*DataIsdn/n CallControl Trace* *This component defines the Call Control trace component for the dataIsdn. It consists of the Pri/n subcomponent.*
Mib	DataIsdn
Dyn. Subcomp.	"COMPONENT DataSigChan Cc Tr Pri"
Common Verbs	Help List Display Add DELete

COMPONENT DataSigChan Cc Tr Pri

Instance	Decimal (0..3)
Scope	Application
Description	*DataIsdn/n CallControl Trace Pri/n* *The component displays the class data members of the isdn Pri/n class.*
Mib	DataIsdn
Dyn. Subcomp.	"COMPONENT DataSigChan Cc Tr Pri Bch"
Common Verbs	Help List Display

COMPONENT DataSigChan Cc Tr Pri Bch

Instance	Decimal (1..31)

Scope	Application
Description	*DataIsdn/n CallControl Trace Pri/n Bch/m* *The component displays the class data members of the isdn Pri/n Bch/m class.*
Mib	DataIsdn
Common Verbs	Help List Display

COMPONENT DataSigChan Cc Bchannel (Bch)

Instance	Decimal (1..31)
Groups	"GROUP DataSigChan Cc Bch BchannelOpData (BchanOpData)"
Scope	Application
Description	*DataSigChan/n Cc Bchannel/n* *DataSigChan/n Cc Cg/n Bchannel/n* *This component identifies the B-channels associated with a CallControl or a ChannelGroup.*
Mib	DataIsdn
Common Verbs	Help List Display

GROUP DataSigChan Cc Bch BchannelOpData (BchanOpData)

Properties	Operational
Description	This group contains the operational data of a B-Channel.
Mib	DataIsdn

ATTRIBUTE DataSigChan Cc Bch state

Access	Read only

Description	This attribute indicates the state of the B-channel. A B-channel is in idle state when it is available for a call. The busy state indicate that the B-channel is presently in use. The disabled state means that the access service is not enabled because it is locked or the port is down. The state noProtocolProvisioned means that the call control did not yet received the registration for this B-channel.
Mib	DataIsdn
Values	idle busy disabled noProtocolProvisioned
Default	No default

ATTRIBUTE DataSigChan Cc Bch callingPartyNumber (cgpn)

Access	Read only
Description	This attribute indicates the calling party number of the last valid call request for this channel.
Mib	DataIsdn
Values	BCD (1..14)
Default	No default

ATTRIBUTE DataSigChan Cc Bch lastQ931ClearCause (cause)

Access	Read only
Description	The clear cause of the last call on this B-channel.
Mib	DataIsdn
Values	Decimal (0..255)
Default	No default

ATTRIBUTE DataSigChan Cc Bch runningApplication (app)

Access	Read only
Description	The name of the application running on this B-channel.

Mib	DataIsdn
Values	String (0..20, ASCII)
Default	""

ATTRIBUTE DataSigChan Cc Bch callRefNumber (cref)

Access	Read only
Description	This attribute indicates the call reference number for this B-channel. The call reference value is assigned by the originating side of the call and remains fixed for the lifetime of a call (except in the case of call suspension).
Mib	DataIsdn
Values	Decimal (0..65535)
Default	No default

COMPONENT DataSigChan TS014 (TS014)

Groups	"GROUP DataSigChan TS014 Layer2Options (L2)" "GROUP DataSigChan TS014 Provisioned (Prov)" "GROUP DataSigChan TS014 Operational (Oper)" "GROUP DataSigChan TS014 Tools"
Scope	Device
Description	*DataSigChan/n TS014* The *TS014* component defines the operational characteristics of the signalling channel's connection to the external equipment.
Mib	DisdnTS014
Subcomponents	"COMPONENT DataSigChan TS014 Framer (Framer)"
Common Verbs	Help List Display Add DELete

GROUP DataSigChan TS014 Layer2Options (L2)

Properties	Provisioned
Description	This group represents the provisionable Layer 2 attributes of the Q931 CCITT protocol.
Mib	DisdnTS014

ATTRIBUTE DataSigChan TS014 t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer2 enable request timer.
Mib	DisdnTS014
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE DataSigChan TS014 t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgement
Mib	DisdnTS014
Values	Decimal (1..20)
Units	seconds
Default	2

ATTRIBUTE DataSigChan TS014 n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer2 frame.
Mib	DisdnTS014
Values	Decimal (1..8)
Default	3

ATTRIBUTE DataSigChan TS014 t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time that a no layer 2 traffic situation can last. Expiry triggers a check on whether the far end is a live.
Mib	DisdnTS014
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE DataSigChan TS014 n201

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of octets in an information field.
Mib	DisdnTS014

Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE DataSigChan TS014 circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of frames for B channel use.
Mib	DisdnTS014
Values	Decimal (1..632)
Default	7

GROUP DataSigChan TS014 Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the d-channel signalling link.
Mib	DisdnTS014

ATTRIBUTE DataSigChan TS014 layer2HdlcMode

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the layer 2 HDLC interface is the network or user side of the connection.
Mib	DisdnTS014
Values	network user
Default	user

GROUP DataSigChan TS014 Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the signalling protocol.
Mib	DisdnTS014

ATTRIBUTE DataSigChan TS014 activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	DisdnTS014
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan TS014 peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	DisdnTS014
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan TS014 dChanStatus (dCh)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to

stage the layer 2.
established means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX.
enabling means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX.
inService means that the resources for processing calls are available.
restarting means that the resources for call processing are being re-initialized.

Mib	DisdnTS014
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP DataSigChan TS014 Tools

Properties	Operational
Description	This group contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	DisdnTS014

ATTRIBUTE DataSigChan TS014 tracing

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in Col/debug must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (for example, *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously.

Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages.

Types of tracing include:
protocolErrors - get details of any protocol errors which are occurring. Protocol errors are also reported in summary form as alarms.
q931Summary - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes).
q931Hex - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Messages in hex format being sent and received on the link.

Mib	DisdnTS014
Set of	protocolErrors q931Summary q931Hex q931Symbolic portHex
Default	No default

COMPONENT DataSigChan TS014 Framer (Framer)

Groups	"GROUP DataSigChan TS014 Framer Provisioned (Prov)" "GROUP DataSigChan TS014 Framer OsiState (State)" "GROUP DataSigChan TS014 Framer Statistics (Stats)"

"COLLECTED STATS DataSignallingChannel TS014 Framer"

Scope	Application

Description

DataSigChan/n ts014 Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

The e1/ds1 port number of the physical channel linked to the *Framer* component is restricted to 0-3 for all FP including MSA32.

Mib DisdnTS014

Common Verbs

Help
List
Display

GROUP DataSigChan TS014 Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib DisdnTS014

ATTRIBUTE DataSigChan TS014 Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	DisdnTS014
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP DataSigChan TS014 Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DisdnTS014

ATTRIBUTE DataSigChan TS014 Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: DisdnTS014

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE DataSigChan TS014 Framer operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: DisdnTS014

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE DataSigChan TS014 Framer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib DisdnTS014

Values idle
active (activ)
busy

Default idle

GROUP DataSigChan TS014 Framer Statistics (Stats)

Properties Operational

Description

This group contains the operational statistics data for a Framer component.

Mib DisdnTS014

ATTRIBUTE DataSigChan TS014 Framer aborts

Access Read only

Description

This attribute counts the total number of aborts received.
This count wraps to zero after reaching its maximum value.

Mib DisdnTS014

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan TS014 Framer crcErrors

Access Read only

Description

This attribute counts the total number of frames with CRC errors.
This count wraps to zero after reaching its maximum value.

Mib	DisdnTS014
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan TS014 Framer lrcErrors

Access	Read only
Description	This attribute counts the total number of frames with LRC errors. This count wraps to zero after reaching its maximum value.
Mib	DisdnTS014
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan TS014 Framer nonOctetErrors

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. This count wraps to zero after reaching its maximum value.
Mib	DisdnTS014
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan TS014 Framer overruns

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnTS014
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE DataSigChan TS014 Framer underruns

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnTS014
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan TS014 Framer largeFrmErrors

Access	Read only
Description	This attribute counts the total number of frames received which were too large. The frame was longer than 500 bytes. This count wraps to zero after reaching its maximum value.
Mib	DisdnTS014
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan TS014 Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer
Mib	DisdnTS014
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan TS014 Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	DisdnTS014
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan TS014 Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	DisdnTS014
Values	Long Integer
Default	No default

COLLECTED STATS DataSignallingChannel TS014 Framer

Description	The statistics record generated by the DataSignallingChannel TS014 Framer component.

ATTRIBUTE DataSigChan TS014 Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DataSigChan TS014 Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DataSigChan TS014 Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DataSigChan TS014 Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DataSigChan TS014 Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT DataSigChan Etsi (Etsi)

Groups	"GROUP DataSigChan Etsi Layer2Options (L2)" "GROUP DataSigChan Etsi Provisioned (Prov)" "GROUP DataSigChan Etsi Operational (Oper)" "GROUP DataSigChan Etsi Tools"
Scope	Device

Description	*DataSigChan/n ETSI* The *ETSI* component defines the operational characteristics of the signalling channel's connection to the external equipment.
Mib	DisdnETSI
Subcomponents	"COMPONENT DataSigChan Etsi Framer (Framer)"
Common Verbs	Help List Display Add DELete

GROUP DataSigChan Etsi Layer2Options (L2)

Properties	Provisioned
Description	This group represents the provisionable Layer 2 attributes of the Q931 CCITT protocol.
Mib	DisdnETSI

ATTRIBUTE DataSigChan Etsi t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer2 enable request timer.
Mib	DisdnETSI
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Etsi t200

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgement
Mib	DisdnETSI
Values	Decimal (1..20)
Units	seconds
Default	2

ATTRIBUTE DataSigChan Etsi n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer2 frame.
Mib	DisdnETSI
Values	Decimal (1..8)
Default	3

ATTRIBUTE DataSigChan Etsi t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time that a no layer 2 traffic situation can last. Expiry triggers a check on whether the far end is a live.
Mib	DisdnETSI
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Etsi n201

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of octets in an information field.
Mib	DisdnETSI
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE DataSigChan Etsi circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of frames for B channel use.
Mib	DisdnETSI
Values	Decimal (1..632)
Default	7

GROUP DataSigChan Etsi Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the d-channel signalling link.
Mib	DisdnETSI

ATTRIBUTE DataSigChan Etsi layer2HdlcMode

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the layer 2 HDLC interface is the network or user side of the connection.
Mib	DisdnETSI
Values	network user
Default	user

GROUP DataSigChan Etsi Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the signalling protocol.
Mib	DisdnETSI

ATTRIBUTE DataSigChan Etsi activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	DisdnETSI
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Etsi peakActiveChannels

Access	Read: All Write: Illegal

Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	DisdnETSI
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Etsi dChanStatus (dCh)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	DisdnETSI
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP DataSigChan Etsi Tools

Properties	Operational
Description	This group contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	DisdnETSI

ATTRIBUTE DataSigChan Etsi tracing

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in Col/debug must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (for example, *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously. Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages. Types of tracing include: ***protocolErrors*** - get details of any protocol errors which are occurring. Protocol errors are also reported in summary form as alarms. ***q931Summary*** - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes). ***q931Hex*** - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends. ***q931Symbolic*** - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link. ***portHex*** - Messages in hex format being sent and received on the link.

Mib	DisdnETSI
Set of	protocolErrors q931Summary q931Hex q931Symbolic portHex
Default	No default

COMPONENT DataSigChan Etsi Framer (Framer)

Groups	"GROUP DataSigChan Etsi Framer Provisioned (Prov)" "GROUP DataSigChan Etsi Framer OsiState (State)" "GROUP DataSigChan Etsi Framer Statistics (Stats)"

"COLLECTED STATS DataSignallingChannel Etsi Framer"

Scope	Application
Description	

DataSigChan/n ts014 Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

The e1/ds1 port number of the physical channel linked to the *Framer* component is restricted to 0-3 for all FP including MSA32.

Mib	DisdnETSI
Common Verbs	Help List Display

GROUP DataSigChan Etsi Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	DisdnETSI

ATTRIBUTE DataSigChan Etsi Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	DisdnETSI
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP DataSigChan Etsi Framer OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DisdnETSI

ATTRIBUTE DataSigChan Etsi Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	DisdnETSI
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DataSigChan Etsi Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: DisdnETSI

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE DataSigChan Etsi Framer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: DisdnETSI

Values: idle
active (activ)
busy

Default: idle

GROUP DataSigChan Etsi Framer Statistics (Stats)

Properties: Operational

Description

This group contains the operational statistics data for a Framer component.

Mib DisdnETSI

ATTRIBUTE DataSigChan Etsi Framer aborts

Access Read only

Description

This attribute counts the total number of aborts received.
This count wraps to zero after reaching its maximum value.

Mib DisdnETSI

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Etsi Framer crcErrors

Access Read only

Description

This attribute counts the total number of frames with CRC errors.
This count wraps to zero after reaching its maximum value.

Mib DisdnETSI

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Etsi Framer lrcErrors

Access Read only

Description

This attribute counts the total number of frames with LRC errors.
This count wraps to zero after reaching its maximum value.

Mib DisdnETSI

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Etsi Framer nonOctetErrors

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. This count wraps to zero after reaching its maximum value.
Mib	DisdnETSI
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Etsi Framer overruns

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnETSI
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Etsi Framer underruns

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnETSI
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Etsi Framer largeFrmErrors

Access	Read only
Description	This attribute counts the total number of frames received which were too large. The frame was longer than 500 bytes. This count wraps to zero after reaching its maximum value.
Mib	DisdnETSI
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Etsi Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer
Mib	DisdnETSI
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan Etsi Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	DisdnETSI
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan Etsi Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.

Mib	DisdnETSI
Values	Long Integer
Default	No default

COLLECTED STATS DataSignallingChannel Etsi Framer

Description	The statistics record generated by the DataSignallingChannel Etsi Framer component.

ATTRIBUTE DataSigChan Etsi Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DataSigChan Etsi Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DataSigChan Etsi Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DataSigChan Etsi Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DataSigChan Etsi Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values	Decimal (0..100)

COMPONENT DataSigChan JapanIns (Ins)

Groups	"GROUP DataSigChan Ins Layer2Options (L2)" "GROUP DataSigChan Ins Provisioned (Prov)" "GROUP DataSigChan Ins Operational (Oper)" "GROUP DataSigChan Ins Tools"
Scope	Device
Description	*DataSigChan/n JapanIns* The *JapanIns* component defines the operational characteristics of the signalling channel's connection to the external equipment.
Mib	DisdnJapanIns
Subcomponents	"COMPONENT DataSigChan Ins Framer (Framer)"
Common Verbs	Help List Display Add DELete

GROUP DataSigChan Ins Layer2Options (L2)

Properties	Provisioned
Description	This group represents the provisionable Layer 2 attributes of the Q931 CCITT protocol.
Mib	DisdnJapanIns

ATTRIBUTE DataSigChan Ins t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer2 enable request timer.
Mib	DisdnJapanIns

Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Ins t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgement
Mib	DisdnJapanIns
Values	Decimal (1..20)
Units	seconds
Default	2

ATTRIBUTE DataSigChan Ins n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer2 frame.
Mib	DisdnJapanIns
Values	Decimal (1..8)
Default	3

ATTRIBUTE DataSigChan Ins t203

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the maximum time that a no layer 2 traffic situation can last. Expiry triggers a check on whether the far end is a live.
Mib	DisdnJapanIns
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Ins n201

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of octets in an information field.
Mib	DisdnJapanIns
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE DataSigChan Ins circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of frames for B channel use.
Mib	DisdnJapanIns
Values	Decimal (1..632)
Default	7

GROUP DataSigChan Ins Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the d-channel signalling link.
Mib	DisdnJapanIns

ATTRIBUTE DataSigChan Ins layer2HdlcMode

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the layer 2 HDLC interface is the network or user side of the connection.
Mib	DisdnJapanIns
Values	network user
Default	user

GROUP DataSigChan Ins Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the signalling protocol.
Mib	DisdnJapanIns

ATTRIBUTE DataSigChan Ins activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	DisdnJapanIns
Values	Decimal (0..128)

Default	0

ATTRIBUTE DataSigChan Ins peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	DisdnJapanIns
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Ins dChanStatus (dCh)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	DisdnJapanIns
Values	outOfService establishing established enabling

	inService restarting
Default	No default

GROUP DataSigChan Ins Tools

Properties	Operational
Description	This group contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	DisdnJapanIns

ATTRIBUTE DataSigChan Ins tracing

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in Col/debug must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (for example, *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously. Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages. Types of tracing include: ***protocolErrors*** - get details of any protocol errors which are occurring. Protocol errors are also reported in summary form as alarms. ***q931Summary*** - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes). ***q931Hex*** - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local

or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Messages in hex format being sent and received on the link.

Mib: DisdnJapanIns

Set of:
protocolErrors
q931Summary
q931Hex
q931Symbolic
portHex

Default: No default

COMPONENT DataSigChan Ins Framer (Framer)

Groups:
"GROUP DataSigChan Ins Framer Provisioned (Prov)"
"GROUP DataSigChan Ins Framer OsiState (State)"
"GROUP DataSigChan Ins Framer Statistics (Stats)"

"COLLECTED STATS DataSignallingChannel JapanIns Framer"

Scope: Application

Description:

DataSigChan/n ts014 Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

The e1/ds1 port number of the physical channel linked to the *Framer* component is restricted to 0-3 for all FP including MSA32.

Mib DisdnJapanIns

Common Verbs
Help
List
Display

GROUP DataSigChan Ins Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib DisdnJapanIns

ATTRIBUTE DataSigChan Ins Framer interfaceName

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib DisdnJapanIns

Values Link (Hardware, applicationFramerName)

Default No default

GROUP DataSigChan Ins Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DisdnJapanIns

ATTRIBUTE DataSigChan Ins Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	DisdnJapanIns
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DataSigChan Ins Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	DisdnJapanIns
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE DataSigChan Ins Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	DisdnJapanIns
Values	idle active (activ) busy
Default	idle

GROUP DataSigChan Ins Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	DisdnJapanIns

ATTRIBUTE DataSigChan Ins Framer aborts

Access	Read only
Description	This attribute counts the total number of aborts received. This count wraps to zero after reaching its maximum value.
Mib	DisdnJapanIns
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ins Framer crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors. This count wraps to zero after reaching its maximum value.
Mib	DisdnJapanIns
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ins Framer lrcErrors

Access	Read only
Description	This attribute counts the total number of frames with LRC errors. This count wraps to zero after reaching its maximum value.
Mib	DisdnJapanIns

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ins Framer nonOctetErrors

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. This count wraps to zero after reaching its maximum value.
Mib	DisdnJapanIns
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ins Framer overruns

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnJapanIns
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ins Framer underruns

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnJapanIns
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE DataSigChan Ins Framer largeFrmErrors

Access	Read only
Description	This attribute counts the total number of frames received which were too large. The frame was longer than 500 bytes. This count wraps to zero after reaching its maximum value.
Mib	DisdnJapanIns
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ins Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer
Mib	DisdnJapanIns
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan Ins Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	DisdnJapanIns
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan Ins Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	DisdnJapanIns
Values	Long Integer
Default	No default

COLLECTED STATS DataSignallingChannel JapanIns Framer

Description	The statistics record generated by the DataSignallingChannel JapanIns Framer component.

ATTRIBUTE DataSigChan Ins Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DataSigChan Ins Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DataSigChan Ins Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DataSigChan Ins Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DataSigChan Ins Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT DataSigChan NationalIsdn2 (Ni2)

Groups	"GROUP DataSigChan Ni2 Layer2Options (L2)" "GROUP DataSigChan Ni2 Provisioned (Prov)" "GROUP DataSigChan Ni2 Operational (Oper)" "GROUP DataSigChan Ni2 Tools"
Scope	Device
Description	*DataSigChan/n NationalIsdn2* The *Ni2* component defines the operational characteristics of the signalling channel's connection to the external equipment.
Mib	DisdnNI2
Subcomponents	"COMPONENT DataSigChan Ni2 Framer (Framer)"
Common Verbs	Help List Display Add DELete

GROUP DataSigChan Ni2 Layer2Options (L2)

Properties	Provisioned
Description	This group represents the provisionable Layer 2 attributes of the Q931 CCITT protocol.
Mib	DisdnNI2

ATTRIBUTE DataSigChan Ni2 t23

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the layer2 enable request timer.
Mib	DisdnNI2
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Ni2 t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgement
Mib	DisdnNI2
Values	Decimal (1..20)
Units	seconds
Default	2

ATTRIBUTE DataSigChan Ni2 n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer2 frame.
Mib	DisdnNI2
Values	Decimal (1..8)
Default	3

ATTRIBUTE DataSigChan Ni2 t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time that a no layer 2 traffic situation can last. Expiry triggers a check on whether the far end is a live.
Mib	DisdnNI2
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Ni2 n201

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of octets in an information field.
Mib	DisdnNI2
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE DataSigChan Ni2 circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of frames for B channel use.

Mib	DisdnNI2
Values	Decimal (1..632)
Default	7

GROUP DataSigChan Ni2 Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the d-channel signalling link.
Mib	DisdnNI2

ATTRIBUTE DataSigChan Ni2 layer2HdlcMode

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the layer 2 HDLC interface is the network or user side of the connection.
Mib	DisdnNI2
Values	network user
Default	user

GROUP DataSigChan Ni2 Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the signalling protocol.
Mib	DisdnNI2

ATTRIBUTE DataSigChan Ni2 activeChannels

Access	Read: All Write: Illegal

Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	DisdnNI2
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Ni2 peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	DisdnNI2
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Ni2 dChanStatus (dCh)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.

Mib	DisdnNI2
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP DataSigChan Ni2 Tools

Properties	Operational
Description	This group contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	DisdnNI2

ATTRIBUTE DataSigChan Ni2 tracing

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in Col/debug must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (for example, *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously. Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages. Types of tracing include: ***protocolErrors*** - get details of any protocol errors which are occurring. Protocol errors are also reported in summary form as alarms.

q931Summary - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes).
q931Hex - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Messages in hex format being sent and received on the link.

Mib: DisdnNI2

Set of:
protocolErrors
q931Summary
q931Hex
q931Symbolic
portHex

Default: No default

COMPONENT DataSigChan Ni2 Framer (Framer)

Groups:
"GROUP DataSigChan Ni2 Framer Provisioned (Prov)"
"GROUP DataSigChan Ni2 Framer OsiState (State)"
"GROUP DataSigChan Ni2 Framer Statistics (Stats)"

"COLLECTED STATS DataSignallingChannel NationalIsdn2 Framer"

Scope: Application

Description

DataSigChan/n ts014 Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to

a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

The e1/ds1 port number of the physical channel linked to the *Framer* component is restricted to 0-3 for all FP including MSA32.

Mib DisdnNI2

Common Verbs

Help
List
Display

GROUP DataSigChan Ni2 Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib DisdnNI2

ATTRIBUTE DataSigChan Ni2 Framer interfaceName

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib DisdnNI2

Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP DataSigChan Ni2 Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DisdnNI2

ATTRIBUTE DataSigChan Ni2 Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	DisdnNI2
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE DataSigChan Ni2 Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	DisdnNI2
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE DataSigChan Ni2 Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	DisdnNI2

Values	idle active (activ) busy
Default	idle

GROUP DataSigChan Ni2 Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	DisdnNI2

ATTRIBUTE DataSigChan Ni2 Framer aborts

Access	Read only
Description	This attribute counts the total number of aborts received. This count wraps to zero after reaching its maximum value.
Mib	DisdnNI2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ni2 Framer crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors. This count wraps to zero after reaching its maximum value.
Mib	DisdnNI2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Ni2 Framer lrcErrors

Access	Read only

Description

This attribute counts the total number of frames with LRC errors. This count wraps to zero after reaching its maximum value.

Mib DisdnNI2

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Ni2 Framer nonOctetErrors

Access Read only

Description

This attribute counts the total number of frames that were non octet aligned.
This count wraps to zero after reaching its maximum value.

Mib DisdnNI2

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Ni2 Framer overruns

Access Read only

Description

This attribute counts the total number of frames received from the link for which overruns occurred.
This count wraps to zero after reaching its maximum value.

Mib DisdnNI2

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Ni2 Framer underruns

Access Read only

Description

This attribute counts the total number of frames transmitted to the

link for which underruns occurred.
This count wraps to zero after reaching its maximum value.

Mib DisdnNI2

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Ni2 Framer largeFrmErrors

Access Read only

Description

This attribute counts the total number of frames received which were too large. The frame was longer than 500 bytes.
This count wraps to zero after reaching its maximum value.

Mib DisdnNI2

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Ni2 Framer frmToIf

Access Read only

Description

The number of frames transmitted to the link interface by Framer.

Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer

Mib DisdnNI2

Values Long Integer

Default No default

ATTRIBUTE DataSigChan Ni2 Framer frmFromIf

Access Read only

Description

The number of frames received from the link interface by Framer.

Mib	DisdnNI2
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan Ni2 Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	DisdnNI2
Values	Long Integer
Default	No default

COLLECTED STATS DataSignallingChannel NationalIsdn2 Framer

Description	The statistics record generated by the DataSignallingChannel NationalIsdn2 Framer component.

ATTRIBUTE DataSigChan Ni2 Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DataSigChan Ni2 Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DataSigChan Ni2 Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DataSigChan Ni2 Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DataSigChan Ni2 Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT DataSigChan Nis (Nis)

Groups	"GROUP DataSigChan Nis Layer2Options (L2)" "GROUP DataSigChan Nis Provisioned (Prov)" "GROUP DataSigChan Nis Operational (Oper)" "GROUP DataSigChan Nis Tools"
Scope	Device
Description	*DataSigChan/n Nis* The *Nis* component defines the operational characteristics of the signalling channel's connection to the external equipment.
Mib	DisdnNIS
Subcomponents	"COMPONENT DataSigChan Nis Framer (Framer)"
Common Verbs	Help List Display Add DELete

GROUP DataSigChan Nis Layer2Options (L2)

Properties	Provisioned
Description	This group represents the provisionable Layer 2 attributes of the Q931 CCITT protocol.

Mib	DisdnNIS

ATTRIBUTE DataSigChan Nis t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer2 enable request timer.
Mib	DisdnNIS
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Nis t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgement
Mib	DisdnNIS
Values	Decimal (1..20)
Units	seconds
Default	2

ATTRIBUTE DataSigChan Nis n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer2 frame.
Mib	DisdnNIS

Values	Decimal (1..8)
Default	3

ATTRIBUTE DataSigChan Nis t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time that a no layer 2 traffic situation can last. Expiry triggers a check on whether the far end is a live.
Mib	DisdnNIS
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE DataSigChan Nis n201

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of octets in an information field.
Mib	DisdnNIS
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE DataSigChan Nis circuitSwitchedK

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the maximum number of frames for B channel use.
Mib	DisdnNIS
Values	Decimal (1..632)
Default	7

GROUP DataSigChan Nis Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the d-channel signalling link.
Mib	DisdnNIS

ATTRIBUTE DataSigChan Nis layer2HdlcMode

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the layer 2 HDLC interface is the network or user side of the connection.
Mib	DisdnNIS
Values	network user
Default	user

GROUP DataSigChan Nis Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the signalling protocol.
Mib	DisdnNIS

ATTRIBUTE DataSigChan Nis activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	DisdnNIS
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Nis peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	DisdnNIS
Values	Decimal (0..128)
Default	0

ATTRIBUTE DataSigChan Nis dChanStatus (dCh)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX.

	inService means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	DisdnNIS
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP DataSigChan Nis Tools

Properties	Operational
Description	This group contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	DisdnNIS

ATTRIBUTE DataSigChan Nis tracing

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in Col/debug must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (for example, *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously. Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages.

Types of tracing include:
protocolErrors - get details of any protocol errors which are occurring. Protocol errors are also reported in summary form as alarms.
q931Summary - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes).
q931Hex - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Messages in hex format being sent and received on the link.

Mib: DisdnNIS

Set of:
protocolErrors
q931Summary
q931Hex
q931Symbolic
portHex

Default: No default

COMPONENT DataSigChan Nis Framer (Framer)

Groups:
"GROUP DataSigChan Nis Framer Provisioned (Prov)"
"GROUP DataSigChan Nis Framer OsiState (State)"
"GROUP DataSigChan Nis Framer Statistics (Stats)"

"COLLECTED STATS DataSignallingChannel Nis Framer"

Scope: Application

Description:

DataSigChan/n ts014 Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

The e1/ds1 port number of the physical channel linked to the *Framer* component is restricted to 0-3 for all FP including MSA32.

Mib	DisdnNIS
Common Verbs	Help List Display

GROUP DataSigChan Nis Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	DisdnNIS

ATTRIBUTE DataSigChan Nis Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name.

	The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	DisdnNIS
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP DataSigChan Nis Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DisdnNIS

ATTRIBUTE DataSigChan Nis Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	DisdnNIS
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DataSigChan Nis Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	DisdnNIS
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE DataSigChan Nis Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib DisdnNIS

Values
idle
active (activ)
busy

Default idle

GROUP DataSigChan Nis Framer Statistics (Stats)

Properties Operational

Description

This group contains the operational statistics data for a Framer component.

Mib DisdnNIS

ATTRIBUTE DataSigChan Nis Framer aborts

Access Read only

Description

This attribute counts the total number of aborts received.
This count wraps to zero after reaching its maximum value.

Mib DisdnNIS

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DataSigChan Nis Framer crcErrors

Access Read only

Description

This attribute counts the total number of frames with CRC errors.
This count wraps to zero after reaching its maximum value.

Mib DisdnNIS

Values Decimal (0..4294967295)

Default	0

ATTRIBUTE DataSigChan Nis Framer lrcErrors

Access	Read only
Description	This attribute counts the total number of frames with LRC errors. This count wraps to zero after reaching its maximum value.
Mib	DisdnNIS
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Nis Framer nonOctetErrors

Access	Read only
Description	This attribute counts the total number of frames that were non octet aligned. This count wraps to zero after reaching its maximum value.
Mib	DisdnNIS
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Nis Framer overruns

Access	Read only
Description	This attribute counts the total number of frames received from the link for which overruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnNIS
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Nis Framer underruns

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred. This count wraps to zero after reaching its maximum value.
Mib	DisdnNIS
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Nis Framer largeFrmErrors

Access	Read only
Description	This attribute counts the total number of frames received which were too large. The frame was longer than 500 bytes. This count wraps to zero after reaching its maximum value.
Mib	DisdnNIS
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DataSigChan Nis Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer
Mib	DisdnNIS
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan Nis Framer frmFromIf

Access	Read only

Description	The number of frames received from the link interface by Framer.
Mib	DisdnNIS
Values	Long Integer
Default	No default

ATTRIBUTE DataSigChan Nis Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	DisdnNIS
Values	Long Integer
Default	No default

COLLECTED STATS DataSignallingChannel Nis Framer

Description	The statistics record generated by the DataSignallingChannel Nis Framer component.

ATTRIBUTE DataSigChan Nis Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DataSigChan Nis Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DataSigChan Nis Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DataSigChan Nis Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DataSigChan Nis Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

Nortel Networks Multiservice Switch 7400/15000/20000

Component DataSigC

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Dcl

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Dcl

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COMPONENT DcmeLink (Dcl)

Instance	Decimal (1..14)
Groups	"GROUP Dcl Provisioned (Prov)" "GROUP Dcl OsiState (State)" "GROUP Dcl Operational (Oper)" "GROUP Dcl Statistics (Stats)"
Scope	Application
Description	*DcmeLink/n* This component defines the characteristics of a connection to an International Switching Centre (ISC). A *DcmeLink* is a collection of 64 kbit/s channels on the same physical E1 interface. There is one *DcmeLink* per physical link.
Mib	Dcme
Subcomponents	"COMPONENT Dcl DataNetworkAddress (Dna)" "COMPONENT Dcl Framer (Framer)"
Opt. Subcomp.	"COMPONENT Dcl VoiceService (Vs)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Dcl Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of a *DcmeLink*.
Mib	Dcme

ATTRIBUTE Dcl commentText (cTxt)

Access	Read: All Write: All
Description	Use of this attribute is at the discretion of the system administrator. Typically, it specifies the name of the customer that is using this *DcmeLink*.
Mib	Dcme
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Dcl remoteNpi (rnpi)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the Numbering Plan Indicator used for the *remoteDna* attribute of this *DcmeLink*.
Mib	Dcme
Values	x121 e164
Default	e164

ATTRIBUTE Dcl remoteDna (rdna)

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the Data Network Address (DNA) of the remote *DcmeLink*. This is the DNA of the peer *DcmeLink* to which the *DcmeLink* component establishes its Logical Connection (LC).
Mib	Dcme
Values	BCD (1..15)
Default	No default

ATTRIBUTE Dcl dcme

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the *Dcme* component that this *DcmeLink* belongs to.
Mib	Dcme
Values	Link (Service, dcmeLinks)
Default	No default

ATTRIBUTE Dcl idlePattern

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies an *idlePattern* in the channel received from the E1 interface, which is required to determine if the channel is active or not. When the end of the *idlePattern* is detected it indicates the start of a new speech call. When this *idlePattern* is detected it indicates the end of a speech call. When changing this attribute make sure that the *alternateIdlePattern* signal is set correctly.
Mib	Dcme

Values	Hex (H.0..H.ff)
Units	Hex
Default	H.d5

ATTRIBUTE Dcl alternateIdlePattern

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies an *alternateIdlePattern* in the channel received from the E1 interface, after the end of a 64kbit/s call. The value of this attribute should be different than the value of the *idlePattern* attribute only if the ISC is programmed for Even/Odd Bit Inversion (EBI/OBI). This is only the case when the ISC is performing A to Mu or Mu to A Law conversion. When the end of the *alternateIdlePattern* is detected it indicates the start of a new speech call.
Mib	Dcme
Values	Hex (H.0..H.ff)
Units	Hex
Default	H.d5

GROUP Dcl OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dcme

ATTRIBUTE Dcl adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dcme
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dcl operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Dcme

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dcl usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dcme
Values	idle active (activ) busy
Default	idle

GROUP Dcl Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the *DcmeLink* component.
Mib	Dcme

ATTRIBUTE Dcl activeSpeechCalls

Access	Read: All Write: Illegal
Description	This attribute indicates the number of speech calls that are currently in progress on this *DcmeLink*.
Mib	Dcme

Values	Decimal (0..30)
Default	0

ATTRIBUTE Dcl active3kHzCalls

Access	Read: All Write: Illegal
Description	This attribute indicates the number of audio 3.1 kHz calls that are currently in progress on this *DcmeLink*.
Mib	Dcme
Values	Decimal (0..30)
Default	0

ATTRIBUTE Dcl active64kCalls

Access	Read: All Write: Illegal
Description	This attribute indicates the number of unrestricted 64 kbit/s calls that are currently in progress on this *DcmeLink*.
Mib	Dcme
Values	Decimal (0..30)
Default	0

ATTRIBUTE Dcl receivedTrmSignal

Access	Read only
Description	This attribute indicates the last TRM signal received from the ISC. The received TRM signal can be one of: ***Invalid (xxx)***: this signal should never be received, ***Switching Centre normal (101)***: this signal is always transmitted by the ISC when there is no other signal to be sent, ***Maintenance release ack(110)***: this signal is transmitted by the ISC if it accepts the maintenance release request, ***Dcme clear of traffic***: this signal is transmitted by the ISC if it

	has accepted the maintenance release request signal and now informs the DCME when all circuits are idle,
Mib	Dcme
Values	None(000) Invalid (001) Invalid (010) Invalid (011) Invalid (100) Switching Centre normal (101) Maintenance release ack (110) Dcme clear of traffic (111)
Default	No default

ATTRIBUTE Dcl transmittedTrmSignal

Access	Read only
Description	This attribute indicates the last TRM signal transmitted to the ISC. The transmitted TRM signal can be one of: ***Dcme normal (100)***: , this signal is always transmitted by the DCME when there is no other signal to be sent, ***No 64 kbit/s capacity (101)***: this signal is transmitted by the DCME when it is not able to handle new 64 kbit/s call requests, ***Maintenance release request(110)***: this signal is transmitted by the DCME when the DCME is to be removed from the service for maintenance, ***No capacity available (111)*** this signal is transmitted by the DCME when there is bearer capacity available to set up new 3.1 kHz audio or speech calls,
Mib	Dcme
Values	None(000) Dcme normal(100) No 64 kbit/s capacity (101) Maintenance release request (110) No capacity available (111)
Default	No default

GROUP Dcl Statistics (Stats)

Properties	Operational
Description	This group contains statistics for the *DcmeLink* component.
Mib	Dcme

ATTRIBUTE Dcl totalSpeechCalls

Access	Read: All Write: Illegal
Description	This attribute counts the total number of speech calls that have been handled by this *DcmeLink*, including rejected calls. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcl total3kHzCalls

Access	Read: All Write: Illegal
Description	This attribute counts the total number of audio 3.1 kHz calls that have been handled by this *DcmeLink*, including rejected calls. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcl total64kCalls

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unrestricted 64 kbit/s calls that have been handled by this *DcmeLink*, including rejected calls. This counter wraps to zero when it exceeds its maximum.

Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcl rejectedSpeechCalls

Access	Read: All Write: Illegal
Description	This attribute counts the total number of speech calls that have been rejected by this *DcmeLink* because there was no preestablished LC available. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcl rejected3kHzCalls

Access	Read: All Write: Illegal
Description	This attribute counts the total number of audio 3.1 KHz calls that have been rejected by this *DcmeLink* because there was no preestablished LC available. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcl rejected64kCalls

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unrestricted 64 kbit/s calls that have been rejected by this *DcmeLink*. This counter wraps to zero when it reaches its maximum.

Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcl invalidTrmSignals

Access	Read: All Write: Illegal
Description	This attribute counts the number of invalid TRM/Maintenance signals received from the ISC by this *DcmeLink*. The most probable cause of an invalid TRM/Maintenance signal is an invalid ISC provisioning or a transmission error. The invalid bit settings are 000, 001, 010, 011, 100. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

COMPONENT Dcl DataNetworkAddress (Dna)

Groups	"GROUP Dcl Dna Address"
Scope	Network
Description	*DcmeLink/n DataNetworkAddress* This is the description of the DCME link *Dna* component. It includes the attributes which apply to all connections established between *DcmeLink* and its peer *DcmeLink*.
Mib	Dcme
Common Verbs	Help List Display

GROUP Dcl Dna Address

Properties	Provisioned

Description	The *Address* group contains attributes common to all *Dna's*. Every *Dna* used in the network is defined with this group of 2 attributes. The string of address digits is complemented by the type of address or Npi. These attributes are used to interpret the format of the address digits.
Mib	Dcme

ATTRIBUTE Dcl Dna numberingPlanIndicator (npi)

Access	Read: All Write: All
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *Dna* that is entered. An address may belong to the X.121 or E.164 numbering plans. X.121 is used in packet switched data networks.
Mib	Dcme
Values	x121 e164
Default	e164

ATTRIBUTE Dcl Dna dataNetworkAddress (dna)

Access	Read: All Write: All
Description	The *Dna* attribute contains digits which form a unique identifier of the customer interface. It can be compared (approximation only) to a telephone number where each phone number identifies a unique telephone set. *Dna* digits are selected and assigned by network operators.
Mib	Dcme
Values	BCD (1..15)
Default	No default

COMPONENT Dcl Framer (Framer)

Groups	"GROUP Dcl Framer Provisioned (Prov)" "GROUP Dcl Framer OsiState (State)"

Scope	Application
Description	*DcmeLink/n Framer* The *Framer* component controls link layer framing for application components sending and receiving data on the link interface to the ISC. It is also through the *Framer* that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).
Mib	Dcme
Common Verbs	Help List Display

GROUP Dcl Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	Dcme

ATTRIBUTE Dcl Framer interfaceName

Access	Read and write
Criticality	Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib: Dcme

Values: Link (Hardware, applicationFramerName)

Default: No default

GROUP Dcl Framer OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Dcme

ATTRIBUTE Dcl Framer adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Dcme

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Dcl Framer operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Dcme

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Dcl Framer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dcme
Values	idle active (activ) busy
Default	idle

COMPONENT Dcl VoiceService (Vs)

Instance	Decimal (1..31)
Groups	"GROUP Dcl Vs Provisioned (Prov)" "GROUP Dcl Vs Operational (Oper)" "GROUP Dcl Vs Statistics (Stats)" "GROUP Dcl Vs OsiState (State)"
Scope	Application
Description	*DcmeLink/n DcmeVoiceService/n* The *DcmeVoiceService* component defines the operational characteristics of the connection to a International Switching Centre (ISC). One instance of this component is required for each channel (that is, timeslot) which is part of the *DcmeLink*.
Mib	Dcme
Subcomponents	"COMPONENT Dcl Vs Framer (Framer)"
Dyn. Subcomp.	"COMPONENT Dcl Vs LogicalConnection (LCo)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Dcl Vs Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of a *DcmeVs* component.
Mib	Dcme

ATTRIBUTE Dcl Vs vsType

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of calls offered by this *DcmeVs*. If the value ***permanent64kVs*** is selected the 64 kbit/s call is established on the channel associated with this *DcmeVs* upon system activation. If this call is cleared due to the subnet failure it is reestablished again by the DcmeLink. If the value ***dynamicVs*** is selected this channel can be used to establish user selected calls.
Mib	Dcme
Values	dynamicVs permanent64kVs
Default	dynamicVs

GROUP Dcl Vs Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the *DcmeVoiceService* component.
Mib	Dcme

ATTRIBUTE Dcl Vs status

Access	Read: All Write: Illegal

Description	This attribute indicates the current status of the channel. ***idle*** means that there is no call currently active on this channel. ***seized*** means that the channel has currently an active call.
Mib	Dcme
Values	idle seized
Default	No default

ATTRIBUTE Dcl Vs callType (ct)

Access	Read: All Write: Illegal
Description	This attribute indicates the type of call that this channel is currently carrying. If no call is active, then it displays the value for the last call.
Mib	Dcme
Values	none speech 3.1 kHz 64 kbit/s
Default	No default

ATTRIBUTE Dcl Vs receivedAbBits

Access	Read only
Description	This attribute indicates the most recently received AB bits.
Mib	Dcme
Values	None (00) Normal service available (01) 3.1 kHz request (10) 64 kbit/s request (11)
Default	No default

ATTRIBUTE Dcl Vs transmittedAbBits

Access	Read only
Description	This attribute indicates the AB bits currently being transmitted.
Mib	Dcme
Values	None(00) Normal service available (01) Special service ack (10) Channel out of service (11)
Default	No default

GROUP Dcl Vs Statistics (Stats)

Properties	Operational
Description	This group provides the operational attributes for the *DcmeVoiceService* component.
Mib	Dcme

ATTRIBUTE Dcl Vs totalCalls (tc)

Access	Read: All Write: Illegal
Description	This attribute counts the call attempts processed on this channel (in both directions). This count includes both successful and unsuccessful calls. The value wraps when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dcl Vs totalCallSeconds (tcs)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of seconds that this channel is handling a call. This is regardless of whether the call is

	successful or not. In other words, this is the amount of time that the channel is not in the idle state. The value wraps when it reaches its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Dcl Vs invalidAbBits

Access	Read: All Write: Illegal
Description	This attribute counts the number of invalid AB bits signals received from the ISC on this channel. The invalid bit setting is 00. This counter wraps to zero when it reaches its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

GROUP Dcl Vs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dcme

ATTRIBUTE Dcl Vs adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dcme
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dcl Vs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Dcme

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dcl Vs usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dcme
Values	idle active (activ) busy
Default	idle

COMPONENT Dcl Vs Framer (Framer)

Groups	"GROUP Dcl Vs Framer Provisioned (Prov)" "GROUP Dcl Vs Framer OsiState (State)" "GROUP Dcl Vs Framer Statistics (Stats)" "GROUP Dcl Vs Framer Operational (Oper)" "GROUP Dcl Vs Framer Negotiation (Neg)"

"COLLECTED STATS DcmeLink VoiceService Framer"

Scope	Device
Description	*Vsr/n Svs/n Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *E1* or *DS1*).
The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.
The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts).

Mib: Dcme

Dyn. Subcomp.:
"COMPONENT Dcl Vs Framer VfpDebug"
"COMPONENT Dcl Vs Framer MvpDebug"
"COMPONENT Dcl Vs Framer PcmCapture (PcmCapture)"

Common Verbs:
Help
List
Display

GROUP Dcl Vs Framer Provisioned (Prov)

Properties: Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib: Dcme

ATTRIBUTE Dcl Vs Framer interfaceName

Access: Read and write

Criticality: Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This

	defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	Dcme
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Dcl Vs Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dcme

ATTRIBUTE Dcl Vs Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dcme

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dcl Vs Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Dcme
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dcl Vs Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Dcme
Values	idle active (activ) busy
Default	idle

GROUP Dcl Vs Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	Dcme

ATTRIBUTE Dcl Vs Framer totalCells

Access	Read only
Description	This attribute counts the cells received from the interface. Each cell contains 44 bytes of data from the DS0 channel. Since a DS0 provides data at 64kbit/s, each cell contains 5.5 ms of audio data. This data flow is measured before compression is performed on the channel. The counter wraps to zero when it exceeds its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer audioCells

Access	Read only
Description	This attribute counts the total number of cells containing audio data received from the interface while the channel was seized. A CCS channel is always considered to be seized. Audio data includes cells containing voice as well modem audio, but not

	silence. A cell contains 44 bytes of data from the DS0 channel(5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer silenceCells

Access	Read only
Description	This attribute counts the total number of cells containing silence data received from the interface which was not forwarded into the network, thus saving bandwidth. A channel may go into silence due to the operation of the silence suppression feature or for CAS channels when the ABCD signalling bits go idle. A cell contains 44 bytes of data from the DS0 channel(5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer lrcErrors

Access	Read only
Description	This attribute counts the number of frames received from the network with LRC errors.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer frmLostInNetwork

Access	Read only
Description	This attribute counts the number of frames which the service knows it did not receive from the network although they were sent in to the network from the far end.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer frmUnderRuns

Access	Read only
Description	This attribute counts the number of times that a frame was needed but was not available because it had been delayed too long in the network. This error may occur repeatedly if the interface clocks at the two access points to the network are operating at different rates.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer frmDumped

Access	Read only
Description	This attribute counts the number of frames which have been dumped because the output queue grew too large. This can occur if the clock rate on the incoming interface is faster than the clock rate on the outgoing interface and there are no silence periods to absorb the difference, or when a compression rate change occurs. This count wraps to zero after reaching its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer faxRelayCells

Access	Read only
Description	This attribute counts the total number of fax relay cells sent to the network. This counter wraps to zero after reaching its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer modemFaxCells

Access	Read only
Description	This attribute counts the total number of cells containing modem data received from the interface while the channel was seized. A CCS channel is always considered to be seized. Cells are considered to be modem data if a constant energy level above -25 dBmO is detected for more than 900 ms. An energy level below -36 dBmO for more than 650 ms is required to detect that the modem is no longer present. A cell contains 44 bytes of data from the DS0 channel (5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer faxIdleCells

Access	Read only
Description	This attribute counts the total number of cells containing silent fax data received from the interface which were not forwarded into the network, thus saving bandwidth. A channel may go into silence due to the silence Suppression feature or for CAS channels when the ABCD signalling bits go idle.

	A cell contains 44 bytes of data from the DS0 channel (5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Dcl Vs Framer frmToNetwork

Access	Read only
Description	This attribute counts the number of frames sent to the network at each encoding rate. Fax relay cells are not included.
Mib	Dcme
Vector of	Decimal (0..4294967295)
Index	64 kbit/s 32 kbit/s 24 kbit/s 16 kbit/s 8 kbit/s
Default	No default

ATTRIBUTE Dcl Vs Framer frmFromNetwork

Access	Read only
Description	This attribute counts the number of frames received from the network at each encoding rate.

Mib	Dcme
Vector of	Decimal (0..4294967295)
Index	64 kbit/s 32 kbit/s 24 kbit/s 16 kbit/s 8 kbit/s
Default	No default

GROUP Dcl Vs Framer Operational (Oper)

Properties	Operational
Description	This group contains the operational data for a *Svs Framer.*
Mib	Dcme

ATTRIBUTE Dcl Vs Framer currentEncoding

Access	Read only
Description	This attribute indicates the encoding currently being performed on this channel. ***g711*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 is being performed. ***g726*** indicates that adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726 is being performed. ***g728*** indicates that the Low Delay Coded Excited Linear Predictive Coder (LD-CELP) algorithm defined by ITU-T G.728 is being performed. ***g729*** indicates that the Conjunctive Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) algorithm defined by ITU-T G.729 is being performed. ***v27*** indicates that the algorithm defined by ITU-T V.27 is being performed. ***v29*** indicates that the algorithm defined by ITU-T V.29 is being performed.
Mib	Dcme
Values	none g729 g728 g723 g726

	g711 v22 v22bis faxRelay v27 v29 v17
Default	No default

ATTRIBUTE Dcl Vs Framer currentRate

Access	Read only
Description	This attribute indicates the current encoding rate for frames being sent to the network.
Mib	Dcme
Values	0 0.3 1.2 2.4 4.8 5.3 6.3 7.2 8.0 9.6 12.0 14.4 16.0 24.0 32.0 64.0
Units	kbit/s
Default	No default

ATTRIBUTE Dcl Vs Framer tptStatus

Access	Read only

Description	This attribute indicates the current status of the tandem pass through algorithm. If *tptStatus* is ***operating,*** the tandem pass through algorithm is cutting through a voice switch. If *tptStatus* is ***monitoring***, *negotiatedTandemPassThrough* is ***enabled***, but the tandem pass through algorithm is not cutting through a voice switch. If *tptStatus* is ***disabled***, *negotiatedTandemPassThrough* is ***disabled***.
Mib	Dcme
Values	operating monitoring disabled
Default	No default

GROUP Dcl Vs Framer Negotiation (Neg)

Properties	Operational
Description	This group contains the attributes indicating the results of voice networking end to end negotiation.
Mib	Dcme

ATTRIBUTE Dcl Vs Framer negotiatedSilenceSuppression (nSilenceSuppression)

Access	Read and write
Description	This attribute indicates the result of negotiating silence suppression with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp silenceSuppression*. If *negotiatedSilenceSuppression* is ***off***, silence suppression is never performed. If *negotiatedSilenceSuppression* is ***on***, silence suppression is always performed. If *negotiatedSilenceSuppression* is ***congested***, silence suppression is performed only when the network is congested. If *negotiatedSilenceSuppression* is ***slow***, silence suppression begins after 10 to 20 seconds without any speech or audio being detected.

If *negotiatedSilenceSuppression* is ***slowAndCongested***, both the ***slow*** and ***congested*** options are applied.

Mib: Dcme

Values:
off
on
congested
slow
slowAndCongested

Default: No default

ATTRIBUTE Dcl Vs Framer negotiatedFisG711G726 (nFisG711G726)

Access: Read and write

Description: This attribute indicates the result of negotiating G.711/G.726 fax idle suppression with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp faxIdleSuppressionG711G726*.

Mib: Dcme

Values:
off
on

Default: No default

ATTRIBUTE Dcl Vs Framer negotiatedDtmfRegeneration (nDtmfRegeneration)

Access: Read and write

Description: This attribute indicates the result of negotiating DTMF regeneration with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp dtmfRegeneration*.

If *negotiatedDtmfRegeneration* is ***on***, DTMF tones received from the link are first converted to digits before being sent to the subnet. When a digit is received from the subnet, its respective DTMF tone is generated before being sent to the link.

If *negotiatedDtmfRegeneration* is ***off***, DTMF tones are transported transparently.

Mib	Dcme
Values	off on
Default	No default

ATTRIBUTE Dcl Vs Framer negotiatedV17AsG711G726 (nV17AsG711G726)

Access	Read only
Description	This attribute indicates how this *SwitchedVoiceService* negotiates with V.17 fax machines, as determined by negotiation with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp v17EncodedAsG711G726*. If *negotiatedV17AsG711G726* is ***no,*** V.17 fax machines are instructed to use V.29, and V.29 fax traffic sent by fax machines is demodulated and encoded using fax relay. If *negotiatedV17AsG711G726* is ***yes***, V.17 fax machines are permitted to use V.17 and V.17 fax traffic sent by fax machines is encoded using G.711 or G.726, at the rates given in *negotiatedRates*.
Mib	Dcme
Values	yes no
Default	No default

ATTRIBUTE Dcl Vs Framer negotiatedTandemPassThrough (nTpt)

Access	Read only
Description	This attribute indicates the result of negotiating tandem pass through with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp tandemPassThrough*.
Mib	Dcme

Values	enabled disabled
Default	No default

ATTRIBUTE Dcl Vs Framer negotiatedEncoding (nEncoding)

Access	Read and write
Description	This attribute indicates the results of negotiating audio call encodings for ***voice***, ***modemFax*** and ***fax*** traffic with the remote end across the subnet. The parameters used for negotiating with the remote end are provisioned in *Vncs Vp voiceEncodingChoice* and *Vncs Vp modemFaxEncodingChoice*. ***voice*** traffic is all traffic from the start of a call or speech until a 2100 Hz tone or call release. ***modemFax*** traffic is all traffic after a 2100 Hz tone but before a fax preamble, speech or call release. ***fax*** traffic is all traffic after a fax preamble but before speech or call release. ***g711*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 is the negotiated encoding. ***g726*** indicates that Adaptive Differential Pulse Code Modulation (ADPCM) defined by ITU-T G.726 is the negotiated encoding. ***g711G726*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 and Adaptive Differential Pulse Code Modulation (ADPCM) defined by ITU-T G.726 are both negotiated encodings. If *negotiatedEncoding* is ***g711G726***, the actual encoding performed can be either G.711 or G.726, depending on network congestion. ***g728*** indicates that Low Delay Coded Excited Linear Predictive Coder (CS-ACELP) defined by ITU-T G.728 is the negotiated encoding. ***g729*** indicates that Conjunctive Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) defined by ITU-T G.729 is the negotiated encoding. ***v29V27Relay*** indicates that fax relay using ITU-T V.29 or ITU-T V.27 is the negotiated encoding. ***v17V29V27Relay*** indicates that fax relay using ITU-T V.17, ITU-T V.29, or ITU-T V.27 is the negotiated encoding.

	If all negotiated encodings are ***none***, the negotiation of audio call encodings is not complete.
Mib	Dcme
Vector of	g711 g726 g711G726 g728 g729 v29V27Relay v17V29V27Relay none
Index	voice modemFax fax
Default	No default

ATTRIBUTE Dcl Vs Framer negotiatedRates (nRates)

Access	Read and write
Description	This attribute indicates the results of negotiating minimum and maximum rates for ***voice***, ***modemFax*** and ***fax*** traffic with the remote end across the subnet. The parameters used for negotiating with the remote end are provisioned in *Vncs Vp voiceRates* and *Vncs Vp modemFaxRates*.

Mib	Dcme	
Array of	8.0 16.0 24.0 32.0 64.0 0.0 0.3 1.2 2.4 4.8 7.2 9.6 12.0 14.4	
Units	kbit/s	
Row	traffic modemFax fax]	[voice
Column	rate max]	[min
Default	No default	

COLLECTED STATS DcmeLink VoiceService Framer

Description	The statistics record generated by the DcmeLink VoiceService Framer component.

ATTRIBUTE Dcl Vs Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Dcl Vs Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE Dcl Vs Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Dcl Vs Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Dcl Vs Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT Dcl Vs Framer VfpDebug

Scope Application

Description *Vsr/m Svs/n Framer VfpDebug*
This component contains debugging attributes for a voice service running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** functional processor.

Mib Dcme

Common Verbs
Help
List
Display

COMPONENT Dcl Vs Framer MvpDebug

Scope Application

Description	*Vsr/m Svs/n Framer MvpDebug* This component contains debugging attributes on a voice service's framer running on a ***1pE1Mvp***, ***1pDS1Mvp*** or ***1pTTC2mMvp*** functional processor.
Mib	Dcme
Common Verbs	Help List Display

COMPONENT Dcl Vs Framer PcmCapture (PcmCapture)

Scope	Application
Description	*Vsr/n Svs/m Framer PcmCapture* This component contains attributes for PCM data capture.
Mib	Dcme
Common Verbs	Help List Display

COMPONENT Dcl Vs LogicalConnection (LCo)

Groups	"GROUP Dcl Vs LCo PathData" "GROUP Dcl Vs LCo Statistics (Stats)"
Scope	Application
Description	...*Lc* This component contains all of the operation attributes for a Path Oriented Logical Connection.
Mib	Dcme
Common Verbs	Help List Display

VERB RERoute Dcl Vs LCo

Impact	Service
Description	RERoute ..Lc This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *RERoute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified. This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively. When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path. If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP Dcl Vs LCo PathData

Properties	Operational
Description	This group contains all operational attributes for the path oriented LCo.
Mib	Dcme

ATTRIBUTE Dcl Vs LCo state

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs

while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.

Mib: Dcme

Values:
pathDown
selectingRoute
connecting
pathUp
pathDownRetrying

Default: No default

ATTRIBUTE Dcl Vs LCo overrideRemoteName (orn)

Access: Read: All
Write: All

Description: If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.

Mib: Dcme

Values: String (0..40, ASCII)

Default: ""

ATTRIBUTE Dcl Vs LCo end

Access: Read only

Description: This attribute identifies whether this is the calling or called end of the path.

Mib: Dcme

Values	calling called
Default	No default

ATTRIBUTE Dcl Vs LCo costMetric (cost)

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	Dcme
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Dcl Vs LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.
Mib	Dcme
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE Dcl Vs LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to

	this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	Dcme
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE Dcl Vs LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	Dcme
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Dcl Vs LCo holdingPriority (hpri)

Access	Read only

Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	Dcme
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Dcl Vs LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	Dcme
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Dcl Vs LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value
Mib	Dcme
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Dcl Vs LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType***,** will be candidates for this connection.
Mib	Dcme
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Dcl Vs LCo permittedTrunkTypes (pttyp)

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.

Mib	Dcme
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Dcl Vs LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	Dcme
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Dcl Vs LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks

	whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	Dcme
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Dcl Vs LCo emissionPriority (epri)

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority. EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	Dcme
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Dcl Vs LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority.* One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).
Mib	Dcme
Values	Decimal (1..3)
Default	No default

ATTRIBUTE Dcl Vs LCo pathType (pType)

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	Dcme
Values	normal manual forced
Default	No default

ATTRIBUTE Dcl Vs LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path

	reconnects and stops counting when it reaches its maximum value.
Mib	Dcme
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Dcl Vs LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	Dcme
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Dcl Vs LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This reason is also issued when there is no physical connectivity between two end nodes.
Mib	Dcme
Values	none destinationNameTooLong

destinationNotSpecified
unknownDestinationName
incorrectDestination
incorrectDestinationEndPoint
unknownSource
unknownDestination
sameNode
routeCostTooMuch
routesDelayTooLong
attributesNotMet
anError
attributeProfileProblem
manualPathIndexProblem

Default none

ATTRIBUTE Dcl Vs LCo lastTearDownReason

Access Read only

Description This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons:
none - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up.
normalShutDown - This path has gone down due to normal call termination.
insufficientTxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction.
insufficientRxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction.
trunkFailure- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute.
trunkCardFailure- A trunk FP card has failed along the path.
accessCardFailure- The FP on which the peer access service was

running has failed.
operatorForced- The path has terminated due to the operator locking a trunk along the path.
lostLcnClash- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path

changed.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib: Dcme

Values:
none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound
farEndNotFound
wrongModuleReached
farEndBusy
callLoopedBack
unknownReason
farEndNotReady
remoteNameMismatch
serviceTypeMismatch
reconnectFromFarEnd
bumped
accessCardFailure
optimized
overrideRemoteName
trunkOrFarEndDidNotSupportMode

Default: none

ATTRIBUTE Dcl Vs LCo pathFailureAction

Access	Read only
Description	This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends
Mib	Dcme
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE Dcl Vs LCo bumpPreference (bpref)

Access	Read only
Description	This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is lower (numerically higher) than the connection's *setupPriority*. A connection may also always bump in order to obtain the best route.
Mib	Dcme
Values	bumpWhenNecessary bumpToObtainBestRoute

Default	No default

ATTRIBUTE Dcl Vs LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	Dcme
Values	disabled enabled
Default	No default

ATTRIBUTE Dcl Vs LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	Dcme
Values	Time (DHMS)
Default	No default

ATTRIBUTE Dcl Vs LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.

Mib	Dcme
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP Dcl Vs LCo Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	Dcme

ATTRIBUTE Dcl Vs LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	Dcme
Values	Long Integer
Default	No default

ATTRIBUTE Dcl Vs LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	Dcme
Values	Long Integer
Default	No default

ATTRIBUTE Dcl Vs LCo pktsFromNetwork

Access	Read only

Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	Dcme
Values	Long Integer
Default	No default

ATTRIBUTE Dcl Vs LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	Dcme
Values	Long Integer
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Dcl

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Dcme

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Nortel Networks Multiservice Switch 7400/15000/20000

Component Dcme

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COMPONENT Dcme

Instance	Decimal (1..16)
Groups	"GROUP Dcme Provisioned (Prov)" "GROUP Dcme OsiState (State)" "GROUP Dcme Operational (Oper)" "GROUP Dcme Statistics (Stats)"
Scope	Application
Description	*Dcme/n* This component defines the common characteristics of a set of connections to an International Switching Centre (ISC) equipment.
Mib	Dcme
Subcomponents	"COMPONENT Dcme Profile"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Dcme Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes of a *Dcme* component.
Mib	Dcme

ATTRIBUTE Dcme commentText (cTxt)

Access	Read: All Write: All
Description	Use of this attribute is at the discretion of the system administrator. Typically, it specifies the name of the customer that is using this *Dcme*.
Mib	Dcme
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Dcme preestablishedConnections (pCon)

Access	Read: All Write: All
Description	This attribute specifies the number of Logical Connections (LC) preestablished between each *DcmeLink* associated with this *Dcme* and its remote peer, that are established beyond those that are required to carry established connections. Those are the standby LCs to be used for the subsequent user speech or audio 3.1 kHz calls. This attribute should be set to the number of speech and audio 3.1 kHz calls expected in a typical burst of calls received from the ISC on one *DcmeLink*.
Mib	Dcme
Values	Decimal (1..30)
Default	5

ATTRIBUTE Dcme trmThreshold (tThresh)

Access	Read: All Write: All

Description	This attribute is used to determine when the *DcmeLink* may be unable to handle incoming calls from the ISC. If the Dcme fails to replenish the number of preestablished connections the “No trunk(s) available for 3.1 kHz audio or speech” TRM signal is sent to the ISC.
Mib	Dcme
Values	Decimal (0..30)
Default	1

ATTRIBUTE Dcme trmSignalChangeInterval (tScl)

Access	Read: All Write: All
Description	This attribute specifies a minimum time interval between TRM signal change from “No trunk(s) available for 3.1 kHz audio or speech” or “No 64 kbit/s capacity available” to “DCME normal” signal.
Mib	Dcme
Values	Decimal (10..300)
Units	seconds
Default	20

ATTRIBUTE Dcme speechAlarmThreshold (sat)

Access	Read: All Write: All
Description	This attribute specifies how many normal speech calls can be rejected by one *dcmeLink* within the *alarmTimeInterval* time before a SET alarm is generated. This alarm is cleared when the number of rejected speech calls is less than *speechAlarmThreshold* in a subsequent interval. If the value is 0 the rejected speech calls are not monitored.
Mib	Dcme
Values	Decimal (0..1000)

Default	0

ATTRIBUTE Dcme audio3kHzAlarmThreshold (aat)

Access	Read: All Write: All
Description	This attribute specifies how many audio 3.1 kHz calls can be rejected by one *dcmeLink* within the *alarmTimeInterval* time before a SET alarm is generated. This alarm is cleared when the number of rejected audio 3.1 kHz calls is less than *audio3kHzAlarmThreshold* in a subsequent interval. If the value is 0 the rejected audio 3.1 kHz calls are not monitored.
Mib	Dcme
Values	Decimal (0..1000)
Default	0

ATTRIBUTE Dcme unrestricted64kAlarmThreshold (uat)

Access	Read: All Write: All
Description	This attribute specifies how many unrestricted 64 kbit/s calls can be rejected by one *dcmeLink* within the *alarmTimeInterval* time before a SET alarm is generated. This alarm is cleared when the number of rejected unrestricted 64 kbit/s calls is less than *unrestricted64kAlarmThreshold* in a subsequent interval. If the value is 0 the rejected unrestricted 64 kbit/s calls are not monitored.
Mib	Dcme
Values	Decimal (0..1000)
Default	0

ATTRIBUTE Dcme alarmTimeInterval (ati)

Access	Read: All Write: All

Description	This attribute specifies the time interval within which the rejected speech calls, audio 3.1 kHz calls, and unrestricted 64 kbit/s calls are monitored. It is used in the conjunction with the *speechAlarmThreshold*, *audio3kHzAlarmThreshold*, and *unrestricted64kAlarmThreshold* attributes.
Mib	Dcme
Values	Decimal (0..120)
Units	minutes
Default	5

ATTRIBUTE Dcme maxUnrestricted64kCalls (umax)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of simultaneous dynamic unrestricted 64 kbit/s calls that can be established. A value of 0 means that no dynamic unrestricted 64 kbit/s calls can be established.
Mib	Dcme
Values	Decimal (0..420)
Default	420

ATTRIBUTE Dcme dcmeLinks (dLinks)

Access	Read: All Write: All
Description	This attribute specifies all of the *DcmeLink*s which are associated with this *Dcme*. There can be up to 14 *DcmeLinks* associated with one *Dcme*.
Mib	Dcme
List of	Link (Service, dcme)
List Size	14

Default	No default

GROUP Dcme OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dcme

ATTRIBUTE Dcme adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dcme
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dcme operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Dcme
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dcme usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dcme
Values	idle active (activ) busy

Default	idle

GROUP Dcme Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Dcme* component.
Mib	Dcme

ATTRIBUTE Dcme activeDcmeLinks

Access	Read: All Write: Illegal
Description	This attribute indicates all of the *DcmeLink* components that are currently active and have registered with this *Dcme*.
Mib	Dcme
List of	The name of the component
List Size	14
Default	No default

GROUP Dcme Statistics (Stats)

Properties	Operational
Description	This group contains the statistics maintained by this *Dcme*.
Mib	Dcme

ATTRIBUTE Dcme trm64kNotAvailable

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the TRM signal was changed to the “No 64 kbit/s capacity available” signal. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Dcme trmSpeechNotAvailable

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the TRM signal was changed to the “No trunk(s) available for 3.1 kHz audio or speech” signal. This counter wraps to zero when it exceeds its maximum.
Mib	Dcme
Values	Decimal (0..4294967295)
Default	0

COMPONENT Dcme Profile

Groups	"GROUP Dcme Profile LogicalConnectionOptions (LCOps)" "GROUP Dcme Profile FramerOptions (FrOps)"
Scope	Application
Description	*Dcme/n DcmeProfile* This component defines the ISC interface characteristics of the *Dcme* component.
Mib	Dcme
Common Verbs	Help List Display

GROUP Dcme Profile LogicalConnectionOptions (LCOps)

Properties	Provisioned
Description	This group contains attributes used in setting up Switched Logical Connections (SLC) over the network using the Path Oriented Routing System (PORS) between two peer *DcmeLink* components.

Mib	Dcme

ATTRIBUTE Dcme Profile setupPriority (spri)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the priority at which a path is established. Zero is the highest priority and four is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The *holdingPriority*, a complementary attribute of this attribute, indicates the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority.*
Mib	Dcme
Values	Decimal (0..4)
Default	2

ATTRIBUTE Dcme Profile holdingPriority (hpri)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the priority that a path holds once it is established. Zero is the highest priority and four is the lowest. A path's *holdingPriority* determines its likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority.*
Mib	Dcme
Values	Decimal (0..4)

Default	2

ATTRIBUTE Dcme Profile bumpPreference (bpref)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies when bumping occurs in the route selection process. A connection with higher (numerically less) *setupPriority* may bump a connection with lower (numerically higher) *setupPriority* in order to acquire its bandwidth and be established. If *bumpPreference* is ***bumpWhenNecessary***, bumping occurs only when it is necessary. That is, a connection will bump another connection only if there is no other way for the connection to be established. If *bumpPreference* is ***bumpToObtainBestRoute,*** bumping occurs in order to use the best available route it may have.
Mib	Dcme
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	bumpWhenNecessary

ATTRIBUTE Dcme Profile requiredTrafficType (rttyp)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1,*** then only trunks

that include ***trafficType1*** in *supportedTrafficType* will be candidates for this connection.

Mib: Dcme

Values:
voice
data
video
trafficType1 (tt1)
trafficType2 (tt2)
trafficType3 (tt3)
trafficType4 (tt4)
trafficType5 (tt5)

Default: voice

ATTRIBUTE Dcme Profile permittedTrunkTypes (pttyp)

Access:
Read: All
Write: All

Criticality: Process

Description: This attribute specifies up to eight types of trunks that can be used on the route. The ***terrestrial*** and ***satellite*** trunk types are defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS chooses only trunks whose *trunkType*s are in the *permittedTrunkTypes* for the path.

Mib: Dcme

Set of:
terrestrial
satellite
trunkType1 (tt1)
trunkType2 (tt2)
trunkType3 (tt3)
trunkType4 (tt4)
trunkType5 (tt5)
trunkType6 (tt6)

Default: (terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Dcme Profile requiredSecurity (rsec)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	Dcme
Values	Decimal (0..7)
Default	4

ATTRIBUTE Dcme Profile requiredCustomerParm (rcparm)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the allowed customer defined parameter of the trunks on the route. The value of *requiredCustomerParm* ranges from 0 to 7. The meaning of each value is specific to a particular network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	Dcme
Values	Decimal (0..7)
Default	4

ATTRIBUTE Dcme Profile pathAttributeToMinimize (pamin)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether a route is selected on the basis of minimizing the cost or the delay. Each trunk has a cost and a delay metric associated with it. The cost of a selected route is the sum of the trunk cost metrics for all trunks included in the route. The delay of a selected route is the sum of the trunk delay metrics for all trunks included in the route.
Mib	Dcme
Values	cost delay
Default	cost

ATTRIBUTE Dcme Profile maximumAcceptableCost (maxCost)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies an upper bound on the cost metric of a route, which is the sum of the cost metrics of all trunks on the route. The cost metric is the *trunkCost* attribute of the Trunk component. If for any trunk the *trunkCost* is larger than the *maximumAcceptableCost*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route cost is being compared with the *maximumAcceptableCost* attribute, and this is done for any minimization criterion. No route is selected if the cost metric of the shortest route is larger than the *maximumAcceptableCost*.
Mib	Dcme
Values	Decimal (0..65535)
Default	1280

ATTRIBUTE Dcme Profile maximumAcceptableDelay (maxDelay)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies an upper bound on the delay of a route, which is the sum of the delays of all trunks on the route. It should be provisioned with a reasonable maximum acceptable delay for the end to end one way delay of a 512-byte packet. During its staging, a trunk measures a *measuredRoundTripDelay*. This delay is divided by two and truncated to an integer number of milliseconds to provide a one way delay which is used to populate the delay in this trunk object in the topological database. The value includes emission, propagation, and queuing delays. A 512-byte packet is used to perform the measurement. If for any trunk the half of the trunk's *measuredRoundTripDelay* is larger than the *maximumAcceptableDelay*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route delay is being compared with the *maximumAcceptableDelay* attribute, and this is done for any minimization criterion. No route is selected if the delay metric of the shortest route is larger than the *maximumAcceptableDelay.*
Mib	Dcme
Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Dcme Profile emissionPriority (epri)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the urgency with which packets on the path are emitted by the trunks on the route. An *emissionPriority* of 0 indicates the highest emission priority, while 2 indicates the

	lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets with a lower *emissionPriority* (or numerically higher).
Mib	Dcme
Values	Decimal (0..2)
Default	0

ATTRIBUTE Dcme Profile discardPriority (dpri)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the importance of the packets on the path. A *discardPriority* of 1 is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with a numerically lower discard priority are discarded after packets with a numerically higher discard priority.
Mib	Dcme
Values	Decimal (1..3)
Default	1

ATTRIBUTE Dcme Profile pathFailureAction (pfa)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the application can tolerate momentary interruption of a path while a new path is selected. If *pathFailureAction* is ***disconnectConnection***, the application is informed as soon as possible about a failure by disconnection. If *pathFailureAction* is ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails, the application is informed of the failure. If *pathFailureAction* is ***reRoutePath***, the *LCo* may wait up to 30

seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect.
All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option has the desired effect that the path is rerouted without complete disconnection at both ends.

Mib: Dcme

Values: reRoutePath
disconnectConnection

Default: reRoutePath

ATTRIBUTE Dcme Profile optimization (opt)

Access: Read: All
Write: All

Criticality: Process

Description: This attribute specifies whether this connection should attempt to optimize its path when requested by the *Rtg Pors* component. Every path is optimal when it is established, but as network traffic patterns and configurations change this path may no longer be optimal. The PORS connection manager on a module requests circuits to optimize at the *optimizationInterval*.

Mib: Dcme

Values: disabled
enabled

Default: enabled

GROUP Dcme Profile FramerOptions (FrOps)

Properties: Provisioned

Description: This group contains attributes which define how audio data is carried across the network.

Mib: Dcme

ATTRIBUTE Dcme Profile voiceEncoding

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the encoding of voice traffic. A *voiceEncoding* setting of ***g711G726*** specifies that either pulse code modulation (PCM) defined by ITU-T G.711 or adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726 is used to encode voice traffic. The actual encoding performed depends on congestion in the network and the settings of *minVoiceG711G726Rate* and *maxVoiceG711G726Rate*. If *voiceEncoding* is ***g711G726***, the bit rate of voice traffic can change during a call due to congestion in the network. In this case, the minimum and maximum rates that can occur during a call are specified by *minVoiceG711G726Rate* and *maxVoiceG711G726Rate* respectively. If *voiceEncoding* is ***g711G726***, *minVoiceG711G726Rate* is ***64*** and *maxVoiceG711G726Rate* is ***64***, G.711 (PCM) encoding is always performed on voice traffic on this channel and all voice traffic is carried uncompressed at 64 kbit/s. A *voiceEncoding* setting of ***g728at16*** specifies that the Low Delay Coded Excited Linear Predictive Coder (LD-CELP) algorithm defined by ITU-T G.728 is always performed on voice traffic. If *voiceEncoding* is ***g728at16***, the bit rate of all voice traffic is fixed at 16 kbit/s. The *minVoiceG711G726Rate* and *maxVoiceG711G726Rate* attributes do not apply if *voiceEncoding* is ***g728at16***. A *voiceEncoding* setting of ***g729at8*** indicates that the Conjugated Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) algorithm defined by ITU-T G.729 is always performed on voice traffic. If *voiceEncoding* is ***g729at8***, the bit rate of all voice traffic is fixed at 8 kbit/s. The *minVoiceG711G726Rate* and *maxVoiceG711G726Rate* attributes do not apply if *voiceEncoding* is ***g729at8***.
Mib	Dcme

Values	g711G726 g728at16 g729at8
Default	g728at16

ATTRIBUTE Dcme Profile maxVoiceG711G726Rate (maxVoiceBitRate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum possible bit rate (minimum possible compression rate) during a voice call on this channel when *voiceEncoding* is ***g711G726***. It applies only to voice traffic, not modem or fax traffic. It also applies only if *voiceEncoding* is ***g711G726***. If *voiceEncoding* is ***g711G726***, the bit rate of voice traffic can change during a call due to congestion in the network. In this case, the minimum and maximum rates that can occur during a call are specified by *minVoiceG711G726Rate* and *maxVoiceG711G726Rate* respectively. If *voiceEncoding* is ***g711G726***, *minVoiceG711G726Rate* is ***64*** and *maxVoiceG711G726Rate* is ***64***, the G.711 (PCM) algorithm is always performed on voice traffic on this channel and all voice traffic is carried uncompressed at 64 kbit/s.
Mib	Dcme
Values	64 32 24
Units	kbit/s
Default	64

ATTRIBUTE Dcme Profile minVoiceG711G726Rate (minVoiceBitRate)

Access	Read and write
Criticality	Process

Description	This attribute specifies the minimum possible bit rate (maximum possible compression rate) during a voice call on this channel when *voiceEncoding* is ***g711G726***. It applies only to voice traffic, not modem or fax traffic. It also applies only if *voiceEncoding* is ***g711G726***. If *voiceEncoding* is ***g711G726***, the bit rate of voice traffic can change during a call due to congestion in the network. In this case, the minimum and maximum rates that can occur during a call are specified by *minVoiceG711G726Rate* and *maxVoiceG711G726Rate* respectively. If *voiceEncoding* is ***g711G726***, *minVoiceG711G726Rate* is ***64*** and *maxVoiceG711G726Rate* is ***64***, the G.711 (PCM) algorithm is always performed on voice traffic on this channel and all voice traffic is carried uncompressed at 64 kbit/s.
Mib	Dcme
Values	64 32 24
Units	kbit/s
Default	64

ATTRIBUTE Dcme Profile voiceTrafficOptimization

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies how to optimize voice traffic. If *voiceTrafficOptimization* is ***bandwidth***, voice traffic is optimized to preserve bandwidth. If *voiceTrafficOptimization* is ***delay***, voice traffic is optimized to minimize delay.
Mib	Dcme
Values	bandwidth delay
Default	bandwidth

ATTRIBUTE Dcme Profile silenceSuppression

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies when silence suppression is performed. It applies to both voice and modem calls. If *silenceSuppression* is ***off***, silence suppression is never performed. If *silenceSuppression* is ***on***, silence suppression is always performed. If *silenceSuppression* is ***congested***, silence suppression is performed only when the network is congested. If *silenceSuppression* is ***slow***, silence suppression begins after 10 to 20 seconds without any detected speech or modem traffic. If *silenceSuppression* is ***slowAndCongested***, both the ***slow*** and ***congested*** options are applied.
Mib	Dcme
Values	off on congested slow slowAndCongested
Default	on

ATTRIBUTE Dcme Profile silenceSuppressionFactor

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the expected savings (percent reduction) in required bandwidth if silence suppression is used. If silence suppression is used, the bandwidth required for the connection will be lower than if silence suppression is not used. However, the routing system will not be aware of the unused bandwidth unless that bandwidth is specified by this attribute. If the value specified for the expected savings is too low, then

	some bandwidth made available by the use of silence suppression will be wasted. If the value specified for the expected savings is too high, then some connections may fail to set up because the routing system will over-calculate the amount of bandwidth available. The effectiveness of silence suppression can be influenced by language related speech patterns.
Mib	Dcme
Values	Decimal (0..60)
Units	%
Default	40

ATTRIBUTE Dcme Profile echoCancellation

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether echo cancellation is performed on calls using this profile as specified by ITU-T G.165. It applies mainly to voice traffic. Echo cancellation is usually (but not always) disabled during modem and fax calls. If *echoCancellation* is ***on***, the traffic that is echo cancelled is determined by ITU-T G.165.
Mib	Dcme
Values	off on
Default	off

ATTRIBUTE Dcme Profile modemFaxEncoding (faxEncoding)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies how modem and fax traffic is encoded. Modem and fax traffic are identified by an in-band 2100 Hz tone.

Prior to the detection of a 2100 Hz tone, all traffic is handled according to *voiceEncoding*.

If *modemFaxEncoding* is ***useVoiceEncoding***, 2100 Hz tones are not detected on the channel. In this case, the channel does not differentiate between modem and fax traffic and voice traffic. All traffic is handled according to *voiceEncoding*. If *voiceEncoding* is ***g728at16*** or ***g729at8***, modem and fax calls will not work.

If a 2100 Hz tone is detected and *modemFaxEncoding* is ***g711G726***, all subsequent traffic during a call is encoded using pulse code modulation (PCM) defined by ITU-T G.711 or adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726. When the 2100 Hz tone is detected, traffic is initially encoded at the rate specified by *maxModemFaxG711G726Rate*. For the duration of the call, the bit rate can change due to network congestion. In this case, the minimum and maximum rates that can occur during the call are specified by *minModemFaxG711G726Rate* and *maxModemFaxG711G726Rate* respectively.

If a 2100 Hz tone is detected and *modemFaxEncoding* is ***faxRelayG711G726***, encoding switches to G.711 or G.726 at the rate specified in *maxModemFaxG711G726Rate*, exactly as it does if *modemFaxEncoding* is ***g711G726***. Until a fax preamble is detected, the rate may fluctuate between *maxModemFaxG711G726Rate* and *minModemFaxG711G726Rate* due to network congestion, exactly as it does if *modemFaxEncoding* is ***g711G726***. If a fax preamble is detected, all subsequent traffic during a call is demodulated and sent through the network as cells at the base rate of the sending machine. Supported demodulation methods are V.29 (up to 9.6 kbit/s) and V.27 (up to 4.8 kbit/s). The modulation and demodulation of fax traffic is called “fax relay”.

If a 2100 Hz tone is detected and *modemFaxEncoding* is ***faxRelayOnly***, this channel does not wait for a fax preamble to switch to “fax relay”. Instead, “fax relay” is entered immediately. If *modemFaxEncoding* is ***faxRelayOnly***, modem calls do not work on this *Dcme*. Therefore, this setting is only appropriate if modem calls are not made on the channel.

The ***faxRelay*** feature is required to set *modemFaxEncoding* to ***faxRelayG711G726*** or ***faxRelayOnly***.

modemFaxEncoding must have the same value at both ends of a *Dcme*. If *modemFaxEncoding* is not provisioned with the same values at both ends of a *Dcme*, the *Dcme* will not be able to carry the modem and fax traffic successfully.

Mib	Dcme
Values	g711G726 faxRelayOnly faxRelayG711G726 useVoiceEncoding
Default	faxRelayOnly

ATTRIBUTE Dcme Profile maxModemFaxG711G726Rate (maxModemBitRate)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the maximum possible bit rate (minimum possible compression rate) during a modem call on this channel. It also specifies the maximum possible bit rate (minimum possible compression rate) during a fax call on this channel, but only if *faxEncoding* is ***g711G726***. *maxModemFaxG711G726Rate* always applies to modem traffic, and never applies to voice traffic. If *faxEncoding* is ***g711G726***, maxModemFaxG711G726Rate also applies to fax traffic. If *faxEncoding* is ***faxRelay***, *maxModemFaxG711G726Rate* does not apply to fax traffic. Rates can change during a call due to congestion in the network.
Mib	Dcme
Values	64 32
Units	kbit/s

Default	64

ATTRIBUTE Dcme Profile minModemFaxG711G726Rate (minModemBitRate)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the minimum possible bit rate (maximum possible compression rate) during a modem call on this channel. It also specifies the minimum possible bit rate (maximum possible compression rate) during a fax call on this channel, but only if *faxEncoding* is ***g711G726***. *minModemFaxG711G726Rate* always applies to modem traffic, and never applies to voice traffic. If *faxEncoding* is ***g711G726***, *minModemFaxG711G726Rate* also applies to fax traffic. If *faxEncoding* is ***faxRelay***, *minModemFaxG711G726Rate* does not apply to fax traffic. Rates can change during a call due to congestion in the network.
Mib	Dcme
Values	64 32
Units	kbit/s
Default	64

ATTRIBUTE Dcme Profile faxIdleSuppressionG711G726

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies whether fax idle suppression is performed on fax traffic on calls using this profile. It only applies to fax traffic, not voice or modem traffic. It also only applies if fax traffic is carried using G.711 or G.726.
Mib	Dcme

Values	off on
Default	off

ATTRIBUTE Dcme Profile insertedOutputDelay

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the amount of added output delay used to compensate for cross network delay variations. It applies to voice, modem and fax traffic. It is required to add output delay so that the statistical variation in the transit time of cells crossing the network does not cause gaps in speech. Backbone networks where high priority traffic consumes a high percentage of trunk bandwidth will require a higher *insertedOutputDelay* to compensate for the greater cell delay variation (CDV).
Mib	Dcme
Values	5 15 22 30 35 40 45 50 75 100 125 150
Units	msec
Default	22

ATTRIBUTE Dcme Profile ingressAudioGain

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the gain in dB that is applied to data coming from outside the network before it is transferred across the network. It applies to voice, modem and fax traffic. For example, ingress gain is applied to audio data coming from a PBX. If *ingressAudioGain* is negative, a loss is applied. *ingressAudioGain* and *egressAudioGain* are used in loss planning, which is the configuration of the devices in a network to ensure that the signal level from any point in the network to any other point is correct.
Mib	Dcme
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Dcme Profile egressAudioGain

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the gain in dB that is applied to data leaving the network on this route. It applies to voice, modem and fax traffic. For example, egress gain is applied to audio data going to a PBX. If *egressAudioGain* is negative, a loss is applied. *ingressAudioGain* and *egressAudioGain* are used in loss planning, which is the configuration of the devices in the network to ensure that the signal level from any point in the network to any other point is correct.
Mib	Dcme

Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Dcme Profile speechHangoverTime

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the time after the end of speech before silence suppression starts. *It applies only to voice traffic.* *Higher values of speechHangoverTime reduce undesirable clipping but increase bandwidth usage.*
Mib	Dcme
Values	Decimal (10..500)
Units	msec
Default	150

ATTRIBUTE Dcme Profile comfortNoiseCap

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the maximum level at which comfort noise is generated. The *comfort noise* is limited by *comfortNoiseCap before egressAudioGain is applied*. The default value of ***-40*** dBm0 equates to the maximum level of comfort noise available and effectively disables the *comfortNoiseCap*.
Mib	Dcme
Values	Signed (-78; -65; -60; -54; -52; -50; -48; -46; -44; -42; -40)
Units	dBm0
Default	-40

ATTRIBUTE Dcme Profile modemFaxSpeechDiscrim (fsd)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies whether this *Dcme* differentiates between modem fax traffic and speech. If *modemFaxSpeechDiscrim* is ***on*** and a false 2100 Hz tone is detected, the VSs under this DCME revert to speech mode when speech is detected.
Mib	Dcme
Values	on off
Default	on

ATTRIBUTE Dcme Profile v17EncodedAsG711G726

Access	Read and write
Criticality	Process
Description	This attribute specifies how services using this *Profile* negotiate with V.17 fax machines. This attribute is not used unless the ***modemFaxEncoding***, defined in this *Profile*, is ***faxRelayG711G726*** If *v17EncodedAsG711G726* is ***no,*** V.17 fax machines are instructed to use V.29 and V.29 fax traffic sent by fax machines is demodulated and encoded using fax relay. If *v17EncodedAsG711G726* is ***yes***, V.17 fax machines are permitted to use V.17 and V.17 fax traffic sent by fax machines is encoded using G.711 or G.726. The actual encoding performed depends on the *minModemFaxG711G726Rate* and *maxModemFaxG711G726Rate*, available in this *Profile*.
Mib	Dcme
Values	no yes

Default	no

ATTRIBUTE Dcme Profile dtmfRegeneration (detGen)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the DTMF regeneration parameter used during negotiation with the remote end across the subnet. If *dtmfRegeneration* is ***on***, it is desired that DTMF tones received from the link are first converted to digits before being sent to the subnet. When a digit is received from the subnet, its respective DTMF tone is desired to be generated before being sent to the link. If *dtmfRegeneration* is ***off***, it is desired that DTMF tones are transported transparently as audio.
Mib	Dcme
Values	off on
Default	off

ATTRIBUTE Dcme Profile maxFaxRelayRate

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the maximum desired fax relay rate. This attribute only applies if *modemFaxEncoding* is ***faxRelayOnly*** or ***faxRelayG711G726***.
Mib	Dcme
Values	Decimal (2.4; 4.8; 7.2; 9.6; 12.0; 14.4)
Units	kbit/s
Default	14.4

Nortel Networks Multiservice Switch 7400/15000/20000

Component Dcme

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Dlep

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Dlep

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COMPONENT DualLpEquipmentProtection (Dlep)

Instance	Decimal (0..7)
Groups	"GROUP Dlep CustomerIdentifierData (CidData)" "GROUP Dlep Provisioned (Prov)" "GROUP Dlep OsiState (State)" "GROUP Dlep Operational (Op)"
Scope	Device
Description	*DualLpEquipmentProtection/n* This component provides the sparing capabilities for electrical ports and server-type applications when using a dual *LP* sparing model. An example of when you would use this component is when you have electrical and optical ports on the same FP. In this situation, *Dlep* is used as the parent component for the spared electrical ports, rather than the *LP/#*.
Mib	Dlep
Opt. Subcomp.	"COMPONENT Dlep DS1" "COMPONENT Dlep VoiceServicesProcessor (Vsp)"
Common Verbs	Help List Display Add DELete

GROUP Dlep CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Dlep

ATTRIBUTE Dlep customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Dlep
Values	Decimal (0; 1..8191)
Default	0

GROUP Dlep Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *DualLpEquipmentProtection* component.

Mib	Dlep

ATTRIBUTE Dlep mainLp

Access	Read and write
Criticality	Process
Description	This attribute specifies one of the *Lp*s of an *Lp* pair. A value must be provided for this attribute, and an *Lp* may only be associated with one *Dlep* component. Each of the *Lp*s must link to only one card, that is, *spareCard* is not allowed to be set on either *Lp*. Each *Lp* must have the same *LogicalProcessorType*. The *cardType* attribute must be identical for both cards.
Mib	Dlep
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Dlep spareLp

Access	Read and write
Criticality	Process
Description	This attribute specifies one of the *Lp*s of an *Lp* pair. A value must be provided for this attribute, and an *Lp* may only be associated with one *Dlep* component. Each of the *Lp*s must link to only one card, that is, *spareCard* is not allowed to be set on either *Lp*. Each *Lp* must have the same *LogicalProcessorType*. The *cardType* attribute must be identical for both cards.
Mib	Dlep
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Dlep linkToApplications

Access	Read only

Description	This attribute allows server-type applications to link themselves to the *Dlep* component, and be spared between the *mainLp* attribute and the *spareLp attribute*.
Mib	Dlep
List of	Link
List Size	256
Default	No default

GROUP Dlep OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dlep

ATTRIBUTE Dlep adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Dlep

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Dlep operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Dlep

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Dlep usageState (osiUsage)

Access: Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Dlep
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Dlep availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal

fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Dlep
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Dlep proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Dlep

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Dlep controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	Dlep
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Dlep alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Dlep

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Dlep standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Dlep

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Dlep unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Dlep
Values	false true
Default	false

GROUP Dlep Operational (Op)

Properties	Operational
Description	This group contains the operational attribute for the *DualLpEquipmentProtection* component.
Mib	Dlep

ATTRIBUTE Dlep activeLp

Access	Read only
Description	This attribute identifies which *Lp* is currently providing service..
Mib	Dlep
Values	The name of the component

Default	No default

COMPONENT Dlep DS1

Instance	Decimal (0..7)
Groups	"GROUP Dlep DS1 Provisioned (Prov)" "GROUP Dlep DS1 CustomerIdentifierData (CidData)" "GROUP Dlep DS1 AdminInfo (AdminInfo)" "GROUP Dlep DS1 IfEntryProv (IfEntry)" "GROUP Dlep DS1 OperationalStatus (OperStatus)" "GROUP Dlep DS1 OsiState (State)" "GROUP Dlep DS1 Operational (Oper)" "GROUP Dlep DS1 Statistics (Stats)"
Scope	Application
Description	*Lp/n DS1/n* The *DS1* component controls and monitors a DS1 port on a Function Processor. The number of ports supported depends on the type of card, and is usually encoded in the *Shelf Card/n cardType*, for example 4pDS1Aal1: 4 port. The lowest instance value is always ***0***. Multi-Service cards have an instance range 0..31, except that instance values 30 and 31 are not available for an “ATM UNI port”. (A DS1 “ATM UNI port” is a *DS1* component with a single *Chan* whose *applicationFramerName* attribute is linked to an *AtmIf* component.)

The instance number of a *DS1* “ATM UNI port” must not be the same as the instance number of an *IMA* group under the same *Lp*.

Mib: Dlep

Subcomponents: "COMPONENT Dlep DS1 Channel (Chan)"

Dyn. Subcomp.: "COMPONENT Dlep DS1 Test (Test)"
"COMPONENT Dlep DS1 Dsp"
"COMPONENT Dlep DS1 Audio"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Dlep DS1 Provisioned (Prov)

Properties: Provisioned

Description

This group contains all of the provisioning data for a DS1 component.

Mib: Dlep

ATTRIBUTE Dlep DS1 lineType (lineType)

Access: Read and write

Description

This attribute defines the framing of the DS1 line.
d4 defines a framing pattern of 12 frames per multiframe.
esf defines a framing pattern of 24 frames per multiframe.
d4Cas defines a framing pattern of 12 frames per multiframe with channel associated signalling.
esfCas defines a framing pattern of 24 frames per multiframe with channel associated signalling.
unframed defines an unknown framing pattern for clear channels.

For cell-based cards only the default option ***esf*** is permitted.

Mib Dlep

Values
d4
esf
d4Cas
esfCas
unframed

Default esf

ATTRIBUTE Dlep DS1 zeroCoding (zeroCoding)

Access Read and write

Criticality Component

Description

This attribute defines the zero encoding on the DS1 line.
bit7Stuffing sets bit 7 of every timeslot to a one to guarantee ones's density. This reduces the available bandwidth of the channel by 1/8.
b8zs substitutes a pattern of bipolar violations if more than 7 zeros in a row are to be transported.
ami specifies Alternate Mark Inversion, in which successive marks (ones) alternate between positive and negative polarity voltage signals, and spaces (zeros) are sent as a zero amplitude signal.
When *zeroCoding* is set to ***ami*** and l*ineType* is set to ***d4***, it is recommended that *raiAlarmType* be set to ***SBit*** in order to avoid possible mimic RAI alarm.

For cell-based cards, only the default value ***b8zs*** is permitted.

The value *ami* should be used with caution. If the ones density of the traffic is not sufficiently high, the DS1 will lose clock synchronization.

Mib Dlep

Values
bit7Stuffing
b8zs
ami

Default
b8zs

ATTRIBUTE Dlep DS1 clockingSource (clockingSource)

Access
Read and write

Description

This attribute defines the source of the transmit clock for the DS1 line.

When ***local*** is selected, the crystal on the port generates the clocking for the line.

When ***line*** is selected, the port synchronizes to the clock from the facility.

When ***module*** is selected, the ports clock synchronizes to the clock provided by the oscillator on the active CP.

When ***otherPort*** is selected, the port synchronizes to the port with a clocking source of ***line***.

When ***srtsMode*** is selected, the port transmit frequency depends on the SRTS (Synchronous Residual Time-Stamp) received over the ATM network. SRTS information is also generated sent over the ATM network.

When ***adaptiveMode*** is selected, the port transmit frequency continually adapts to match the egress data received from the ATM network.

A port with ***srtsMode*** or ***adaptiveMode*** must have a single *Chan* which may be linked only to an *Aal1Ces*.service with serviceType ***unstructured***

If the *NetworkSynchronization* component is present, the default value of this attribute is ***module***, otherwise it defaults to ***line***, except for the ***3pDS1Atm*** card, which it defaults to ***local***.

On a ***3pDS1Atm*** card all ports must have the same value, and be either ***local*** or ***module***.

otherPort is valid only on AAL1 cards. ***srtsMode*** is valid only on AAL1 and Multi-Service Access cards. ***adaptiveMode*** is valid only on Multi-Service Access cards.
On ***4DS1Aal1*** cards either:

all four ports' *clockingSource* values must be ***local*** OR
all four ports' *clockingSource* values must be ***module*** OR
one port's *clockingSource* value must be ***line*** and the other three must be ***otherPort***. A port can only have ***srtsMode*** selected if the other ports are ***module*** or ***srtsMode***.

Mib: Dlep

Values:
local
line
module
otherPort
srtsMode
adaptiveMode

Default: No default

ATTRIBUTE Dlep DS1 raiAlarmType (raiType)

Access: Read and write

Description

This attribute defines the method of sending a RAI (Remote Alarm Indication) alarm on a DS1 line.
When ***SBit*** is selected, RAI alarm is sent by setting the S bit in frame 12.
When ***Bit2*** is selected, RAI alarm is sent by setting bit 2 in all timeslots to 0.
When ***fdl*** is selected, RAI alarm is sent by a repeating pattern of 00 hex and FF hex on the FDL link.
Note that for *lineType* of ***d4***, only the SBit and the Bit2 methods are applicable. Whereas for *lineType* of ***esf***, only the Bit2 and the ***fdl*** methods are applicable.
SBit method is recommended if *lineType* is set to ***d4*** and

zeroCoding is set to ***ami***. This will help to avoid potential mimic RAI alarm when 1's density is too low in the data transmitted. For cell-based cards, only the default value ***fdl*** is permitted.

Mib: Dlep

Values: sBit, bit2, fdl

Default: fdl

ATTRIBUTE Dlep DS1 lineLength (lineLength)

Access: Read and write

Description: This attribute defines the line length (in feet) for equalization calculations for the DS1 line. The value ranges between 0-655. For ***8pDS1Atm*** cards the actual value used for equalization is rounded up to the nearest 110 feet; for all other card types the actual value used is rounded to the nearest 50 feet.

Mib: Dlep

Values: Decimal (0..655)

Default: 0

GROUP Dlep DS1 CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: Dlep

ATTRIBUTE Dlep DS1 customerIdentifier (cid)

Access: Read and write

Description: This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute,

the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	Dlep
Values	Decimal (0; 1..8191)
Default	0

GROUP Dlep DS1 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Dlep

ATTRIBUTE Dlep DS1 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Dlep
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	Dlep
Values	String (0..60, ASCII)
Default	No default

GROUP Dlep DS1 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Dlep

ATTRIBUTE Dlep DS1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Dlep
Values	up down testing
Default	up

ATTRIBUTE Dlep DS1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.

Mib	Dlep
Values	Decimal (1..65535)
Default	No default

GROUP Dlep DS1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Dlep

ATTRIBUTE Dlep DS1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Dlep
Values	up down testing
Default	up

GROUP Dlep DS1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dlep

ATTRIBUTE Dlep DS1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Dlep
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dlep DS1 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Dlep

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Dlep DS1 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Dlep

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Dlep DS1 availabilityStatus (osiAvail)

Access: Read only

Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is

one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Dlep
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Dlep DS1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn’t initialize autonomously) that initialization is required

before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Dlep
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Dlep DS1 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Dlep

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Dlep DS1 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Dlep

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Dlep DS1 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and

containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Dlep

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Dlep DS1 unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Dlep

Values:
false
true

Default: false

GROUP Dlep DS1 Operational (Oper)

Properties: Operational

Description

This group contains the common operational data for a component in a digital hierarchy interface.

Mib Dlep

ATTRIBUTE Dlep DS1 losAlarm (losAlarm)

Access Read only

Description

This attribute displays whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS defects have been observed and accumulated for a period of 2 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). A LOS defect is detected upon observing all zeros for 150 ms (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: upon observing 175 +/- 75 pulse positions with no pulses of either positive or negative polarity). If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOS alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOS alarm state.
The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 seconds.

Mib Dlep

Values on
off

Default off

ATTRIBUTE Dlep DS1 rxAisAlarm (rxAisAlarm)

Access Read only

Description

This attribute displays whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5

seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period (for **8pDS1Atm** cards: when both an Out Of Frame condition exists and a 1's density of at least 99.9% is present for a time T, where 3 ms ≤ T ≤ 75 ms; for **8pE1Atm** cards: when both an Out Of Frame condition exists and fewer than three 0's have been received in 512 bit periods). If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state.
The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.

Mib: Dlep

Values: on
off

Default: off

ATTRIBUTE Dlep DS1 lofAlarm (lofAlarm)

Access: Read only

Description

This attribute displays whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state
The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib	Dlep
Values	on off
Default	off

ATTRIBUTE Dlep DS1 rxRaiAlarm (rxRaiAlarm)

Access	Read only
Description	This attribute displays whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. For **3pDS1Atm**, and **8pDS1Atm** cards: alarm is declared immediately upon observing the defect is present, with no integration time. For **3pE1Atm**, and **8pE1Atm** cards: alarm state is entered when the RAI defect indicator has been observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds (for **3pDS1Atm**, and **8pDS1Atm** cards: alarm is cleared immediately upon observing the defect is absent, with no integration time). The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.
Mib	Dlep
Values	on off
Default	off

ATTRIBUTE Dlep DS1 txAisAlarm (txAisAlarm)

Access	Read only
Description	This attribute displays whether an AIS (Alarm Indication Signal)

alarm is being transmitted on the line. An AIS alarm is transmitted when the port is in a locked state.

Mib Dlep

Values on
off

Default off

ATTRIBUTE Dlep DS1 txRaiAlarm (txRaiAlarm)

Access Read only

Description

This attribute displays whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the port detects a LOF alarm condition (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: RAI is transmitted when the port detects a LOS, LOF, or AIS condition).

Mib Dlep

Values on
off

Default off

GROUP Dlep DS1 Statistics (Stats)

Properties Operational

Description

This group contains the common statistical data for a component in a digital hierarchy interface.

Mib Dlep

ATTRIBUTE Dlep DS1 runningTime (runningTime)

Access Read only

Description

The number of seconds since the port component was activated.

Mib Dlep

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 errorFreeSec (efs)

Access	Read only
Description	The number of seconds that the port has been in an error free state.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 erroredSec (es)

Access	Read only
Description	An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 sevErroredSec (ses)

Access	Read only
Description	A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.
Mib	Dlep
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Dlep DS1 sevErroredFrmSec (sefs)

Access	Read only
Description	A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 unavailSec

Access	Read only
Description	The total number of seconds that the interface is in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 bpvErrors (bpvErrors)

Access	Read only
Description	The current count of Bipolar Violations. A bipolar violation is an error in the alternate mark inversion pattern (AMI) on the line.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 crcErrors (crcErrors)

Access	Read only
Description	If the interface is a DS1 line, it is the current count of CRC-6 errors. These will only be counted when the lineType is ESF. If the interface is an E1 line, it is the total number of CRC-4 errors. These will only be counted when crc4Mode is on.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 frmErrors (frmErrors)

Access	Read only
Description	The current count of frame errors. A frame error is an error in the framing bits
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 losStateChanges (losChanges)

Access	Read only
Description	The total number of times that the line lost signal.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 slipErrors (slipErrors)

Access	Read only

Description	The total number of times that the line experienced a controlled frame slip. This attribute is incremented for ports on the voice cards (for example the 1pDS1V and the 1pE1V function processors) only.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

COMPONENT Dlep DS1 Channel (Chan)

Instance	Decimal (0..24)
Groups	"GROUP Dlep DS1 Chan Provisioned (Prov)" "GROUP Dlep DS1 Chan CustomerIdentifierData (CidData)" "GROUP Dlep DS1 Chan IfEntryProv (IfEntry)" "GROUP Dlep DS1 Chan OperationalStatus (OperStatus)" "GROUP Dlep DS1 Chan OsiState (State)" "GROUP Dlep DS1 Chan Operational (Oper)" "GROUP Dlep DS1 Chan AdminInfo (AdminInfo)"
Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port. Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots. Similarly,

the ***1pDS3C*** card type only allows one channel per port, and this is automatically provisioned with all available timeslots.

Mib	Dlep
Opt. Subcomp.	"COMPONENT Dlep DS1 Chan AtmCell (Cell)" "COMPONENT Dlep DS1 Chan TrunkConditioning (Tc)"
Dyn. Subcomp.	"COMPONENT Dlep DS1 Chan Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Dlep DS1 Chan Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisional data for a *Channel* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan timeslots (ts)

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component. For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.

Mib	Dlep
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Default	No default

ATTRIBUTE Dlep DS1 Chan timeslotDataRate (dataRate)

Access	Read and write
Criticality	Component

Description

This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute.

When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s.

When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s.

On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card.

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***.

One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.

Mib: Dlep

Values: 56k
doNotOverride

Default: doNotOverride

ATTRIBUTE Dlep DS1 Chan applicationFramerName

Access: Read and write

Description

This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.

Mib	Dlep
Values	Link (Service, interfaceName)
Default	No default

GROUP Dlep DS1 Chan CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Dlep
Values	Decimal (0; 1..8191)
Default	0

GROUP Dlep DS1 Chan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Dlep
Values	up down testing
Default	up

ATTRIBUTE Dlep DS1 Chan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Dlep
Values	Decimal (1..65535)
Default	No default

GROUP Dlep DS1 Chan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib	Dlep

ATTRIBUTE Dlep DS1 Chan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Dlep
Values	up down testing
Default	up

GROUP Dlep DS1 Chan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Dlep

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Dlep DS1 Chan operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Dlep

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dlep DS1 Chan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Dlep
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Dlep DS1 Chan availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: Dlep

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Dlep DS1 Chan proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been

initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Dlep

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Dlep DS1 Chan controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Dlep

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Dlep DS1 Chan alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Dlep

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Dlep DS1 Chan standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	Dlep
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Dlep DS1 Chan unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Dlep
Values	false true
Default	false

GROUP Dlep DS1 Chan Operational (Oper)

Properties	Operational
Description	This group contains all of the operational data for a *Channel* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan actualChannelSpeed

Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.

Mib	Dlep
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Dlep DS1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Dlep
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 Chan commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	Dlep
Values	String (0..60, ASCII)
Default	No default

COMPONENT Dlep DS1 Chan Test (Test)

Groups	"GROUP Dlep DS1 Chan Test OsiState (State)" "GROUP Dlep DS1 Chan Test Setup (Setup)" "GROUP Dlep DS1 Chan Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.
Mib	Dlep
Common Verbs	Help List Display

VERB START Dlep DS1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Dlep DS1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Dlep DS1 Chan Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Dlep

ATTRIBUTE Dlep DS1 Chan Test adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Dlep

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Dlep DS1 Chan Test operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Dlep

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Dlep DS1 Chan Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Dlep

Values: idle
active (activ)
busy

Default: idle

GROUP Dlep DS1 Chan Test Setup (Setup)

Properties: Operational

Description:

This group contains all of the operational data for a *Test* component.

Mib: Dlep

ATTRIBUTE Dlep DS1 Chan Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Dlep
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 Chan Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).

Note that not all test types are not supported by all function processors.

Mib: Dlep

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Dlep DS1 Chan Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: Dlep

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Dlep DS1 Chan Test frmPatternType (fpt)

Access: Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: Dlep

Values: ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default: ccitt32kBitPattern

ATTRIBUTE Dlep DS1 Chan Test customizedPattern (cp)

Access: Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: Dlep

Values: Hex (H.0..H.ffffffff)

Units: Hex

Default: H.55555555

ATTRIBUTE Dlep DS1 Chan Test dataStartDelay (dsd)

Access: Read and write

Description

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib	Dlep
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Dlep DS1 Chan Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Dlep
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Dlep DS1 Chan Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Dlep DS1 Chan Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: Dlep

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Dlep DS1 Chan Test bitsTx

Access: Read only

Description:

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: Dlep

Values: Long Integer

Default: No default

ATTRIBUTE Dlep DS1 Chan Test bytesTx

Access: Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib Dlep

Values Long Integer

Default No default

ATTRIBUTE Dlep DS1 Chan Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Dlep

Values Long Integer

Default No default

ATTRIBUTE Dlep DS1 Chan Test bitsRx

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib Dlep

Values Long Integer

Default No default

ATTRIBUTE Dlep DS1 Chan Test bytesRx

Access Read only

Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Chan Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Chan Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Chan Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Dlep
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 Chan Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Dlep DS1 Chan Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Dlep DS1 Chan AtmCell (Cell)

Groups	"GROUP Dlep DS1 Chan Cell Provisioned (Prov)" "GROUP Dlep DS1 Chan Cell Operational (Oper)" "GROUP Dlep DS1 Chan Cell Statistics (Stats)"
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.
Mib	Dlep
Common Verbs	Help List Display Add DELete

GROUP Dlep DS1 Chan Cell Provisioned (Prov)

Properties	Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib Dlep

ATTRIBUTE Dlep DS1 Chan Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib Dlep

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Dlep DS1 Chan Cell scrambleCellPayload (scramble)

Access Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib	Dlep
Values	off on
Default	No default

ATTRIBUTE Dlep DS1 Chan Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	Dlep
Values	off on
Default	off

ATTRIBUTE Dlep DS1 Chan Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	Dlep
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Dlep DS1 Chan Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Dlep
Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Dlep DS1 Chan Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval*

attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Dlep

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Dlep DS1 Chan Cell lcdStateDelay (delay)

Access: Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Dlep

Values: Decimal (1..50)

Units: msec

Default: No default

ATTRIBUTE Dlep DS1 Chan Cell hecErrorIntervalLimit (hIntLimit)

Access: Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Dlep

Values: Decimal (1..25)

Default: 1

GROUP Dlep DS1 Chan Cell Operational (Oper)

Properties: Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib: Dlep

ATTRIBUTE Dlep DS1 Chan Cell lcdAlarm (lcd)

Access: Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x*

milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib: Dlep

Values: on
off

Default: off

GROUP Dlep DS1 Chan Cell Statistics (Stats)

Properties: Operational

Description:

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib: Dlep

ATTRIBUTE Dlep DS1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access	Read only
Description	This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.
Mib	Dlep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Dlep DS1 Chan Cell sevErroredSec (ses)

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects. Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.
Mib	Dlep
Values	Decimal (0..4294967295)

Default 0

ATTRIBUTE Dlep DS1 Chan Cell receiveCellUtilization (rxutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib Dlep

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Dlep DS1 Chan Cell transmitCellUtilization (txutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib Dlep

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Dlep DS1 Chan Cell correctableHeaderErrors (cErr)

Access Read only

Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib: Dlep

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Dlep DS1 Chan TrunkConditioning (Tc)

Groups: "GROUP Dlep DS1 Chan Tc Provisioned (Prov)"
"GROUP Dlep DS1 Chan Tc Operational (Op)"

Scope: Device

Description

Lp/n Ds1/n Chan/n Tc
Lp/n E1/n Chan/n Tc
Lp/n Ds3/n Ds1/n Chan/n Tc
Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc
Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc
Laps/n Vc4/n Vc12/k,l,m E1 Chan/n T*c*
Laps/n Sts/n Vt1dot5/l,m Ds1 Chan/n T*c*

The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service.

Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined.

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the

following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib: Dlep

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Dlep DS1 Chan Tc Provisioned (Prov)

Properties: Provisioned

Description: This group contains all specific provisioning data for a *Tc* component.

Mib: Dlep

ATTRIBUTE Dlep DS1 Chan Tc replacementData (data)

Access: Read and write

Description: This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component

under fault conditions.

The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values:
DS1 MUX Out Of Service Code = 0x1A
E1 MUX Out Of Service Code = 0xFF

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***.

On the ***4pOC3ChSmIr*** and ***2pOC3ChSmIrVsp3*** cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.

Mib	Dlep
Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Dlep DS1 Chan Tc signalOneDuration (duration)

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits. If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions. The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.
Mib	Dlep
Values	Decimal (0..60)
Units	seconds

Default 0

ATTRIBUTE Dlep DS1 Chan Tc noServiceResponse (resp)

Access Read and write

Description This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available:

autoConfigure - automatically configure the channels response.
tc - transmit trunk conditioning on all timeslots provisioned in the egress direction.
ais - transmit AIS in the egress direction.
noResponse - no response is sent in the egress direction.

A value of ***autoConfigure*** will result in TC being transmitted for all card types.

Mib Dlep

Values autoConfigure
tc
ais
noResponse

Default autoConfigure

ATTRIBUTE Dlep DS1 Chan Tc signalOne (sigOne)

Access Read and write

Description This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined.

For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.

Mib	Dlep
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Dlep DS1 Chan Tc signalTwo (sigTwo)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	Dlep
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Dlep DS1 Chan Tc Operational (Op)

Properties	Operational
Description	This group contains all specific operational data for a *Tc* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Chan Tc ingressConditioning (inCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI)
Mib	Dlep
Values	off on
Default	off

ATTRIBUTE Dlep DS1 Chan Tc egressConditioning (egCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the PDH line. When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***.

Trunk conditioning is transmitted towards the PDH line under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

Mib: Dlep

Values: off
on

Default: off

COMPONENT Dlep DS1 Test (Test)

Groups: "GROUP Dlep DS1 Test OsiState (State)"
"GROUP Dlep DS1 Test Setup (Setup)"
"GROUP Dlep DS1 Test Results (Results)"

Scope: Application

Description

The *Test* component is configured to control a hardware facility test on a physical (*V*35, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.

Mib: Dlep

Common Verbs: Help
List
Display

VERB START Dlep DS1 Test

Impact: Service

Description

This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Dlep DS1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Dlep DS1 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dlep

ATTRIBUTE Dlep DS1 Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dlep

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dlep DS1 Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Dlep
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dlep DS1 Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Dlep
Values	idle active (activ) busy
Default	idle

GROUP Dlep DS1 Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Dlep
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and

performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Dlep

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Dlep DS1 Test frmSize (size)

Access: Read and write

Description

This attribute defines the size of the test data frames in number of

bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: Dlep

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Dlep DS1 Test frmPatternType (fpt)

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: Dlep

Values:
ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default: ccitt32kBitPattern

ATTRIBUTE Dlep DS1 Test customizedPattern (cp)

Access: Read and write

Description:
This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: Dlep

Values: Hex (H.0..H.ffffffff)

Units	Hex
Default	H.55555555

ATTRIBUTE Dlep DS1 Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Dlep
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Dlep DS1 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Dlep
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Dlep DS1 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Dlep DS1 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Dlep

ATTRIBUTE Dlep DS1 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed

to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	Dlep
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Dlep DS1 Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Test erroredFrmRx

Access	Read only

Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep DS1 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Dlep
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Dlep DS1 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Dlep DS1 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Dlep DS1 Dsp

Scope	Device
Description	*LogicalProcessor/n Ds1/0 Dsp* The *Dsp* component presents the status of the Digital Signal Processors (DSPs) present on a voice card. A voice card's *Dsp* component is created automatically whenever the parent DS1 component becomes active, and remains in

existence as long as the card remains operational. *Dsp* components cannot be added or deleted.

Mib: Dlep

Common Verbs:
Help
List
Display

COMPONENT Dlep DS1 Audio

Scope: Device

Description:
LogicalProcessor/n Ds1/0 Audio
The Audio component presents the audio status of all timeslots on a given DS1.
A voice card's *Audio* component is created automatically whenever the parent DS1 component becomes active, and remains in existence as long as the card remains operational. *Audio* components cannot be added or deleted.

Mib: Dlep

Common Verbs:
Help
List
Display

COMPONENT Dlep VoiceServicesProcessor (Vsp)

Groups:
"GROUP Dlep Vsp Provisioned (Op)"
"GROUP Dlep Vsp OsiState (State)"

Scope: Device

Description:
Lp/n VoiceServicesProcessor
Dlep/n VoiceServicesProcessor

This component represents a Voice Services Processor FP.

When added, *PModule* subcomponents are added automatically. For the ***12mVspAal*** and ***Vsp2*** cards, 12 *PModule* instances are added.

	For the ***2pGeMmSrVsp3*** card, 24 *PModule* instances are added. For the ***2pOC3ChSmIrVsp3*** card, 23 *PModule* instances are added.
Mib	Dlep
Subcomponents	"COMPONENT Dlep Vsp ProcessingModule (PModule)"
Opt. Subcomp.	"COMPONENT Dlep Vsp Ethernet1000BaseSX (GigE)"
Dyn. Subcomp.	"COMPONENT Dlep Vsp Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Dlep Vsp Provisioned (Op)

Properties	Provisioned
Description	This group contains provisioning data for the *Vsp* Component.
Mib	Dlep

ATTRIBUTE Dlep Vsp linkToApplication (lta)

Access	Read and write
Criticality	Process
Description	This attribute specifies a service link to an *Nsta* component that defines the application services available in the VSP card.
Mib	Dlep
Values	Link (Service, linkToServer)
Default	No default

GROUP Dlep Vsp OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dlep

ATTRIBUTE Dlep Vsp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dlep
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dlep Vsp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Dlep
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dlep Vsp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dlep
Values	idle active (activ) busy
Default	idle

COMPONENT Dlep Vsp ProcessingModule (PModule)

Instance	Decimal (1..24)

Groups	"GROUP Dlep Vsp PModule Provisioned (Prov)" "GROUP Dlep Vsp PModule OsiState (State)" "GROUP Dlep Vsp PModule Operational (Oper)"
Scope	Device
Description	*Lp/n Vsp ProcessingModule/n* *Dlep/n Vsp ProcessingModule/n* A *ProcessingModule* (*PModule*) component instance represents a distinct physical processing module on a Voice Services Processor (VSP) FP. Each *PModule* instance is uniquely identified by a number that corresponds to a specific physical location on the VSP FP.
Mib	Dlep
Dyn. Subcomp.	"COMPONENT Dlep Vsp PModule ProcessingBlock (PBlock)"
Common Verbs	Help List Display Add DELete

GROUP Dlep Vsp PModule Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for a *ProcessingModule*.
Mib	Dlep

ATTRIBUTE Dlep Vsp PModule moduleType (modType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of processing module expected for this *ProcessingModule* instance. A value of ***vpm*** refers to a processing module instance that is

capable of processing voice, voiceband data, and data.
A value of ***spm*** refers to a processing module instance that is capable of processing signaling, and hosting a media or signaling gateway.
A value of ***none*** refers to a processing module instance that is unavailable for use.

Mib: Dlep

Values:
none
vpm
spm

Default: none

GROUP Dlep Vsp PModule OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Dlep

ATTRIBUTE Dlep Vsp PModule adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Dlep

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Dlep Vsp PModule operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Dlep

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Dlep Vsp PModule usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Dlep

Values:
idle
active (activ)
busy

Default: idle

GROUP Dlep Vsp PModule Operational (Oper)

Properties: Operational

Description: This group indicates operational information for a *ProcessingModule*.

Mib: Dlep

ATTRIBUTE Dlep Vsp PModule insertedModuleType (insModType)

Access: Read only

Description: This attribute indicates the type of processing module currently present in the physical position on a Voice Services Processor FP.

A value of ***vpm*** indicates the presence of a processing module capable of processing voice, voiceband data, and data.
A value of ***spm*** indicates the presence of a processing module capable of processing signaling, and hosting a media or signaling gateway.
A value of ***none*** indicates that no processing module is present.
A value of ***unknown*** indicates the presence of a processing module with capabilities not known by the software.

Mib: Dlep

Values:
none
unknown
vpm
spm

Default	No default

ATTRIBUTE Dlep Vsp PModule productCode (prc)

Access	Read only
Description	This attribute indicates the product engineering code and release of the *ProcessingModule*.
Mib	Dlep
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Dlep Vsp PModule failureCause (failCause)

Access	Read only
Description	This attribute indicates the reason why the physical processing module has failed. The various failure causes are: ***none*** - There is no failure. ***cannotLoadFirmware*** - A module has been detected, but the firmware load operation failed. ***failedDiagnostics*** - The diagnostics cycle has completed and an error has been detected within the module. ***mismatched*** - The *insertedModuleType* of the *PModule* does not match its provisioned *moduleType*. ***connectivityFailed*** - The test cycle has run and an error has been detected on one of the *PBlock*s within the *PModule*. ***notResponding*** - One of the *PBlock*s within the *PModule* is not responding.
Mib	Dlep
Values	none cannotLoadFirmware failedDiagnostics mismatched connectivityFailed notResponding
Default	none

COMPONENT Dlep Vsp PModule ProcessingBlock (PBlock)

Instance	Decimal (1..2)
Groups	"GROUP Dlep Vsp PModule PBlock Operational (Oper)" "GROUP Dlep Vsp PModule PBlock Utilization (Util)"
Scope	Device
Description	*Lp/n Vsp PModule/n ProcessingBlock/n* *Dlep/n Vsp PModule/n ProcessingBlock/n* This dynamic component represents a block of Data Processors within a *ProcessingModule*. The Processing Block is the smallest unit on the Voice Services Processor (VSP) FP on which different Data Processing software algorithms may be executed, or on which diagnostics may be performed.
Mib	Dlep
Common Verbs	Help List Display

GROUP Dlep Vsp PModule PBlock Operational (Oper)

Properties	Operational
Description	This group contains status information about the *ProcessingBlock* component.
Mib	Dlep

ATTRIBUTE Dlep Vsp PModule PBlock serviceList (servList)

Access	Read only
Description	This attribute indicates the components that have resources allocated on this *ProcessingBlock* component. This attribute is not displayed if the *Shelf Card cardType* attribute is set to ***2pOC3ChSmIrVsp3***.

Mib	Dlep
List of	The name of the component
Default	No default

GROUP Dlep Vsp PModule PBlock Utilization (Util)

Properties	Operational
Description	This group contains information about processing utilization of this *PBlock* component. This group is filtered if the *modType* attribute of the parent *PModule* component is not set to ***spm***, or on the ***12mVspAal*** card.
Mib	Dlep

ATTRIBUTE Dlep Vsp PModule PBlock timeInterval

Access	Read only
Description	This attribute indicates the time period for which the average, minimum, and maximum utilization values are calculated. If the associated *Vsp* component is locked this attribute will be reset to ***0***. This attribute is reset to ***0*** every 15 minutes.
Mib	Dlep
Values	Decimal (0..15)
Units	minutes
Default	No default

ATTRIBUTE Dlep Vsp PModule PBlock cpuUtil

Access	Read only
Description	This attribute indicates the approximate processing utilization of this *PBlock* component.
Mib	Dlep

Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Dlep Vsp PModule PBlock cpuUtilAvg

Access	Read only
Description	This attribute indicates average processing utilization of this *PBlock* component over the time period indicated in the *timeInterval* attribute.
Mib	Dlep
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Dlep Vsp PModule PBlock cpuUtilAvgMin

Access	Read only
Description	This attribute indicates the minimum average processing utilization of this *PBlock* component over the time period indicated in the *timeInterval* attribute.
Mib	Dlep
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Dlep Vsp PModule PBlock cpuUtilAvgMax

Access	Read only
Description	This attribute indicates the maximum average processing utilization of this *PBlock* component over the time period indicated in the *timeInterval* attribute.
Mib	Dlep

Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Dlep Vsp Test (Test)

Groups	"GROUP Dlep Vsp Test OsiState (State)" "GROUP Dlep Vsp Test Setup (Setup)" "GROUP Dlep Vsp Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.
Mib	Dlep
Common Verbs	Help List Display

VERB START Dlep Vsp Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Dlep Vsp Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Dlep Vsp Test OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Dlep

ATTRIBUTE Dlep Vsp Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dlep
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dlep Vsp Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Dlep
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dlep Vsp Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dlep
Values	idle active (activ) busy
Default	idle

GROUP Dlep Vsp Test Setup (Setup)

Properties	Operational

Description

This group contains all of the operational data for a *Test* component.

Mib Dlep

ATTRIBUTE Dlep Vsp Test purpose (purpose)

Access Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib Dlep

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Dlep Vsp Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).

sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Dlep

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Dlep Vsp Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: Dlep

Values: Decimal (4..4096)

Units: bytes

Default 1024

ATTRIBUTE Dlep Vsp Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib Dlep

Values ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default ccitt32kBitPattern

ATTRIBUTE Dlep Vsp Test customizedPattern (cp)

Access Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib Dlep

Values Hex (H.0..H.ffffffff)

Units Hex

Default H.55555555

ATTRIBUTE Dlep Vsp Test dataStartDelay (dsd)

Access Read and write

Description

This attribute specifies the time delay (in seconds) between when

the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib: Dlep

Values: Decimal (0..1814400)

Units: seconds

Default: 0

ATTRIBUTE Dlep Vsp Test displayInterval (di)

Access: Read and write

Description:

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib: Dlep

Values: Decimal (0..30240)

Units: minutes

Default: 5

ATTRIBUTE Dlep Vsp Test duration

Access: Read and write

Description:

This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.

Mib: Dlep

Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Dlep Vsp Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Dlep

ATTRIBUTE Dlep Vsp Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have

been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: Dlep

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Dlep Vsp Test bitsTx

Access: Read only

Description:

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: Dlep

Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Dlep
Values	Long Integer

Default	No default

ATTRIBUTE Dlep Vsp Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Dlep

Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Dlep
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Dlep Vsp Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Dlep
Values	Decimal (0.00..30240.00)

Units	minutes
Default	0.00

ATTRIBUTE Dlep Vsp Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Dlep
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Dlep Vsp Ethernet1000BaseSX (GigE)

Instance	Decimal (0..1)
Groups	"GROUP Dlep Vsp GigE OsiState (State)" "GROUP Dlep Vsp GigE Eth1000Operational (Oper)" "GROUP Dlep Vsp GigE Eth1000Statistics (Stats)"
Scope	Device
Description	*Lp/n Vsp GigE/n* This component monitors and provides access to statistical measurements of the *VspEth1000BaseSX* ports on the card, when the ***vgsIpGigE*** or the ***vgsIpG729GigE*** feature is provisioned.

Two *VspEth1000BaseSX* ports are supported on the ***2pGeMmSrVsp3*** Function Processor.

Mib: Dlep

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Dlep Vsp GigE OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Dlep

ATTRIBUTE Dlep Vsp GigE adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is

	administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Dlep
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Dlep Vsp GigE operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Dlep
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Dlep Vsp GigE usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Dlep
Values	idle active (activ) busy
Default	idle

GROUP Dlep Vsp GigE Eth1000Operational (Oper)

Properties	Operational
Description	This group contains the port operational attributes of the *VspEth1000BaseSX* component.
Mib	Dlep

ATTRIBUTE Dlep Vsp GigE macAddress (macAdd)

Access	Read only
Description	This attribute indicates the medium access controller address. The value of this attribute will be assigned by the system. The medium access controller address is displayed in canonical format.
Mib	Dlep
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Dlep Vsp GigE autoNegotiationStatus (negStatus)

Access	Read only
Description	This attribute indicates the status of the auto negotiation at the physical level. Possible values are: ***succeeded*** – auto-negotiation has completed successfully.

failed – auto-negotiation has failed to negotiate a compatible set of capabilities.

inProgress – auto-negotiation is currently in progress.

disabled – the port has detected that the far end does not support auto-negotiation.

Mib: Dlep

Values: succeeded
failed
inProgress
disabled

Default: No default

ATTRIBUTE Dlep Vsp GigE ingressFlowControlStatus (ingFcStatus)

Access: Read only

Description: This attribute indicates whether the ingress flow control has been successfully negotiated with the link partner.

Possible values are:

enabled - this state will generate pause frames when internal congestion is detected.

disabled - in this state, no pause frames are generated. In addition, there is a risk that the received packets may be discarded due to lack of internal resources.

Mib: Dlep

Values: enabled
disabled

Default: No default

ATTRIBUTE Dlep Vsp GigE lossofSyncAlarm (syncAlarm)

Access: Read only

Description	This attribute indicates whether the loss of synchronization alarm is ***on*** or ***off***. Possible values are: ***on*** - the alarm is set. ***off*** - the alarm is clear.
Mib	Dlep
Values	on off
Default	No default

ATTRIBUTE Dlep Vsp GigE autoNegIncompleteAlarm (negAlarm)

Access	Read only
Description	This attribute indicates whether the auto-negotiation incomplete alarm is ***on*** or ***off***. Possible values are: ***on*** - the alarm is set. ***off*** - the alarm is clear.
Mib	Dlep
Values	on off
Default	No default

ATTRIBUTE Dlep Vsp GigE remoteFaultIndicationAlarm (remFaultAlarm)

Access	Read only
Description	This attribute indicates whether the remote fault indication alarm is ***on*** or ***off***. Possible values are:

on - the alarm is set.

off - the alarm is clear.

Mib	Dlep
Values	on off
Default	No default

GROUP Dlep Vsp GigE Eth1000Statistics (Stats)

Properties	Operational
Description	This group contains the statistics for the *VspEth1000BaseSX* component.
Mib	Dlep

ATTRIBUTE Dlep Vsp GigE framesTransmittedOk (frmTxOk)

Access	Read only
Description	This attribute counts the frames that were transmitted without errors. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE framesReceivedOk (frmRxOk)

Access	Read only
Description	This attribute counts the number of frames that were received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE octetsTransmittedOk (octetsTxOk)

Access	Read only
Description	This attribute counts the octets that were transmitted without errors. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE octetsReceivedOk (octetsRxOk)

Access	Read only
Description	This attribute counts the octets that were received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE pauseFramesTransmitted (txPause)

Access	Read only
Description	This attribute counts the pause medium access controller control frames transmitted. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE pauseFramesReceived (rxPause)

Access	Read only

Description	This attribute counts the pause medium access controller control frames received. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE undersizeFrames (underFrm)

Access	Read only
Description	This attribute counts the frames that were received but were less than the minimum size (64 bytes). This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE framesTooLong (longFrm)

Access	Read only
Description	This attribute counts the frames that were received but were greater than the maximum size. The count includes frames which have a bad frame check sequence. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE frameCheckSequenceErrors (fcsErr)

Access	Read only
Description	This attribute counts the frames received that were an integral number of octets in length and did not pass the FCS check. This count does not include frames received that were too long or too

	short. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE symbolErrors (symErr)

Access	Read only
Description	This attribute counts the times a valid length frame was received and had at least one occurance of a data reception or symbol error. This counter increments once per valid Carrier Event as defined by the specification IEEE 802.3 - 2000 edition. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE broadcastFramesReceivedOk (bcastRxOk)

Access	Read only
Description	This attribute counts the valid broadcast frames received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	Dlep
Values	Long Integer
Default	No default

ATTRIBUTE Dlep Vsp GigE discardedFrames (discFrm)

Access	Read only
Description	This attribute counts the valid frames discarded because of a lack of resources available to receive them. This counter wraps to zero after it reaches its maximum value.

Mib	Dlep
Values	Long Integer
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Dlep

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component DnsAg

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component DnsAg

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COMPONENT DnsAgent (DnsAg)

Instance	virtualRouter (vr) [String (1..8, ASCII)] dnsNum [Decimal (1..15)]
Groups	"GROUP DnsAg Provisioned (Prov)" "GROUP DnsAg Statistics (Stats)" "GROUP DnsAg WlcCustomCounters (WlcCustomCntr)" "GROUP DnsAg OsiState (State)"
Scope	Application
Description	*DnsAgent/<vr>,n* This component represents a Domain Name System (DNS) Agent for a particular Virtual Router (VR).
Mib	WirelessDnsAg
Dyn. Subcomp.	"COMPONENT DnsAg CacheEntry (CacheEnt)"
Common Verbs	Help List Display Add DELete

GROUP DnsAg Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisioning attributes to set up the links to other components (for example, *SessionManagement*, *Port*) and to set the Name Server Internet Protocol (IP) addresses.
Mib	WirelessDnsAg

ATTRIBUTE DnsAg linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor that the *DnsAgent* and its subcomponents are provisioned on.
Mib	WirelessDnsAg
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE DnsAg maxDynamicEntries (maxDyEnt)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of dynamic entries supported by the *DnsAgent* cache table. Decrease in the cache size will be effective only in the next restart. The current cache usage can be obtained from the attribute *currentCacheUsage*.
Mib	WirelessDnsAg
Values	Decimal (0..500)
Default	1

ATTRIBUTE DnsAg linkToPort (lToPort)

Access	Read: All Write: All
Description	This attribute specifies the IP Address and the UDP port number that the DnsAgent associates with. Changing this value causes the outstanding transactions to be affected.

Mib	WirelessDnsAg
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE DnsAg serverAddresses (servAddr)

Access	Read: All Write: All
Description	This attribute specifies the IP addresses of the Domain Name System (DNS) Name Server, which this Server queries as necessary. If this attribute is empty then only static entries are used.
Mib	WirelessDnsAg
List of	IP address
List Size	4
Default	No default

ATTRIBUTE DnsAg linkToDnsClient (lToCl)

Access	Read: All Write: All
Description	This attribute specifies the Application using a *DnsAgent*. This is to ensure that the *DnsAgent* is linked to the same Virtual Router (VR).
Mib	WirelessDnsAg
List of	Link (Service, linkToDnsAgent)
List Size	1
Default	No default

GROUP DnsAg Statistics (Stats)

Properties	Operational
Description	This group contains the operational attributes for the *DnsAgent*.

Mib	WirelessDnsAg

ATTRIBUTE DnsAg currentCacheUsage (curCacUs)

Access	Read: All Write: Illegal
Description	This attribute indicates the current cache usage for this instance of *DnsAgent*. The maximum value is provisioned in the attribute *maxCacheEntries*.
Mib	WirelessDnsAg
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE DnsAg clientQueries (clQue)

Access	Read: All Write: Illegal
Description	This attribute counts the queries received by this *DnsAgent* from the GPRS applications. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg cacheHits

Access	Read: All Write: Illegal
Description	This attribute counts the successful Domain Name System (DNS) queries for which a Logical Name was found in the *DnsAgent* cache. The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg serverQueries (servQue)

Access	Read: All Write: Illegal
Description	This attribute counts the queries sent by this *DnsAgent* component to the Name Server because the requested name mapping queries received from an application were not in the cache. The value indicates the initial queries sent by the *DnsAgent* component to the Name Server, not only when the initial name mapping queries are received from the application, but also when the retry name mapping queries are received from the application. The *DnsAgent* component retries are not counted. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg serverPendingQueries (servPendQue)

Access	Read: All Write: Illegal
Description	This attribute counts the current outstanding queries of this *DnsAgent*.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg serverQueryTimeouts (servQueTouts)

Access	Read: All Write: Illegal

Description	This attribute counts the failed Domain Name System (DNS) queries sent. A failed query is one that did not receive a response within the time provisioned in the *retryTimer* attribute (defined in the Sgsn *DnsAgent* component). The value indicates the sum of initial and retry query timeouts. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg serverQuerySuccesses (servQueSuc)

Access	Read: All Write: Illegal
Description	This attribute counts the successful Domain Name System (DNS) queries to which a valid IP address was received from the Name Server, using only dynamic resolution. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg serverQueriesNameNotFound (servQueNnf)

Access	Read: All Write: Illegal
Description	This attribute counts the failed Domain Name System (DNS) queries. This can be due any of the following errors: Format error - The Name server was unable to interpret the query. Name error - Domain name referenced in the query does not exist. Not implemented error - The Name server does not support the requested kind of query. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessDnsAg

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg serverQueryFailures (servQueFail)

Access	Read: All Write: Illegal
Description	This attribute counts the failed Domain Name System (DNS) queries due to a failure in the Name Server itself or due to some network error. Query failures can result from a connection problem, failure in the Server node, or a lower layer failure indication such as port unreachable. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg cachePurges (cachePurg)

Access	Read: All Write: Illegal
Description	This attribute counts the entries that were purged from the Domain Name System (DNS) cache table. Entries are purged when an entry needs to be added to the cache and the cache is full. The least recently accessed dynamic entry is the one that is purged. Static entries are never purged. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg serverAvgRespTime (avgRespTime)

Access	Read: All Write: Illegal

Description	This attribute indicates the average query response time for the Domain Name System (DNS) query server. The values are in the same order as the servers provisioned under *serverAddress* attribute. This is an 80/20 weighted value with 80 given to the previous time value and 20 to the current time value.
Mib	WirelessDnsAg
Vector of	Decimal (0..4294967295)
Units	seconds
Index	server1 server2 server3 server4
Default	No default

ATTRIBUTE DnsAg serverRespPercentage (serverRespPct)

Access	Read: All Write: Illegal
Description	This attribute indicates the percentage of response for queries sent to the Domain Name System (DNS) query server. The values are in the same order as the servers provisioned under *serverAddress* attribute.
Mib	WirelessDnsAg
Vector of	Decimal (0..100)
Units	%
Index	server1 server2 server3 server4
Default	No default

GROUP DnsAg WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessDnsAg

ATTRIBUTE DnsAg customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

GROUP DnsAg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessDnsAg

ATTRIBUTE DnsAg adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To

enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: WirelessDnsAg

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE DnsAg operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: WirelessDnsAg

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE DnsAg usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	WirelessDnsAg
Values	idle active (activ) busy
Default	idle

ATTRIBUTE DnsAg availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	WirelessDnsAg
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE DnsAg proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: WirelessDnsAg

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE DnsAg controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

	The value ***suspended*** indicates that the service has been administratively suspended.
Mib	WirelessDnsAg
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE DnsAg alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: WirelessDnsAg

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE DnsAg standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: WirelessDnsAg

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE DnsAg unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	WirelessDnsAg
Values	false true
Default	false

COMPONENT DnsAg CacheEntry (CacheEnt)

Instance	String (1..253, ASCII)
Groups	"GROUP DnsAg CacheEnt Operational (Oper)" "GROUP DnsAg CacheEnt WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*DnsAg/<vr>,n CacheEntry/<logicalName>* This component represents an entry in the Logical Name-IP

	Address mapping table for the Serving GPRS Support Node (SGSN).
Mib	WirelessDnsAg
Dyn. Subcomp.	"COMPONENT DnsAg CacheEnt AddressInfo (Addr)"
Common Verbs	Help List Display

GROUP DnsAg CacheEnt Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the Logical Name-Internet Protocol (IP) mapping table on a particular *GprsSubscriberControl (Gsc)*.
Mib	WirelessDnsAg

ATTRIBUTE DnsAg CacheEnt entryType (type)

Access	Read: All Write: Illegal
Description	This attribute indicates whether this entry is a static entry (provisioned in the *Sgsn DnsAg StaticCacheEntry* component) or a dynamic entry.
Mib	WirelessDnsAg
Values	static dynamic
Default	No default

ATTRIBUTE DnsAg CacheEnt lastUpdateTime (tUpdate)

Access	Read: All Write: Illegal
Description	This attribute indicates the time that this entry was updated. If the *entryType* is ***static***, the value indicates the time this entry was

created. If the *entryType* is ***dynamic***, the value is the time of the most recent update by the Name Server.

Mib	WirelessDnsAg
Values	Time (HMS)
Default	No default

ATTRIBUTE DnsAg CacheEnt mappedIpAddr (ipAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the Internet Protocol (IP) addresses associated with a given Logical Name. The order of the addresses is not important and success queries of the Logical Name returns the IP addresses in a round robin fashion.
Mib	WirelessDnsAg
List of	IP address
List Size	10
Default	No default

GROUP DnsAg CacheEnt WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessDnsAg

ATTRIBUTE DnsAg CacheEnt customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessDnsAg

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg CacheEnt customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg CacheEnt customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

COMPONENT DnsAg CacheEnt AddressInfo (Addr)

Instance	IP address
Groups	"GROUP DnsAg CacheEnt Addr Operational (Oper)" "GROUP DnsAg CacheEnt Addr WlcCustomCounters (WlcCustomCntr)"
Scope	Application

Description	*DnsAg/<vr>,n CacheEnt/<logicalName> AddressInfo/<ipAddr>* This component represents the address specific information in a cache entry.
Mib	WirelessDnsAg
Common Verbs	Help List Display

GROUP DnsAg CacheEnt Addr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes to define the *AddressInfo*.
Mib	WirelessDnsAg

ATTRIBUTE DnsAg CacheEnt Addr ttl

Access	Read: All Write: Illegal
Description	This attribute indicates the Time To Live (TTL) value received from the Domain Name System (DNS) Server in a DNS query response. This address is removed from the *CacheEntry ttl* seconds after the *lastUpdateTime*. For static mapping, the *ttl* value is ***infinity***. The IP address with a negative *ttl* value is discarded from the query response received from the Name Server while the IP address with a ***0*** *ttl* value is sent to the application and then discarded.
Mib	WirelessDnsAg
Values	Decimal (0..2147483647) infinity (inf)
Units	seconds
Default	No default

GROUP DnsAg CacheEnt Addr WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessDnsAg

ATTRIBUTE DnsAg CacheEnt Addr customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg CacheEnt Addr customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DnsAg CacheEnt Addr customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessDnsAg
Values	Decimal (0..4294967295)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component DnsAg

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component DpnGate

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component DpnGate

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COMPONENT DpnGateway (DpnGate)

Instance	Decimal (0..65535)
Groups	"GROUP DpnGate IfEntryProv (IfEntry)" "GROUP DpnGate Provisioned (Prov)" "GROUP DpnGate Overrides" "GROUP DpnGate OsiState (State)" "GROUP DpnGate OperationalStatus (OperStatus)" "GROUP DpnGate Operational (Oper)" "GROUP DpnGate Transport" "GROUP DpnGate Statistics (Stats)"

"COLLECTED STATS DpnGateway"

Scope	Network
Description	*DpnGateway/n* The *DpnGateway* component provides a connection to a DPN-100 module. It controls a protocol stack associated with a logical port on a Functional Processor providing a connection to a DPN-100 UTP Trunk or Network Link. The underlying link protocol

may be provided by either *Utp* or *FrAccess*. A maximum of 256 instances of *DpnGateway* may be provisioned on a module.

Mib	DpnTrunks
Opt. Subcomp.	"COMPONENT DpnGate Utp" "COMPONENT DpnGate FrAccess"
Dyn. Subcomp.	"COMPONENT DpnGate ForwardingStatistics (FwdStats)"
Common Verbs	Help List Display Add DELete Unlock

VERB LOCK DpnGate

Impact	Service
Description	*Lock [-force][-forever] <component name>* This verb will cause the specified component to no longer providing service and enter the OSI ***locked*** administrative state. In some cases, locking a component causes all its subcomponents to shut down also. **Options:** *-force* If this option is present, service to current clients is terminated and the ***locked*** state is entered immediately. Without this option, *Lock* behaves as described above. -forever If this option is present, then after service to current clients is terminated and the ***locked*** state is entered, an unlock command is required to get the service into the ***unlocked*** state. Without this option, the service automatically returns to the ***unlocked*** state after five minutes.

GROUP DpnGate IfEntryProv (IfEntry)

Properties	Provisioned

Description	This group contains the provisionable attributes for the ifEntry.
Mib	DpnTrunks

ATTRIBUTE DpnGate ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	DpnTrunks
Values	up down testing
Default	up

ATTRIBUTE DpnGate ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	DpnTrunks
Values	Decimal (1..65535)
Default	No default

GROUP DpnGate Provisioned (Prov)

Properties	Provisioned
Description	This group of provisionable attributes provide parameters used by *DpnGateway* for staging.
Mib	DpnTrunks

ATTRIBUTE DpnGate expectedRemoteNamsId (expectedRemote)

Access	Read and write
Description	This attribute specifies the expected NAMS identifier of the module to which this *DpnGateway* is connected. The *DpnGateway* end points exchange their NAMS identifiers through the *DpnGateway*'s staging protocol. The staged value is validated and the *remoteValidationAction* will be executed for those values not matching the value supplied for this attribute. If this value is zero, then the comparison is always successful.
Mib	DpnTrunks
Values	Decimal (0..65535)
Default	0

ATTRIBUTE DpnGate remoteValidationAction (validation)

Access	Read and write
Description	This attribute specifies the action to be taken if there is a mismatch between the provisioned value and the value received from the remote end, in cases where the *expectedRemoteNamsId* is non-zero. If this attribute is provisioned to ***continue*** then upon an unsuccessful validation staging continues, otherwise, if ***disable*** is set then the *DpnGateway* does not continue to stage but, attempts to stage again after a one minute time out. All unsuccessful validation when *expectedRemoteNamsId* has been set result in the generation of an alarm.
Mib	DpnTrunks
Values	continue disable
Default	continue

ATTRIBUTE DpnGate linkType (type)

Access	Read and write
Criticality	Process

Description	This attribute specifies the type of network link. If this attribute is provisioned to ***dedicated*** then the link is a dedicated network link to a DPN module. If this attribute is provisioned to ***dialIn*** then the link is connected to the DPN module through a public telephone network, on a dial line.
Mib	DpnTrunks
Values	dedicated dialIn
Default	dedicated

GROUP DpnGate Overrides

Properties	Provisioned
Description	Theses attribute comprise the set of provisionable override parameters supported by both the *Trunk* and *DpnGateway* components. The attributes are used when reporting operational attributes (used for metric calculations) to the routing system.
Mib	DpnTrunks

ATTRIBUTE DpnGate overrideTransmitSpeed (ots)

Access	Read and write
Description	This is the overridden value of link speed (bit/s) that, if staged successfully with the remote, is reported to the routing system for metric calculations. A zero indicates that an override value has not been provided and that only the measured value will be reported to the routing system. If this value is changed on a *Trunk* or *DpnGateway* that is enabled, the LOCK and UNLOCK commands must be issued to the component to restage the override with the remote.
Mib	DpnTrunks
Values	Decimal (0; 1000..4294967295)
Units	bit/s
Default	0

ATTRIBUTE DpnGate overrideRoundTripDelay (ortd)

Access	Read and write
Description	This is the overridden value of link delay (ms) that, if staged successfully with the remote, is reported to the routing system for metric calculations. A zero indicates that an override value has not been provided and that only the measured value will be reported to the routing system. If this value is changed on a *Trunk* or *DpnGateway* that is enabled, the LOCK and UNLOCK commands must be issued to the component to restage the override with the remote.
Mib	DpnTrunks
Values	Decimal (0.0..1500.0)
Units	msec
Default	0.0

GROUP DpnGate OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DpnTrunks

ATTRIBUTE DpnGate adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component.

When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: DpnTrunks

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE DpnGate operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: DpnTrunks

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE DpnGate usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	DpnTrunks
Values	idle active (activ) busy
Default	idle

ATTRIBUTE DpnGate availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: DpnTrunks

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE DpnGate proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been

initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: DpnTrunks

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE DpnGate controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: DpnTrunks

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE DpnGate alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: DpnTrunks

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE DpnGate standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	DpnTrunks
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE DpnGate unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	DpnTrunks
Values	false true
Default	false

GROUP DpnGate OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	DpnTrunks

ATTRIBUTE DpnGate snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable

	to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	DpnTrunks
Values	up down testing
Default	up

GROUP DpnGate Operational (Oper)

Properties	Operational
Description	This group of attributes contain the operational information associated with this *DpnGateway* and the remote to which it has it staged.
Mib	DpnTrunks

ATTRIBUTE DpnGate remoteComponentName (remote)

Access	Read only
Description	This attribute indicates the Component Name of the remote DPN-100 UTP Trunk or Network Link supplied by the staging protocol. It is in the format *PM/n PE/n PI/n PO/n* where *PM* is the remote module NAMS identifier, *PE* is the remote module Processor Element that is staged with, *PI* is the remote module Peripheral Interface card associated with the *PE*, and *PO* is the remote module Port (physical or virtual) on the *PI* that the physical line is connected to.
Mib	DpnTrunks
Values	String (1..26, ASCII)
Default	No default

ATTRIBUTE DpnGate remoteNamsMnemonic (remoteNams)

Access	Read only
Description	This attribute indicates the NAMS Mnemonic of the remote DPN-100 Module supplied by the staging protocol. It can be used

	as a parameter to *Rtg Dpn* for displaying all *DpnGateway* that are connect to the same module.
Mib	DpnTrunks
Values	String (1..12, ASCII)
Default	No default

ATTRIBUTE DpnGate linkMode (mode)

Access	Read only
Description	This attribute indicates whether the *DpnGateway* is a ***Trunk*** connected to a DPN-100 RM or a ***NetworkLink*** connected to a DPN-100 AM.
Mib	DpnTrunks
Values	trunk networkLink unknown
Default	No default

ATTRIBUTE DpnGate activateReason (reason)

Access	Read only
Description	This attribute indicates the reason the *DpnGateway* has been activated by the remote end. The value corresponds to the link type of the DPN end. It is always ***unknown*** until the link comes into service. If this attribute is set to ***dedicated***, the DPN is a dedicated network link. If this attribute is set to ***dnl***, the DPN end is a dial network link, meaning a network link which is connected through a dial-up service. If this attribute is set to ***dbnl***, the DPN end is dial backup network link, activated because the main network link is out of service. If this attribute is set to ***bwod***, the DPN end is a bandwidth on demand link, activated because extra bandwidth is required. If the attribute is set to ***unknown***, the link is either not currently in use, or the DPN end has an unrecognized link type.
Mib	DpnTrunks

Values	dedicated dnl dbnl dialIn bwod unknown
Default	unknown

GROUP DpnGate Transport

Properties	Operational
Description	This group of attributes contains the set of operational parameters measured and maintained by both the *Trunk* and *DpnGateway* components.
Mib	DpnTrunks

ATTRIBUTE DpnGate measuredSpeedToIf (spd)

Access	Read only
Description	This attribute indicates the current “transmittable” bandwidth of the underlying facility. For a *Trunk* with a *Unack* subcomponent, and a *DpnGateway* with a *Utp* subcomponent, if a serial port is used, the value is the measured transmit speed of the port; if a channelized port (E1/DS1) is used, the value is the measured transmit speed of the *Channel*. For a *Trunk* with an *AtmAccess* subcomponent, the value is calculated by converting the VCC transmit cell rate to an equivalent bit rate. The VCC transmit cell rate is determined based on the *vccReportingBw* attribute of the *Trunk AtmAccess* component. If *vccReportingBw* has a value of ***pcr*** and attribute *bwElastic* of *AtmAccess* has a value of ***no***, the peak cell rate (PCR) of the VCC, defined in *txTrafficDescParm* of *AtmIf Vcc Vcd*, is used. If *vccReportingBw* has a value of ***pcr*** and attribute *bwElastic* of *AtmAccess* has a value of ***yes***, the minimum of the PCR, defined in *txTrafficDescParm* of *AtmIf Vcc Vcd*, and the current cell rate (CCR) of the VCC is used. If *vccReportingBw* has a value of ***acr***, the best measurement of the actual cell rate (ACR) of the VCC is used, which is the minimum of the PCR,

	the CCR and the actual shaping rate (ASR). For a *Trunk* with an *MplsAccess* subcomponent, the value is the transmit bandwidth reserved on the MPLS transport *Lsp*. For a *DpnGateway* with a *FrAccess* subcomponent, the value indicates the *committedInformationRate* of *FrAccess FrMuxSetup*. A value of zero is displayed when the underlying facility is disabled or the current “transmittable” bandwidth is unknown.
Mib	DpnTrunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

ATTRIBUTE DpnGate maxTxUnit (mtu)

Access	Read only
Description	This is the maximum transmission unit (byte size) that is supported by the *Trunk* or *DpnGateway* component. This size includes the data and routing headers. A value of zero indicates the MTU has not yet been determined.
Mib	DpnTrunks
Values	Decimal (0..65535)
Units	bytes
Default	0

ATTRIBUTE DpnGate measuredRoundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the measured Round Trip Delay (msec) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. The value includes emission, propagation, and queuing delays. A 512 byte data packet is used to perform the measurement. A value of zero is displayed when the link is disabled or the measured Round Trip Delay is unknown.
Mib	DpnTrunks

Values	Decimal (0.0..1500.0)
Units	msec
Default	0.0

GROUP DpnGate Statistics (Stats)

Properties	Operational
Description	This group of attributes contains statistics collected by the *DpnGateway* component.
Mib	DpnTrunks

ATTRIBUTE DpnGate pktFromIf (pkt)

Access	Read only
Description	This attribute counts the number of packets received from the remote module. This counter wraps around to zero when the maximum value is reached.
Mib	DpnTrunks
Values	Long Integer
Default	No default

ATTRIBUTE DpnGate trunkPktFromIf (trk)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets received from the remote module. These packets are forwarded to the *DpnGateway* component. This counter wraps around to zero when the maximum value is reached.
Mib	DpnTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DpnGate trunkPktToIf (trkti)

Access	Read only

Description	This attribute counts the number of internal trunk protocol packets transmitted to the remote module. This counter wraps around to zero when the maximum value is reached.
Mib	DpnTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DpnGate discardUnforward (disc)

Access	Read only
Description	This attribute counts the number of packets received from the remote module that have been discarded. This counter wraps around to zero when the maximum value is reached. Two main reasons that cause this counter to increment are: the remote protocol is not compatible to the local protocol stack or, the packet cannot be forwarded due to either a recent loss of connectivity or due to congestion.
Mib	DpnTrunks
Values	Long Integer
Default	No default

ATTRIBUTE DpnGate discardTrunkPktFromIf (discTrk)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets received from the remote module that have been discarded. This counter wraps around to zero when the maximum value is reached. The two main reasons that cause this counter to increment is if the DpnGateway is un-synchronized with DPN-100 and if the remote protocol is not the same version as the local protocol.
Mib	DpnTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DpnGate stagingAttempts (statt)

Access	Read only
Description	This attribute counts the number of times that the staging protocol has attempted to stage with the remote module. This counter wraps around to zero when the maximum value is reached. The main reason for this counter to increment is that the local hardware is up but the local protocol cannot stage with the remote protocol due to a faulty connection. If the value is zero, then the local hardware has never enabled successfully.
Mib	DpnTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DpnGate discardTrunkPktToIf (discTrkti)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets that have been discarded before being transmitted to the remote module. This counter wraps around to zero when the maximum value is reached. The main reason that causes this counter to increment is that the DpnGateway can not get sufficient resources to create an internal trunk protocol packet.
Mib	DpnTrunks
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS DpnGateway

Description	The statistics record generated by the DpnGateway component.

ATTRIBUTE DpnGate remoteComponentName (remote)

Description	This attribute is the component name of the remote end which it has supplied through the *Trunk* or *DpnGateway* staging protocol.
Values	String (1..26, ASCII)

ATTRIBUTE DpnGate measuredSpeedToIfMax

Description: This is the maximum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for the whole interval or the measured speed is unknown.

Values: Decimal (0..4294967295)

ATTRIBUTE DpnGate measuredSpeedToIfMin

Description: This is the minimum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for any part of the interval or the measured speed is unknown.

Values: Decimal (0..4294967295)

ATTRIBUTE DpnGate measuredSpeedToIfCurrent

Description: This is the current measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled or the measured speed is unknown.

Values: Decimal (0..4294967295)

ATTRIBUTE DpnGate measuredRoundTripDelayMax

Description: This is the maximum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for the whole interval or the delay is unknown.

Values: Decimal (0..1500)

ATTRIBUTE DpnGate measuredRoundTripDelayMin

Description: This is the minimum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for any part of the interval or the delay is unknown.

Values: Decimal (0..1500)

ATTRIBUTE DpnGate measuredRoundTripDelayCurrent

Description: This is the measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A

value of zero is provided when the link is disabled or the delay is unknown.

Values — Decimal (0..1500)

ATTRIBUTE DpnGate fwdPktFromIf (fwdPkt)

Description — This attribute counts the number of forwarding packets received on the *Trunk* or *DpnGateway* in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE DpnGate fwdDiscUnforwardFromIf (fwdDisc)

Description — This attribute counts the number of forwarding packets discarded by the *Trunk* or *DpnGateway* in the last statistics collection interval.

Values — Long Integer

ATTRIBUTE DpnGate fwdOctetFromIf (fwdOctet)

Description — This attribute counts the number of forwarding bytes received on the *Trunk* or *DpnGateway* in the last statistics collection interval.

Values — Long Integer

COMPONENT DpnGate Utp

Groups — "GROUP DpnGate Utp Provisioned (Prov)"
"GROUP DpnGate Utp OsiState (State)"
"GROUP DpnGate Utp Operational (Op)"
"GROUP DpnGate Utp Statistics (Stats)"

Scope — Network

Description — *DpnGateway/n Utp*
The *Utp* component provides the Utp Level2 link protocol, an acknowledged protocol that provides selective retransmission of frames. A *Framer* subcomponent is automatically added

	providing the underlying HDLC framing and associated hardware that the *Utp* component will use.
Mib	UtpDpnTrunks
Subcomponents	"COMPONENT DpnGate Utp Framer"
Common Verbs	Help List Display Add DELete

GROUP DpnGate Utp Provisioned (Prov)

Properties	Provisioned
Description	This group of provisionable attributes contains the parameters used by *Unacknowledged*, *Utp*, and *FrAccess* for monitoring link quality.
Mib	UtpDpnTrunks

ATTRIBUTE DpnGate Utp maximumErroredInterval

Access	Read and write
Description	This attribute specifies the interval time over which the error threshold (as specified by *receiveErrorSensitivity)* must be continuously exceeded before the *Unacknowledged*, *Utp*, or *FrAccess* component can be degraded. Once the error interval count exceeds the provisioned value, the *Unacknowledged*, *Utp*, or *FrAccess* component issues an alarm indicating that link quality has degraded, and it disables its parent component. The exception to this is a value of zero, the default, which indicates that the mechanism is completely disabled.
Mib	UtpDpnTrunks
Values	Decimal (0; 1..15)
Units	minutes
Default	0

ATTRIBUTE DpnGate Utp receiveErrorSensitivity

Access	Read and write
Description	This attribute is the allowable error rate beyond which the *Unacknowledged*, *Utp*, or *FrAccess* component can be degraded if it persists for a duration longer than the *maximumErrorInterval*. The threshold is expressed as a percentage of number of errored frames in the last interval per number of frames received in the last interval. The exception to this is a value of zero, which indicates that the mechanism is completely disabled. The configurable values are: 0 = the mechanism is completely disabled 1 = 1/(2**1) 2 = 1/(2**2) 3 = 1/(2**3) : 10 = 1/(2**10)
Mib	UtpDpnTrunks
Values	Decimal (0; 1..10)
Default	3

GROUP DpnGate Utp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	UtpDpnTrunks

ATTRIBUTE DpnGate Utp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	UtpDpnTrunks
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DpnGate Utp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

	The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	UtpDpnTrunks
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE DpnGate Utp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	UtpDpnTrunks
Values	idle active (activ) busy
Default	idle

ATTRIBUTE DpnGate Utp availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The

operationalState is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: UtpDpnTrunks

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE DpnGate Utp proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it

can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: UtpDpnTrunks

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE DpnGate Utp controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	UtpDpnTrunks
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE DpnGate Utp alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: UtpDpnTrunks

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE DpnGate Utp standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization

activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: UtpDpnTrunks

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE DpnGate Utp unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: UtpDpnTrunks

Values:
false
true

Default: false

GROUP DpnGate Utp Operational (Op)

Properties: Operational

Description: This group of attributes contains the set of UTP operational parameters measured and maintained by this component.

Mib: UtpDpnTrunks

ATTRIBUTE DpnGate Utp roundTripDelay (rtd)

Access: Read only

Description	This is the measured Round Trip Delay (ms) discovered with the remote through the UTP staging protocol. The value includes emission, propagation, and queuing delays. A 2 byte control frame is used to perform the measurement. A value of zero is displayed when the link is disabled or the measured Round Trip Delay is unknown.
Mib	UtpDpnTrunks
Values	Decimal (0..1500)
Units	msec
Default	No default

GROUP DpnGate Utp Statistics (Stats)

Properties	Operational
Description	This group of attributes contains the set of Utp frame counters collected by this component.
Mib	UtpDpnTrunks

ATTRIBUTE DpnGate Utp discardBadFromIf (discfi)

Access	Read only
Description	This attribute is the number of received frames discarded by the *Utp* component. UTP discards any received frame that is unknown to its protocol. This counter wraps around to zero when the maximum value is reached.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE DpnGate Utp discardExcessToIf (discti)

Access	Read only
Description	This attribute is the number of transmitted frames discarded by the *Utp* component. Transmitted frames are discarded if the wait

for transmission queue is congested. This counter wraps around to zero when the maximum value is reached.

Mib UtpDpnTrunks

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE DpnGate Utp frmRexmtToIf (rexmt)

Access Read only

Description This attribute is the number of frames retransmitted by the *Utp* component. This counter wraps around to zero when the maximum value is reached.

Mib UtpDpnTrunks

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE DpnGate Utp areYouThereModeEntries (ayt)

Access Read only

Description This attribute is the number of times the *Utp* component entered the AreYouThere mode. UTP enters this mode whenever the acknowledgment for the last transmitted frame has not been received within a certain time interval. In this mode UTP verifies that the remote end is still active. If so, it will retransmit all frames that were waiting to be acknowledged. This counter wraps around to zero when the maximum value is reached.

Mib UtpDpnTrunks

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE DpnGate Utp windowClosures (closures)

Access Read only

Description This attribute is the number of times the *Utp* component closed its frame window. The frame window determines the maximum

number of unacknowledged frames allowed. Typically, the frame window closes when the remote end cannot keep up with the frame arrival rate. This counter wraps around to zero when the maximum value is reached.

Mib UtpDpnTrunks

Values Decimal (0..4294967295)

Default No default

COMPONENT DpnGate Utp Framer

Groups "GROUP DpnGate Utp Framer Provisioned (Prov)"
"GROUP DpnGate Utp Framer LinkOptions (Link)"
"GROUP DpnGate Utp Framer OsiState (State)"
"GROUP DpnGate Utp Framer Statistics (Stats)"
"GROUP DpnGate Utp Framer LinkUtilization (Util)"
"GROUP DpnGate Utp Framer LinkUtilThreshold (UtilThreshold)"

"COLLECTED STATS DpnGateway Utp Framer"

Scope Device

Description

Trunk/n Utp Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link

interface datapath statistics (such as frame counts and aborts).

Mib	UtpDpnTrunks
Common Verbs	Help List Display

GROUP DpnGate Utp Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	UtpDpnTrunks

ATTRIBUTE DpnGate Utp Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	UtpDpnTrunks
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP DpnGate Utp Framer LinkOptions (Link)

Properties	Provisioned

Description

This group contains attributes defining the framing of data on the link interface.

Mib UtpDpnTrunks

ATTRIBUTE DpnGate Utp Framer framingType

Access Read and write

Criticality Process

Description

This attribute defines the type of framing on the link.

Mib UtpDpnTrunks

Values hdlc

Default hdlc

ATTRIBUTE DpnGate Utp Framer dataInversion

Access Read and write

Description

This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed.

This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density.

Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted.

Mib UtpDpnTrunks

Values off
on

Default off

ATTRIBUTE DpnGate Utp Framer frameCrcType

Access	Read and write
Description	This attribute defines the type of CRC used. The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness. NoCrc means that CRC is not used.
Mib	UtpDpnTrunks
Values	crc16 crc32 noCrc
Default	crc16

ATTRIBUTE DpnGate Utp Framer flagsBetweenFrames

Access	Read and write
Description	This attribute defines the number of flags that are inserted between frames sent to the link interface.
Mib	UtpDpnTrunks
Values	Decimal (1..16)
Default	1

GROUP DpnGate Utp Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	UtpDpnTrunks

ATTRIBUTE DpnGate Utp Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	UtpDpnTrunks
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DpnGate Utp Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: UtpDpnTrunks

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE DpnGate Utp Framer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: UtpDpnTrunks

Values: idle
active (activ)
busy

Default: idle

GROUP DpnGate Utp Framer Statistics (Stats)

Properties: Operational

Description:
This group contains the operational statistics data for a UTP Framer component.

Mib: UtpDpnTrunks

ATTRIBUTE DpnGate Utp Framer aborts

Access: Read only

Description

This attribute is the total number of aborts received.

Mib UtpDpnTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DpnGate Utp Framer crcErrors

Access Read only

Description

This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.

Mib UtpDpnTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DpnGate Utp Framer lrcErrors

Access Read only

Description

This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.

Mib UtpDpnTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DpnGate Utp Framer nonOctetErrors

Access Read only

Description

This attribute is the total number of frames that were non octet aligned.

Mib UtpDpnTrunks

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer overruns

Access	Read only
Description	This attribute is the total number of frames received from the link for which overruns occurred.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer underruns

Access	Read only
Description	This attribute is the total number of frames transmitted to the link for which underruns occurred.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer largeFrmErrors

Access	Read only
Description	This attribute is the total number of frames received which were too large. The frame exceeded the maximumFrameLengthLimit provisioned attribute or it contained more than the 255 block hardware limit.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer frmModeErrors

Access	Read only
Description	This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are inconsistent with the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer outOfSequenceFrm

Access	Read only
Description	This attribute is the total number of out of sequence frames in interrupting mode that have been received from the link.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer repeatedFrm

Access	Read only
Description	This attribute is the total number of repeated frames (frames with the same sequence number) in interrupting mode that have been received from the link.
Mib	UtpDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate Utp Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	UtpDpnTrunks
Values	Long Integer
Default	No default

ATTRIBUTE DpnGate Utp Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	UtpDpnTrunks
Values	Long Integer
Default	No default

ATTRIBUTE DpnGate Utp Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	UtpDpnTrunks
Values	Long Integer
Default	No default

GROUP DpnGate Utp Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.

Mib	UtpDpnTrunks

ATTRIBUTE DpnGate Utp Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	UtpDpnTrunks
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE DpnGate Utp Framer highPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the interrupting data traffic sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with a Transfer Priority (TP) of 11 and/or Emission Priority of 1. The utilization is the average for the last minute.
Mib	UtpDpnTrunks
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE DpnGate Utp Framer normPrioLinkUtilFromIf

Access	Read only

Description

This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.

Mib UtpDpnTrunks

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE DpnGate Utp Framer highPrioLinkUtilFromIf

Access Read only

Description

This attribute is the utilization of the interrupting data traffic received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with a Transfer Priority (TP) of 11 and/or Emission Priority of 1. The utilization is the average for the last minute.

Mib UtpDpnTrunks

Values Decimal (0..100)

Units %

Default 0

GROUP DpnGate Utp Framer LinkUtilThreshold (UtilThreshold)

Properties Provisioned

Description

This group contains all of the provisioning data required to set the link utilization alarm thresholds. All thresholds are percentages which can take on any value in the range of 0% through 100%. The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the minor

alarm threshold is less than the other thresholds and that the major alarm threshold is less than the critical alarm threshold.

Mib UtpDpnTrunks

ATTRIBUTE DpnGate Utp Framer minorLinkUtilAlarmThreshold (minor)

Access Read and write

Description

This attribute provides the threshold value which defines when a minor alarm would be issued, denoting a sustained total average link utilization. The total average link utilization is calculated based on the number of received bytes. The Set alarm is issued after 3 minutes of utilization greater than the given threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the given threshold.
The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the minor alarm threshold is less than the other thresholds.

Mib UtpDpnTrunks

Values Decimal (0..100)

Units %

Default 75

ATTRIBUTE DpnGate Utp Framer majorLinkUtilAlarmThreshold (major)

Access Read and write

Description

This attribute provides the threshold value which defines when a major alarm would be issued, denoting a sustained total average link utilization. The total average link utilization is calculated based on the number of received bytes. The Set alarm is issued after 3 minutes of utilization greater than the given threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the given threshold.
The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the major

alarm threshold is greater than the minor threshold and less than the critical threshold.

Mib UtpDpnTrunks

Values Decimal (0..100)

Units %

Default 85

ATTRIBUTE DpnGate Utp Framer criticalLinkUtilAlarmThreshold (critical)

Access Read and write

Description

This attribute provides the threshold value which defines when a critical alarm would be issued, denoting a sustained total average link utilization. The total average link utilization is calculated based on the number of received bytes. The Set alarm is issued after 3 minutes of utilization greater than the given threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the given threshold.
The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the critical alarm threshold is greater than the other thresholds.

Mib UtpDpnTrunks

Values Decimal (0..100)

Units %

Default 95

ATTRIBUTE DpnGate Utp Framer linkUtilAlarmStatus (status)

Access Read and write

Description

This attribute provides control of the generation of link utilization alarms. If the value is ***disabled***, none of the alarms are generated (this is equivalent to setting all of the thresholds to 100%). If the value is ***enabled***, the individual thresholds are handled.

Mib UtpDpnTrunks

Values	enabled (ena) disabled (dis)
Default	disabled

COLLECTED STATS DpnGateway Utp Framer

Description	The statistics record generated by the DpnGateway Utp Framer component.

ATTRIBUTE DpnGate Utp Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DpnGate Utp Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE DpnGate Utp Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DpnGate Utp Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE DpnGate Utp Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values	Decimal (0..100)

COMPONENT DpnGate ForwardingStatistics (FwdStats)

Groups	"GROUP DpnGate FwdStats Operational (Oper)"
Scope	Application
Description	*Trunk/n ForwardingStatistics* This is a dynamic subcomponent of a *Trunk* or *DpnGateway* which appears when packet forwarding traffic is used over the *Trunk* or *DpnGateway.* It contains statistics associated with packet forwarding traffic for *Trunks* and *DpnGateways*.
Mib	DpnTrunks
Common Verbs	Help List Display

GROUP DpnGate FwdStats Operational (Oper)

Properties	Operational
Description	This operational group counts the *Trunk* or *DpnGateway* packet forwarding traffic statistics for operator console display.
Mib	DpnTrunks

ATTRIBUTE DpnGate FwdStats fwdPktFromIf (fwdPkt)

Access	Read only
Description	This attribute counts the number of forwarding packets received by the *Trunk* or *DpnGateway.* This counter wraps around to zero when the maximum value is exceeded.
Mib	DpnTrunks
Values	Long Integer
Default	No default

ATTRIBUTE DpnGate FwdStats fwdDiscUnforwardFromIf (fwdDisc)

Access	Read only

Description	This attribute counts the number of forwarding packets discarded by the *Trunk* or *DpnGateway*. This counter wraps around to zero when the maximum value is exceeded.
Mib	DpnTrunks
Values	Long Integer
Default	No default

ATTRIBUTE DpnGate FwdStats fwdOctetFromIf (fwdOctet)

Access	Read only
Description	This attribute counts the number of forwarding bytes received by the *Trunk* or *DpnGateway*. This counter wraps around to zero when the maximum value is exceeded.
Mib	DpnTrunks
Values	Long Integer
Default	No default

COMPONENT DpnGate FrAccess

Groups	"GROUP DpnGate FrAccess Provisioned (Prov)" "GROUP DpnGate FrAccess OsiState (State)" "GROUP DpnGate FrAccess Operational (Op)" "GROUP DpnGate FrAccess Statistics (Stats)"
Scope	Network

Description	*DpnGate/n FrAccess* This component provides Layer 2 trunking protocol, to be used by *DpnGateway* running over *FrMux* frame relay interface.
Mib	FraDpnTrunks
Subcomponents	"COMPONENT DpnGate FrAccess FrMuxSetup"
Common Verbs	Help List Display Add DELete

GROUP DpnGate FrAccess Provisioned (Prov)

Properties	Provisioned
Description	This group of provisionable attributes contains the parameters used by *Unacknowledged*, *Utp*, and *FrAccess* for monitoring link quality.
Mib	FraDpnTrunks

ATTRIBUTE DpnGate FrAccess maximumErroredInterval

Access	Read and write
Description	This attribute specifies the interval time over which the error threshold (as specified by *receiveErrorSensitivity)* must be continuously exceeded before the *Unacknowledged*, *Utp*, or *FrAccess* component can be degraded. Once the error interval count exceeds the provisioned value, the *Unacknowledged*, *Utp*, or *FrAccess* component issues an alarm indicating that link quality has degraded, and it disables its parent component. The exception to this is a value of zero, the default, which indicates that the mechanism is completely disabled.
Mib	FraDpnTrunks
Values	Decimal (0; 1..15)
Units	minutes

Default	0

ATTRIBUTE DpnGate FrAccess receiveErrorSensitivity

Access	Read and write
Description	This attribute is the allowable error rate beyond which the *Unacknowledged*, *Utp*, or *FrAccess* component can be degraded if it persists for a duration longer than the *maximumErrorInterval*. The threshold is expressed as a percentage of number of errored frames in the last interval per number of frames received in the last interval. The exception to this is a value of zero, which indicates that the mechanism is completely disabled. The configurable values are: 0 = the mechanism is completely disabled 1 = 1/(2**1) 2 = 1/(2**2) 3 = 1/(2**3) : 10 = 1/(2**10)
Mib	FraDpnTrunks
Values	Decimal (0; 1..10)
Default	3

GROUP DpnGate FrAccess OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FraDpnTrunks

ATTRIBUTE DpnGate FrAccess adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FraDpnTrunks
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE DpnGate FrAccess operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

	The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FraDpnTrunks
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE DpnGate FrAccess usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FraDpnTrunks
Values	idle active (activ) busy
Default	idle

ATTRIBUTE DpnGate FrAccess availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: FraDpnTrunks

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE DpnGate FrAccess proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does

initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: FraDpnTrunks

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE DpnGate FrAccess controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: FraDpnTrunks

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE DpnGate FrAccess alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: FraDpnTrunks

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE DpnGate FrAccess standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the

role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: FraDpnTrunks

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE DpnGate FrAccess unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: FraDpnTrunks

Values:
false
true

Default: false

GROUP DpnGate FrAccess Operational (Op)

Properties: Operational

Description: This group of attributes contains the set of LTP operational parameters measured and maintained by this component.

Mib: FraDpnTrunks

ATTRIBUTE DpnGate FrAccess roundTripDelay (rtd)

Access	Read only
Description	This is the measured Round Trip Delay (ms) discovered with the remote through the LTP staging protocol. The value includes emission, propagation, and queuing delays. A 2 byte control frame is used to perform the measurement. A value of zero is displayed when the link is disabled or the measured Round Trip Delay is unknown.
Mib	FraDpnTrunks
Values	Decimal (0..1500)
Units	msec
Default	No default

GROUP DpnGate FrAccess Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for *FrAccess*.
Mib	FraDpnTrunks

ATTRIBUTE DpnGate FrAccess receivedBytesFromIf (rbfi)

Access	Read only
Description	This attribute counts the number of bytes received by *FrAccess* in information frames. When the maximum count is reached the count wraps to zero.
Mib	FraDpnTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE DpnGate FrAccess lostFramesFromIf (lfti)

Access	Read only

Description

This attribute counts the frames lost in the direction from interface, the loss of which is detected based on the sequence number mechanism. The reason for a loss may be the congestion-related loss in the external frame relay network, or errors/congestion developing in the *FrMux* service. When *FrMux* statistics do not show errors/congestion developing internally in *FrMux*, then the losses visible through this statistic should be attributed to the external frame relay network. When the maximum count is reached the count wraps to zero.

Mib FraDpnTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DpnGate FrAccess discardBadFromIf (dbfi)

Access Read only

Description

This attribute counts the number of frames discarded in the direction ‘from interface’, because they are unknown to the *FrAccess* protocol. When the maximum count is reached the count wraps to zero.

Mib FraDpnTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE DpnGate FrAccess discardExcessToIf (deti)

Access Read only

Description

This attribute counts the number of frames discarded in the direction ‘to interface’ because of congestion on the transmit queue. When the maximum count is reached the count wraps to zero.

Mib FraDpnTrunks

Values	Decimal (0..4294967295)
Default	0

COMPONENT DpnGate FrAccess FrMuxSetup

Groups	"GROUP DpnGate FrAccess FrMuxSetup TrafficDescriptors (TrafficDescr)" "GROUP DpnGate FrAccess FrMuxSetup DlciCompNameOp"
Scope	Application
Description	*DpnGate/n FrAccess FrMuxSetup* This component contains operational and provisionable attributes for setting up a *FrMux Dlci* to act as a transport for *DpnGate/n FrAccess*.
Mib	FraDpnTrunks
Subcomponents	"COMPONENT DpnGate FrAccess FrMuxSetup PvcSetup"
Common Verbs	Help List Display

GROUP DpnGate FrAccess FrMuxSetup TrafficDescriptors (TrafficDescr)

Properties	Provisioned
Description	This group contains the provisionable attributes for the application of which this *FrMuxSetup* is a subcomponent. The parameters are used for maximum frame size checking and traffic shaping and are to be passed over to *FrMux Dlci* associated with the application. The attributes in this group are defined in T1.606 Addendum 1.
Mib	FraDpnTrunks

ATTRIBUTE DpnGate FrAccess FrMuxSetup committedInformationRate (cir)

Access	Read and write
Criticality	Process

Description	This attribute specifies, in bit/s, the committed information rate (CIR) to which the traffic transmitted towards the interface is shaped. The minimum value is 4800 bit/s.
Mib	FraDpnTrunks
Values	Decimal (4800..2048000)
Units	bit/s
Default	64000

ATTRIBUTE DpnGate FrAccess FrMuxSetup maximumFrameSize (n203)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of octets which may be included in the information field. The frame relay header and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.
Mib	FraDpnTrunks
Values	Decimal (1..4096)
Units	octets
Default	4096

GROUP DpnGate FrAccess FrMuxSetup DlciCompNameOp

Properties	Operational
Description	This group contains the component name of the *Dlci* which carries the traffic for this application.
Mib	FraDpnTrunks

ATTRIBUTE DpnGate FrAccess FrMuxSetup dlciCompName

Access	Read only

Description

This attribute specifies the component name of the *Dlci* with which the application using this *FrMuxSetup* component is associated. The name is a string *FrMux/n Dlci/m*. For a PVC this is the same component name as provisioned under the subcomponent *FrMuxPvcSetup*.

Mib FraDpnTrunks

Values The name of the component

Default No default

COMPONENT DpnGate FrAccess FrMuxSetup PvcSetup

Groups "GROUP DpnGate FrAccess FrMuxSetup PvcSetup Provisioned (Prov)"

Scope Application

Description *DpnGate/n FrAccess FrMuxSetup PvcSetup*
This component contains provisionable attributes for setting up a *Dlci* associated with the application using this component. The *Dlci* is of a PVC type.

Mib FraDpnTrunks

Common Verbs
Help
List
Display

GROUP DpnGate FrAccess FrMuxSetup PvcSetup Provisioned (Prov)

Properties Provisioned

Description

This group contains provisionable attributes for setting up a *Dlci* associated with the application using the *FrMuxSetup* component. The *Dlci* is of the PVC type.

Mib FraDpnTrunks

ATTRIBUTE DpnGate FrAccess FrMuxSetup PvcSetup dlciName

Access	Read and write
Criticality	Process
Description	This attribute is the link to the *Dlci* which is associated with the application using the *FrMuxSetup* component.
Mib	FraDpnTrunks
Values	Link (Hardware, applicationName)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component DpnGate

Release 6.1

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COMPONENT EM

Scope	Device
Description	*Em/string* This component represents the local node. An instance of the *EM* component class (with the local node name as its instance string) is automatically created as the root of the component hierarchy; that is, all of the top level components are its subcomponents. The local node name is provisioned as the *nodeName* attribute of the *ModuleData* component. An operator need not enter the *EM* component at the start of a component name; the local node is assumed by default. However,

	to specify some other node, it must be entered. Similarly, on output, the local node name is suppressed.
Mib	no_mib
Subcomponents	"COMPONENT RncInterfaceNode (RncIn)" "COMPONENT CpdsNode (Cpds)" "COMPONENT ProvisioningSystem (Prov)" "COMPONENT Shelf" "COMPONENT Software (Sw)" "COMPONENT ModuleData (Mod)" "COMPONENT NetworkManagementInterfaceSystem (Nmis)" "COMPONENT Time (Time)" "COMPONENT Collector (Col)" "COMPONENT ActiveAlarmServices (AAServ)"
Opt. Subcomp.	"COMPONENT Router (Rtr)" "COMPONENT PortBridgeGroup (Pbg)" "COMPONENT EthernetTransportSystem (Ets)" "COMPONENT LogicalProcessor (Lp)" "COMPONENT AccessControl (Ac)" "COMPONENT NetworkSynchronization (NS)" "COMPONENT DnsAgent (DnsAg)" "COMPONENT Routing (Rtg)" "COMPONENT CallRouter (CR)" "COMPONENT VoiceNetworkingCallServer (Vncs)" "COMPONENT IpInterfaceOverFrameRelay (IpiFr)" "COMPONENT IpInterfaceOverVc (Ipivc)" "COMPONENT Trunk (Trk)" "COMPONENT DpnGateway (DpnGate)" "COMPONENT FrameRelayNni (FrNni)" "COMPONENT FrameRelayUni (FrUni)" "COMPONENT FrameRelayAtmInterface (FrAtm)" "COMPONENT VoiceService (Vs)" "COMPONENT BitTransparentDataService (Btds)" "COMPONENT HdlcTransparentDataService (Htds)" "COMPONENT X25Dte" "COMPONENT AtmRouting (ARtg)" "COMPONENT VirtualRouter (Vr)" "COMPONENT FrameRelayDte (FrDte)" "COMPONENT PointToPointProtocol (Ppp)" "COMPONENT ClusterBridge (CB)"

"COMPONENT PseudoBridge (PB)"
"COMPONENT LanApplication (La)"
"COMPONENT RemoteServerAgent (Rsa)"
"COMPONENT FrMux"
"COMPONENT AtmInterface (AtmIf)"
"COMPONENT SignallingChannel (SigChan)"
"COMPONENT VoiceRoute (VRoute)"
"COMPONENT VoiceSubroute (Vsr)"
"COMPONENT AtmMultiprotocolEncapsulation (AtmMpe)"
"COMPONENT Aal1CircuitEmulationService (Aal1Ces)"
"COMPONENT DataSignallingChannel (DataSigChan)"
"COMPONENT McsManager (McsMgr)"
"COMPONENT MpaNetworkLink (Mpanl)"
"COMPONENT LanEmulationClient (Lec)"
"COMPONENT NarrowbandServicesTrunkOverATM (Nsta)"
"COMPONENT GsmIwfCallServer (GsmCs)"
"COMPONENT GsmIwfBearerChannel (GsmBc)"
"COMPONENT Dcme"
"COMPONENT DcmeLink (Dcl)"
"COMPONENT HuntGroup (Hg)"
"COMPONENT CallRedirectionServer (Crs)"
"COMPONENT VirtualMedia (Vm)"
"COMPONENT AutomaticProtectionSwitching (Aps)"
"COMPONENT TdmaIwfCallServer (TdmaCs)"
"COMPONENT TdmaIwfBearerChannel (TdmaBc)"
"COMPONENT RoutingGateway (RGty)"
"COMPONENT PCUSupportApplication (Pcusa)"
"COMPONENT HlrSimulator (HlrSim)"
"COMPONENT GprsIpServer (Gips)"
"COMPONENT GprsSubscriberControl (Gsc)"
"COMPONENT GprsSubscriberDataPath (Gsd)"
"COMPONENT SgGprsTransportLayer (SgGtl)"
"COMPONENT PacketControlUnitSupportNode (Pcusn)"
"COMPONENT PcGprsTransportLayer (PcGtl)"
"COMPONENT ServingGprsSupportNode (Sgsn)"
"COMPONENT TdmaIwfFcBearerChannel (TdmaFcBc)"
"COMPONENT Layer2TunnelingProtocolAccessConcentrator (Lac)"
"COMPONENT MaintenanceMonitorTx (MmTx)"
"COMPONENT FrameRelayIpServer (FrIpServer)"
"COMPONENT PppIwf (Piwf)"

"COMPONENT SgsnAccountingServer (Sas)"
"COMPONENT SignallingGateway (Sg)"
"COMPONENT VirtualMediaGateway (Vmg)"
"COMPONENT SignallingConnControlPart (Sccp)"
"COMPONENT MessageTransferPartLayer3 (Mtp3)"
"COMPONENT SaalNni (SaalNni)"
"COMPONENT UmtsServingGprsSupportNode (Usgsn)"
"COMPONENT UsgsnSubscriberControl (Usc)"
"COMPONENT UsgsnSubscriberDatapath (Usd)"
"COMPONENT IuxInterface (IuxIf)"
"COMPONENT LawfulInterceptAccessFunction (Liaf)"
"COMPONENT DualLpEquipmentProtection (Dlep)"
"COMPONENT TcapStack (Tcap)"
"COMPONENT IpDlciGroup (IpDlciGrp)"
"COMPONENT LocalMedia"
"COMPONENT ServiceTrace (SrvTrace)"
"COMPONENT SignallingSystem7 (Ss7)"
"COMPONENT IuPc (IuPc)"
"COMPONENT LpGroup (LpG)"
"COMPONENT VcTester (Vct)"
"COMPONENT LineAutomaticProtectionSwitching (Laps)"

Dyn. Subcomp.

"COMPONENT FileSystem (Fs)"
"COMPONENT TransportResource (Trm)"
"COMPONENT NumberingPlanIndicator (Npi)"
"COMPONENT LpPair (LpP)"

Common Verbs

Help
List

VERB LOGOUT (LOGOFF)

Impact

Passive

Description

Logout
This verb terminates a Local or Telnet Operator session.

If the session was in provisioning mode, an *End Prov* command is effectively executed before the session terminates. The edit view is neither saved nor modified by logging out while in provisioning mode.

VERB ME

Impact	Passive
Description	*Me* This verb displays an FMIP, Local or Telnet Operator's component name and userid as well as other information.

VERB CANCEL

Impact	Passive
Description	*Cancel* This verb aborts the latest command, if possible.

VERB QUIT (EXIT)

Impact	Passive
Description	*Quit* This verb terminates a Local or Telnet Operator session, just like the *Logout* command does. If the session was in provisioning mode, an *End Prov* command is effectively executed before the session terminates. The edit view is neither saved nor modified by logging out while in provisioning mode.

VERB RESETLOCAL

Impact	System_admin
Description	Resetlocal This verb logs out a user currently using the local operator port on the CP. This command can be executed from a telnet session to force another user out of the local port.

Nortel Networks Multiservice Switch 7400/15000/20000

Component em

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component FrAtm

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component FrAtm

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COMPONENT FrameRelayAtmInterface (FrAtm)

Instance	Decimal (1..4294967295)
Groups	"GROUP FrAtm CustomerIdentifierData (CidData)" "GROUP FrAtm OsiState (State)" "GROUP FrAtm Statistics (Stats)" "GROUP FrAtm IfEntryProv (IfEntry)" "GROUP FrAtm OperationalStatus (OperStatus)" "GROUP FrAtm EmissionPriorityQs" "GROUP FrAtm TrafficStatistics (TrafficStats)"
Scope	Application
Description	*FrameRelayAtmInterface/n* This component defines an instance of the Frame Relay to ATM interworking interface. It manages the set of Frame Relay DLCI connections that are interworked with ATM connections. The component instance value is a unique positive integer within a module. Framer is created whenever the FrAtm is added. Users

	who need VirtualFramer should delete the Framer first, then add the VirtualFramer.
Mib	FrameRelayAtm
Subcomponents	"COMPONENT FrAtm LocalManagementInterface (Lmi)" "COMPONENT FrAtm ConnectionAdministrator (Ca)"
Opt. Subcomp.	"COMPONENT FrAtm Framer" "COMPONENT FrAtm DataLinkConnectionIdentifier (Dlci)" "COMPONENT FrAtm VirtualFramer (VFramer)" "COMPONENT FrAtm Address (Addr)" "COMPONENT FrAtm Reroute"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP FrAtm CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	FrameRelayAtm
Values	Decimal (0; 1..8191)
Default	0

GROUP FrAtm OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is

administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	FrameRelayAtm
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrAtm operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayAtm
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrAtm usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayAtm
Values	idle active (activ) busy
Default	idle

ATTRIBUTE FrAtm availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can

be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	FrameRelayAtm
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE FrAtm proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: FrameRelayAtm

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE FrAtm controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: FrameRelayAtm

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE FrAtm alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

	The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	FrameRelayAtm
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE FrAtm standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	FrameRelayAtm

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE FrAtm unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FrameRelayAtm
Values	false true
Default	false

GROUP FrAtm Statistics (Stats)

Properties	Operational
Description	FrUni/n Statistics This group contains the statistics about the operational behavior of the service at the interface level.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm lastUnknownDlci (ludlc)

Access	Read only
Description	This attribute identifies the most recent DLCI which user frames were received on for which a DLCI has not been provisioned on the port.
Mib	FrameRelayAtm

Values	Decimal (0..1023)
Default	0

ATTRIBUTE FrAtm unknownDlciFramesFromIf (unknown)

Access	Read only
Description	This attribute contains a count of the number of frames received from the interface with an unknown DLCI (DLCI which is not provisioned). When the maximum is reached the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm invalidHeaderFramesFromIf (invalid)

Access	Read only
Description	This attribute counts the number of frames received from the interface with an invalid header format. When the maximum is reached the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

GROUP FrAtm IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm ifAdminStatus (ifState)

Access	Read and write

Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayAtm
Values	up down testing
Default	up

ATTRIBUTE FrAtm ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayAtm
Values	Decimal (1..65535)
Default	No default

GROUP FrAtm OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable

	to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayAtm
Values	up down testing
Default	up

GROUP FrAtm EmissionPriorityQs

Properties	Provisioned
Description	This group contains the provisionable attribute to specify the number of Frame Relay egress emission priority queues to be used on that Frame Relay Interface
Mib	FrameRelayAtm

ATTRIBUTE FrAtm numberOfEmissionQs

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of egress emission priority queues that will be used for that Frame Relay interface. For V.35, V.11, HSSI, E1, DS1, E3, DS3 or 8pDS1 the possible values are: ***2*** (in which case they are hardware queues), or ***4*** (in which case they are software queues). For DS1C, E1C or DS3C the possible values are ***2, 4*** (in all cases they are software queues). For 32 port Msa cards the possible values are ***2, 4*** (in all cases they are hardware queues). For 4pDS3Ch, 1pSTM1ChSmIr PQC6v2 (also known as PQC2) the possible values are ***2, 4*** (in all cases they are hardware queues).

	For 4pDS3Ch PQC12, setting this attribute has no effect on the number of egress emission priority queues, four hardware queues are always used.
Mib	FrameRelayAtm
Values	Decimal (2; 4)
Default	2

GROUP FrAtm TrafficStatistics (TrafficStats)

Properties	Operational
Description	This operational group provides the traffic statistics of the service at the interface level. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm frmToIfByQueue

Access	Read only
Description	This attribute counts the frames transmitted to the interface through each of the egress queues. The number of queues is determined by the attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, and egress queue 3 has the highest priority. The attribute is displayed only on SBIC cards when *numberOfEmissionQs* is 4.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

ATTRIBUTE FrAtm octetToIfByQueue

Access	Read only

Description	This attribute counts the octets transmitted to the interface through each of the egress queues. The number of queues is determined by the attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, and egress queue 3 has the highest priority. The attribute is displayed only on SBIC cards when *numberOfEmissionQs* is 4.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

COMPONENT FrAtm Framer

Groups	"GROUP FrAtm Framer Provisioned (Prov)" "GROUP FrAtm Framer LinkOptions (Link)" "GROUP FrAtm Framer OsiState (State)" "GROUP FrAtm Framer Statistics (Stats)" "GROUP FrAtm Framer LinkUtilization (Util)"

"COLLECTED STATS FrameRelayAtmInterface Framer"

Scope	Application
Description	*FrUni/n Framer* *FrNni/n Framer* *FrAtm/n Framer* This component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	FrameRelayAtm
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP FrAtm Framer LinkOptions (Link)

Properties: Provisioned

Description

This group contains attributes defining the framing of data on the link interface.

Mib: FrameRelayAtm

ATTRIBUTE FrAtm Framer dataInversion

Access: Read and write

Description

This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed.

This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density.

Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted.

This attribute may only take its default value for non-MSA cards.

Mib: FrameRelayAtm

Values: off
on

Default: off

ATTRIBUTE FrAtm Framer frameCrcType

Access: Read and write

Description

This attribute defines the type of CRC used.

The CRC value calculated is appended to the end of the frames

transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness. NoCrc means that CRC is not used.

This attribute may take only its default value for non-MSA cards.

Mib FrameRelayAtm

Values crc16
crc32
noCrc

Default crc16

ATTRIBUTE FrAtm Framer flagsBetweenFrames

Access Read and write

Description

This attribute defines the number of flags that are inserted between frames sent to the link interface. The flagBetweenFrames can be set to only 1, 2, 4, 8 or 16 for 4pDS3Ch FrameRelay FP.

Mib FrameRelayAtm

Values Decimal (1..16)

Default 1

GROUP FrAtm Framer OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib FrameRelayAtm

ATTRIBUTE FrAtm Framer adminState (osiAdmin)

Access Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayAtm
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrAtm Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayAtm

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrAtm Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayAtm
Values	idle active (activ) busy
Default	idle

GROUP FrAtm Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Framer aborts

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	FrameRelayAtm

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer crcErrors

Access	Read only
Description	This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer lrcErrors

Access	Read only
Description	This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer nonOctetErrors

Access	Read only
Description	This attribute is the total number of frames that were non octet aligned.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer overruns

Access	Read only
Description	This attribute is the total number of frames received from the link for which overruns occurred.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer underruns

Access	Read only
Description	This attribute is the total number of frames transmitted to the link for which underruns occurred.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer largeFrmErrors

Access	Read only
Description	This attribute is the total number of frames received which were too large. The frame exceeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer frmModeErrors

Access	Read only

Description	This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are inconsistent with the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.

Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Framer ingressFrameDiscards

Access	Read only
Description	This attribute is the total number of frames discarded at ingress PQC.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

GROUP FrAtm Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	FrameRelayAtm
Values	Decimal (0..100)
Units	%

Default	0

ATTRIBUTE FrAtm Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	FrameRelayAtm
Values	Decimal (0..100)
Units	%
Default	0

COLLECTED STATS FrameRelayAtmInterface Framer

Description	The statistics record generated by the FrameRelayAtmInterface Framer component.

ATTRIBUTE FrAtm Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE FrAtm Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE FrAtm Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrAtm Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrAtm Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT FrAtm LocalManagementInterface (Lmi)

Groups "GROUP FrAtm Lmi ProtocolParameters (Parms)"
"GROUP FrAtm Lmi OsiState (State)"
"GROUP FrAtm Lmi ProtocolStatusInfo (Psi)"
"GROUP FrAtm Lmi Statistics (Stats)"
"GROUP FrAtm Lmi UspProtocolParameters (UspParms)"

Scope Application

Description *FrUni/n LocalManagementInterface*
FrNni/n LocalManagementInterface
FrAtm/n LocalManagementInterface
This component defines the parameters for implementing the Local Management Interface protocol.

Mib FrameRelayAtm

Common Verbs Help
List
Display

GROUP FrAtm Lmi ProtocolParameters (Parms)

Properties Provisioned

Description

This group contains the provisionable attributes of the *LMI* component.

Mib FrameRelayAtm

ATTRIBUTE FrAtm Lmi procedures (proc)

Access Read and write

Criticality Process

Description

This attribute selects the procedures to be used for the Local Management Interface. The following procedures are supported:

none: no Local Management Interface procedures are running on this interface. This accommodates Frame Relay user equipment that has not implemented any LMI procedures. The remaining attributes of this group are ignored.

For the ***4pDS3Ch*** card, when the *timeslot* of the *channel* component linked to this *FrUni* is set to ***none***, only ***none*** is permitted for the *procedures* attribute of this *Lmi* component.

vendorForum: Local Management Interface procedures from the Vendor Forum specification are supported on this interface. *DLCI 1023* is used for the LMI protocol. This value cannot be used if the side attribute is both.

ansi: Local Management Interface procedures from the ANSI specification are supported. *DLCI 0* is used for the LMI protocol.

itu: Local Management Interface procedures from the ITU-T specification are supported. *DLCI 0* is used for the LMI protocol. Was previously ***ccitt***.

autoConfigure: The interface determines automatically which Local Management Interface procedures to use. This value cannot be used if the side attribute is user.

The procedures currently in use can be seen in the operational attribute *opProcedures*.

Mib FrameRelayAtm

Values
none
vendorForum
ansi
itu (ccitt)
autoConfigure

Default autoConfigure

ATTRIBUTE FrAtm Lmi asyncStatusReport (asr)

Access Read and write

Description

This attribute selects the use of asynchronous PVC status report procedures as specified in ANSI, CCITT, and Vendor Forum.

This attribute can be set to ***on*** or ***off***. If *procedure*s is set to ***none***, this attribute is ignored.

Mib FrameRelayAtm

Values
off
on

Default off

ATTRIBUTE FrAtm Lmi errorEventThreshold (n392)

Access Read and write

Description

An event is defined as follows: (1) receipt of a STATUS ENQUIRY message; or (2) expiration of timer T392. An error event is (1) nonreceipt of STATUS ENQUIRY in T392 seconds; (2) invalid contents of a LMI message; (3) invalid receive sequence number. This attribute specifies the number of error events which, if they occur within *eventCount* events, cause a protocol error condition. The condition is cleared after *eventCount* sequential correct events occur. This attribute corresponds to the nN2 parameter described in the Vendor Forum

Specification.

It must be less than or equal to *eventCount*.

Mib FrameRelayAtm

Values Decimal (1..10)

Default 3

ATTRIBUTE FrAtm Lmi eventCount (n393)

Access Read and write

Description

This attribute specifies the number of contiguous events within which no more than *eventErrorThreshold* error events are allowed. This attribute corresponds to the nN3 parameter described in the Vendor Forum Specification.

It must be greater than or equal to *errorEventThreshold*.

Mib FrameRelayAtm

Values Decimal (1..10)

Default 4

ATTRIBUTE FrAtm Lmi checkPointTimer (t392)

Access Read and write

Description

This attribute selects the time (in seconds) within which a STATUS ENQUIRY message is expected. This attribute corresponds to the nT2 parameter described in the Vendor Forum Specification.

It must be less than *messageCountTimer.*

Mib FrameRelayAtm

Values Decimal (1; 2; 3; 4; 5; 10; 15; 20; 25; 30)

Units seconds

Default	15

ATTRIBUTE FrAtm Lmi messageCountTimer (nt3)

Access	Read and write
Description	This attribute selects the time (in seconds) within which at most five (this is a fixed value and corresponds to maximum message count in VendorForum) STATUS ENQUIRY messages are expected. This attribute applies only when the *lmiProcedures* is set to ***vendorForum***. *messageCountTimer* must always be greater than *checkPointTimer.*
Mib	FrameRelayAtm
Values	Decimal (5; 10; 15; 20; 25; 30)
Units	seconds
Default	20

ATTRIBUTE FrAtm Lmi ignoreActiveBit (inab)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the Frame Relay LMI Active Bit (A-bit) has a bearing on the transfer of user data across this Frame Relay interface for both directions of traffic flow. When this attribute is set to ***yes***, the A-bit status of a user DLCI connection does not affect data transfer. When this attribute is set to ***no,*** data received from the local interface will be discarded if an A-bit =0 condition exists towards the local user. Data being sent to the local interface is discarded if an A-bit = 0 condition exists towards the subnet.
Mib	FrameRelayAtm

Values	no yes
Default	no

ATTRIBUTE FrAtm Lmi side

Access	Read and write
Criticality	Process
Description	This attribute can be set to ***user, network,*** or ***both***. When this attribute is set to ***user***, USP LMI procedures are running. When this attribute is set to ***network***, NSP LMI procedures are running. When this attribute is set to ***both***, USPNSP LMI procedures are running. When the value is ***both***, the *procedures* attribute must not be set to ***vendorForum***. Setting the value to ***user*** when the *procedures* attribute is set to ***autoConfigure*** is disallowed semantically.
Mib	FrameRelayAtm
Values	network user both
Default	network

ATTRIBUTE FrAtm Lmi pvcConfigParmsInFsr (pvcConfig)

Access	Read and write
Description	When this attribute is set to ***yes***, additional Q.933 information elements are included in the LMI Full Status message to facilitate CPE PVC parameter configuring. When set to ***yes***, the *Check Prov* command fails if the *Lmi side* is not set to ***network***. When set to ***yes***, *Check Prov* fails if the number of DLCIs on the *FrUni* is greater than 300.

This attribute should be set to ***no*** if the *BnxProtocol* component is provisioned under this *FrUni* for BNX Frame Relay interworking.

If the service is not a *FrUni* this attribute is ignored.

Mib FrameRelayAtm

Values no
yes

Default no

ATTRIBUTE FrAtm Lmi pvcAlarmsReporting (pvcAlarms)

Access Read and write

Description This attribute specifies if alarms are generated when PVCs change state in the local network, an adjacent network or in remote networks.

When the value is ***internal***, PVCs operational status change in the local network are reported in alarms. When the value is ***external***, PVCs operational status change in an adjacent or remote networks are reported in alarms. When the value is ***both***, PVCs status change in local and adjacent or remote networks are reported in alarms. When the value is ***none***, no alarms are issued for PVCs status change.

There are four kinds of alarms controlled by the attribute.
Alarm 7007 200x reports PVCs that have lost connectivity in an adjacent or remote networks.
Alarm 7007 201x reports PVCs that have reached the data transfer state in an adjacent or remote networks.
Alarm 7007 202x reports PVCs that have lost connectivity in the local network.
Alarm 7007 203x reports PVCs that have reached the data transfer state in the local network.

Each alarm can report a maximum of 112 DLCIs. Up to nine alarms of the same kind may be required to report all PVCs that

have changed state if all these PVCs have experienced the same condition at the *FrUni* interface.

Mib: FrameRelayAtm

Values:
external
internal
both
none

Default: external

GROUP FrAtm Lmi OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: FrameRelayAtm

ATTRIBUTE FrAtm Lmi adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: FrameRelayAtm

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE FrAtm Lmi operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: FrameRelayAtm

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE FrAtm Lmi usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib FrameRelayAtm

Values
idle
active (activ)
busy

Default idle

GROUP FrAtm Lmi ProtocolStatusInfo (Psi)

Properties Operational

Description

This group provides the protocol status of the Local Management Interface.

Mib FrameRelayAtm

ATTRIBUTE FrAtm Lmi protocolStatus

Access Read only

Description

This attribute indicates whether the LMI is in an error condition or whether the LMI procedures are behaving normally. When operating with no LMI protocol, this attribute is always set to ***normalCondition***. When operating with LMI procedures, this attribute is set to ***errorCondition*** after n392 of the last n393 events are in error. The consequence of an ***errorCondition*** is that all DLCIs on this interface will become inactive in both directions. The ***errorCondition*** is cleared and a ***normalCondition*** is indicated when a sufficient number of events have occurred without error. In ANSI, this occurs when n393 consecutive good events take place.

If the *procedures* attribute is set to ***autoConfigure***, this attribute is set to ***configuring*** while adaptive LMI determines which LMI procedures are running on the link. A single LMI error event during auto configuration causes the attribute value to change to ***errorCondition***. If during ***configuring*** no LMI message is

received, an LMI ***errorCondition*** is raised after n392 x t392 seconds.

Mib FrameRelayAtm

Values errorCondition
normalCondition
configuring

Default No default

ATTRIBUTE FrAtm Lmi opProcedures (opproc)

Access Read only

Criticality Process

Description

The *opProcedures* attribute indicates the procedures being used for the Local Management Interface. This attribute should be ignored if *protocolStatus* is not ***normalCondition***. The following procedures are supported:

none: Local Management Interface procedures are not running on this interface. This accommodates Frame Relay user equipment that has not implemented any LMI procedures.

vendorForum: Local Management Interface procedures from the Vendor Forum specification are running on this interface. *DLCI 1023* is used for the LMI protocol.

ansi: Local Management Interface procedures from the ANSI specification are running. *DLCI 0* is used for the LMI protocol.

itu: Local Management Interface procedures from the ITU-T specification are running. *DLCI 0* is used for the LMI protocol. Was previously ***ccitt***.

unknown: Local Management Interface procedures have yet to be determined by Adaptive LMI.

Mib FrameRelayAtm

Values	none vendorForum ansi itu unknown
Default	No default

GROUP FrAtm Lmi Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for the Frame Relay Local Management Interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Lmi keepAliveStatusToIf (kasti)

Access	Read only
Description	This attribute counts the number of Local Management Interface keep alive status messages sent to the external user device in response to a status enquiry for keep alive status. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi fullStatusToIf (fsti)

Access	Read only
Description	This attribute counts the number of Local Management Interface full status messages sent to the external user device in response to a status enquiry for keep alive or full status. When the maximum count is reached it wraps to zero.
Mib	FrameRelayAtm

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi keepAliveStatusEnqFromIf (kafi)

Access	Read only
Description	This attribute counts the number of Local Management Interface valid keep alive status enquiry messages received from the external user device. When the maximum count is reached it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi fullStatusEnqFromIf (fsfi)

Access	Read only
Description	This attribute counts the number of Local Management Interface valid full status enquiry messages received from the external user device. When the maximum count is reached it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi networkSideEventHistory (nsh)

Access	Read only
Description	This attribute displays the Local Management Interface network side procedure event history in order of occurrence. An event is represented by a single symbol. A ‘+’ symbol indicates a good event. An ‘X‘ symbol indicates a protocol error event. The leftmost event is the most recent to occur. The provisioned *eventCount* (nN3/N393) dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status

enquiry message. An error event is one of three possibilities, either a nT2/T392 timer expiry, receipt of a status enquiry message with bad sequence numbers, or when *lmiProcedures* is provisioned to vendorForum and we receive more than nN4 status enquiry messages within the provisioned *messageCountTimer* (nT3).

Mib FrameRelayAtm

Values String (1..10, ASCII)

Default No default

ATTRIBUTE FrAtm Lmi protocolErrors (proto)

Access Read only

Description

This attribute counts the number of Local Management Interface protocol errors. It is the sum of the sequence (*sequenceErrors*), timeout (*pollingVerifTimeouts*) and too many status enquiry messages received within the *messageCountTimer* (nT3) errors. The too many status enquiries error only applies when *lmiProcedures* is set to ***vendorForum***. When the maximum count is exceeded it wraps to zero.

Mib FrameRelayAtm

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrAtm Lmi unexpectedIes (uie)

Access Read only

Description

This attribute counts the number of Local Management Interface frames received with an Information Element identifier that is unknown or unexpected. An unexpected Information Element is not a protocol error. When the maximum count is reached, this counter wraps to zero.

Mib FrameRelayAtm

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi sequenceErrors (seq)

Access	Read only
Description	This attribute counts the number of Local Management Interface Status Enquiry message sequence errors. A sequence error is receipt of a Status Enquiry message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi unexpectedReports (ur)

Access	Read only
Description	This attribute counts the number of Local Management Interface frames received with an unknown or unexpected report type. An unexpected report type is not a protocol error. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi pollingVerifTimeouts (tmo)

Access	Read only
Description	This attribute counts the number of *checkPointTImer* (t392) timer expiries occurring on the Local Management Interface. When the maximum count is reached the counter wraps to zero.

Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi keepAliveEnqToIf (kaeti)

Access	Read only
Description	This attribute counts the number of Local Management Interface keep alive enquiry status messages sent to the external user device for keep alive status. When the maximum count is reached it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi fullStatusEnqToIf (fseti)

Access	Read only
Description	This attribute counts the number of Local Management Interface full status messages sent to the external user device in response to a status enquiry for keep alive or full status. When the maximum count is reached it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Lmi userSideEventHistory (ush)

Access	Read only
Description	This attribute displays the Local Management Interface user side procedure event history in order of occurrence. An event is represented by a single symbol. A ‘+’ symbol indicates a good event. An ‘X‘ symbol indicates a protocol error event. The left

most event is the most recent to occur. The provisioned *eventCount* (nN3/N393) dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status message. An error event is either a nT1/T391 timer expiry or receipt of a status message with bad sequence numbers.

Mib FrameRelayAtm

Values String (1..10, ASCII)

Default No default

ATTRIBUTE FrAtm Lmi statusSequenceErrors (stseq)

Access Read only

Description

This attribute counts the number of Local Management Interface Status message sequence errors. A sequence error is receipt of a Status message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.

Mib FrameRelayAtm

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrAtm Lmi noStatusReportCount (nsrc)

Access Read only

Description

This attribute counts the number of times when no status report or an invalid status report comes from the external network. This attribute is incremented in two cases:
i) after a status enquiry is sent out and T391 timer expires without having a status report received.
ii) an invalid status report is received.

When the maximum count is reached it wraps to zero.

Mib FrameRelayAtm

Values	Decimal (0..4294967295)
Default	0

GROUP FrAtm Lmi UspProtocolParameters (UspParms)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Local Management Interface user side procedure.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Lmi fullStatusPollingCycles (n391)

Access	Read and write
Description	This attribute specifies how frequently the Frame Relay UNI service should initiate a Status Enquiry for a full PVC status report. A polling cycle is a Status Enquiry and Status Report exchange. This attribute is used only if the *side* attribute is either ***user*** or ***both***.
Mib	FrameRelayAtm
Values	Decimal (1..255)
Default	6

ATTRIBUTE FrAtm Lmi linkVerificationTimer (t391)

Access	Read and write
Description	This attribute specifies how frequently the Frame Relay UNI service should initiate a Status Enquiry for link integrity verification. It must be less than *checkPointTimer (t392)*. When the Lmi *side* is ***network***, this attribute is ignored.
Mib	FrameRelayAtm
Values	Decimal (1; 2; 3; 4; 5; 10; 15; 20; 25; 30)

Units	seconds
Default	10

COMPONENT FrAtm DataLinkConnectionIdentifier (Dlci)

Instance	Decimal (16..1007)
Groups	"GROUP FrAtm Dlci OsiState (State)" "GROUP FrAtm Dlci ABitStatus (ABit)" "GROUP FrAtm Dlci ServiceParametersOp (SpOp)" "GROUP FrAtm Dlci Statistics (Stats)" "GROUP FrAtm Dlci CallData (Calld)" "GROUP FrAtm Dlci IntervalData (Int)"
Scope	Application
Description	*FrAtm/n DataLinkConnectionIdentifier/n* This component represents a data link connection. The instance value defines the DLCI value for this connection. For example, *Dlci*/30 defines a logical connection with a DLCI of 30. For the ***4pDS3Ch*** card, when the *timeslot* of the *channel* component linked to this *FrAtm* is set to ***none***, no *Dlci* component is allowed under this *FrAtm*. The *Dlci* component is a subcomponent of *FrAtm*, and is

	responsible for the Frame Relay U-plane (User-plane) protocol for the specified data link connection.
Mib	FrameRelayAtm
Subcomponents	"COMPONENT FrAtm Dlci ServiceParameters (Sp)"
Opt. Subcomp.	"COMPONENT FrAtm Dlci ServiceInterworkingFunction (Siwf)" "COMPONENT FrAtm Dlci NetworkInterworkingFunction (Niwf)" "COMPONENT FrAtm Dlci EgressServiceParameters (EgSp)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP FrAtm Dlci OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	FrameRelayAtm
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrAtm Dlci operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	FrameRelayAtm
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrAtm Dlci usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayAtm
Values	idle active (activ) busy
Default	idle

ATTRIBUTE FrAtm Dlci availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: FrameRelayAtm

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE FrAtm Dlci proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	FrameRelayAtm
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrAtm Dlci controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is

unlocked.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: FrameRelayAtm

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE FrAtm Dlci alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: FrameRelayAtm

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE FrAtm Dlci standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: FrameRelayAtm

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE FrAtm Dlci unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: FrameRelayAtm

Values:
false
true

Default: false

GROUP FrAtm Dlci ABitStatus (ABit)

Properties: Operational

Description:
This group contains the A-Bit status information for this Data Link Connection Identifier.

Mib: FrameRelayAtm

ATTRIBUTE FrAtm Dlci aBitStatusToIf (abti)

Access: Read only

Description	This attribute contains the most recent A-bit status sent to the interface. The A-bit status is part of the LMI protocol, and indicates the remote end's willingness to accept data from the local interface. When an inactive setting is sent out, the Frame Relay service will discard any data offered from the local interface. When an active setting is sent out, the Frame Relay service tries to process all data offered from the local interface.
Mib	FrameRelayAtm
Values	inactive active notApplicable
Default	No default

ATTRIBUTE FrAtm Dlci aBitReasonToIf (abrti)

Access	Read only
Description	This attribute provides the reason (if any) for an inactive status to be sent to the interface. This reason is ***notApplicable*** for an active status.
Mib	FrameRelayAtm
Values	notApplicable remoteUserSignaled localLmiError remoteLmiError localLinkDown remoteLinkDown pvcDown
Default	No default

ATTRIBUTE FrAtm Dlci aBitStatusFromIf (abfi)

Access	Read only
Description	This attribute indicates the most recent A-Bit status received from the interface.
Mib	FrameRelayAtm

Values	inactive active notApplicable
Default	No default

ATTRIBUTE FrAtm Dlci aBitReasonFromIf (abrfi)

Access	Read only
Description	This attribute provides the reason (if any) for an inactive status to be sent to the subnet. The value is ***notApplicable*** when the *aBitStatusFromIf* attribute is ***active***. The value is ***remoteUserSignaled*** if the remote interface originating the A-Bit status detects that the virtual circuit is down at the remote network through the LMI protocol. The remote interface must be running network site LMI protocol for this A-Bit status reason to be sent. The value is ***localLmiError*** if the LMI protocol is down at this interface. The value is ***localLinkDown*** if the physical link is disabled at this interface. The value is ***pvcDown*** if no A-Bit status has been sent to this interface from the local network. The value is ***missingFromLmiReport*** if the remote interface did not provide a reason along with the inactive A-Bit status.
Mib	FrameRelayAtm
Values	notApplicable remoteUserSignaled localLmiError localLinkDown pvcDown missingFromLmiReport
Default	No default

GROUP FrAtm Dlci ServiceParametersOp (SpOp)

Properties	Operational

Description

This group contains service parameters for the *Dlci* component.

Mib FrameRelayAtm

ATTRIBUTE FrAtm Dlci maximumFrameSize (n203)

Access Read only

Description

This attribute indicates the maximum number of octets which can be included in the information field. This definition does not include the FrameRelay header and CRC octets. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.

Mib FrameRelayAtm

Values Decimal (1..8187)

Units octets

Default No default

ATTRIBUTE FrAtm Dlci rateEnforcement (re)

Access Read only

Description

This attribute indicates whether rate enforcement is in effect for this user Data Link Connection on this *FrAtm* interface.

When rate enforcement is on, Committed Information Rate (CIR) and DE=1 traffic will be measured and enforced.

When rate enforcement is off, all frames from the user will be accepted and no modifications to the frame with respect to the DE bit will be made.

Mib FrameRelayAtm

Values off
on

Default No default

ATTRIBUTE FrAtm Dlci committedInformationRate (cir)

Access	Read only
Description	This attribute indicates the committed information rate (CIR) in bits per second (bit/s) and represents the rate at which the network agrees to transfer information under normal conditions when *rateEnforcement* is ***on***. This rate is measured over a measurement interval (t). Changing the value of this attribute will result in a change to the required bandwidth of the ATM connection, and a service impact to this Dlci. This attribute is not applicable when *rateEnforcement* is ***off***.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE FrAtm Dlci committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (Bc) in bits and represents the amount of data that a network agrees to transfer under normal conditions over a measurement interval (*t*) when rateEnforcement is ***on***. Data marked with DE=1 is not accounted for in committed burst size. Changing the value of this attribute will result in a change to the required bandwidth of the ATM connection, and a service impact to this Dlci. This attribute is not applicable when *rateEnforcement* is ***off***.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bits

Default	No default

ATTRIBUTE FrAtm Dlci excessBurstSize (be)

Access	Read only
Description	This attribute indicates the excess burst size (Be) in bits and represents the amount of uncommitted data that the network attempts to deliver over measurement interval (t) when *rateEnforcement* is ***on***. Data marked DE=1 by the user or by the network is accounted for here. Changing the value of this attribute will result in a change to the required bandwidth of the ATM connection, and a service impact to this Dlci. This attribute is not applicable ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE FrAtm Dlci measurementInterval (t)

Access	Read only
Description	This attribute indicates the time interval over which rates and burst sizes are measured. Changing the value of this attribute will result in a change to the required bandwidth of the ATM connection, and a service impact to this Dlci. This attribute is not applicable when *rateEnforcement* is ***off***.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	msec

Default No default

ATTRIBUTE FrAtm Dlci emissionPriorityToIf (epToIf)

Access Read only

Description This attribute indicates the emission priority of frames sent to the interface.

If the value of *FrAtm/n numberOfEmissionQs* is ***2***, set the value of this attribute to either ***0*** or ***1***; if the value of *FrAtm/n numberOfEmissionQs* is ***4***, set the value of this attribute to one of ***0***, ***1***, ***2***, ***3***.

Mib FrameRelayAtm

Values Decimal (0; 1; 2; 3)

Default No default

ATTRIBUTE FrAtm Dlci dlciType (dlcty)

Access Read only

Description

This attribute indicates the type of DLCI.
A value of ***serviceInterworking*** indicates that a *FrAtm/n Dlci/n Siwf* component is present.
A value of ***networkInterworking*** indicates that a *FrAtm/n Dlci/n Niwf* component is present.

Mib FrameRelayAtm

Values serviceInterworking
networkInterworking

Default No default

ATTRIBUTE FrAtm Dlci troubled (trb)

Access Read only

Description

This attribute indicates whether or not the connection is in a troubled state. Connections may become troubled for the following reasons; if CAC failed to admit the call, or if one of the

attributes *aBitStatusToIf*, *aBitStatusFromIf* goes inactive; otherwise it is set to no.

Mib FrameRelayAtm

Values
no
yes

Default no

ATTRIBUTE FrAtm Dlci troubledReason (trbrc)

Access Read only

Description

This attribute provides the reason (if any) for a troubled connection.

A value of ***notApplicable*** indicates no current failures; either Connection Admission Control (CAC) is off, or call was admitted.

A value of ***notAdmitted*** indicates the CAC algorithm fails to admit this connection. Check if there is a sufficient bandwidth allocation.

A value of ***aBitInactive*** indicates that either the aBitStatusToIf or aBitStatusFromIf is inactive.

Mib FrameRelayAtm

Values
notApplicable
notAdmitted
aBitInactive

Default notApplicable

GROUP FrAtm Dlci Statistics (Stats)

Properties Operational

Description This group contains the operational statistics for the Frame Relay Data Link Connection Identifier.

Mib FrameRelayAtm

ATTRIBUTE FrAtm Dlci frmToIf (fti)

Access	Read only
Description	This attribute counts the number of frames sent to the interface. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci fecnFrmToIf (fecnti)

Access	Read only
Description	This attribute counts the number of frames sent to the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci becnFrmToIf (becnti)

Access	Read only
Description	This attribute counts the number of frames sent to the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci deFrmToIf (deti)

Access	Read only

Description	This attribute counts the number of frames sent to the interface with the Discard Eligibility (DE) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discCongestedToIf (discardcti)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay service due to local congestion in the direction toward the interface. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discDeCongestedToIf (discarddecti)

Access	Read only
Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set, at the Frame Relay service, due to local congestion in the direction toward the interface. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci frmFromIf (ffi)

Access	Read only
Description	This attribute counts the number of frames received from the interface. Frames that are discarded due to error or excess are not

	counted. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci fecnFrmFromIf (fecnfi)

Access	Read only
Description	This attribute counts the number of frames received from the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci becnFrmFromIf (becnfi)

Access	Read only
Description	This attribute counts the number of frames received from the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci efciFrmFromNetwork (efcifnwk)

Access	Read only
Description	This attribute counts the number of frames received from the interworking function with the Explicit Forward Congestion Indication (EFCI) bit set. When the maximum count is reached, the count wraps to zero.

Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci deFrmFromIf (defi)

Access	Read only
Description	This attribute counts the number of frames received from the interface with the Discard Eligibility (DE) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci excessFrmFromIf (excess)

Access	Read only
Description	This attribute counts the number of frames received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discExcessFromIf (discardefi)

Access	Read only
Description	This attribute counts the number of frames which were discarded due to rate enforcement. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE FrAtm Dlci discFrameAbit (discfab)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay Service, due to an inactive PVC status, in the direction toward the interworking function. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discCongestedFromIf (discardcfi)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay service due to local congestion in the direction toward the interworking function. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discDeCongestedFromIf (discarddecfi)

Access	Read only
Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set due to local congestion in the direction toward the interworking function. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci errorShortFrmFromIf (shortfi)

Access	Read only
Description	This attribute counts the number of frames received with 0 octets in the information field. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci errorLongFrmFromIf (longfi)

Access	Read only
Description	This attribute counts the number of frames received with number of octets in the information field greater than the subscribed maximum. When the maximum count is reached, the count wraps to zero. The hardware ignores frame lengths greater than the hardware receive buffer, and therefore does not includes them in this count.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci becnFrmSetByService (becnset)

Access	Read only
Description	This attribute counts the number of frames with BECN set by the Frame Relay service. It is incremented when the Frame Relay service sets BECN on a frame upon detecting local congestion. This count is incremented regardless of whether the frame already bears a set BECN bit since its use is to determine the place of congestion. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE FrAtm Dlci bytesToIf (bti)

Access	Read only
Description	This attribute counts the number of bytes sent out the interface. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci deBytesToIf (debti)

Access	Read only
Description	This attribute counts the number of bytes sent to the interface with the Discard Eligibility (DE) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discCongestedToIfBytes (discardctib)

Access	Read only
Description	This attribute counts the number of byte discards at the Frame Relay service due to local congestion in the direction toward the link. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discDeCongestedToIfBytes (discarddectib)

Access	Read only

Description	This attribute counts the number of discard eligible (DE=1) byte discards at the Frame Relay service due to local congestion in the direction toward the link. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci bytesFromIf (bfi)

Access	Read only
Description	This attribute counts the number of bytes received from the interface. Bytes that are discarded due to error or excess are not counted. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci deBytesFromIf (debi)

Access	Read only
Description	This attribute counts the number of bytes received from the interface with the Discard Eligibility (DE) bit set. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci excessBytesFromIf (excessb)

Access	Read only
Description	This attribute counts the number of bytes received from the interface with the Discard Eligibility (DE) bit clear, but

	subsequently set by the network due to rate enforcement. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discExcessFromIfBytes (discardebi)

Access	Read only
Description	This attribute counts the number of bytes which were discarded due to rate enforcement. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discByteAbit (discbab)

Access	Read only
Description	This attribute counts the bytes number of which were discarded due to the A-bit being turned off. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discCongestedFromIfBytes (discardcbib)

Access	Read only
Description	This attribute counts the number of byte discards at the Frame Relay service due to local congestion in the direction toward the interworking function. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci discDeCongestedFromIfBytes (discarddecbib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the Frame Relay service due to local congestion in the direction toward the interworking function. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci errorShortBytesFromIf (shortbi)

Access	Read only
Description	This attribute counts the number of bytes received with 0 octets in the information field. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci errorLongBytesFromIf (longbi)

Access	Read only
Description	This attribute counts the number of bytes received when the number of octets in the information field is greater than the subscribed maximum. The hardware ignores bytes lengths greater than the hardware receive buffer and therefore does not include them in this count. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm

Values	Decimal (0..4294967295)
Default	No default

GROUP FrAtm Dlci CallData (CallId)

Properties	Operational
Description	This group contains the operational values for the *FrAtm Dlci* call data. If the *accountingEnabled* attribute is ***no***, then this group except for *accountingEnabled* is not displayed.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci accountingEnabled

Access	Read only
Description	This attribute indicates whether accounting is enabled. To enable accounting, the *FrAtm Ca accountCollection* attribute must be non-empty and *FrAtm Dlci Sp accounting* attribute must be ***on***.
Mib	FrameRelayAtm
Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci accountingEnd

Access	Read only
Description	This attribute indicates whether this DLCI represents the called or calling end of the connection. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE FrAtm Dlci correlationTag

Access	Read only

Description	This attribute indicates the unique string which identifies this connection. The value of this operational attribute can be provisioned in the correlationTag attribute of either the Siwf Npvc, Siwf Spvc, or Niwf Spvc subcomponents. For the Siwf Spvc and Niwf Spvc cases, when the provisionable correlationTag is an empty string, then this attribute receives the value of a system- generated correlationTag. Downstream processing uses this attribute to correlate accounting records issued at different nodes in the network. If the accountingEnabled attribute is no, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	String (0..32, ASCII)
Default	""

GROUP FrAtm Dlci IntervalData (Int)

Properties	Operational
Description	This group contains the operational statistics for the *FrAtm Dlci* interval data.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci startTime

Access	Read only
Description	This attribute indicates the start time of this interval. A new interval is started each time an accounting record is generated and call at a setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrAtm Dlci totalIngressBytes (tib)

Access	Read only

Description	This attribute counts the total payload bytes in received from the link since the start of the interval. To calculate total valid payload bytes received from link, subtract *discardedBytes* from this attribute. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Dlci totalEgressBytes

Access	Read only
Description	This attribute counts the total payload bytes sent to the link since the start of the interval. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Dlci eirIngressBytes

Access	Read only
Description	This attribute counts the total valid payload bytes in frames with the Discard Eligibility (DE) bit set to 1 received from the link since the start of the interval. Subtract this attribute and *discardedBytes* from *totalIngressBytes* to calculate total valid payload bytes in frames received from the link, with the DE bit set to 0. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.

Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Dlci eirEgressBytes

Access	Read only
Description	This attribute counts the total valid payload bytes in frames with the Discard Eligibility (DE) bit set sent to the link since the start of the interval. Subtract the value of this attribute from *totalEgressBytes* to calculate total valid payload bytes in frames, with DE set to 0, sent to the link. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm Dlci discardedBytes

Access	Read only
Description	This attribute counts the total payload bytes in invalid frames received from the link and discarded at the DLCI since the start of the interval. This count is a sum of octets in frames discarded due to: frames too long or too short; A-Bit off; or to rate enforcement. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Long Integer

Default	No default

ATTRIBUTE FrAtm Dlci totalIngressFrames

Access	Read only
Description	This attribute counts the total number of frames received from the link since the start of the interval. To calculate the total valid number of frames received from the link, subtract *discardedFrames* from this attribute. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Dlci totalEgressFrames

Access	Read only
Description	This attribute counts the total number of frames sent to the link since the start of the interval. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Dlci eirIngressFrames

Access	Read only
Description	This attribute counts the number of valid frames with the Discard Eligibility (DE) bit set to 1 received from the link since the start of the interval. Subtract this attribute and *discardedFrames* from *totalIngressFrames* to calculate total valid frames received from

	the link, with the DE bit set to 0. The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated or at call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Dlci eirEgressFrames

Access	Read only
Description	This attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the link since the start of the interval. Subtract the value of this attribute from *totalEgressFrames* to calculate total frames, with DE set to 0, sent to the link.The start of the interval is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated call setup. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrAtm Dlci discardedFrames

Access	Read only
Description	This attribute counts the number of invalid frames received from the link and discarded at the DLCI. The count is reset to zero when an accounting record is generated or at call setup. The count is a sum of frames discarded due to: frames too long or too short; A-Bit is off; or rate enforcement. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)

Default 0

ATTRIBUTE FrAtm Dlci elapsedDifference

Access Read only

Description This attribute indicates the elapsed time representing the of this interval data. It is the elapsed time in 0.1 second increments since the start of the interval. If the *accountingEnabled* attribute is ***no***, then this attribute is not displayed.

Mib FrameRelayAtm

Values Decimal (0..4294967295)

Default 0

COMPONENT FrAtm Dlci ServiceParameters (Sp)

Groups "GROUP FrAtm Dlci Sp Provisioned (Prov)"

Scope Application

Description *FrAtm/n Dlci/n ServiceParameters*
This component is a subcomponent of *Dlci*. It contains the provisionable attributes for the parent *Dlci* component.

Mib FrameRelayAtm

Common Verbs
Help
List
Display

GROUP FrAtm Dlci Sp Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisionable attributes for the Data Link Connection Identifier. These attributes reflect the service parameters specific to this instance of DLCI. The congestion control attributes in this group are defined in T1.606 Addendum 1.

Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Sp maximumFrameSize (n203)

Access	Read and write
Description	This attribute specifies the maximum number of octets which may be included in the information field. The Frame Relay header and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.
Mib	FrameRelayAtm
Values	Decimal (1..8187)
Units	octets
Default	2100

ATTRIBUTE FrAtm Dlci Sp rateEnforcement (re)

Access	Read and write
Description	This attribute specifies whether rate enforcement is in effect for this user data link connection. When *rateEnforcement* is *on*, the *CIR* and *De=1* traffic will be measured and enforced. When *rateEnforcement* is *off*, all frames from the user are accepted and no modifications to the frame with respect to the *De* bit will be made.
Mib	FrameRelayAtm
Values	off on
Default	on

ATTRIBUTE FrAtm Dlci Sp committedInformationRate (cir)

Access	Read and write

Description	This attribute specifies the committed information rate (CIR). It represents the rate at which the network agrees to transfer information under normal conditions when rate enforcement is in effect. When rate enforcement is not in effect, this attribute is ignored. Determination of the actual CIR is based on *committedInformationRate*, *committedBurstSize* and a measurement interval. The measurement interval is determined internally when *committedInformationRate* has a non-zero value. Otherwise, it is based on *measurementInterval* which must be explicitly provisioned. Note: The *committedBurstSize* must have a value of 0 when rate enforcement is in effect and *committedInformationRate* has a value of 0.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bit/s
Default	64000

ATTRIBUTE FrAtm Dlci Sp committedBurstSize (bc)

Access	Read and write
Description	This attribute specifies the committed burst size (Bc). It represents the amount of data that a network agrees to transfer under normal conditions over a measurement interval when rate enforcement is in effect. Data marked DE=1 is not accounted for in the committed burst size. When rate enforcement is not in effect, this attribute is ignored. Note: The *committedInformationRate* must have a value of 0 when rate enforcement is in effect and *committedBurstSize* has a value of 0.
Mib	FrameRelayAtm

Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE FrAtm Dlci Sp excessBurstSize (be)

Access	Read and write
Description	This attribute specifies the excess burst size (Be). It represents the amount of uncommitted data that the network will attempt to deliver over a measurement interval when rate enforcement is in effect. Data marked DE=1 by the user or by the network is accounted for here. *committedInformationRate*, *committedBurstSize*, and *excessBurstSize* cannot all be zero when rate enforcement is in effect.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bits
Default	0

ATTRIBUTE FrAtm Dlci Sp measurementInterval (t)

Access	Read and write
Description	This attribute specifies the time interval over which rates and burst sizes are measured when rate enforcement is in effect. When rate enforcement is in effect and both *committedInformationRate* and *committedBurstSize* have values of zero, this attribute must have a non-zero value. When rate enforcement is not in effect or when *committedInformationRate* and *committedBurstSize* have non-zero values, this attribute is ignored. When *committedInformationRate* and *committedBurstSize* have non-zero values, the time interval is internally calculated. In this

situation, *measurementInterval* is ignored, and it does not represent the time interval.

Mib FrameRelayAtm

Values Decimal (0..25500)

Units msec

Default 0

ATTRIBUTE FrAtm Dlci Sp accounting (ac)

Access Read and write

Description

This attribute allows the operator to control accounting for this DLCI. To enable accounting data collection and record generation, the value of this attribute must be ***on*** and at least one of the *accountCollection* reasons in the *FrAtm Ca* component must be set.

Mib FrameRelayAtm

Values off
on

Default off

COMPONENT FrAtm Dlci ServiceInterworkingFunction (Siwf)

Groups "GROUP FrAtm Dlci Siwf ConnectionOp (ConnOp)"
"GROUP FrAtm Dlci Siwf ServiceDescriptorsOp (SdOp)"
"GROUP FrAtm Dlci Siwf FrAtmDlcSiwfSoftPvcOp (SiwfSpvcOp)"
"GROUP FrAtm Dlci Siwf Statistics (Stats)"

Scope Application

Description *FrAtm/n Dlci/n ServiceInterworkingFunction*
The *Siwf* component provides the service interworking function

capability between a Frame Relay data link connection and an ATM connection.

Mib	FrameRelayAtm
Opt. Subcomp.	"COMPONENT FrAtm Dlci Siwf ServiceDescriptor (Sd)" "COMPONENT FrAtm Dlci Siwf NailedUpPvc (NPvc)" "COMPONENT FrAtm Dlci Siwf SoftPvc (SPvc)" "COMPONENT FrAtm Dlci Siwf QualityOfService (QoS)"
Dyn. Subcomp.	"COMPONENT FrAtm Dlci Siwf AtmConnection (AtmCon)" "COMPONENT FrAtm Dlci Siwf RerouteInfo (RerInfo)"
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Siwf ConnectionOp (ConnOp)

Properties	Operational
Description	This group contains operational attributes for the ATM connection.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf discardPriority (dp)

Access	Read only
Description	This attribute indicates the discard priority of frames sent to and received from the ATM connection. When *discardPriority* is ***dp3*** the frames belonging to this connection will be discarded first when the *FrAtm/n Dlci/n Siwf* and the ATM End-Point experience congestion. When *discardPriority* is ***dp2*** the frames belonging to this connection will be discarded after all the ***dp3*** priority frames are discarded when the *FrAtm/n Dlci/n Siwf* and the ATM End-Point experience congestion.

When *discardPriority* is ***dp1*** the frames belonging to this connection will be discarded after all the ***dp2*** and ***dp3*** priority frames are discarded when the *FrAtm/n Dlci/n Siwf* and the ATM End-Point experience congestion.

Mib: FrameRelayAtm

Values:
dp1
dp2
dp3

Default: No default

ATTRIBUTE FrAtm Dlci Siwf atmServiceCategory (sc)

Access: Read only

Description: This attribute indicates the ATM service category that is used for this connection. This attribute is only displayed for SPVCs.

Mib: FrameRelayAtm

Values:
ubr
cbr
rtVbr
nrtVbr
notApplicable

Default: No default

ATTRIBUTE FrAtm Dlci Siwf trafficParmConvPolicy (tpcp)

Access: Read only

Description: This attribute indicates the traffic parameter conversion policy that is being used for this connection.

For Npvcs, this attribute is not displayed.

Policy ***3*** characterizes the traffic in the following way:
- ATM traffic descriptor type 6 is selected
- ATM service category rtVbr and nrtVbr supported only
- PCR0+1 is based on AR
- SCR0+1 is based on CIR and EIR

- MBS0+1 is based on Bc, Be, CIR, EIR and AR
- Takes into account that the instantaneous rate of the frame relay stream can be above CIR and up to the AR.

Policy ***4*** characterizes the traffic in the following way:
- ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer.
- PCR0+1 is based on AR
- SCR0 is based on CIR
- MBS0 is based on Bc, CIR, and AR
- There is no direct characterization of EIR. The allowed EIR can be derived using the difference between the AR and CIR.

Policy ***5*** characterizes the traffic in the following way:
- ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer
- ATM service category rtVbr and nrtVbr supported only
- PCR0+1 is based on CIR and EIR
- SCR0 is based on the CIR
- MBS0 is based on the CIR
- The maximum PCR is no longer based on the AR but rather on the CIR and EIR or CIR.

Policy ***6*** characterizes the traffic in the following way:
- ATM traffic descriptor type 3 is selected
- ATM service category ubr, cbr, rtVbr and nrtVbr supported only
- PCR0+1 is based only on CIR.

Mib	FrameRelayAtm
Values	3 4 5 6 notApplicable
Default	No default

ATTRIBUTE FrAtm Dlci Siwf avgFrameSize (afs)

Access	Read only
Description	This attribute indicates the average frame size that is used for this connection as part of the traffic parameter conversion policy. Average frame size is not applicable for Npvcs, and therefore it is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..8187)
Units	bytes
Default	No default

ATTRIBUTE FrAtm Dlci Siwf remoteAddress (raddr)

Access	Read only
Description	This attribute indicates the remote address (native E.164, native X.121 or NSAP) for this connection. This attribute is only displayed for SPVCs.
Mib	FrameRelayAtm
Values	String (1..44, NativeAESANsapAddress)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf remoteConnectionIdentifier (rci)

Access	Read only
Description	This attribute indicates the remote connection identifier. This identifier is either a remote *Atm Vpi.Vci* logical channel number or a remote *Frame Relay Dlci* logical channel number. The remote *Atm Vpi.Vci* logical channel number is displayed as "***Vpi.Vci***". and the remote *Frame Relay Dlci* logical channel number is displayed as "***0.remoteDlci***". For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm
Values	Integer Sequence (0..255; 0..16128)
Default	No default

GROUP FrAtm Dlci Siwf ServiceDescriptorsOp (SdOp)

Properties	Operational
Description	This group contains operational information for a *Siwf* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf mode

Access	Read only
Description	This attribute indicates the mode of interoperability between the Frame Relay and ATM connections regarding upper layer protocol encapsulations. A value of ***translationMode*** indicates that the interworking function performs translation between RFC 1490 and RFC 1483 encapsulated headers, including routed protocol translation, bridged protocol translation, and connection oriented protocol translation (except for RFC 1490 connection oriented protocol without RFC 1490 header, which is done in *speTranslationMode*). A value of ***transparentMode*** indicates that the interworking function forwards data without altering the upper layer user protocol encapsulation. Transparent mode is selected when the upper layer user protocol encapsulation methods are compatible between terminal equipments. A value of ***speTranslationMode*** indicates that the interworking function performs single protocol translation between RFC 1490 with no header and RFC 1483 encapsulated packets.
Mib	FrameRelayAtm
Values	translationMode transparentMode speTranslationMode
Default	No default

ATTRIBUTE FrAtm Dlci Siwf deToClpMapping (detclp)

Access	Read only
Description	This attribute indicates the type of DE to CLP mapping that is performed in the Frame Relay to ATM direction. A value of ***preserve*** indicates that the DE field in a Q.922 core frame is copied to the ATM CLP field of every cell containing the information of that frame. A value of ***always0*** indicates that the CLP field of every generated ATM cell is always 0. A value of ***always1*** indicates that the CLP field of every generated ATM cell is always1.
Mib	FrameRelayAtm
Values	always0 always1 preserve
Default	No default

ATTRIBUTE FrAtm Dlci Siwf clpToDeMapping (clptde)

Access	Read only
Description	This attribute indicates the type of CLP to DE mapping that is performed in the ATM to Frame Relay direction. A value of ***preserve*** indicates that the DE field of the Q.922 Core frame is set when one or more ATM cells belonging to an AAL5 frame have their CLP field set. A value of ***always0*** indicates that the DE field of the Q.922 Core frame is always set to 0. A value of ***always1*** indicates that the DE field of the Q.922 Core frame is always set to 1.
Mib	FrameRelayAtm

Values	always0 always1 preserve
Default	No default

ATTRIBUTE FrAtm Dlci Siwf fecnToEfciMapping (fecntefci)

Access	Read only
Description	This attribute indicates the type of FECN to EFCI mapping that is performed in the Frame Relay to ATM direction. A value of ***preserve*** indicates that the FECN field in a Q.922 Core frame is copied directly to the ATM EFCI field of every cell. A value of ***always0*** indicates that the EFCI field in every ATM cell generated is set to 0.
Mib	FrameRelayAtm
Values	always0 preserve
Default	No default

ATTRIBUTE FrAtm Dlci Siwf crToUuMapping (crtuu)

Access	Read only
Description	This attribute indicates the type of CR to UU mapping that is performed in the Frame Relay to ATM direction. A value of ***preserve*** indicates that the proprietary and CR bits are mapped to the CPCS-UU field of the last cell generated by the AAL5 segmentation process. The proprietary bits are used for rate enforcement and rate adaption but are unused according to the FRF8 standard. A value of ***standardFRF8*** indicates that only the CR bit is mapped to the CPCS-UU field of the last cell generated by the AAL5 segmentation process. This is in accordance with the FRF8

standard. This option is provided to avoid equipment interworking issues with the proprietary use of the unused bits of the CPCS-UU field for rate enforcement and rate adaption.

Mib	FrameRelayAtm
Values	standardFRF8 preserve
Default	preserve

ATTRIBUTE FrAtm Dlci Siwf transferPriority (tp)

Access	Read only
Description	This attribute indicates the transfer priority used to establish the connection. For Npvcs, the value is ***notApplicable***.
Mib	FrameRelayAtm
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 notApplicable
Default	No default

ATTRIBUTE FrAtm Dlci Siwf assignedBandwidthPool (asgBwPool)

Access	Read only
Description	This attribute specifies the bandwidth pool that this *Dlci* uses.
Mib	FrameRelayAtm
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Default	No default

GROUP FrAtm Dlci Siwf FrAtmDlcSiwfSoftPvcOp (SiwfSpvcOp)

Properties	Operational
Description	This group contains operational attributes for the *FrAtm Dlci Siwf Spvc* connection.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf peakCellRate0 (pcr0)

Access	Read only
Description	This attribute indicates the Peak Cell Rate (PCR) of the ATM VCC to which this interworking function is linked for all cells (with CLP=0). The *pcr0* is derived from the remote end traffic parameters using the conversion policy of the *transferPriorityMapping*.

	For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE FrAtm Dlci Siwf peakCellRate01 (pcr01)

Access	Read only
Description	This attribute indicates the Peak Cell Rate (PCR) of the ATM VCC to which this interworking function is linked for all cells (with CLP=0 and CLP=1). The *pcr01* is derived from the remote end traffic parameters using the conversion policy of the *transferPriorityMapping*. For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE FrAtm Dlci Siwf sustainedCellRate0 (scr0)

Access	Read only
Description	This attribute indicates the Sustained Cell Rate (SCR) of the ATM VCC to which this interworking function is linked for high priority cells (with CLP=0). The *scr0* is derived from the remote end traffic parameters using the conversion policy of the *transferPriorityMapping*. For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm

Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE FrAtm Dlci Siwf sustainedCellRate01 (scr01)

Access	Read only
Description	This attribute indicates the Sustained Cell Rate (SCR) of the ATM VCC that to which this interworking function is linked for all cells (with CLP=0 and CLP=1). The *scr01* is derived from the remote end traffic parameters using the conversion policy of the *transferPriorityMapping*. For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE FrAtm Dlci Siwf maximumBurstSize0 (mbs0)

Access	Read only
Description	This attribute indicates the Maximum Burst Size (MBS) of the ATM VCC to which this interworking function is linked for high priority cells (with CLP=0). The *mbs0* is derived from the remote end traffic parameters using the conversion policy of the *transferPriorityMapping*. For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	cell/s

Default	No default

ATTRIBUTE FrAtm Dlci Siwf maximumBurstSize01 (mbs01)

Access	Read only
Description	This attribute indicates the Maximum Burst Size (MBS) of the ATM VCC to which this interworking function is linked for all cells (with CLP=0 and CLP=1). The *mbs01* is derived from the remote end traffic parameters using the conversion policy of the *transferPriorityMapping*. For NPVCs, this attribute is not displayed.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE FrAtm Dlci Siwf equivalentBitRate (ebr)

Access	Read only
Description	This attribute indicates the access reserved bandwidth for this FR-ATM connection when CAC is on. If a connection is subscribed to CIR only or CIR plus EIR service, the EBR reserved is CIR. If a connection is subscribed to EIR only service, the EBR reserved is 0.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE FrAtm Dlci Siwf type (typ)

Access	Read only

Description	This attribute indicates if the component provisioned is a calling or called end. If the value is ***master***, the *Dlci Siwf Spvc* component is provisioned as a calling end and is responsible for originating the call to set up the ATM VCC. If the value is ***slave***, this *Dlci Siwf* component is provisioned as a called end and is responsible for terminating call setup requests from the remote end. This attribute is not displayed for NPVCs.
Mib	FrameRelayAtm
Values	master slave notApplicable
Default	No default

ATTRIBUTE FrAtm Dlci Siwf vccClearCause (vclc)

Access	Read only
Description	This attribute indicates the last received clear cause message from the network. This attribute is not displayed for NPVCs. Please refer to ATM User-Network Interface Specification for possible clear causes.
Mib	FrameRelayAtm
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf vccCauseDiag (vcdg)

Access	Read only
Description	This attribute indicates the diagnostic value of the last release message received from the network. This attribute is not displayed for NPVCs. Please refer to ATM User-Network Interface Specification for possible diagnostic values.
Mib	FrameRelayAtm

Values	String (1..8, Hex)
Default	No default

GROUP FrAtm Dlci Siwf Statistics (Stats)

Properties	Operational
Description	This group contains statistics for the *Siwf* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf unknown1490Frames (unknown1490)

Access	Read only
Description	This attribute counts the number of frames received from the interface that have a frame header that is not recognized by the RFC 1490. When the maximum count is reached, it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf invalid1490Frames (invalid1490)

Access	Read only
Description	This attribute counts the number of frames received from the interface that have an invalid frame header. An invalid frame header occurs when the frame has less than the expected number of bytes. When the maximum count is reached, the count wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf lastUnknown1490ProtocolHeader (lastUnk1490)

Access	Read only
Description	This attribute contains the most recent unrecognized protocol header that was received from the interface. All the RFC 1490 protocols described in sections 5.3.1.1 through 5.3.1.3 of FRF.8 are supported, except ARP is not supported.
Mib	FrameRelayAtm
Values	String (1..8, Hex)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf unknown1483Frames (unknown1483)

Access	Read only
Description	This attribute counts the number of frames received from the ATM connection that have a frame header that is not recognized by the RFC 1483. When the maximum count is reached, it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf invalid1483Frames (invalid1483)

Access	Read only
Description	This attribute counts the number of frames received from the ATM connection that have an invalid frame header. An invalid frame header occurs when the frame has less than the expected number of bytes. When the maximum count is reached, it wraps to zero.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf lastUnknown1483ProtocolHeader (lastUnk1483)

Access	Read only
Description	This attribute identifies the most recent unrecognized protocol header that was received from the ATM connection. All the RFC 1483 protocols described in sections 5.3.1.1 through 5.3.1.3 of FRF.8 are supported except ARP.
Mib	FrameRelayAtm
Values	String (1..8, Hex)
Default	No default

COMPONENT FrAtm Dlci Siwf ServiceDescriptor (Sd)

Groups	"GROUP FrAtm Dlci Siwf Sd Provisioned (Prov)"
Scope	Application
Description	*FrAtm/n Dlci/n Siwf ServiceDescriptor* The *Sd* component contains provisioning information for its parent *Siwf* component. It is a required component when *Npvc* is provisioned. In the case of *Spvc*, if this component is not provisioned, the connection will use the provisioning information from the *FrAtm Ca* component.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Siwf Sd Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the parent *Siwf* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf Sd mode

Access	Read and write
Description	This attribute specifies the mode of interoperability between the Frame Relay and ATM connections regarding upper layer protocol encapsulations. When ***translationMode*** is selected, the interworking function performs translations between RFC 1490 and RFC 1483 encapsulated headers, including routed protocol translation, bridged protocol translation, and connection oriented protocol translation (except for RFC 1490 connection oriented protocol without RFC 1490 header, which is done in *speTranslationMode*). A value of ***transparentMode*** indicates that the interworking function forwards data without altering the upper layer user protocol encapsulation. Transparent mode is selected when the upper layer user protocol encapsulation methods are compatible between terminal equipments. A value of ***speTranslationMode*** indicates that the interworking function performs single protocol translation between RFC 1490 with no header and RFC 1483 encapsulated packets. The default value is ***sameAsInterface,*** which means as defined in ***FrAtm/n Ca sdMode.***
Mib	FrameRelayAtm
Values	translationMode transparentMode speTranslationMode sameAsInterface
Default	sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf Sd deToClpMapping (detclp)

Access	Read and write
Description	This attribute specifies the DE to CLP mapping that is performed in the Frame Relay to ATM direction.

When ***preserve*** is selected, the DE field in the Q.922 core frame is mapped to the ATM CLP field of every cell generated by the segmentation process of the AAL5 PDU containing the information of that frame.

When ***always0*** is selected, the CLP field of every ATM cell generated by the segmentation process of the AAL5 PDU containing the information of that frame is always set to 0.

When ***always1*** is selected, the CLP field of every ATM cell generated by the segmentation process of the AAL5 PDU containing the information of that frame is always set to 1.

Mib: FrameRelayAtm

Values:
always0
always1
preserve
sameAsInterface

Default: sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf Sd clpToDeMapping (clpToDe)

Access: Read and write

Description: This attribute specifies the type of CLP to DE mapping that is performed in the ATM to Frame Relay to direction.

When ***preserve*** is selected, the DE field of the Q.922 Core frame is set when one or more ATM cells belonging to an AAL5 frame have their CLP field set.

When ***always0*** is selected, the DE field of the Q.922 Core frame is always set to 0.

When ***always1*** is selected, the DE field of the Q.922 Core frame is always set to 1.

Mib: FrameRelayAtm

Values:
always0
always1

	preserve sameAsInterface
Default	sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf Sd fecnToEfciMapping (fecntefci)

Access	Read and write
Description	This attribute specifies the type of FECN to EFCI mapping that is performed in the Frame Relay to ATM direction. When ***preserve*** is selected, the FECN field in the Q.922 Core frame is mapped directly to the ATM EFCI field of every cell generated by the AAL5 segmentation process. When ***always0*** is selected, the EFCI field in every ATM cell generated is set to 0.
Mib	FrameRelayAtm
Values	always0 preserve sameAsInterface
Default	sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf Sd crToUuMapping (crtuu)

Access	Read and write
Description	This attribute indicates the type of CR to UU mapping that is performed in the Frame Relay to ATM direction. A value of ***preserve*** indicates that the proprietary and CR bits are mapped to the CPCS-UU field of the last cell generated by the AAL5 segmentation process. The proprietary bits are used for rate enforcement and rate adaption but are unused according to the FRF8 standard. A value of ***standardFRF8*** indicates that only the CR bit is mapped to the CPCS-UU field of the last cell generated by the AAL5 segmentation process. This is in accordance with the FRF8 standard. This option is provided to avoid equipment inter-

	working issues with the proprietary use of the unused bits of the CPCS-UU field for rate enforcement and rate adaption.
Mib	FrameRelayAtm
Values	standardFRF8 preserve sameAsInterface
Default	sameAsInterface

COMPONENT FrAtm Dlci Siwf NailedUpPvc (NPvc)

Groups	"GROUP FrAtm Dlci Siwf NPvc Provisioned (Prov)" "GROUP FrAtm Dlci Siwf NPvc FrAtmDlcSiwfNailedUpPvcOp (SiwfNpvcOp)"
Scope	Application
Description	*FrAtm/n Dlci/n Siwf NailedUpPvc* This component associates an interworking function with an ATM connection.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Siwf NPvc Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the NPvc component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf NPvc atmConnection (atmConn)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM connection to which the interworking function is linked. The ATM connection must be linked to an ATM end-point. For example *AtmIf/m Vcc/m Nep*.
Mib	FrameRelayAtm
Values	Link (Service, applicationName)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf NPvc correlationTag

Access	Read and write
Description	This attribute specifies a unique string, set by the operator, which identifies the call for accounting purposes. Downstream processing uses this attribute to correlate accounting records issued at different nodes in the network. Normally, this value is provisioned with the same value at each end of the connection. If the value of accountingEnabled is no, this attribute has no effect. This attribute is also visible in the FrAtm Dlci component when accounting is enabled.
Mib	FrameRelayAtm
Values	String (0..32, ASCII)
Default	""

GROUP FrAtm Dlci Siwf NPvc FrAtmDlcSiwfNailedUpPvcOp (SiwfNpvcOp)

Properties	Operational
Description	This group contains the operational attributes for the *FrAtm Dlci Siwf Npvc* connection.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf NPvc connectionToAtm (connToAtm)

Access	Read only

Description	This attribute indicates the ATM connection to which the interworking function is linked.
Mib	FrameRelayAtm
Values	The name of the component
Default	No default

COMPONENT FrAtm Dlci Siwf SoftPvc (SPvc)

Groups	"GROUP FrAtm Dlci Siwf SPvc Provisioned (Prov)"
Scope	Application
Description	*FrAtm/n Dlci/n Siwf SoftPvc* The *Spvc* component specifies the remote end for a soft PVC.
Mib	FrameRelayAtm
Opt. Subcomp.	"COMPONENT FrAtm Dlci Siwf SPvc RerouteOverride (RerOv)"
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Siwf SPvc Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the soft PVC component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf SPvc remoteAddress (raddr)

Access	Read and write
Description	This attribute specifies the remote address of the SPVC. It is represented as a prefix NPI string and a sequence of up to 15 digits to specify either a native (E.164 or X.121) address format

or Atm End System Address(AESA) in ISO NSAP format.

For example:
native E.164 = “e.upto15digits”
native X.121 = “x.upto14digits”
NSAP E.164 ATM address = “n.upto15digits.ESI.SEL”
NSAP address = “40 hexadecimal digits”

Mib: FrameRelayAtm

Values: String (1..44, ASCII)

Default: No default

ATTRIBUTE FrAtm Dlci Siwf SPvc remoteConnectionIdentifier (rci)

Access: Read and write

Description: This attribute specifies the remote connection identifier. The identifier is either a remote *Atm Vpi.Vci* logical channel number assignment or a remote *Frame Relay Dlci* logical channel number assignment. The remote *Atm Vpi.Vci* logical channel number is input as “***Vpi.Vci***” and the remote *Frame Relay Dlci* logical channel number is input as “***0.remoteDlci***”.

Mib: FrameRelayAtm

Values: Integer Sequence (0..255; 0..16128)

Default: No default

ATTRIBUTE FrAtm Dlci Siwf SPvc correlationTag

Access: Read and write

Description: This attribute specifies the unique string, set by the operator, which identifies the call for accounting purposes. Downstream processing uses this attribute to correlate accounting records issued at different nodes in the network. If the value of accountingEnabled is no, this attribute has no effect. This attribute is also visible in the FrAtm Dlci component when accounting is enabled. When this attribute is an empty string, the operational correlationTag attribute in the FrAtm Dlci component receives the value of a system-generated correlationTag.

Mib	FrameRelayAtm
Values	String (0..32, ASCII)
Default	""

COMPONENT FrAtm Dlci Siwf SPvc RerouteOverride (RerOv)

Groups	"GROUP FrAtm Dlci Siwf SPvc RerOv Provisioned (Prov)"
Scope	Device
Description	*FrAtm/n Dlci/x Siwf RerouteOverride* This component represents the ability to override rerouting capability subscription options on a per connection basis for provisioned SPVC and SPVP connections. The addition of this component and changes to the attributes contained in this component are critical to the parent SPVC or SPVP. However, the deletion of this component is not a critical change for the connection. If this component is deleted, the connection remains active with the last provisioned subscription options. Subscription is lost when the connection goes down and re-establishes.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

VERB OPTIMIZE FrAtm Dlci Siwf SPvc RerOv

Impact	Service
Description	*OPTimize FrAtm/n Dlci/x Siwf RerOv* This command triggers path optimization for the connection segment. If the interface is already processing a path optimization request, then the *Optimize* command is cancelled. Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP FrAtm Dlci Siwf SPvc RerOv Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes related to rerouting subscription options for provisioned connections.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf SPvc RerOv protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by the connection segment. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning. One of the following values can be specified: ***sameAsInterface***: The requested rerouting protocols are specified by the *protocol* attribute under the *Reroute Ov* component for the interface. ***localGlobal***: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature. ***localOnly***: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting

feature.
globalOnly: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib: FrameRelayAtm

Values:
localGlobal
localOnly
globalOnly
localEbr
ebrOnly
sameAsInterface (sameAs)

Default: sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf SPvc RerOv localConnectionRecoverySubscr (lRecSub)

Access: Read and write

Description: This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local connection recovery subscription.

If the connection segment requests ***localEbr***, this attribute controls the local connection recovery subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *localConnectionRecoverySubscr* attribute under the *Reroute Ov*

component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local connection recovery, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to local connection recovery.
no: The connection segment does not request subscription to local connection recovery.

Mib — FrameRelayAtm

Values — no
yes
sameAsInterface (sameAs)

Default — sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf SPvc RerOv localPathOptimizationSubscr (lOptSub)

Access — Read and write

Description — This attribute specifies whether the connection segment requests subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either local domain rerouting node or a DTL originator.

If the connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local path optimization subscription.

If the connection segment requests ***localEbr***, this attribute controls the local path optimization subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *localPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to local path optimization, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to local path

optimization.
no: The connection segment does not request subscription to local path optimization.

Mib: FrameRelayAtm

Values:
no
yes
sameAsInterface (sameAs)

Default: sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf SPvc RerOv globalConnectionRecoverySubscr (gRecSub)

Access: Read and write

Description: This attribute specifies whether the connection segment requests subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

If the connection segment requests ***ebrOnly***, this attribute controls EBR connection recovery subscription.

If the connection segment requests ***localEbr***, this attribute controls the EBR connection recovery subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalConnectionRecoverySubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR connection recovery, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR connection recovery.
no: The connection segment does not request subscription to global or EBR connection recovery.

Mib: FrameRelayAtm

Values
no
yes
sameAsInterface (sameAs)

Default
sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf SPvc RerOv globalPathOptimizationSubscr (gOptSub)

Access
Read and write

Description
This attribute specifies whether the connection segment requests subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute affects connection segments for a node that is a DTL originator.

If the connection segment requests ***ebrOnly***, this attribute controls EBR path optimization subscription.

If the connection segment requests ***localEbr***, this attribute controls the EBR path optimization subscription. Only one will be granted.

One of the following values can be specified:
sameAsInterface: The subscription rule is determined by the *globalPathOptimizationSubscr* attribute under the *Reroute Ov* component for the interface. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segment requests subscription to global or EBR path optimization, otherwise the connection segment does not request subscription.
yes: The connection segment requests subscription to global or EBR path optimization.
no: The connection segment does not request subscription to global or EBR path optimization.

Mib
FrameRelayAtm

Values
no
yes
sameAsInterface (sameAs)

Default
sameAsInterface

COMPONENT FrAtm Dlci Siwf QualityOfService (QoS)

Groups	"GROUP FrAtm Dlci Siwf QoS Provisioned (Prov)"
Scope	Application
Description	*FrAtm/n Dlci/n Siwf QualityOfService* The *QoS* component provides quality of service overrides for its parent *Siwf* component.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Siwf QoS Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable quality of service attributes for the *Qos* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf QoS emissionPriorityToIf (epToIf)

Access	Read and write
Description	This attribute specifies the emission priority of frames sent to the *FrAtm* interface. Frames in a higher priority queue, represented by a numerically higher number, will be sent before frames in a lower priority queue. The value of this attribute is interpreted according to the value of the provisionable attribute *numberOfEmissionQs* under the parent *FrAtm* component. If the *numberOfEmissionQs* attribute is set to ***2***, *emissionPriorityToIf* value of ***0*** maps to emission priority queue 0 representing a lower priority queue, and *emissionPriorityToIf* values of ***1, 2,*** and ***3*** are mapped to emission priority queue 1 representing the highest priority queue. If the *numberOfEmissionQs* is set to ***4***, the *emissionPriorityToIf* values are directly assigned to the emission priority queues.

A value of ***deriveFromTp*** specifies that the emission priority is to be extracted from the *Mod Frs AtmNet Tpm/n* component using the *transferPriority* attribute.
A value of ***sameAsInterface*** specifies that the emission priority is to be extracted from the *FrAtm Ca* component using the *niwfEmissionPriorityToIf* attribute.

Mib: FrameRelayAtm

Values:
0
1
2
3
deriveFromTp
sameAsInterface

Default: sameAsInterface

ATTRIBUTE FrAtm Dlci Siwf QoS transferPriority (tp)

Access: Read and write

Description: This attribute specifies the transfer priority of frames sent to the ATM connection using this particular Dlci.
In the Frame Relay to ATM direction, the *tp* selects the ATM service category of the connection.
In the ATM to Frame Relay direction, the *tp* selects the *FrAtm* emission priority queue.
A value of ***sameAsInterface*** specifies that the emission priority extracts from the *FrAtm Ca* component using the *siwfTransferPriority* attribute.

Mib: FrameRelayAtm

Values:
0
1
2
3
4
5
6
7
8
9

	10 11 12 13 14 15 sameAsInterface
Default	sameAsInterface

COMPONENT FrAtm Dlci Siwf AtmConnection (AtmCon)

Groups	"GROUP FrAtm Dlci Siwf AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	FrameRelayAtm
Common Verbs	Help List Display

GROUP FrAtm Dlci Siwf AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	FrameRelayAtm

Values	The name of the component
Default	No default

COMPONENT FrAtm Dlci Siwf RerouteInfo (RerInfo)

Groups	"GROUP FrAtm Dlci Siwf RerInfo Operational (Oper)" "GROUP FrAtm Dlci Siwf RerInfo EbrOperational (EOper)" "GROUP FrAtm Dlci Siwf RerInfo LocalOperational (LOper)" "GROUP FrAtm Dlci Siwf RerInfo GlobalOperational (GOper)" "GROUP FrAtm Dlci Siwf RerInfo EbrStatistics (EStats)" "GROUP FrAtm Dlci Siwf RerInfo LocalStatistics (LStats)" "GROUP FrAtm Dlci Siwf RerInfo GlobalStatistics (GStats)"
Scope	Device
Description	*AtmIf/n Vcc/vpi.vci RerouteInfo* *AtmIf/n Vpc/vpi RerouteInfo* *AtmIf/n Vpt/vpi Vcc/vci RerouteInfo* *Aal1Ces/n RerouteInfo* *Fratm/n Dlci/n Siwf RerouteInfo* This component represents the rerouting capabilities of a connection segment. The component is present at the DTL originator of the connection segment. It is also present at each local domain rerouting node, if the local rerouting protocol has been granted to the connection segment.
Mib	FrameRelayAtm
Common Verbs	Help List Display

GROUP FrAtm Dlci Siwf RerInfo Operational (Oper)

Properties	Operational
Description	This group contains the common operational attributes that indicate rerouting activities at the connection level.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf RerInfo lastOptimizationMetric (lOptMet)

Access	Read only
Description	This attribute indicates which optimization metric was last used to select a path for the connection segment.
Mib	FrameRelayAtm
Values	cdv maxCtd aw specifiedPath
Default	No default

GROUP FrAtm Dlci Siwf RerInfo EbrOperational (EOper)

Properties	Operational
Description	This group contains attributes that indicate the EBR rerouting characteristics of a connection segment. This group is only present if the connection segment has been granted the EBR rerouting protocol.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf RerInfo ebrRecoverySubscribed (eRecSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo ebrOptimizationSubscribed (eOptSub)

Access	Read only

Description	This attribute indicates whether the connection segment is subscribed to EBR path optimization. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo ebrOptimizationMetricValue (eOptVal)

Access	Read only
Description	This attribute indicates the EBR optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo ebrOptimalMetricValue (eOptMetVal)

Access	Read only
Description	This attribute indicates the EBR optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the

segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections.

This attribute is only present if the connection segment has been granted the EBR protocol.

Mib: FrameRelayAtm

Values: Decimal (0..4294967292)
primary
alternate

Default: No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo ebrOptimizationState (eOptSt)

Access: Read only

Description: This attribute indicates the current EBR optimization state of the connection segment.

One of the following values is indicated:
optimal: This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value.
recovered: This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value.
optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

This attribute is only present if the connection segment has been granted the EBR protocol.

Mib: FrameRelayAtm

Values: optimal
recovered
optimized

Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo ebrTimeOfLastRecovery (eTime)

Access	Read only
Description	This attribute indicates the date and time of the last EBR connection recovery. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	Time (DHMS)
Default	No default

GROUP FrAtm Dlci Siwf RerInfo LocalOperational (LOper)

Properties	Operational
Description	This group contains attributes that indicate the local rerouting characteristics of a connection segment. This group is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf RerInfo localRecoverySubscribed (lRecSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to local connection recovery. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo localOptimizationSubscribed (lOptSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to local path optimization. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo localOptimizationMetricValue (lOptVal)

Access	Read only
Description	This attribute indicates the local optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. A value of ***undefined*** indicates that the local optimization metric value is undetermined. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967294) undefined
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo localOptimalMetricValue (lOptMetVal)

Access	Read only
Description	This attribute indicates the local optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the ***localOptimizationValue*** whenever a connection is optimized

onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.A value of ***undefined*** indicates that the local optimal optimization metric value is undetermined.

This attribute is only present if the connection segment has been granted the local rerouting protocol.

Mib: FrameRelayAtm

Values: Decimal (0..4294967294)
undefined

Default: No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo localOptimizationState (lOptSt)

Access: Read only

Description: This attribute indicates the current local optimization state of the connection segment.

One of the following values is indicated:
optimal: This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value.
recovered: This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value.
optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

This attribute is only present if the connection segment has been granted the local rerouting protocol.

Mib: FrameRelayAtm

Values: optimal
recovered
optimized

Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo localTimeOfLastRecovery (lTime)

Access	Read only
Description	This attribute indicates the date and time of the last local connection recovery. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	Time (DHMS)
Default	No default

GROUP FrAtm Dlci Siwf RerInfo GlobalOperational (GOper)

Properties	Operational
Description	This group contains attributes that indicate the global rerouting characteristics of a connection. This group is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf RerInfo globalRecoverySubscribed (gRecSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to global connection recovery. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo globalOptimizationSubscribed (gOptSub)

Access	Read only
Description	This attribute indicates whether the connection segment is subscribed to global path optimization. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	no yes
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo globalOptimizationMetricValue (gOptVal)

Access	Read only
Description	This attribute indicates the global optimization metric value that was collected for the call during the most recent call establishment. It represents the segment of the connection between the rerouting and rendezvous nodes. The ***primary*** and ***alternate*** values are used to denote optimization values for Specified Path connections. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967292) primary alternate
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo globalOptimalMetricValue (gOptMetVal)

Access	Read only
Description	This attribute indicates the global optimization metric value of the connection's best path. It is initialized to the value collected during initial call establishment. It is set to the

globalOptimizationValue whenever a connection is optimized onto a path that has a better optimization value or when the number of optimization attempts is exhausted. It represents the segment of the connection between the rerouting and rendezvous nodes.The ***primary*** and ***alternate*** values are used to denote the optimization values for Specified Path connections.

This attribute is only present if the connection segment has been granted the global rerouting protocol.

Mib: FrameRelayAtm

Values: Decimal (0..4294967292)
primary
alternate

Default: No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo globalOptimizationState (gOptSt)

Access: Read only

Description: This attribute indicates the current global optimization state of the connection segment.

One of the following values is indicated:
optimal: This is the initial value when the connection segment is first established. The connection segment is in optimal state whenever the optimization metric value of the connection segment is equal to the best known value.
recovered: This value represents the state when the connection segment has been recovered to a path with an optimization metric value for the connection segment that is greater than the value specified by the optimal metric value.
optimized: This value represents the state when the connection segment has moved to a path that is better than the recovered path but not as good as the optimal path.

This attribute is only present if the connection segment has been granted the global rerouting protocol.

Mib: FrameRelayAtm

Values	optimal recovered optimized
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo globalTimeOfLastRecovery (gTime)

Access	Read only
Description	This attribute indicates the date and time of the last global connection recovery. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	Time (DHMS)
Default	No default

GROUP FrAtm Dlci Siwf RerInfo EbrStatistics (EStats)

Properties	Operational
Description	This group contains statistics related to Ebr rerouting for the connection segment.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf RerInfo totalEbrConnectionRecoveries (eConnRec)

Access	Read only
Description	This attribute counts successful EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo totalEbrPathOptimizations (ePathOpt)

Access	Read only
Description	This attributes counts successful EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo totalEbrOptimizationAttempts (eOptAtt)

Access	Read only
Description	This attribute counts the total number of EBR path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the EBR protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

GROUP FrAtm Dlci Siwf RerInfo LocalStatistics (LStats)

Properties	Operational
Description	This group contains statistics related to local rerouting for the connection segment.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf RerInfo totalLocalConnectionRecoveries (lConnRec)

Access	Read only

Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo totalLocalPathOptimizations (lPathOpt)

Access	Read only
Description	This attributes counts successful local path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo totalLocalOptimizationAttempts (lOptAtt)

Access	Read only
Description	This attribute counts the total number of local path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the local rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

GROUP FrAtm Dlci Siwf RerInfo GlobalStatistics (GStats)

Properties	Operational
Description	This group contains statistics related to global rerouting for the connection segment.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Siwf RerInfo totalGlobalConnectionRecoveries (gConnRec)

Access	Read only
Description	This attribute counts successful global connection recovery attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo totalGlobalPathOptimizations (gPathOpt)

Access	Read only
Description	This attributes counts successful global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Dlci Siwf RerInfo totalGlobalOptimizationAttempts (gOptAtt)

Access	Read only

Description	This attribute counts the total number of global path optimization attempts. The counter wraps to zero when the maximum value is exceeded. This attribute is only present if the connection segment has been granted the global rerouting protocol.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

COMPONENT FrAtm Dlci NetworkInterworkingFunction (Niwf)

Groups	"GROUP FrAtm Dlci Niwf Operational (Oper)"
Scope	Application
Description	*FrAtm/n Dlci/n NetworkInterworkingFunction* The *Niwf* component provides the network interworking function capability between a Frame Relay data link connection and a FRF.5 ATM end point.
Mib	FrameRelayAtm
Subcomponents	"COMPONENT FrAtm Dlci Niwf SoftPermanentVirtualCircuit (Spvc)"
Opt. Subcomp.	"COMPONENT FrAtm Dlci Niwf NetworkingDescriptor (Nd)" "COMPONENT FrAtm Dlci Niwf QualityOfService (QoS)"
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Niwf Operational (Oper)

Properties	Operational
Description	This group contains operational networking description information for a *Niwf* component.

Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Niwf deToClpMapping (detclp)

Access	Read only
Description	This attribute indicates the type of DE to CLP mapping that is performed in the Frame Relay to ATM direction. A value of ***preserve*** indicates that the DE field in the Q.922 core frame copies to the CLP field of every ATM cell containing the frame. A value of ***always0*** indicates that the CLP field of every ATM cell is always set to 0. A value of ***always1*** indicates that the CLP field of every ATM cell is always set to 1.
Mib	FrameRelayAtm
Values	always0 always1 preserve
Default	No default

ATTRIBUTE FrAtm Dlci Niwf clpToDeMapping (clptde)

Access	Read only
Description	This attribute indicates the type of CLP to DE mapping that is performed in the ATM to Frame Relay direction. A value of ***preserve*** indicates that the DE field of the Q.922 core frame is set when one or more ATM cells belonging to the frame has its CLP field set, or when the DE field of the FR-SSCS PDU is set. A value of ***transparent*** indicates that the DE field of the Q.922 core frame copies directly from the DE field of the FR-SSCS PDU.
Mib	FrameRelayAtm
Values	preserve transparent
Default	No default

ATTRIBUTE FrAtm Dlci Niwf transferPriority (tp)

Access	Read only
Description	This attribute indicates the transfer priority in use for a specific connection. This is the transfer priority that the local Frame Relay network uses for this connection to an ATM network. In the Frame Relay to ATM direction, the *tp* selects the FRF.5 End Point which multiplexes the frames. In the ATM to Frame Relay direction, the *tp* selects the default *FrAtm* emission priority queue to be used by this *Dlci*.
Mib	FrameRelayAtm
Values	Decimal (0..15)
Default	No default

ATTRIBUTE FrAtm Dlci Niwf atmServiceCategory (asc)

Access	Read only
Description	This attribute indicates the ATM service category that was mapped for this connection. A value of ***scNotAvailable*** indicates that *atmServiceCategory* is not yet available for this connection.
Mib	FrameRelayAtm
Values	ubr cbr rtVbr nrtVbr scNotAvailable
Default	No default

ATTRIBUTE FrAtm Dlci Niwf trafficParmConvPolicy (tpcp)

Access	Read only
Description	This attribute indicates the traffic parameter conversion policy that is used for this connection. Policy ***3*** characterizes the traffic in the following way:

- ATM traffic descriptor type 6 is selected.
- PCR(0+1) is based on the ATM link rate.
- SCR(0+1) is based on the CIR and EIR.
- MB(0+1) is based on Bc, Be, CIR, EIR and AR.
- Takes into account that the instantaneous rate of the frame relay stream can be above CIR and up to the AR.

Policy ***4*** characterizes the traffic in the following way:
- ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer.
- PCR(0+1) is based on AR.
- SCR(0) is based on the CIR.
- MBS(0) is based on Bc, CIR, and AR.
- There is no direct characterization of EIR. The allowed EIR can be derived using the difference between the AR and CIR.

Policy ***5*** characterizes the traffic in the following way:
- ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer.
- PCR(0+1) is based on the CIR and EIR.
- SCR(0) is based on the CIR.
- MBS(0) is based on the CIR.
- The maximum PCR is no longer based on the AR but rather on the CIR and EIR.

Policy ***6*** characterizes the traffic in the following way:
- ATM traffic descriptor type 3 is selected.
- PCR(0+1) is based only on the CIR

policyNotAvailable indicates that the *trafficParmConvPolicy* is not yet available for this connection.

Mib	FrameRelayAtm
Values	policyNotAvailable 3 4 5 6
Default	No default

ATTRIBUTE FrAtm Dlci Niwf avgFrameSize (afs)

Access	Read only
Description	This attribute indicates the average frame size that was used for this connection as part of the traffic parameter conversion policy. A value of zero indicates that the *avgFrameSize* is not yet available for this connection.
Mib	FrameRelayAtm
Values	Decimal (0..8187)
Units	bytes
Default	No default

ATTRIBUTE FrAtm Dlci Niwf equivalentBitRate (ebr)

Access	Read only
Description	This attribute indicates the access reserved bandwidth for this FR-ATM connection when CAC is on. If a connection is subcribed to CIR only or CIR plus EIR service, the EBR reserved is CIR. If a connection is subcribed to EIR only service, the EBR reserved is 0.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE FrAtm Dlci Niwf atmDlci

Access	Read only
Description	This attribute displays the DLCI logical channel used inside the ATM VCC. A null value indicates that the *atmDlci* is not yet available for this connection.
Mib	FrameRelayAtm
Values	String (0..40, ASCII)

Default	No default

ATTRIBUTE FrAtm Dlci Niwf assignedBandwidthPool (asgBwPool)

Access	Read only
Description	This attribute specifies the bandwidth pool which is used by this *Dlci*.
Mib	FrameRelayAtm
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Default	No default

COMPONENT FrAtm Dlci Niwf SoftPermanentVirtualCircuit (Spvc)

Groups	"GROUP FrAtm Dlci Niwf Spvc Provisioned (Prov)"
Scope	Application
Description	*FrAtm/n Dlci/n Niwf SoftPermanentVirtualCircuit* The *Spvc* component represents the remote end of a soft PVC.
Mib	FrameRelayAtm
Common Verbs	Help List Display

GROUP FrAtm Dlci Niwf Spvc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the soft PVC component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Niwf Spvc remoteAddress (raddr)

Access	Read and write
Description	This attribute specifies the remote address of the SPVC. It is represented as a prefix NPI string and a sequence of up to 15 digits to specify either a native E.164 or native X.121 address format. For example, native E.164 = “e.upto15digits”.
Mib	FrameRelayAtm
Values	String (3..17, ASCII)
Default	No default

ATTRIBUTE FrAtm Dlci Niwf Spvc remoteDlci

Access	Read and write
Description	This attribute specifies the remote connection identifier. This identifier is the DLCI logical channel number assignment used inside the ATM pipe.
Mib	FrameRelayAtm
Values	Decimal (16..1007; 1022)
Default	1022

ATTRIBUTE FrAtm Dlci Niwf Spvc correlationTag

Access	Read and write
Description	This attribute specifies aunique string, set by the operator, which identifies the call for accounting purposes. Downstream processing uses this attribute to correlate accounting records issued at different nodes in the network. Normally, the attribute is provisioned with the same value at both ends of the connection. If

	the value of accountingEnabled is no, this attribute has no effect. This attribute is also visible in the FrAtm Dlci component when accounting is enabled. When this attribute is an empty string, the operational correlationTag attribute in the FrAtm Dlci component receives the value of a system-generated correlationTag.
Mib	FrameRelayAtm
Values	String (0..32, ASCII)
Default	""

COMPONENT FrAtm Dlci Niwf NetworkingDescriptor (Nd)

Groups	"GROUP FrAtm Dlci Niwf Nd Provisioned (Prov)"
Scope	Application
Description	*FrAtm/n Dlci/n Niwf NetworkingDescriptor* The *Nd* component provides networking descriptor overrides for its parent *Niwf* component.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Niwf Nd Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the parent *Niwf* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Niwf Nd deToClpMapping (detclp)

Access	Read and write
Description	This attribute specifies the type of DE to CLP mapping performs in the Frame Relay to ATM direction.

When ***preserve*** is selected, the DE field in the Q.922 core frame copies to the CLP field of every ATM cell containing the frame.
When ***always0*** is selected, the CLP field of every ATM cell is always set to 0.
When ***always1*** is selected, the CLP field of every ATM cell is always set to 1.

Mib: FrameRelayAtm

Values:
always0
always1
preserve
sameAsInterface

Default: sameAsInterface

ATTRIBUTE FrAtm Dlci Niwf Nd clpToDeMapping (clptde)

Access: Read and write

Description: This attribute specifies the type of CLP to DE mapping performs in the ATM to Frame Relay direction.
When ***preserve*** is selected, the DE field of the Q.922 core frame is set when one or more ATM cells belonging the frame has its CLP field set, or when the DE field of the FR-SSCS PDU is set.
When ***transparent*** is selected, the DE field of the Q.922 core frame copies directly from the DE field of the FR-SSCS PDU.

Mib: FrameRelayAtm

Values:
preserve
transparent
sameAsInterface

Default: sameAsInterface

COMPONENT FrAtm Dlci Niwf QualityOfService (QoS)

Groups: "GROUP FrAtm Dlci Niwf QoS Provisioned (Prov)"

Scope: Application

Description	*FrAtm/n Dlci/n Niwf QualityOfService* The *QoS* component provides quality of service overrides for its parent *Niwf* component.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci Niwf QoS Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable quality of service attributes for the *Qos* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci Niwf QoS emissionPriorityToIf (epToIf)

Access	Read and write
Description	This attribute specifies the emission priority of frames sent to the *FrAtm* interface. Frames in a higher priority queue, depicted by a numerically higher number, are sent before frames in a lower priority queue. The value of this attribute is interpreted according to the value of the provisionable attribute *numberOfEmissionQs* under the parent *FrAtm* component. If the *numberOfEmissionQs* attribute is set to ***2***, *emissionPriorityToIf* value of ***0*** maps to emission priority queue 0 representing a lower priority queue, and *emissionPriorityToIf* values of ***1, 2,*** and ***3*** map to emission priority queue 1 representing the highest priority queue. If the *numberOfEmissionQs* is set to ***4***, the *emissionPriorityToIf* values are directly assigned to the emission priority queues. A value of ***deriveFromTp*** specifies that the emission priority is to be extracted from the *Mod Frs AtmNet Tpm/n* component using the *transferPriority* attribute. A value of ***sameAsInterface*** specifies that the emission priority is

extracts from the *FrAtm Ca* component using the *niwfEmissionPriorityToIf* attribute.

Mib FrameRelayAtm

Values
0
1
2
3
deriveFromTp
sameAsInterface

Default sameAsInterface

ATTRIBUTE FrAtm Dlci Niwf QoS transferPriority (tp)

Access Read and write

Description This attribute specifies the transfer priority of frames sent to the ATM connection.
In the Frame Relay to ATM direction, the *tp* selects the FRF.5 End Point which multiplexes the frames.
In the ATM to Frame Relay direction, the *tp* selects the default *FrAtm* emission priority queue to be used by this DLCI.
A value of ***sameAsInterface*** specifies that the emission priority is to be extracted from the *FrAtm Ca* component using the *niwfTransferPriority* attribute.

Mib FrameRelayAtm

Values
0
1
2
3
4
5
6
7
8
9
10
11
12
13

	14 15 sameAsInterface
Default	sameAsInterface

COMPONENT FrAtm Dlci EgressServiceParameters (EgSp)

Groups	"GROUP FrAtm Dlci EgSp Provisioned (Prov)"
Scope	Application
Description	*FrAtm/n Dlci/n EgressServiceParameters* This component contains the provisionable attributes of the egress direction for the parent *Dlci* component.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Dlci EgSp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the egress direction for the Data Link Connection Identifier. These attributes reflect the service parameters for the egress direction specific to this instance of *Dlci*.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Dlci EgSp committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR) for the egress direction. It is used for bandwidth reservation for the purpose of performing a Call Admission Control (CAC) function towards the egress link.

	This attribute is not used to perform rate enforcement towards the egress link.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bit/s
Default	64000

ATTRIBUTE FrAtm Dlci EgSp committedBurstSize (bc)

Access	Read and write
Description	This attribute specifies the committed burst size (Bc) for the egress direction. It is used for bandwidth reservation for the purpose of performing a Call Admission Control (CAC) function towards the egress link. This attribute is not used to perform rate enforcement towards the egress link.
Mib	FrameRelayAtm
Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE FrAtm Dlci EgSp excessBurstSize (be)

Access	Read and write
Description	This attribute specifies the excess burst size (Be) for the egress direction. It is used for bandwidth reservation for the purpose of performing a Call Admission Control (CAC) function towards the egress link. This attribute is not used to perform rate enforcement towards the egress link.
Mib	FrameRelayAtm

Values	Decimal (0..50000000)
Units	bits
Default	0

ATTRIBUTE FrAtm Dlci EgSp measurementInterval (t)

Access	Read and write
Description	This attribute specifies the time interval for the egress direction. It is used for bandwidth reservation for the purpose of performing a Call Admission Control (CAC) function towards the egress link. This attribute is not used to perform rate enforcement towards the egress link.
Mib	FrameRelayAtm
Values	Decimal (0..25500)
Units	msec
Default	0

COMPONENT FrAtm VirtualFramer (VFramer)

Groups	"GROUP FrAtm VFramer Provisioned (Prov)" "GROUP FrAtm VFramer OsiState (State)" "GROUP FrAtm VFramer Statistics (Stats)"
Scope	Application
Description	*FrUni/n VirtualFramer* *FrDte/n VirtualFramer* The *VirtualFramer* component binds two services together to

	provide data transfer between them. It is mutually exclusive from *Framer* component.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm VFramer Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *VirtualFramer* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm VFramer otherVirtualFramer (ovf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the other *VirtualFramer* to which the service is linked, for example, *FrUni/n VirtualFramer*, *FrDte/n VirtualFramer*.
Mib	FrameRelayAtm
Values	Link (Service, otherVirtualFramer)
Default	No default

ATTRIBUTE FrAtm VFramer logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the logical processor on which the service component will reside.
Mib	FrameRelayAtm

Values	Link (Hardware, linkToApplications)
Default	No default

GROUP FrAtm VFramer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm VFramer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayAtm
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE FrAtm VFramer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayAtm
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrAtm VFramer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayAtm

Values	idle active (activ) busy
Default	idle

GROUP FrAtm VFramer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *VirtualFramer* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm VFramer frmToOtherVFramer

Access	Read only
Description	This attribute counts the frames transmitted to the *otherVirtualFramer.*
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm VFramer frmFromOtherVFramer

Access	Read only
Description	This attribute counts the frames received from the *otherVirtualFramer.*
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm VFramer octetFromOtherVFramer

Access	Read only
Description	This attribute counts the octets received from the *otherVirtualFramer.*

Mib	FrameRelayAtm
Values	Long Integer
Default	No default

ATTRIBUTE FrAtm VFramer discFrmFromOtherVFramer (discFrmFromOvf)

Access	Read only
Description	This attribute counts the discarded frames from the *otherVirtualFramer*. Incrementing of this counter indicates that some incoming traffic cannot be handled by the FP.
Mib	FrameRelayAtm
Values	Long Integer
Default	No default

COMPONENT FrAtm Address (Addr)

Groups	"GROUP FrAtm Addr Provisioned (Prov)" "GROUP FrAtm Addr FrAtmAddrOp (addrOp)"
Scope	Application
Description	*FrAtm/n Address* The *Addr* component contains the address for a *FrAtm* interface that supports native E.164 or X.121.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Addr Provisioned (Prov)

Properties	Provisioned
Description	This group specifies the address of the *FrAtm* Interface.

Mib	FrameRelayAtm

ATTRIBUTE FrAtm Addr address (addr)

Access	Read and write
Criticality	Process
Description	This attribute contains digits which form the unique identifier of the customer. It is the equivalent of the telephone number in the telephone network (either native E.164 or X.121 address formats, or Atm End System Address(AESA) in ISO NSAP format). For example, E.164 prefix “e.613722”, X.121 prefix “x.302”, NSAP “45000441812460730F000000000020480D200100”.
Mib	FrameRelayAtm
Values	String (1..44, ASCII)
Default	No default

GROUP FrAtm Addr FrAtmAddrOp (addrOp)

Properties	Operational
Description	This group display the address of the *FrAtm* Interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Addr myAddress (myAddr)

Access	Read only
Description	This attribute displays the parent FRATM component’s address in the ISO NSAP format.
Mib	FrameRelayAtm
Values	String (40, ASCII)
Default	No default

COMPONENT FrAtm ConnectionAdministrator (Ca)

Groups	"GROUP FrAtm Ca Provisioned (Prov)" "GROUP FrAtm Ca ServiceDescriptor (Sd)" "GROUP FrAtm Ca NetworkingDescriptor (Nd)" "GROUP FrAtm Ca InterfaceQualityOfService (IfQoS)" "GROUP FrAtm Ca Operational (Op)" "GROUP FrAtm Ca AccountingOptions"
Scope	Application
Description	*FrAtm/n ConnectionAdministrator* The *Ca* component allows common subscription options applicable to interworking with ATM networking to be specified by the network operator on a *FrAtm* interface. The values defined under the *Ca* component interface defaults are used for the majority of the connections. For exception cases, the interface defaults specified in the *Ca* component can be overridden on a per connection basis by provisioning *FrAtm Dlci Siwf Qos* or *FrAtm Dlci Niwf Qos* components.
Mib	FrameRelayAtm
Opt. Subcomp.	"COMPONENT FrAtm Ca TransferPriorityMapping (Tpm)"
Common Verbs	Help List Display

GROUP FrAtm Ca Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the common provisionable attributes of the *Ca* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Ca callAdmissionControl (cac)

Access	Read and write
Criticality	Process

Description	This attribute specifies the control to turn on Call Admission Control (CAC). The default value for CAC is off.
Mib	FrameRelayAtm
Values	off on
Default	off

ATTRIBUTE FrAtm Ca overrideLinkRate (ovLinkRate)

Access	Read and write
Criticality	Process
Description	This attribute allows the link rate to be overridden for this interface. This allows the user to specify a value other than the actual physical link rate computed when a *Framer* component is provisioned. In the absence of a *Framer* component, or when a *VirtualFramer* component is provisioned, this value needs to be explictly set to provide an equivalent link rate. This attribute provides control on the amount of bandwidth available for performing CAC. This attribute also provides the requested amount of bandwidth that is negotiated across an ATM network for traffic conversion polices 3 and 4, since these policies are a function of the access rate.
Mib	FrameRelayAtm
Values	Decimal (0..520000000)
Units	bit/s
Default	0

ATTRIBUTE FrAtm Ca bandwidthPool (bwPool)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15). This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from

	0% to 1000%. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentage assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentage for the 16 pools exceeds 100%. The sum of the percentage assigned to the 16 pools cannot exceed 1000%. The default is full sharing of port capacity without pre-set partitions between transfer priorities.
Mib	FrameRelayAtm
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(100, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

GROUP FrAtm Ca ServiceDescriptor (Sd)

Properties	Provisioned
Description	This group contains provisionable service interworking attributes for the *FrAtm* component. The attributes defined in this group provide the defaults for all the connections on the *FrAtm* interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Ca sdMode

Access	Read and write
Criticality	Process
Description	This attribute specifies the mode of interoperability between the Frame Relay and ATM connections regarding upper layer protocol encapsulations. This is used as the default for all the connections on the interface. When ***translationMode*** is selected, the interworking function performs translations between RFC1490 and RFC1483 encapsulated headers. This includes routed protocol translation,

bridged protocol translation, and connection oriented protocol translation (except for RFC 1490 connection oriented protocol without RFC 1490 header, which is done in *speTranslationMode*).

A value of ***transparentMode*** indicates that the interworking function is forwarding data without altering the upper layer user protocol encapsulation. Use transparent mode when the upper layer user protocol encapsulation methods are compatible between terminal equipments.

A value of ***speTranslationMode*** indicates that the interworking function performs single protocol translation between RFC1490 with no header and RFC1483 encapsulated packets.

Mib	FrameRelayAtm
Values	translationMode transparentMode speTranslationMode
Default	translationMode

ATTRIBUTE FrAtm Ca sdDeToClpMapping (sdetclp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the DE to CLP mapping that is performed in the Frame Relay to ATM direction. This is used as the default for all the connections on the interface. When ***preserve*** is selected, the DE field in a Q.922 core frame copies to the ATM CLP field of every cell containing the information of that frame. When ***always0*** is selected, the CLP field of every generated ATM cell is always 0. When ***always1*** is selected, the CLP field of every generated ATM cell is always 1.

Mib	FrameRelayAtm
Values	always0 always1 preserve
Default	preserve

ATTRIBUTE FrAtm Ca sdClpToDeMapping (sclpToDe)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of CLP to DE mapping that is performed in the ATM to Frame Relay direction. When ***preserve*** is selected, the DE field of the Q.922 core frame is set when one or more ATM cells belonging to an AAL5 frame has its CLP field set. When ***always0*** is selected, the DE field of the Q.922 core frame is always set to 0. When ***always1*** is selected, the DE field of the Q.922 core frame is always set to 1.
Mib	FrameRelayAtm
Values	always0 always1 preserve
Default	preserve

ATTRIBUTE FrAtm Ca sdFecnToEfciMapping (sfecntefci)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of FECN to EFCI mapping that is performed in the Frame Relay to ATM direction. When ***preserve*** is selected, the FECN field in the Q.922 Core

frame maps directly to the ATM EFCI field of every cell generated by the AAL5 segmentation process.

When ***always0*** is selected, the EFCI field in every ATM cell generated is set to 0.

Mib: FrameRelayAtm

Values: always0
preserve

Default: preserve

ATTRIBUTE FrAtm Ca sdCrToUuMapping (scrtuu)

Access: Read and write

Criticality: Process

Description: This attribute indicates the type of CR to UU mapping that is performed in the Frame Relay to ATM direction.

A value of ***preserve*** indicates that the proprietary and CR bits are mapped to the CPCS-UU field of the last cell generated by the AAL5 segmentation process. The proprietary bits are used for rate enforcement and rate adaption but are unused according to the FRF8 standard.

A value of ***standardFRF8*** indicates that only the CR bit is mapped to the CPCS-UU field of the last cell generated by the AAL5 segmentation process. This is in accordance with the FRF8 standard. This option is provided to avoid equipment inter-working issues with the proprietary use of the unused bits of the CPCS-UU field for rate enforcement and rate adaption.

Mib: FrameRelayAtm

Values: standardFRF8
preserve

Default: preserve

GROUP FrAtm Ca NetworkingDescriptor (Nd)

Properties: Provisioned

Description	This group contains the default provisionable networking attributes for the *FrAtm* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Ca ndDeToClpMapping (ndetclp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of DE to CLP mapping to be performed in the Frame Relay to ATM direction. When ***preserve*** is selected, the DE field in the Q.922 core frame copies to the CLP field of every ATM cell containing the frame. When ***always0*** is selected, the CLP field of every ATM cell is always set to 0. When ***always1*** is selected, the CLP field of every ATM cell is always set to 1.
Mib	FrameRelayAtm
Values	always0 always1 preserve
Default	preserve

ATTRIBUTE FrAtm Ca ndClpToDeMapping (nclptde)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of CLP to DE mapping to be performed in the ATM to Frame Relay direction. When ***preserve*** is selected, the DE field of the Q.922 core frame is set when one or more ATM cells belonging to the frame has its CLP field set, or when the DE field of the FR-SSCS PDU is set. When ***transparent*** is selected, the DE field of the Q.922 core frame copies directly from the DE field of the FR-SSCS PDU.
Mib	FrameRelayAtm

Values	preserve transparent
Default	preserve

GROUP FrAtm Ca InterfaceQualityOfService (IfQoS)

Properties	Provisioned
Description	This attribute group contains the provisionable quality of service attributes for the parent *FrAtm* interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Ca siwfEmissionPriorityToIf (sEpToIf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the emission priority of frames sent to this *FrAtm* interface from its service interworking functions. Frames in a higher priority queue, designated by a numerically higher number, are sent before frames in a lower priority queue. The value of this attribute is interpreted according to the value of the provisionable attribute *numberOfEmissionQs* under the parent *FrAtm* component. If the *numberOfEmissionQs* attribute is set to ***2***, *siwfEmissionPriorityToIf* value of ***0*** maps to emission priority queue 0 representing a lower priority queue, and *siwfEmissionPriorityToIf* values of ***1***, ***2*** or ***3*** map to emission priority queue 1 representing the highest priority queue. If the *numberOfEmissionQs* is set to ***4***, the *siwfEmissionPriorityToIf* values directly map to the emission priority queues. A value of ***deriveFromTp*** specifies that the emission priority is extracted from the *Mod Frs AtmNet Tpm/n* component using the *siwfTransferPriority* attribute. The *siwfEmissionPriorityToIf* can also be overridden on a per connection basis by setting the *emissionPriorityToIf* attribute in the *FrAtm Dlci Siwf Qos* component.
Mib	FrameRelayAtm
Values	0 1

	2 3 deriveFromTp
Default	0

ATTRIBUTE FrAtm Ca siwfTransferPriority (stp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the transfer priority of frames sent to and received from the ATM connection, through the service interworking functions of this interface. In the Frame Relay to ATM direction, the *stp* selects the ATM service category of the connection. In the ATM to Frame Relay direction, the s*tp* selects the *FrAtm* emission priority queue. The *siwfTransferPriority* can also be overridden on a per connection basis by setting the *transferPriority* atribute in the *FrAtm Dlci Siwf Qos* component.
Mib	FrameRelayAtm
Values	Decimal (0..15)
Default	0

ATTRIBUTE FrAtm Ca niwfEmissionPriorityToIf (nEpToIf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the emission priority of frames sent to this *FrAtm* interface from its network interworking functions. Frames in a higher priority queue are sent before frames in a lower priority queue. The value of this attribute is interpreted according to the value of the provisionable attribute *numberOfEmissionQs* under the parent *FrAtm* component. If the *numberOfEmissionQs* attribute is set to ***2***, *niwfEmissionPriorityToIf* value of ***0*** maps to emission priority queue 0 representing a lower priority queue, and *niwfEmissionPriorityToIf* values of ***1, 2*** or ***3*** map to emission

priority queue 1 representing the highest priority queue. If the *numberOfEmissionQs* is set to ***4***, the *emissionPrioToIf* values directly assign to the emission priority queues.
A value of ***deriveFromTp*** specifies that the emission priority is extracted from the *Mod Frs AtmNet Tpm/n* component using the *niwfTransferPriority* attribute.
The *niwfEmissionPriorityToIf* can also be overridden on a per connection basis by setting the *emissionPriorityToIf* atribute in the *FrAtm Dlci Niwf Qos* component.

Mib	FrameRelayAtm
Values	0 1 2 3 deriveFromTp
Default	deriveFromTp

ATTRIBUTE FrAtm Ca niwfTransferPriority (ntp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the transfer priority of frames sent to and received from the ATM connection, through the network interworking functions of this interface. In the Frame Relay to ATM direction, the *ntp* selects the *Frf5EndPoint* which multiplexes the frames. In the ATM to Frame Relay direction, the *ntp* selects the default *FrAtm* emission priority queue. The *niwfTransferPriority* can also be overridden on a per connection basis by setting the *transferPriority* atribute in the *FrAtm Dlci Niwf Qos* component.
Mib	FrameRelayAtm
Values	Decimal (0..15)
Default	0

GROUP FrAtm Ca Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the *Ca* component.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Ca linkRate (linkRate)

Access	Read only
Description	This attribute indicates the link rate. If the provisionable attribute, *overrideLinkRate*, under the *Ca* component is 0, then the link rate reported is the actual link rate of the port or channel. Otherwise, the link rate reported is the *overrideLinkRate* provisioned under the *Ca* component.
Mib	FrameRelayAtm
Values	Decimal (0..520000000)
Units	bit/s
Default	No default

ATTRIBUTE FrAtm Ca nailedUpPvcs (nPvcs)

Access	Read only
Description	This attribute indicates the number of nailed-Up PVCs currently provisioned on this interface.
Mib	FrameRelayAtm
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrAtm Ca troubledDlcis (trbDlcis)

Access	Read only
Description	This attribute indicates the total number of DLCIs that are disabled and are experiencing problems. This counter

	increments as a result of the following problem scenarios: Abit down, PVC down, local CAC failure, or call setup failure due to network problem.
Mib	FrameRelayAtm
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrAtm Ca softPvcs (sPvcs)

Access	Read only
Description	This attribute indicates the number of soft PVCs currently provisioned on this interface.
Mib	FrameRelayAtm
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrAtm Ca poolProvisionedBandwidth (poolProvBw)

Access	Read only
Description	This attribute represents the total bandwidth that is allowed for each pool. Total bandwidth for a given pool can be oversubscribed or undersubscribed. The value of this attribute for a given pool is a percentage of the value of the *linkRate* attribute. This percentage is provisioned by setting the *FrAtm Ca bandwidthPool* attribute.
Mib	FrameRelayAtm
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrAtm Ca poolAvailableBandwidth (poolAvailBw)

Access	Read only

Description	This attribute indicates the total available bandwidth from the bandwidth pool.
Mib	FrameRelayAtm
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrAtm Ca poolAdmittedBandwidth (poolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted bandwidth from each bandwidth pool. Each value is the sum of the equivalent bit rates of the admitted connections.
Mib	FrameRelayAtm
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

GROUP FrAtm Ca AccountingOptions

Properties	Provisioned
Description	This group contains the common provisioned attributes for accounting on a *FrAtm*.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Ca accountClass (acl)

Access	Read and write
Description	This attribute specifies the accounting class, which is reserved for network operations usage. Its value is an arbitrary number. The accounting records the value of this attribute.

Mib	FrameRelayAtm
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrAtm Ca accountCollection (aco)

Access	Read and write
Description	This attribute controls accounting data collection at the interface level. It contains the following values: ***bill, test, study, audit, force*** which are used to specify the reason(s) for which accounting records are collected. If the ***bill, test, study and audit*** options are selected in the accountCollection field, accounting records are collected for bill, test, study, or audit purposes. If the ***force*** option is selected in the accountCollection field, accounting records are collected regardless of whether other reasons are provisioned. If no reason is provisioned for this attribute, then accounting data collection does not occur.
Mib	FrameRelayAtm
Set of	bill test study audit force
Default	(bill)

ATTRIBUTE FrAtm Ca serviceExchange (sre)

Access	Read and write
Description	This attribute is an arbitrary number, which is reserved for network operations usage. It is recorded in the accounting record.
Mib	FrameRelayAtm
Values	Decimal (0..255)
Default	0

COMPONENT FrAtm Ca TransferPriorityMapping (Tpm)

Instance	Decimal (0..15)
Groups	"GROUP FrAtm Ca Tpm Provisioned (Prov)"
Scope	Application
Description	*FrAtm/n Ca TransferPriorityMapping/n* The *Tpm* component defines the corresponding traffic management subscription options on a *FrAtm* interface corresponding to a particular transfer priority. This component is needed only if there is a requirement to override the *Mod Frs AtmNet Tpm* component defaults.
Mib	FrameRelayAtm
Common Verbs	Help List Display Add DELete

GROUP FrAtm Ca Tpm Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *Tpm* component at this interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Ca Tpm assignedBandwidthPool (asgBwPool)

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth pool that supports this transfer priority at this interface.
Mib	FrameRelayAtm
Values	0 1

2
3
4
5
6
7
8
9
10
11
12
13
14
15
samePoolAsModule

Default samePoolAsModule

ATTRIBUTE FrAtm Ca Tpm trafficParmConvPolicy (tpcp)

Access Read and write

Criticality Process

Description This attribute specifies the traffic parameter conversion policy to use for a specific transfer priority for specifying equivalent bandwidth rate at the *FrAtm* interface.

Policy 3 characterizes the traffic in the following way:
- ATM traffic descriptor type 6 is selected
- ATM service category rtVbr and nrtVbr supported only
- PCR0+1 is based on AR
- SCR0+1 is based on CIR and EIR
- MBS0+1 is based on Bc, Be, CIR, EIR and AR
- Takes into account that the instantaneous rate of the Frame Relay stream can be above CIR and up to the AR.

Policy 4 characterizes the traffic in the following way:
- ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by the UPC traffic policer.
- PCR0+1 is based on AR

- ATM service category rtVbr and nrtVbr supported only
- SCR0 is based on CIR
- MBS0 is based on Bc, CIR, and AR
- There is no direct characterization of EIR. The allowed EIR can be derived using the difference between the AR and CIR.

Policy 5 characterizes the traffic in the following way:
- ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by the UPC traffic policer.
- ATM service category rtVbr and nrtVbr supported only
- PCR0+1 is based on CIR for descriptor type 7
- PCR0+1 is based on CIR and EIR for descriptor type 8
- SCR0 is based on CIR
- MBS0 is based on Bc, CIR, and AR
- The maximum PCR is no longer based on the AR but rather on the CIR and EIR or CIR

Policy 6 characterizes the traffic in the following way:
- ATM traffic descriptor type 3 is selected
- ATM service category ubr, cbr, rtVbr and nrtVbr supported only
- PCR0+1 is based only on CIR.

The default value ***sameAsModule*** implies the *trafficParmConversionPolicy* of *Mod Frs AtmNet Tpm/n* is as defined as *Mod Frs AtmNet Tpm/n*.

Mib	FrameRelayAtm
Values	sameAsModule policy3 policy4 policy5 policy6
Default	sameAsModule

ATTRIBUTE FrAtm Ca Tpm averageFrameSize (aFs)

Access	Read and write
Criticality	Process

Description	This attribute specifies the average frame size at the FrAtm interface for connections using this transfer priority. If a value of ***0*** is specified, the average frame size defined in *Mod Frs AtmNet Tpm/n avgFrameSize* attribute is used.
Mib	FrameRelayAtm
Values	Decimal (0..8187)
Units	bytes
Default	0

COMPONENT FrAtm Reroute

Groups	"GROUP FrAtm Reroute LocalOperational (LOper)" "GROUP FrAtm Reroute GlobalOperational (GOper)" "GROUP FrAtm Reroute Statistics (Stats)"
Scope	Device
Description	*FrAtm/n Reroute* This component represents the rerouting capabilities of the FrAtm interface. If this component is provisioned, the *Artg Pnni* component must already exist. The addition or deletion of this component, or changes to its provisionable attributes, does not affect existing connections.
Mib	FrameRelayAtm
Subcomponents	"COMPONENT FrAtm Reroute Ov"
Common Verbs	Help List Display Add DELete

VERB OPTIMIZE FrAtm Reroute

Impact	Service
Description	*Optimize [-all]FrAtm/n Reroute* This command triggers path optimization for the connection segments managed by the *Reroute* component. By default, only connection segsforation. The best known optimization metric value for the connection segment is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection. The *-all* option causes all connection segments subscribed to path optimization to be considered. Using the *Optimize* command results in service disruptions when connection segments are moved to a better path. Care should be exercised when using this command. It is recommended that the command be used during maintenance windows.

GROUP FrAtm Reroute LocalOperational (LOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the local rerouting activities at the interface level.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Reroute localSubscribedConnections (lsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more local rerouting capabilities. Note that a given connection segment is subscribed to either local rerouting capabilities, not both.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute localEligibleRecoveredCon (lerc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered using local rerouting and are eligible for local path optimization. The value decreases as counted connections are released.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute localIneligibleRecoveredCon (lirc)

Access	Read only
Description	This attribute counts the connection segments that have been recovered by local rerouting but are not eligible for local path optimization. The value decreases as counted connections are released.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute localLastRrCauseCode (lrrcc)

Access	Read only
Description	This attribute indicates the value of the last local rerouting cause code received at this interface.
Mib	FrameRelayAtm
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrAtm Reroute localPathsOptimized (lPathsOpt)

Access	Read only

Description	This attribute counts the paths that were successfully optimized by local rerouting or EBR during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

GROUP FrAtm Reroute GlobalOperational (GOper)

Properties	Operational
Description	This group contains the operational attributes that indicate the global and EBR rerouting activities at the interface level.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Reroute globalSubscribedConnections (gsub)

Access	Read only
Description	This attribute counts the connection segments that are subscribed to one or more global and EBR rerouting capabilities.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute globalEligibleRecoveredCon (gerc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting and are eligible for global or EBR path optimization.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute globalIneligibleRecoveredCon (girc)

Access	Read only
Description	This attribute counts the connections that have been recovered by global and EBR rerouting but are not eligible for global or EBR path optimization. The value decreases as counted connections are released.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute globalLastRrCauseCode (grrcc)

Access	Read only
Description	This attribute indicates the value of the last global or EBR rerouting cause code received at this interface.
Mib	FrameRelayAtm
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrAtm Reroute globalPathsOptimized (gPathsOpt)

Access	Read only
Description	This attribute counts the paths that were successfully optimized by global and EBR rerouting during the last optimization pass at this interface. Successfully optimized paths are paths that switched to a better route. The value is reset to zero at the beginning of each optimization pass.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

GROUP FrAtm Reroute Statistics (Stats)

Properties	Operational

Description	This group contains the rerouting statistics for the interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Reroute totalLocalConnectionRecoveries (tLConRec)

Access	Read only
Description	This attribute counts successful local connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute totalLocalFailedRecoveries (lFailedRec)

Access	Read only
Description	This attribute counts failed local connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment can not be established. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute totalLocalPathOptimizations (tLPathOpt)

Access	Read only
Description	This attribute counts successful local path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute totalGlobalConnectionRecoveries (tGConRec)

Access	Read only
Description	This attribute counts successful global and EBR connection recovery attempts. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute totalGlobalFailedRecoveries (gFailedRec)

Access	Read only
Description	This attribute counts failed global and EBR connection recovery attempts. A connection recovery attempt fails if a rerouting connection segment cannot be established. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute totalGlobalPathOptimizations (tGPathOpt)

Access	Read only
Description	This attribute counts successful global and EBR path optimization attempts. A successful path optimization attempt results in a switch to a better route. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrAtm Reroute totalOptimizationPasses (optPass)

Access	Read only

Description	This attribute counts optimization passes at the interface. Both module and interface optimization passes are counted. The counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayAtm
Values	Decimal (0..4294967295)
Default	No default

COMPONENT FrAtm Reroute Ov

Groups	"GROUP FrAtm Reroute Ov Provisioned (Prov)" "GROUP FrAtm Reroute Ov LocalProvisioned (LProv)" "GROUP FrAtm Reroute Ov GlobalProvisioned (GProv)"
Scope	Device
Description	*FrAtm/n Reroute Ov* This component represents the provisioning capabilities of the rerouting functionality for the FrAtm interface.
Mib	FrameRelayAtm
Common Verbs	Help List Display

GROUP FrAtm Reroute Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the common provisionable attributes for rerouting capabilities at the ATM signaling interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Reroute Ov protocol

Access	Read and write
Description	This attribute specifies the rerouting protocols that are requested by connection segments on the interface, for which this node is the first rerouting node. This attribute has no effect on connection

segments for which this node is not the first rerouting node. A subset of the requested protocols is granted by the last rendezvous node, according to its software level and provisioning.

One of the following values can be specified:
sameAsARtgPnniReroute: The requested rerouting protocols are specified by the *Artg Pnni Reroute protocol* attribute.
localGlobal: Local and global rerouting protocols are requested. Local and global rerouting are granted if the DTL terminator is provisioned with the Rerouting feature.
localOnly: Local rerouting is requested. This value guarantees interoperability with other vendors' equipment running the ATM Forum "Domain Based Rerouting" protocol. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
globalOnly: Global rerouting is requested. Global rerouting is granted if the DTL terminator is provisioned with the Rerouting feature.
***localEbr*:** Local and EBR rerouting protocols are requested. Local rerouting is granted if the DTL terminator is provisioned with the Rerouting feature. Alternatively, EBR is granted if the DTL terminator is provisioned with the EBR feature.
ebrOnly: EBR is requested. EBR is granted if the DTL terminator is provisioned with the EBR feature.

Mib	FrameRelayAtm
Values	localGlobal localOnly globalOnly localEbr ebrOnly sameAsARtgPnniReroute (sameAs)
Default	sameAsARtgPnniReroute

ATTRIBUTE FrAtm Reroute Ov numOptAttempts

Access	Read and write
Description	This attribute specifies the number of path optimizations attempted before declaring a recovered connection segment to be

optimally routed. Following a connection recovery, each manual and automatic path optimization will attempt to optimize the connection segment. When a path is found with a better optimization metric than the best known value, or the number of optimization attempts is exhausted, the current optimization metric is declared to be the new optimal metric for the connection segment. Subsequent path optimizations will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***0***, the optimization metric of a connection segment following connection recovery is declared to be the new optimal metric, and no connection recovery alarm is issued. A subsequent path optimization will not attempt to optimize the connection segment unless all subscribed connection segments are eligible for path optimization.

If the value is set to ***sameAsARtgPnniReroute***, the value of the *ARtg Pnni Reroute numOptAttempts* attribute is used.

Mib	FrameRelayAtm
Values	Decimal (0..15) sameAsARtgPnniReroute (sameAs)
Default	sameAs

ATTRIBUTE FrAtm Reroute Ov moduleOptimizationConnections

Access	Read and write
Description	This attribute specifies which connection segments on the interface will be considered by a module optimization pass as controlled by the *ARtg Pnni Reroute* component. One of the following values can be specified: ***sameAsARtgPnniReroute***: The connection segments to be considered by a module optimization pass are specified by the *Artg Pnni Reroute moduleOptimization* attribute. ***none***: No connection segments are considered for path optimization. ***recoveredOnly***: Only connection segments that are foration. The best known optimization metric value for the connection segment

is indicated by the *localOptimalMetricValue* attribute under the *RerouteInfo* component for the connection
allSubscribed: All connection segments subscribed to path optimization are considered.

Mib: FrameRelayAtm

Values:
none
recoveredOnly
allSubscribed
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

ATTRIBUTE FrAtm Reroute Ov switchoverMechanism

Access: Read and write

Description: This attribute specifies the mechanism used for switchover of a rerouted connection segment.

One of the following values can be specified:
sameAsARtgPnniReroute: The switchover mechanism is specified by the *ARtg Pnni Reroute switchoverMechanism* attribute.
standard: The mechanism described in the ATM Forum “Domain based Rerouting” specification is used for switchover. This value ensures interoperability with other vendors’ equipment running ATM Forum “Domain based Rerouting”.
rcl: The Reduced Cell Loss mechanism is used for switchover. RCL is a value-added Nortel Networks extension to the standard mechanism, allowing for faster switchover time.

Mib: FrameRelayAtm

Values:
standard
rcl
sameAsARtgPnniReroute (sameAs)

Default: sameAsARtgPnniReroute

GROUP FrAtm Reroute Ov LocalProvisioned (LProv)

Properties: Provisioned

Description	This group contains the provisionable attributes for EBR and local rerouting protocols for the *FrAtm* interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Reroute Ov localConnectionRecoverySubscr (lConRec)

Access	Read and write
Description	This attribute specifies whether the connection segments on this interface request subscription to local connection recovery. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either a local domain rerouting node or a DTL originator. If a connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local connection recovery subscription. If a connection segment requests ***localEbr***, this attribute controls the local connection recovery subscription. Only one will be granted. One of the following values can be specified: ***sameAsARtgPnniReroute***: The subscription rule is determined by the *Artg Pnni Reroute localConnectionRecoverySubscr* attribute. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segments request subscription to local connection recovery, otherwise, the connection segments do not request subscription. ***yes:*** The connection segments request subscription to local connection recovery. ***no***: The connection segments do not request subscription to local connection recovery.
Mib	FrameRelayAtm
Values	no yes sameAsARtgPnniReroute (follow)
Default	sameAsARtgPnniReroute

ATTRIBUTE FrAtm Reroute Ov localPathOptimizationSubscr (lPathOpt)

Access	Read and write
Description	This attribute specifies whether the connection segments on this interface request subscription to local path optimization. This attribute only affects connection segments that request the local rerouting protocols. This attribute affects connection segments for a node that is either a local domain rerouting node or a DTL originator. If a connection segment requests ***localGlobal*** or ***localOnly*** protocols, this attribute controls local path optimization subscription. If a connection segment requests ***localEbr***, this attribute controls the local path optimization subscription. Only one will be granted. One of the following values can be specified: ***sameAsARtgPnniReroute***: The subscription rule is determined by the *Artg Pnni Reroute localPathOptimizationSubscr* attribute. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segments request subscription to local path optimization, otherwise, the connection segments do not request subscription. ***yes:*** The connection segments request subscription to local path optimization. ***no***: The connection segments do not request subscription to local path optimization.
Mib	FrameRelayAtm
Values	no yes sameAsARtgPnniReroute (follow)
Default	sameAsARtgPnniReroute

GROUP FrAtm Reroute Ov GlobalProvisioned (GProv)

Properties	Provisioned

Description	This group contains the provisionable attributes for the global rerouting protocol for the *FrAtm* interface.
Mib	FrameRelayAtm

ATTRIBUTE FrAtm Reroute Ov globalConnectionRecoverySubscr (gConRec)

Access	Read and write
Description	This attribute specifies whether the connection segments on this interface request subscription to global or EBR connection recovery. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute only affects connection segments for a node that is a DTL originator. If a connection segment requests ***ebrOnly***, this attribute controls EBR connection recovery subscription. If a connection segment requests ***localEbr***, this attribute controls the EBR connection recovery subscription. Only one will be granted. One of the following values can be specified: ***sameAsARtgPnniReroute***: The subscription rule is determined by the *Artg Pnni Reroute globalConnectionRecoverySubscr* attribute. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segments request subscription to global or EBR connection recovery, otherwise, the connection segments do not request subscription. ***yes:*** The connection segments request subscription to global or EBR connection recovery. ***no***: The connection segments do not request subscription to global or EBR connection recovery.
Mib	FrameRelayAtm
Values	no yes sameAsARtgPnniReroute (follow)
Default	sameAsARtgPnniReroute

ATTRIBUTE FrAtm Reroute Ov globalPathOptimizationSubscr (gPathOpt)

Access	Read and write
Description	This attribute specifies whether the connection segments on this interface request subscription to global or EBR path optimization. This attribute only affects connection segments that request the global or EBR rerouting protocols. This attribute only affects connection segments for a node that is a DTL originator. If a connection segment requests ***ebrOnly***, this attribute controls EBR path optimization subscription. If a connection segment requests ***localEbr***, this attribute controls the EBR path optimization subscription. Only one will be granted. One of the following values can be specified: ***sameAsARtgPnniReroute***: The subscription rule is determined by the *Artg Pnni Reroute globalPathOptimizationSubscr* attribute. If the attribute specifies the ***sourceSpvcSpvp*** value, the connection segments request subscription to global or EBR path optimization, otherwise, the connection segments do not request subscription. ***yes:*** The connection segments request subscription to global or EBR path optimization. ***no***: The connection segments do not request subscription to global or EBR path optimization.
Mib	FrameRelayAtm
Values	no yes sameAsARtgPnniReroute (follow)
Default	sameAsARtgPnniReroute

Nortel Networks Multiservice Switch 7400/15000/20000

Component FrAtm

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component FrDte

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component FrDte

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COMPONENT FrameRelayDte (FrDte)

Instance	Decimal (1..4294967295)
Groups	"GROUP FrDte CustomerIdentifierData (CidData)" "GROUP FrDte IfEntryProv (IfEntry)" "GROUP FrDte Provisioned (Prov)" "GROUP FrDte OsiState (State)" "GROUP FrDte OperationalStatus (OperStatus)" "GROUP FrDte Operational (Oper)" "GROUP FrDte FrErrEntry (Err)" "GROUP FrDte ErrorStatistics (ErrStats)"
Scope	Application

Description	*FrameRelayDte/n* The *FrameRelayDte* component defines the general parameters for implementing the Frame Relay DTE interface.
Mib	FrameRelayDte
Subcomponents	"COMPONENT FrDte LinkManagementInterface (Lmi)" "COMPONENT FrDte RemoteGroup (Rg)" "COMPONENT FrDte DynamicDlciDefaults (DynDlciDefs)"
Opt. Subcomp.	"COMPONENT FrDte Framer" "COMPONENT FrDte StaticDlci (StDlci)" "COMPONENT FrDte LinkEmissionQueue (Leq)" "COMPONENT FrDte VirtualFramer (VFramer)" "COMPONENT FrDte DirectConnection (Dconn)"
Dyn. Subcomp.	"COMPONENT FrDte DataLinkConnectionIdentifier (Dlci)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP FrDte CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	FrameRelayDte

ATTRIBUTE FrDte customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute;

	otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	FrameRelayDte
Values	Decimal (0; 1..8191)
Default	0

GROUP FrDte IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	FrameRelayDte

ATTRIBUTE FrDte ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayDte
Values	up down testing
Default	up

ATTRIBUTE FrDte ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayDte
Values	Decimal (1..65535)
Default	No default

GROUP FrDte Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *FrDte* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte acceptUndefinedDlci (aud)

Access	Read and write
Description	This parameter allows previously undefined Data Link Connection Identifiers (DLCIs) to be dynamically accepted in the default remote group. If set to ***enabled***, undefined DLCIs will be accepted, if ***disabled***, they will not.
Mib	FrameRelayDte
Values	enabled disabled
Default	enabled

GROUP FrDte OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies

about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib FrameRelayDte

ATTRIBUTE FrDte adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib FrameRelayDte

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE FrDte operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for

operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	FrameRelayDte
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrDte usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayDte
Values	idle active (activ) busy
Default	idle

GROUP FrDte OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib	FrameRelayDte

ATTRIBUTE FrDte snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayDte
Values	up down testing
Default	up

GROUP FrDte Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *FrDte* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte linkOperState (lstate)

Access	Read only
Description	This attribute describes the operational state of the Link Control protocol. If the interface to the physical link hardware is inactive, the *linkOperState* is in the ***down*** state. The ***polling*** state only occurs when the Local Management Interface (LMI) is enabled and the physical link is active. The ***polling*** state indicates LMI is polling for its peer. Once communication is established the *linkOperState* will transition to the ***active*** state. If the *procedure* attribute of the *Lmi* component is set to ***none***,

	linkOperState will transition to the ***active*** state once the physical link becomes active.
Mib	FrameRelayDte
Values	active down polling
Default	down

GROUP FrDte FrErrEntry (Err)

Properties	Operational
Description	This group contains the SNMP frErrEntry attributes for the *FrDte* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte errType (etype)

Access	Read only
Description	The type of error that was last seen on this interface. The error types are as follows: ***receiveShort***: This error indicates a received frame was discarded because it was less than four octets long or it was missing the Organizationally Unique Identifier (OUI) for a SNAP header. ***receiveLong***: This error indicates a received frame was discarded because it was longer than expected. This error is currently not used on this interface. ***illegalDlci***: This error indicates that a received frame was discarded because it's Q.922 address was not two octets in length. This error could also indicate that a frame was discarded because it was received on a DLCI reserved for LMI which had not been provisioned active. ***dlcmiProtoErr***: This error indicates an LMI frame was received with contents formatted incorrectly.

dlcmiUnknownIe: This error indicates that an LMI frame was received which contained an unsupported Information Element (IE) type

dlcmiSequenceErr: This error indicates that an LMI frame was received whose Keep Alive Sequence was incorrect.

dlcmiUnknownRpt: This error indicates that an LMI frame was received which contained a Report-type Information Element with an invalid type of report.

noErrorSinceReset: This error type indicates that there has not been an error since the interface has been reset.

unknownError: This error type contains the cumulation of receive frame errors that did not fit one of the MIB error descriptions above. These errors include those counted by the following attributes:

ulpUnknownProtocol - A received frame was discarded because the Upper Level Protocol (ULP) encapsulation used was unsupported.

badFc - A received frame was discarded because the frame control character was incorrect.

defragSequenceErrors - A fragment was received that was discarded due to an out of sequence error detection.

Mib	FrameRelayDte
Values	unknownError receiveShort receiveLong illegalDlci dlcmiProtoErr dlcmiUnknownIe dlcmiSequenceErr dlcmiUnknownRpt noErrorSinceReset
Default	noErrorSinceReset

ATTRIBUTE FrDte errData (edata)

Access	Read only
Description	An octet string containing the first part of the frame in which an error was last detected.
Mib	FrameRelayDte
Values	String (64, Hex)
Default	No default

ATTRIBUTE FrDte errTime (etime)

Access	Read only
Description	The time at which the last error was detected and recorded in *errType*.
Mib	FrameRelayDte
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrDte errDiscards (ed)

Access	Read only
Description	Number of inbound frames dropped because of format errors or because the virtual circuit was not known. Format errors, in this case, are any errors which would prevent the system from recognizing the DLCI and placing the error in the discard category. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte errFaults (ef)

Access	Read only
Description	This attribute counts the number of times LMI has taken down the interface. When the *procedure* attribute of the *Lmi* component is set to ***none***, this counter will not be incremented. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte errFaultTime (eftime)

Access	Read only
Description	The last time the *errFaults* counter was incremented.
Mib	FrameRelayDte
Values	Time (DHMS)
Default	No default

GROUP FrDte ErrorStatistics (ErrStats)

Properties	Operational
Description	This group contains error counters for the *FrDte*.
Mib	FrameRelayDte

ATTRIBUTE FrDte xmitDiscardPvcDown

Access	Read only
Description	This attribute counts the transmitted frames discarded because the DLCI of a component positioned in a hierarchical fashion above it (for example, it's remote group or the *FrDte* component) was administratively disabled.

	This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte xmitDiscardLmiInactive

Access	Read only
Description	Count of transmitted frames discarded because the Local Management Interface (LMI) was not yet active (i.e. LMI was still in the polling state). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte xmitDiscardFramerDown

Access	Read only
Description	Count of transmitted frames discarded because the *framer* component was down. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte xmitDiscardPvcInactive

Access	Read only

Description	Count of transmitted frames discarded because the Local Management Interface (LMI) had inactivated or invalidated the DLCI. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte xmitDiscardCirExceeded

Access	Read only
Description	Count of transmitted frames discarded because CIR was enabled on a DLCI without a *HibernationQueue* subcomponent and the traffic exceeded the combined Committed and Excess Burst thresholds. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte recvDiscardPvcDown

Access	Read only
Description	This attribute counts received frames discarded because the DLCI of a component positioned in a hierarchical fashion above it (for example its remote group or the *FrDte* component) was administratively disabled. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte recvDiscardLmiInactive

Access	Read only
Description	Count of received frames discarded because the Local Management Interface (LMI) was not yet active (i.e. LMI was still in the polling state). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte recvDiscardPvcInactive

Access	Read only
Description	Count of received frames discarded because the Local Management Interface (LMI) had inactivated or invalidated the DLCI. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte badFc

Access	Read only
Description	Count of received frames discarded because the frame control character was incorrect. This may indicate that the other side of

	the link is configured for a different link level protocol. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte ulpUnknownProtocol

Access	Read only
Description	Count of received frames discarded because the Upper Level Protocol (ULP) encapsulation used was unsupported. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte defragSequenceErrors

Access	Read only
Description	Count of fragments received which were discarded due to out of sequence error detection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte receiveShort

Access	Read only

Description	Count of received frames (including LMI frames) discarded because they were less than four octets long or they were missing the Organizationally Unique Identifier (OUI) for a SNAP header. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte illegalDlci

Access	Read only
Description	Count of received frames discarded because their Q.922 address was not two octets in length. This count also includes frames discarded because they were received on a DLCI reserved for LMI that had not been provisioned active. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte dlcmiProtoErr

Access	Read only
Description	Count of received LMI frames whose contents were formatted incorrectly. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte dlcmiUnknownIe

Access	Read only
Description	Count of received LMI frames which contained an unsupported Information Element (IE) type. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte dlcmiSequenceErr

Access	Read only
Description	Count of received LMI frames whose Keep Alive Sequence was incorrect. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte dlcmiUnknownRpt

Access	Read only
Description	Count of received LMI frames which contained a Report-type Information Element with an invalid type of report. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)

Default 0

COMPONENT FrDte Framer

Groups
"GROUP FrDte Framer Provisioned (Prov)"
"GROUP FrDte Framer OsiState (State)"
"GROUP FrDte Framer Statistics (Stats)"
"GROUP FrDte Framer LinkUtilization (Util)"

Scope Application

Description

FrDte/n Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisional attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisional attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib FrameRelayDte

Common Verbs
Help
List
Display
Add
DELete

GROUP FrDte Framer Provisioned (Prov)

Properties Provisioned

Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisional *Framer* groups.
Mib	FrameRelayDte

ATTRIBUTE FrDte Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	FrameRelayDte
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP FrDte Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayDte

ATTRIBUTE FrDte Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	FrameRelayDte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrDte Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayDte
Values	enabled (ena) disabled (dis)

Default	disabled

ATTRIBUTE FrDte Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayDte
Values	idle active (activ) busy
Default	idle

GROUP FrDte Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Framer frmToIf

Access	Read only
Description	This attribute counts the number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.

Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Framer frmFromIf

Access	Read only
Description	This attribute counts the number of frames received from the link interface by Framer.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Framer aborts

Access	Read only
Description	This attribute counts the total number of aborts received.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Framer crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Framer lrcErrors

Access	Read only

Description

This attribute counts the total number of frames with LRC errors.

Mib FrameRelayDte

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrDte Framer nonOctetErrors

Access Read only

Description

This attribute counts the total number of frames that were non octet aligned.

Mib FrameRelayDte

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrDte Framer overruns

Access Read only

Description

This attribute counts the total number of frames received from the link for which overruns occurred.

Mib FrameRelayDte

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrDte Framer underruns

Access Read only

Description

This attribute counts the total number of frames transmitted to the link for which underruns occurred.

Mib FrameRelayDte

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Framer largeFrmErrors

Access	Read only
Description	This attribute counts the total number of frames received which were too large. The frame exceeded the maximumFrameLengthLimit provisioned attribute or it contained more than the 255 block hardware limit.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

GROUP FrDte Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal priority data sent to the link as a percentage of the available bandwidth on the link. The utilization is the average for the last minute.
Mib	FrameRelayDte
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE FrDte Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute is the utilization of the normal priority data received from the link as a percentage of the available bandwidth on the link. The utilization is the average for the last minute.
Mib	FrameRelayDte
Values	Decimal (0..100)
Units	%
Default	0

COMPONENT FrDte LinkManagementInterface (Lmi)

Groups	"GROUP FrDte Lmi Provisioned (Prov)" "GROUP FrDte Lmi Operational (Oper)"
Scope	Application
Description	*FrDte/n Lmi* This component defines parameters for implementing the Local Management Interface (LMI) protocol for the *FrDte* interface.
Mib	FrameRelayDte
Common Verbs	Help List Display

GROUP FrDte Lmi Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Lmi* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Lmi procedures (proc)

Access	Read and write

Description	This attribute selects the Local Management Interface (LMI) protocol to be used on the interface. This attribute is equivalent to the SNMP variable frDlcmiState. The ***vendorForum*** LMI protocol automatically implies that the DLCI used by the protocol is 1023. The ***ansi*** (T1.617 Annex D) and ***ccitt*** (Q.933 Annex A) LMI protocols use DLCI 0. If ***none*** is selected, no LMI procedures will run on the interface.
Mib	FrameRelayDte
Values	none vendorForum ansi ccitt
Default	ccitt

ATTRIBUTE FrDte Lmi pollingInterval (polli)

Access	Read and write
Description	This is the number of seconds between successive status enquiry messages. This field corresponds to the parameter T391 described in the ANSI T1.617-1991 Annex D.
Mib	FrameRelayDte
Values	Decimal (5..30)
Units	seconds
Default	10

ATTRIBUTE FrDte Lmi fullEnquiryInterval (n391)

Access	Read and write
Description	The count of status polls before a full status enquiry message is issued. Every nth poll will request a full status. This field corresponds to the parameter N391 described in the ANSI T1.617-1991 Annex D.
Mib	FrameRelayDte
Values	Decimal (1..255)

Default	6

ATTRIBUTE FrDte Lmi errorThreshold (n392)

Access	Read and write
Description	The number of errors detected within the monitored events window before declaring the link non-functional. This field corresponds to the parameter N392 described in the ANSI T1.617-1991 Annex D.
Mib	FrameRelayDte
Values	Decimal (1..10)
Default	3

ATTRIBUTE FrDte Lmi monitoredEvents (n393)

Access	Read and write
Description	The number of status polling intervals over which the *errorThreshold* is counted This is used to determine if the *errorThreshold* is exceeded. This field corresponds to the parameter N393 described in the ANSI T1.617-1991 Annex D.
Mib	FrameRelayDte
Values	Decimal (1..10)
Default	4

GROUP FrDte Lmi Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Lmi* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Lmi lmiStatus

Access	Read only
Description	This indicates the status of the Frame Relay interface as determined by the performance of the link management interface

	(LMI). If no LMI is running, *lmiStatus* will stay in the ***running*** state indefinitely.
Mib	FrameRelayDte
Values	running fault initializing
Default	No default

COMPONENT FrDte RemoteGroup (Rg)

Instance	Decimal (1..256)
Groups	"GROUP FrDte Rg IfEntryProv (IfEntry)" "GROUP FrDte Rg Provisioned (Prov)" "GROUP FrDte Rg MediaProv (Mp)" "GROUP FrDte Rg OsiState (State)" "GROUP FrDte Rg OperationalStatus (OperStatus)"
Scope	Application
Description	*FrDte/n Rg/n* This component describes the links between a group of *Dlci*s and a Protocol Port. The *Rg/1* instance is required.
Mib	FrameRelayDte
Opt. Subcomp.	"COMPONENT FrDte Rg BridgedFrameRouting (Bfr)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP FrDte Rg IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	FrameRelayDte

ATTRIBUTE FrDte Rg ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayDte
Values	up down testing
Default	up

ATTRIBUTE FrDte Rg ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayDte
Values	Decimal (1..65535)
Default	No default

GROUP FrDte Rg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the Remote Group component.

Mib	FrameRelayDte

ATTRIBUTE FrDte Rg maxTransmissionUnit (mtuSize)

Access	Read and write
Description	The Maximum Transmission Unit size of the largest datagram (including Frame Relay header) which can be sent on the interface.
Mib	FrameRelayDte
Values	Decimal (80..9190)
Units	octets
Default	1604

ATTRIBUTE FrDte Rg linkToFrDteDlci (ltDlci)

Access	Read and write
Description	This attribute associates a *Rg* component with zero or more *StDlci* components. The *Rg* and *StDlci* components must be under the same *FrDte* component.
Mib	FrameRelayDte
List of	Link (Service, linkToRemoteGroup)
List Size	256
Default	No default

GROUP FrDte Rg MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the Media Application component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Rg linkToProtocolPort (pp)

Access	Read and write
Criticality	Component

Description	This attribute contains a protocol port component name. The attribute associates the application with a protocol port.
Mib	FrameRelayDte
Values	Link (Service, linkToMedia)
Default	No default

GROUP FrDte Rg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayDte

ATTRIBUTE FrDte Rg adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayDte

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrDte Rg operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayDte
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrDte Rg usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	FrameRelayDte
Values	idle active (activ) busy
Default	idle

GROUP FrDte Rg OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Rg snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayDte
Values	up down testing
Default	up

COMPONENT FrDte Rg BridgedFrameRouting (Bfr)

Groups	"GROUP FrDte Rg Bfr Provisioned (Prov)" "GROUP FrDte Rg Bfr Operational (Opr)"
Scope	Application
Description	*FrDte/n Rg/n Bridged Frame Routing*

The *BridgedFrameRouting* component defines the parameters for implementing the Bridged Frame Routing port.

Mib FrameRelayDte

Common Verbs
Help
List
Display
Add
DELete

GROUP FrDte Rg Bfr Provisioned (Prov)

Properties Provisioned

Description
This group contains the provisioning attributes for the *Bfr* component.

Mib FrameRelayDte

ATTRIBUTE FrDte Rg Bfr macType (macType)

Access Read and write

Criticality Process

Description
This attribute specifies the MAC address type of the *Bfr* component.
The value must be chosen based on the media of the traffic source. For traffic originated from FDDI, use ***fddi***; for Ethernet, use ***enet***; for Token Ring, use ***tokenRing***

Mib FrameRelayDte

Values
fddi
enet
tokenRing

Default enet

ATTRIBUTE FrDte Rg Bfr bfrIndex (index)

Access	Read and write
Criticality	Process
Description	This attribute specifies the value which is used to derive a unique MAC address for the *Bfr*. The *bfrIndex* must be unique across all *Bfr*s on the same *Lp*.
Mib	FrameRelayDte
Values	Decimal (0..511)
Default	No default

GROUP FrDte Rg Bfr Operational (Opr)

Properties	Operational
Description	This group contains the operational attributes for the *Bfr* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Rg Bfr macAddr (macAddr)

Access	Read only
Description	This attribute indicates the unique MAC address of the *Bfr* component. This value is derived by the value of the attribute *bfrIndex*. The value is displayed in canonical format.
Mib	FrameRelayDte
Values	String (6, Dashed Hex)
Default	No default

COMPONENT FrDte DynamicDlciDefaults (DynDlciDefs)

Groups	"GROUP FrDte DynDlciDefs Provisioned (Prov)"
Scope	Application

Description	*FrDte/n DynDlciDefs* This component defines the default values that will be used when a *Dlci* of *creationType* ***dynamic*** is created.
Mib	FrameRelayDte
Common Verbs	Help List Display

GROUP FrDte DynDlciDefs Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for a virtual circuit. These attributes represent the default settings for the resulting *Dlci* components and can be operationally changed using the corresponding attributes under the *Dlci* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte DynDlciDefs rowStatus

Access	Read and write
Description	This attribute is used to manage the status of a *StDlci* component. Set to ***active*** to enable the *StDlci* component. Set to ***notInService*** to disable the *StDlci* component. Set to ***createAndGo*** (SNMP only) to create a new *StDlci* component. Set to ***destroy*** (SNMP only) to delete an existing *StDlci* component.
Mib	FrameRelayDte
Values	active notInService
Default	active

ATTRIBUTE FrDte DynDlciDefs rateEnforcement (re)

Access	Read and write
Description	This attribute specifies whether the CIR attributes *committedInformationRate*, *committedBurst*, and *excessBurst* are used to define rate enforcement on this user DLCI. If *rateEnforcement* is ***enabled***, and the combined Committed and Excess burst thresholds are exceeded, the frame in violation will be discarded immediately if a *HibernationQueue* subcomponent is not provisioned under the *StDlci* component. If a *HibernationQueue* is provisioned, the frame will be placed on the *HibernationQueue* at time of violation and transmission will be attempted later after the point at which the burst thresholds will no longer be exceeded. Setting all the CIR attributes to zero has the same affect as setting this attribute to ***disabled***.
Mib	FrameRelayDte
Values	enabled disabled
Default	disabled

ATTRIBUTE FrDte DynDlciDefs committedInformationRate (cir)

Access	Read and write
Description	The average number of bits to be transferred per second over the DLCI to the DCE. When this attribute is set to zero, the link speed will be used instead.
Mib	FrameRelayDte
Values	Decimal (0..50000000)
Units	bit/s
Default	64000

ATTRIBUTE FrDte DynDlciDefs committedBurst (bc)

Access	Read and write
Description	The committed burst size (in bits) to which the DLCI wants to subscribe.
Mib	FrameRelayDte
Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE FrDte DynDlciDefs excessBurst (be)

Access	Read and write
Description	The excess burst size (in bits) to which the DLCI wants to subscribe.
Mib	FrameRelayDte
Values	Decimal (0..50000000)
Units	bits
Default	0

ATTRIBUTE FrDte DynDlciDefs excessBurstAction (beAction)

Access	Read and write
Description	This attribute specifies the action taken when the *committedBurst* size has been exceeded on the DLCI but the *excessBurst* size has not. If the attribute is set to ***setDeBit***, the Discard Eligibility bit in the Frame Relay header will be turned on. If the attribute is set to ***none***, no action will be taken.
Mib	FrameRelayDte
Values	none setDeBit
Default	none

ATTRIBUTE FrDte DynDlciDefs ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the Frame Relay connection. This value is used to distinguish the connection from others for the purpose of IP forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers. If an IP packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one Frame Relay connection, then one of the connections is selected for transmitting the packet. The selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet. DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component. Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component. Modifying this attribute will reset the Frame Relay connection. If the Frame Relay connection is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the Frame Relay connection. See the description of *Vr Ip CosPolicyGroup* for more information.
Mib	FrameRelayDte
Values	Decimal (0..3)
Default	0

COMPONENT FrDte StaticDlci (StDlci)

Instance	Decimal (16..1007)
Groups	"GROUP FrDte StDlci Provisioned (Prov)" "GROUP FrDte StDlci RemoteGroupLink (RgLink)" "GROUP FrDte StDlci IpIfLink"
Scope	Application
Description	*FrDte/n StDlci/n* This component is used to provision a static virtual circuit on the Frame Relay DTE interface. For each *StDlci* provisioned, there will be a matching *Dlci* component. *Dlci* components of *creationType* ***dynamic*** will be converted to ***static*** without disruption of service when a *StDlci* component is provisioned with the same instance number.
Mib	FrameRelayDte
Opt. Subcomp.	"COMPONENT FrDte StDlci HibernationQueue (Hq)"
Common Verbs	Help List Display Add DELete

GROUP FrDte StDlci Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for a virtual circuit. These attributes represent the default settings for the resulting *Dlci* components and can be operationally changed using the corresponding attributes under the *Dlci* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte StDlci rowStatus

Access	Read and write

Description	This attribute is used to manage the status of a *StDlci* component. Set to ***active*** to enable the *StDlci* component. Set to ***notInService*** to disable the *StDlci* component. Set to ***createAndGo*** (SNMP only) to create a new *StDlci* component. Set to ***destroy*** (SNMP only) to delete an existing *StDlci* component.
Mib	FrameRelayDte
Values	active notInService
Default	active

ATTRIBUTE FrDte StDlci rateEnforcement (re)

Access	Read and write
Description	This attribute specifies whether the CIR attributes *committedInformationRate*, *committedBurst*, and *excessBurst* are used to define rate enforcement on this user DLCI. If *rateEnforcement* is ***enabled***, and the combined Committed and Excess burst thresholds are exceeded, the frame in violation will be discarded immediately if a *HibernationQueue* subcomponent is not provisioned under the *StDlci* component. If a *HibernationQueue* is provisioned, the frame will be placed on the *HibernationQueue* at time of violation and transmission will be attempted later after the point at which the burst thresholds will no longer be exceeded. Setting all the CIR attributes to zero has the same affect as setting this attribute to ***disabled***.
Mib	FrameRelayDte
Values	enabled disabled
Default	disabled

ATTRIBUTE FrDte StDlci committedInformationRate (cir)

Access	Read and write
Description	The average number of bits to be transferred per second over the DLCI to the DCE. When this attribute is set to zero, the link speed will be used instead.
Mib	FrameRelayDte
Values	Decimal (0..50000000)
Units	bit/s
Default	64000

ATTRIBUTE FrDte StDlci committedBurst (bc)

Access	Read and write
Description	The committed burst size (in bits) to which the DLCI wants to subscribe.
Mib	FrameRelayDte
Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE FrDte StDlci excessBurst (be)

Access	Read and write
Description	The excess burst size (in bits) to which the DLCI wants to subscribe.
Mib	FrameRelayDte
Values	Decimal (0..50000000)
Units	bits
Default	0

ATTRIBUTE FrDte StDlci excessBurstAction (beAction)

Access	Read and write
Description	This attribute specifies the action taken when the *committedBurst* size has been exceeded on the DLCI but the *excessBurst* size has not. If the attribute is set to ***setDeBit***, the Discard Eligibility bit in the Frame Relay header will be turned on. If the attribute is set to ***none***, no action will be taken.
Mib	FrameRelayDte
Values	none setDeBit
Default	none

ATTRIBUTE FrDte StDlci ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the Frame Relay connection. This value is used to distinguish the connection from others for the purpose of IP forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers. If an IP packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one Frame Relay connection, then one of the connections is selected for transmitting the packet. The selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet. DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component. Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component. Modifying this attribute will reset the Frame Relay connection.

	If the Frame Relay connection is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the Frame Relay connection. See the description of *Vr Ip CosPolicyGroup* for more information.
Mib	FrameRelayDte
Values	Decimal (0..3)
Default	0

GROUP FrDte StDlci RemoteGroupLink (RgLink)

Properties	Provisioned
Description	This group provides the link between a *Dlci* and a *remoteGroup*.
Mib	FrameRelayDte

ATTRIBUTE FrDte StDlci linkToRemoteGroup (ltrg)

Access	Read and write
Criticality	Component
Description	This attribute associates a *StDlci* component with a *Rg* component. Provisioned *StDlci* components must be linked to a *Rg* component which is under the same *FrDte* component.
Mib	FrameRelayDte
Values	Link (Service, linkToFrDteDlci)
Default	No default

GROUP FrDte StDlci IpIfLink

Properties	Provisioned
Description	This group contains the link between this component and an *IpLogicalInterface* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte StDlci linkToIpLogicalInterface (ipIf)

Access	Read and write
Description	This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ipAddress*, that this connection is associated with. When set, the value of this attribute must be consistent with the *linkToProtocolPort* attribute value of the associated *RemoteGroup* component. That is, they must both point to the same *ProtocolPort* component.
Mib	FrameRelayDte
Values	Link (Service, linkToMediaConnection)
Default	No default

COMPONENT FrDte StDlci HibernationQueue (Hq)

Groups	"GROUP FrDte StDlci Hq Provisioned (Prov)" "GROUP FrDte StDlci Hq Statistics (Stats)" "GROUP FrDte StDlci Hq TotalStatistics (TStats)" "GROUP FrDte StDlci Hq CurrentStatistics (CStats)" "GROUP FrDte StDlci Hq ThresholdStatistics (ThrStats)"
Scope	Application
Description	*FrDte/n StDlci/n Hq* This component provides a Hibernation Queue capability for a *Dlci* component which has been provisioned with CIR enforcement enabled. The *HibernationQueue* provides priority placement of frames on the queue, Time To Live (TTL) discarding of frames from the queue, and queue statistics.
Mib	FrameRelayDteExt
Common Verbs	Help List Display Add DELete

GROUP FrDte StDlci Hq Provisioned (Prov)

Properties	Provisioned
Description	This group contains the Link Emission Queue provisioned attributes.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte StDlci Hq maxPackets (maxP)

Access	Read and write
Description	This attribute specifies the maximum number of packets allowed in the *Leq* before being discarded. If this attribute is set to zero then the maximum number of packets is calculated from the transmit data rate. This calculated value is placed in *queuePktThreshold*.
Mib	FrameRelayDteExt
Values	Decimal (0..2048)
Default	0

ATTRIBUTE FrDte StDlci Hq maxMsecData (maxData)

Access	Read and write
Description	This attribute specifies the maximum number of “Milliseconds worth of data” allowed in the *Leq* before packets are discarded. The *queueByteThreshold* will be calculated from this attribute, based on the transmit data rate.
Mib	FrameRelayDteExt
Values	Decimal (100..60000)
Default	10000

ATTRIBUTE FrDte StDlci Hq maxPercentMulticast (mpm)

Access	Read and write
Description	This attribute specifies the maximum percentage of multicast packets allowed in the *Leq*, based on *queuePktThreshold*, before

	being discarded. The calculated value will be placed in *queueMulticastThreshold*.
Mib	FrameRelayDteExt
Values	Decimal (1..100)
Default	50

ATTRIBUTE FrDte StDlci Hq timeToLive (ttl)

Access	Read and write
Description	This attribute specifies the “Milliseconds Time To Live” of packets in the *Leq*. If the *timeToLive* of a packet expires, it will be discarded.
Mib	FrameRelayDteExt
Values	Decimal (100..60000)
Units	msec
Default	10000

GROUP FrDte StDlci Hq Statistics (Stats)

Properties	Operational
Description	This group contains *HibernationQueue* general statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte StDlci Hq timedOutPkt (topkt)

Access	Read only
Description	This attribute counts the number of packets that have been discarded due to exceeding the *timeToLive*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq queuePurgeDiscards (qpd)

Access	Read only
Description	This attribute counts the total number of packets discarded by a queue purge which occurs when the *Dlci* goes down. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

GROUP FrDte StDlci Hq TotalStatistics (TStats)

Properties	Operational
Description	This group contains Link Emission Queue total statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte StDlci Hq totalPktHandled (tpkthand)

Access	Read only
Description	This attribute counts the total number of packets handled by the *Leq*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq totalPktForwarded (tpktfor)

Access	Read only
Description	This attribute counts the total number of packets forwarded by the *Leq*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq totalPktQueued (tpktq)

Access	Read only
Description	This attribute counts the total number of packets that required queuing by the *Leq* due to transmit congestion. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq totalMulticastPkt (tmulp)

Access	Read only
Description	This attribute counts the total number of multicast packets handled by this instance of *FrDte*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq totalPktDiscards (tpktdis)

Access	Read only
Description	This attribute counts the total number of packets that were discarded for this instance of *FrDte*. This is the sum of *timedOutPkt*, *forcedPktDiscards*, *queuePurgeDiscards*, *pktThresholdExceeded*, *byteThresholdExceeded*, *mulThresholdExceeded* and *memThresholdExceeded*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

GROUP FrDte StDlci Hq CurrentStatistics (CStats)

Properties	Operational
Description	This group contains Link Emission Queue current statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte StDlci Hq currentPktQueued (cpktq)

Access	Read only
Description	This attribute contains the current number of packets queued.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq currentBytesQueued (cbytesq)

Access	Read only
Description	This attribute contains the current number of bytes queued.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq currentMulticastQueued (cmulq)

Access	Read only
Description	This attribute counts the current number of multicast packets in the queue.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

GROUP FrDte StDlci Hq ThresholdStatistics (ThrStats)

Properties	Operational

Description	This group contains Link Emission Queue threshold statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte StDlci Hq queuePktThreshold (qpthr)

Access	Read only
Description	This attribute is the maximum number of packets that can be contained in the queue before being discarded. If *maxPackets* was set to 0 then this attribute will contain the value that has been calculated based on the transmit data rate. If *maxPackets* was set to one or more than this attribute will contain that number.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq pktThresholdExceeded (pthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queuePktThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq queueByteThreshold (qbytethr)

Access	Read only
Description	This attribute is the maximum number of bytes allowed in the queue based on *maxMsecData* and the transmit data rate.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq byteThresholdExceeded (bthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queueByteThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq queueMulticastThreshold (qmolthr)

Access	Read only
Description	This attribute is the number of multicast packets allowed in the queue based on *maxPercentMulticast* and *maxPackets*.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq mulThresholdExceeded (multhrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queueMulticastThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte StDlci Hq memThresholdExceeded (memthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to exceeding the memory usage threshold for *Leq*. The memory

usage threshold is determined by the *Leq* software, guaranteeing that the *Leq* does not consume all of the memory. This counter will wrap around to 0 when it exceeds its maximum count.

Mib: FrameRelayDteExt

Values: Decimal (0..4294967295)

Default: 0

COMPONENT FrDte LinkEmissionQueue (Leq)

Groups:
"GROUP FrDte Leq Provisioned (Prov)"
"GROUP FrDte Leq Statistics (Stats)"
"GROUP FrDte Leq TotalStatistics (TStats)"
"GROUP FrDte Leq CurrentStatistics (CStats)"
"GROUP FrDte Leq ThresholdStatistics (ThrStats)"

Scope: Application

Description:
FrDte/n Leq
This component provides a means of statistics gathering and packet discard.

Mib: FrameRelayDteExt

Common Verbs:
Help
List
Display
Add
DELete

GROUP FrDte Leq Provisioned (Prov)

Properties: Provisioned

Description: This group contains the Link Emission Queue provisioned attributes.

Mib: FrameRelayDteExt

ATTRIBUTE FrDte Leq maxPackets (maxP)

Access: Read and write

Description	This attribute specifies the maximum number of packets allowed in the *Leq* before being discarded. If this attribute is set to zero then the maximum number of packets is calculated from the transmit data rate. This calculated value is placed in *queuePktThreshold*.
Mib	FrameRelayDteExt
Values	Decimal (0..2048)
Default	0

ATTRIBUTE FrDte Leq maxMsecData (maxData)

Access	Read and write
Description	This attribute specifies the maximum number of “Milliseconds worth of data” allowed in the *Leq* before packets are discarded. The *queueByteThreshold* will be calculated from this attribute, based on the transmit data rate.
Mib	FrameRelayDteExt
Values	Decimal (100..60000)
Default	10000

ATTRIBUTE FrDte Leq maxPercentMulticast (mpm)

Access	Read and write
Description	This attribute specifies the maximum percentage of multicast packets allowed in the *Leq*, based on *queuePktThreshold*, before being discarded. The calculated value will be placed in *queueMulticastThreshold*.
Mib	FrameRelayDteExt
Values	Decimal (1..100)
Default	50

ATTRIBUTE FrDte Leq timeToLive (ttl)

Access	Read and write

Description	This attribute specifies the “Milliseconds Time To Live” of packets in the *Leq*. If the *timeToLive* of a packet expires, it will be discarded.
Mib	FrameRelayDteExt
Values	Decimal (100..60000)
Units	msec
Default	10000

GROUP FrDte Leq Statistics (Stats)

Properties	Operational
Description	This group contains Link Emission Queue general statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte Leq timedOutPkt (topkt)

Access	Read only
Description	This attribute counts the number of packets that have been discarded due to exceeding the *timeToLive*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq hardwareForcedPkt (hfpkt)

Access	Read only
Description	This attribute counts the number of hardware forced packets on this instance of *FrDte*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq forcedPktDiscards (fpktd)

Access	Read only
Description	This attribute counts the total number of hardware forced packets that had to be discarded due to link failure. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq queuePurgeDiscards (qpd)

Access	Read only
Description	This attribute counts the total number of packets discarded by a queue purge (i.e. a discarding of all packets on the queue). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

GROUP FrDte Leq TotalStatistics (TStats)

Properties	Operational
Description	This group contains Link Emission Queue total statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte Leq totalPktHandled (tpkthand)

Access	Read only
Description	This attribute counts the total number of packets handled by the *Leq*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq totalPktForwarded (tpktfor)

Access	Read only
Description	This attribute counts the total number of packets forwarded by the *Leq*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq totalPktQueued (tpktq)

Access	Read only
Description	This attribute counts the total number of packets that required queuing by the *Leq* due to transmit congestion. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq totalMulticastPkt (tmulp)

Access	Read only
Description	This attribute counts the total number of multicast packets handled by this instance of *FrDte*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq totalPktDiscards (tpktdis)

Access	Read only
Description	This attribute counts the total number of packets that were discarded for this instance of *FrDte*. This is the sum of *timedOutPkt*, *forcedPktDiscards*, *queuePurgeDiscards*, *pktThresholdExceeded*, *byteThresholdExceeded*, *mulThresholdExceeded* and *memThresholdExceeded*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

GROUP FrDte Leq CurrentStatistics (CStats)

Properties	Operational
Description	This group contains Link Emission Queue current statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte Leq currentPktQueued (cpktq)

Access	Read only
Description	This attribute contains the current number of packets queued.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq currentBytesQueued (cbytesq)

Access	Read only
Description	This attribute contains the current number of bytes queued.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE FrDte Leq currentMulticastQueued (cmulq)

Access	Read only
Description	This attribute counts the current number of multicast packets in the queue.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

GROUP FrDte Leq ThresholdStatistics (ThrStats)

Properties	Operational
Description	This group contains Link Emission Queue threshold statistics.
Mib	FrameRelayDteExt

ATTRIBUTE FrDte Leq queuePktThreshold (qpthr)

Access	Read only
Description	This attribute is the maximum number of packets that can be contained in the queue before being discarded. If *maxPackets* was set to 0 then this attribute will contain the value that has been calculated based on the transmit data rate. If *maxPackets* was set to one or more than this attribute will contain that number.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq pktThresholdExceeded (pthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queuePktThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.

Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq queueByteThreshold (qbytethr)

Access	Read only
Description	This attribute is the maximum number of bytes allowed in the queue based on *maxMsecData* and the transmit data rate.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq byteThresholdExceeded (bthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queueByteThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq queueMulticastThreshold (qmolthr)

Access	Read only
Description	This attribute is the number of multicast packets allowed in the queue based on *maxPercentMulticast* and *maxPackets*.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq mulThresholdExceeded (multhrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queueMulticastThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Leq memThresholdExceeded (memthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to exceeding the memory usage threshold for *Leq*. The memory usage threshold is determined by the *Leq* software, guaranteeing that the *Leq* does not consume all of the memory. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDteExt
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrDte DataLinkConnectionIdentifier (Dlci)

Instance	Decimal (0..1023)
Groups	"GROUP FrDte Dlci OsiState (State)" "GROUP FrDte Dlci Operational (Oper)"
Scope	Application

Description	*FrDte/n Dlci/n* This component provides access to both static and dynamic virtual circuit instances.
Mib	FrameRelayDte
Common Verbs	Help List Display LOCK Unlock

VERB Clear FrDte Dlci

Impact	Service
Description	*Clear FrDte/n Dlci/n* The *Clear* verb allows the user the ability to delete a *Dlci* component of *creationType* ***dynamic***.

GROUP FrDte Dlci OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayDte

ATTRIBUTE FrDte Dlci adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component.

When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	FrameRelayDte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrDte Dlci operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayDte
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrDte Dlci usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayDte
Values	idle active (activ) busy
Default	idle

GROUP FrDte Dlci Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Dlci* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte Dlci dlciState

Access	Read only
Description	This attribute reflects the current operational circuit state of the *Dlci*. The state ***active*** indicates that the circuit is up and ***inactive*** that the circuit is down. The state ***invalid*** means the circuit has been deleted by the DCE (via *Lmi*).
Mib	FrameRelayDte

Values	invalid active inactive
Default	inactive

ATTRIBUTE FrDte Dlci lastTimeChange

Access	Read only
Description	The last time *dlciState* changed state.
Mib	FrameRelayDte
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrDte Dlci sentFrames

Access	Read only
Description	Number of frames transmitted across the interface. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Dlci sentOctets

Access	Read only
Description	The number of octets sent from this virtual circuit since it was created. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Dlci receivedFrames (recvFrames)

Access	Read only

Description	Number of frames received across the interface. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Dlci receivedOctets (recvOctets)

Access	Read only
Description	The number of octets sent from this virtual circuit since it was created. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Dlci receivedFECNs (recvFecn)

Access	Read only
Description	Number of frames with the FECN bit set received from the network. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Dlci receivedBECNs (recvBecn)

Access	Read only
Description	Number of frames with the BECN bit set received from the network. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Dlci discardedFrames (discards)

Access	Read only
Description	The number of inbound frames dropped because of format errors, or because the VC was inactive. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	FrameRelayDte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrDte Dlci creationType (type)

Access	Read only
Description	This indicates whether the virtual circuit was manually created (static), or dynamically created (dynamic) via the data link control management interface.
Mib	FrameRelayDte
Values	static dynamic
Default	No default

ATTRIBUTE FrDte Dlci creationTime

Access	Read only
Description	The time when the circuit was created, whether by the Data Link Connection Management Interface or by an SNMP set request.
Mib	FrameRelayDte
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrDte Dlci rateEnforcement (re)

Access	Read and write
Description	This attribute specifies whether the CIR attributes *committedInformationRate*, *committedBurst*, and *excessBurst* are used to define rate enforcement on this user DLCI. If *rateEnforcement* is ***enabled***, and the combined Committed and Excess burst thresholds are exceeded, the frame in violation will be discarded immediately if a *HibernationQueue* subcomponent is not provisioned under the *StDlci* component (static entries only). If a *HibernationQueue* is provisioned, the frame will be placed on the *HibernationQueue* at time of violation and transmission will be attempted later after the point at which the burst thresholds will no longer be exceeded. Setting all the CIR attributes to zero has the same affect as setting this attribute to ***disabled***. Setting this attribute will operationally override the corresponding provisional value on static entries.
Mib	FrameRelayDte
Values	enabled disabled
Default	disabled

ATTRIBUTE FrDte Dlci committedInformationRate (cir)

Access	Read and write
Description	The average number of bits to be transferred per second over the DLCI to the DCE. When this attribute is set to zero, the link speed will be used instead. Setting this attribute will operationally override the corresponding provisional value on static entries.
Mib	FrameRelayDte
Values	Decimal (0..48000000)

Units	bit/s
Default	64000

ATTRIBUTE FrDte Dlci committedBurst (bc)

Access	Read and write
Description	The committed burst size (in bits) to which the DLCI wants to subscribe. Setting this attribute will operationally override the corresponding provisional value on static entries.
Mib	FrameRelayDte
Values	Decimal (0..2048000)
Units	bits
Default	64000

ATTRIBUTE FrDte Dlci excessBurst (be)

Access	Read and write
Description	The excess burst size (in bits) to which the DLCI wants to subscribe. Setting this attribute will operationally override the corresponding provisional value on static entries.
Mib	FrameRelayDte
Values	Decimal (0..2048000)
Units	bits
Default	0

ATTRIBUTE FrDte Dlci excessBurstAction (beAction)

Access	Read and write
Description	This attribute specifies the action taken when the *committedBurst* size has been exceeded on the *Dlci* but the *excessBurst* size has not. If the attribute is set to ***setDeBit***, the Discard Eligibility bit in

the Frame Relay header will be turned on. If the attribute is set to ***none***, no action will be taken.

Setting this attribute will operationally override the corresponding provisional value on static entries.

Mib: FrameRelayDte

Values: none
setDeBit

Default: none

COMPONENT FrDte VirtualFramer (VFramer)

Groups: "GROUP FrDte VFramer Provisioned (Prov)"
"GROUP FrDte VFramer OsiState (State)"
"GROUP FrDte VFramer Statistics (Stats)"

Scope: Application

Description: *FrUni/n VirtualFramer*
FrDte/n VirtualFramer
The *VirtualFramer* component binds two services together to provide data transfer between them. It is mutually exclusive from *Framer* component.

Mib: FrameRelayDte

Common Verbs:
Help
List
Display
Add
DELete

GROUP FrDte VFramer Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisionable attributes for the *VirtualFramer* component.

Mib: FrameRelayDte

ATTRIBUTE FrDte VFramer otherVirtualFramer (ovf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the other *VirtualFramer* to which the service is linked, for example, *FrUni/n VirtualFramer*, *FrDte/n VirtualFramer*.
Mib	FrameRelayDte
Values	Link (Service, otherVirtualFramer)
Default	No default

ATTRIBUTE FrDte VFramer logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the logical processor on which the service component will reside.
Mib	FrameRelayDte
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP FrDte VFramer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayDte

ATTRIBUTE FrDte VFramer adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayDte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrDte VFramer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayDte

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrDte VFramer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayDte
Values	idle active (activ) busy
Default	idle

GROUP FrDte VFramer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *VirtualFramer* component.
Mib	FrameRelayDte

ATTRIBUTE FrDte VFramer frmToOtherVFramer

Access	Read only
Description	This attribute counts the frames transmitted to the *otherVirtualFramer.*
Mib	FrameRelayDte

Values	Long Integer
Default	No default

ATTRIBUTE FrDte VFramer frmFromOtherVFramer

Access	Read only
Description	This attribute counts the frames received from the *otherVirtualFramer.*
Mib	FrameRelayDte
Values	Long Integer
Default	No default

ATTRIBUTE FrDte VFramer octetFromOtherVFramer

Access	Read only
Description	This attribute counts the octets received from the *otherVirtualFramer.*
Mib	FrameRelayDte
Values	Long Integer
Default	No default

ATTRIBUTE FrDte VFramer discFrmFromOtherVFramer (discFrmFromOvf)

Access	Read only
Description	This attribute counts the discarded frames from the *otherVirtualFramer.* Incrementing of this counter indicates that some incoming traffic cannot be handled by the FP.
Mib	FrameRelayDte
Values	Long Integer
Default	No default

COMPONENT FrDte DirectConnection (Dconn)

Groups	"GROUP FrDte Dconn DirectFrUniConnData (DirData)"

Scope	Application
Description	*FrDte/n DirectConnection* This component defines the parameter for implementing the IP over Frame Relay Direct Connection for the *FrameRelayDte* interface. The Direct Connection is only supported on the Nortel Networks Multiservice Switch 7000 MSA32 cards as well as the Nortel Networks Multiservice Switch 15000 4-port DS3 Channelised and 1-port STM1 Channelised cards. Before a Direct Connection can be established, the provisioning check for this component validates that the following conditions are present: - *FrameRelayDte* (*FrDte*) is provisioned with a Virtual Framer. - *FrameRelayUni* (*FrUni*) to which the Direct Connection will be establish is provisioned with a Framer. - *FrDte* and *FrUni* link by the Direct Connection are on the same. Logical Processor, and they are provisioned on a Nortel Networks Multiservice Switch 7000 MSA card. - accounting on the *FrUni* connected to the *FrDte* via the Virtual Framer is set to **off**. - *Lmi* on the *FrUni* and *FrDte* connected via the Virtual Framer is off. - all *Dlci*'s instances on the *FrUni*'s in the IP over Frame Relay setup match, and the provisioned PVC's do not connect to any other *FrUni* than the *FrUni*'s in IP over Frame Relay setup.
Mib	FrameRelayDte
Common Verbs	Help List Display Add DELete

GROUP FrDte Dconn DirectFrUniConnData (DirData)

Properties	Provisioned
Description	This group contains the provisioned attribute for the *FrameRelayDte DirectConnection* component.

Mib	FrameRelayDte

ATTRIBUTE FrDte Dconn directFrUniConnection (direct)

Access	Read and write
Criticality	Process
Description	This attribute specifies the *FrameRelayUni* to which the *FrameRelayDte* will extablish a Direct Connection to.
Mib	FrameRelayDte
Values	Link (Service, directFrDteConnection)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component FrDte

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component FrIpServ

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component FrIpServ

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COMPONENT FrameRelayIpServer (FrIpServer)

Instance	Decimal (1..1024)
Groups	"GROUP FrIpServer CustomerIdentifierData (CidData)" "GROUP FrIpServer IfEntryProv (IfEntry)" "GROUP FrIpServer Provisioned (Prov)" "GROUP FrIpServer Operational (Oper)" "GROUP FrIpServer OperationalStatus (OperStatus)" "GROUP FrIpServer OsiState (State)"
Scope	Application
Description	*FrameRelayIpServer/n* This component represents a server that distributes traffic between an IP protocol port and multiple Frame Relay interfaces. The *FrIpServer* receives all datagrams destined for the subnet specified at the *ProtocolPort* and forwards each to the appropriate Frame Relay interface. An instance of this component should be provisioned for each *LogicalProcessor*

	having BNX DLCIs and for each subnet on which BNX DLCIs are located.
Mib	FrameRelayIp
Dyn. Subcomp.	"COMPONENT FrIpServer IpAddress (IpAddr)"
Common Verbs	Help List Display Add DELete

GROUP FrIpServer CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	FrameRelayIp

ATTRIBUTE FrIpServer customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of

	any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	FrameRelayIp
Values	Decimal (0; 1..8191)
Default	0

GROUP FrIpServer IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	FrameRelayIp

ATTRIBUTE FrIpServer ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayIp
Values	up down testing
Default	up

ATTRIBUTE FrIpServer ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayIp
Values	Decimal (1..65535)

Default	No default

GROUP FrIpServer Provisioned (Prov)

Properties	Provisioned
Description	This group contains all attributes that can be provisioned to define a *FrIpServer* instance.
Mib	FrameRelayIp

ATTRIBUTE FrIpServer logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the *LogicalProcessor* where the *FrIpServer* is located.
Mib	FrameRelayIp
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE FrIpServer linkToProtocolPort (lToPp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *ProtocolPort* to which the *FrIpServer* instance is linked. The *ProtocolPort* must have only an *IpPort* subcomponent which has exactly one logical interface.
Mib	FrameRelayIp
Values	Link (Service, linkToMedia)
Default	No default

GROUP FrIpServer Operational (Oper)

Properties	Operational
Description	This group contains operational attributes specific to the *FrIpServer* component.

Mib	FrameRelayIp

ATTRIBUTE FrIpServer datagramsFromPp (dataFrPP)

Access	Read only
Description	This attribute counts the datagrams received from the *ProtocolPort*, including those counted in *unknownIpAddrErr*. Counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayIp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrIpServer lastUnknownIpAddress (lastUnkwnAddr)

Access	Read only
Description	This attribute indicates the destination IP address of the last datagram that was dropped because none of the interfaces specified in *linkToFrameRelayApps* have a matching IP address.
Mib	FrameRelayIp
Values	IP address
Default	No default

ATTRIBUTE FrIpServer unknownIpAddressErr (unkwnAddrErr)

Access	Read only
Description	This attribute counts the datagrams dropped by the *FrIpServer* because none of the interfaces specified in *linkToFrameRelayApps* have a matching IP address. The destination address from most recent dropped datagram is counted and saved in *lastUnknownIpAddress*. Counter wraps to zero when the maximum value is exceeded.
Mib	FrameRelayIp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrIpServer invalidIpHeaderVersion (iiphv)

Access	Read only
Description	This attribute counts the datagrams dropped because the version in IP header was invalid.
Mib	FrameRelayIp
Values	Decimal (0..429496729)
Default	0

GROUP FrIpServer OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	FrameRelayIp

ATTRIBUTE FrIpServer snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayIp
Values	up down testing
Default	up

GROUP FrIpServer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state

combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib FrameRelayIp

ATTRIBUTE FrIpServer adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib FrameRelayIp

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE FrIpServer operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be

providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	FrameRelayIp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrIpServer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayIp
Values	idle active (activ) busy
Default	idle

COMPONENT FrIpServer IpAddress (IpAddr)

Instance	IP address
Groups	"GROUP FrIpServer IpAddr Operational (Oper)"
Scope	Application

Description	*FrIpServer/n IpAddress/<IP Address>* This component represents the IP address of the Frame Relay interfaces that are connected to the parent *FrIpServer*. It is a dynamic component used for informational purposes only.
Mib	FrameRelayIp
Common Verbs	Help List Display

GROUP FrIpServer IpAddr Operational (Oper)

Properties	Operational
Description	This group contains all *IpAddress* attributes.
Mib	FrameRelayIp

ATTRIBUTE FrIpServer IpAddr hostApplication (host)

Access	Read only
Description	This attribute indicates the component name of the Frame Relay interface with the IP Address specified by the index of the *IpAddress* component.
Mib	FrameRelayIp
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component FrIpServ

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component FrMux

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component FrMux

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COMPONENT FrMux

Instance	Decimal (1..65535)
Groups	"GROUP FrMux OperationalStatus (OperStatus)" "GROUP FrMux IfEntryProv (IfEntry)" "GROUP FrMux CustomerIdentifierData (CidData)" "GROUP FrMux OsiState (State)" "GROUP FrMux Statistics (Stats)"
Scope	Application
Description	*FrMux/n* This component defines an instance of the Frame Relay Multiplexer/Demultiplexer used by the *DpnGateway* as a frame relay transport mechanism. The component instance value n is a unique positive integer within a module.
Mib	FrameRelayMux
Subcomponents	"COMPONENT FrMux Framer" "COMPONENT FrMux LocalManagementInterface (Lmi)"
Opt. Subcomp.	"COMPONENT FrMux DataLinkConnectionIdentifier (Dlci)"
Common Verbs	Help List Display Add DELete Unlock

VERB LOCK FrMux

Impact	Service
Description	*Lock [-force] [-forever] frMux*. This verb locks the frMux. If option [-forever] is present, then the locked state lasts forever and can only be terminated by a respective Unlock command. Without option [-forever] the service returns automatically to the unlocked state after five minutes. The option [-force] is accepted, but not acted upon; the effect of the Lock command with this option is the same as without this option.

GROUP FrMux OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	FrameRelayMux

ATTRIBUTE FrMux snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayMux
Values	up down testing
Default	up

GROUP FrMux IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.

Mib	FrameRelayMux

ATTRIBUTE FrMux ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayMux
Values	up down testing
Default	up

ATTRIBUTE FrMux ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayMux
Values	Decimal (1..65535)
Default	No default

GROUP FrMux CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	FrameRelayMux

ATTRIBUTE FrMux customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	FrameRelayMux
Values	Decimal (0; 1..8191)
Default	0

GROUP FrMux OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayMux

ATTRIBUTE FrMux adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayMux
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrMux operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: FrameRelayMux

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE FrMux usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: FrameRelayMux

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE FrMux availabilityStatus (osiAvail)

Access: Read only

Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is

one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	FrameRelayMux
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE FrMux proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn’t initialize autonomously) that initialization is required

before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	FrameRelayMux
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrMux controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: FrameRelayMux

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE FrMux alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	FrameRelayMux
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE FrMux standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and

containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: FrameRelayMux

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE FrMux unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: FrameRelayMux

Values:
false
true

Default: false

GROUP FrMux Statistics (Stats)

Properties: Operational

Description: This group contains the statistics about the operational behavior of the *FrMux* at the interface level.

Mib	FrameRelayMux

ATTRIBUTE FrMux lastUnknownDlci (ludlc)

Access	Read only
Description	This attribute identifies the most recent DLCI which user frames were received on, for which a *Dlci* has not been provisioned on the interface.
Mib	FrameRelayMux
Values	Decimal (0..1023)
Default	0

ATTRIBUTE FrMux unknownDlciFramesFromIf (unknown)

Access	Read only
Description	This attribute counts frames received from the interface with an unknown DLCI (*Dlci* which is not provisioned). When the maximum is reached the count wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux invalidHeaderFramesFromIf (invalid)

Access	Read only
Description	This attribute counts the number of frames received from the interface with an invalid header format. When the maximum is reached the count wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux timeFramerCongested (timeCong)

Access	Read only
Description	This attribute accumulates the time (in msec) during which *Framer* congestion has been observed in the direction towards the interface. The overload causing this statistic to increase may be caused by oversubscription. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Units	msec
Default	0

COMPONENT FrMux Framer

Groups	"GROUP FrMux Framer Provisioned (Prov)" "GROUP FrMux Framer LinkOptions (Link)" "GROUP FrMux Framer OsiState (State)" "GROUP FrMux Framer Statistics (Stats)" "GROUP FrMux Framer LinkUtilization (Util)"

"COLLECTED STATS FrMux Framer"

Scope	Application
Description	*FrUni/n Framer* *FrNni/n Framer* *FrAtm/n Framer* This component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer*

component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib	FrameRelayMux
Common Verbs	Help List Display

GROUP FrMux Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	FrameRelayMux

ATTRIBUTE FrMux Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	FrameRelayMux
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP FrMux Framer LinkOptions (Link)

Properties: Provisioned

Description

This group contains attributes defining the framing of data on the link interface.

Mib: FrameRelayMux

ATTRIBUTE FrMux Framer dataInversion

Access: Read and write

Description

This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed.

This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density.

Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted.

This attribute may only take its default value for non-MSA cards.

Mib: FrameRelayMux

Values: off
on

Default: off

ATTRIBUTE FrMux Framer frameCrcType

Access: Read and write

Description

This attribute defines the type of CRC used.

The CRC value calculated is appended to the end of the frames

transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness. NoCrc means that CRC is not used.

This attribute may take only its default value for non-MSA cards.

Mib FrameRelayMux

Values crc16
crc32
noCrc

Default crc16

ATTRIBUTE FrMux Framer flagsBetweenFrames

Access Read and write

Description

This attribute defines the number of flags that are inserted between frames sent to the link interface. The flagBetweenFrames can be set to only 1, 2, 4, 8 or 16 for 4pDS3Ch FrameRelay FP.

Mib FrameRelayMux

Values Decimal (1..16)

Default 1

GROUP FrMux Framer OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib FrameRelayMux

ATTRIBUTE FrMux Framer adminState (osiAdmin)

Access Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayMux
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrMux Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayMux

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrMux Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayMux
Values	idle active (activ) busy
Default	idle

GROUP FrMux Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	FrameRelayMux

ATTRIBUTE FrMux Framer aborts

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	FrameRelayMux

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer crcErrors

Access	Read only
Description	This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer lrcErrors

Access	Read only
Description	This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer nonOctetErrors

Access	Read only
Description	This attribute is the total number of frames that were non octet aligned.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer overruns

Access	Read only
Description	This attribute is the total number of frames received from the link for which overruns occurred.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer underruns

Access	Read only
Description	This attribute is the total number of frames transmitted to the link for which underruns occurred.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer largeFrmErrors

Access	Read only
Description	This attribute is the total number of frames received which were too large. The frame exceeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer frmModeErrors

Access	Read only

Description	This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are inconsistent with the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	FrameRelayMux
Values	Long Integer
Default	No default

ATTRIBUTE FrMux Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	FrameRelayMux
Values	Long Integer
Default	No default

ATTRIBUTE FrMux Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.

Mib	FrameRelayMux
Values	Long Integer
Default	No default

ATTRIBUTE FrMux Framer ingressFrameDiscards

Access	Read only
Description	This attribute is the total number of frames discarded at ingress PQC.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

GROUP FrMux Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	FrameRelayMux

ATTRIBUTE FrMux Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	FrameRelayMux
Values	Decimal (0..100)
Units	%

Default 0

ATTRIBUTE FrMux Framer normPrioLinkUtilFromIf

Access Read only

Description

This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.

Mib FrameRelayMux

Values Decimal (0..100)

Units %

Default 0

COLLECTED STATS FrMux Framer

Description The statistics record generated by the FrMux Framer component.

ATTRIBUTE FrMux Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrMux Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrMux Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrMux Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrMux Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT FrMux LocalManagementInterface (Lmi)

Groups "GROUP FrMux Lmi Provisioned (Prov)"
"GROUP FrMux Lmi OsiState (State)"
"GROUP FrMux Lmi ProtocolStatusInfo (Psi)"
"GROUP FrMux Lmi Statistics (Stats)"

Scope Application

Description *FrMux/n Lmi*
This component defines the parameters for implementing the Local Management Interface protocol.

Mib FrameRelayMux

Common Verbs
Help
List
Display

GROUP FrMux Lmi Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attributes of the Local Management Interface component of the *FrMux*. The Local

Management Interface of the *FrMux* is always User Side Procedure of the User Network Interface (USP-UNI).

Mib FrameRelayMux

ATTRIBUTE FrMux Lmi procedures (proc)

Access Read and write

Criticality Process

Description

This attribute selects the procedures to be used for the Local Management Interface. The following are the supported procedures:
none: No Local Management Interface procedure is active.
vendorForum:Local Management Interface procedure according to the Vendor Forum specification is active. DLCI 1023 is used for the LMI protocol.
ansi: Local Management Interface procedure according to the ANSI specification is active. DLCI 0 is used for the LMI protocol.
ccitt: Local Management Interface procedure according to the CCITT specification is active. DLCI 0 is used for the LMI protocol.

Mib FrameRelayMux

Values none
vendorForum
ansi
ccitt

Default ccitt

ATTRIBUTE FrMux Lmi linkVerificationTimer (t391)

Access Read and write

Description

This attribute specifies the time interval (in seconds) at which the *FrMux* sends Status Enquiry messages to the interface. Exchange of Status Enquiry and Status Report messages constitutes a polling cycle, so this attribute may also be interpreted as time

interval at which the *FrMux* initiates polling cycles. It must be less than *checkPointTimer (t392)* configured at the other end of the Frame Relay interface.

This attribute corresponds to t391 of the ANSI and CCITT specifications, and nT1 of the Vendor Forum specification.

Mib	FrameRelayMux
Values	Decimal (5; 10; 15; 20; 25; 30)
Units	seconds
Default	10

ATTRIBUTE FrMux Lmi fullStatusPollingCycles (n391)

Access	Read and write
Description	This attribute specifies every which polling cycle the *FrMux* sends a full STATUS ENQUIRY to the interface. Every *fullStatusPollingCycles* polling cycles the *FrMux* sends a full STATUS ENQUIRY. In all other cycles of a sequence of *fullStatusPollingCycles* polling cycles the *FrMux* sends a keep alive STATUS ENQUIRY. This attribute corresponds to n391 of the ANSI and CCITT specifications and nN1 of the Vendor Forum specification.
Mib	FrameRelayMux
Values	Decimal (1..255)
Default	6

ATTRIBUTE FrMux Lmi errorEventThreshold (n392)

Access	Read and write
Description	This attribute specifies the number of error events which, if they occur within *eventCount* events, will cause a protocol error condition (*protocolStatus* = ***errorCondition***). The error condition is cleared after *eventCount* sequential correct events occur (*protocolStatus* = ***normalCondition***).

An event is one of the following: (1) expiry of the linkVerificationTimer (t391), (2) reception of a STATUS message. An error event is one of the following: (1)non-receipt of the STATUS message in t391 seconds, (2)invalid STATUS message, (3) invalid sequence number.

This attribute corresponds to n392 of the ANSI and CCITT specifications and nN2 of the Vendor Forum Specification.

This attribute must be less than or equal to *eventCount*.

Mib: FrameRelayMux

Values: Decimal (1..10)

Default: 3

ATTRIBUTE FrMux Lmi eventCount (n393)

Access: Read and write

Description

This attribute specifies the number of contiguous events within which no more than *eventErrorThreshold* error events are allowed.

This attribute corresponds to n392 of the ANSI and CCITT specifications and nN3 of the Vendor Forum Specification.

This attribute must be greater than or equal to *errorEventThreshold*.

Mib: FrameRelayMux

Values: Decimal (1..10)

Default: 4

GROUP FrMux Lmi OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state

combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib FrameRelayMux

ATTRIBUTE FrMux Lmi adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib FrameRelayMux

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE FrMux Lmi operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be

providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: FrameRelayMux

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE FrMux Lmi usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: FrameRelayMux

Values: idle
active (activ)
busy

Default: idle

GROUP FrMux Lmi ProtocolStatusInfo (Psi)

Properties: Operational

Description:

This group provides the protocol status of the Local Management Interface of this *FrMux*.

Mib FrameRelayMux

ATTRIBUTE FrMux Lmi protocolStatus

Access Read only

Description

This attribute indicates whether the *Lmi* is in an error condition or whether the protocol is behaving normally. When operating with no LMI protocol (*procedures* = ***none***), this attribute will always be set to ***normalCondition***. When operating with an LMI protocol (procedures set to one of ***venforForum***, ***ansi***, ***ccitt***), this attribute is set to ***errorCondition*** when *errorEventThreshold* of the last *eventCount* events are in error.
The error condition is cleared when *eventCount* consecutive good events take place.
The consequence of an error condition is that all *Dlci*'s on this interface become disabled and there is no data flow in either direction.

Mib FrameRelayMux

Values errorCondition
normalCondition

Default normalCondition

GROUP FrMux Lmi Statistics (Stats)

Properties Operational

Description

This group contains the operational statistics for the *FrMux* Local Management Interface.

Mib FrameRelayMux

ATTRIBUTE FrMux Lmi keepAliveStatusEnqToIf (kati)

Access Read only

Description

This attribute counts the number of keep alive STATUS ENQUIRY messages sent to the interface. When the maximum count is reached it wraps to zero.

Mib	FrameRelayMux
Values	Decimal (0..4294967275)
Default	0

ATTRIBUTE FrMux Lmi fullStatusEnqToIf (fsti)

Access	Read only
Description	This attribute counts the number of full STATUS ENQUIRY messages sent to the interface. When the maximum count is reached it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967275)
Default	0

ATTRIBUTE FrMux Lmi protocolErrors (proto)

Access	Read only
Description	This attribute counts the number of Local Management Interface protocol errors. Protocol errors include (1) protocol message format errors, (2) protocol timer expiry errors, and (3) sequence errors. When the maximum count is reached it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967275)
Default	0

ATTRIBUTE FrMux Lmi unexpectedIes (uie)

Access	Read only
Description	This attribute counts the number of frames received with an Information Element identifier that is unknown or unexpected. When the maximum count is reached, this counter wraps to zero.
Mib	FrameRelayMux

Values	Decimal (0..4294967275)
Default	0

ATTRIBUTE FrMux Lmi sequenceErrors (seq)

Access	Read only
Description	This attribute counts the number of Local Management Interface sequence errors. A sequence error is receipt of an LMI message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967275)
Default	0

ATTRIBUTE FrMux Lmi unexpectedReports (ur)

Access	Read only
Description	This attribute counts the number of frames received on the Local Management Interface with an unknown or unexpected report type. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967275)
Default	0

ATTRIBUTE FrMux Lmi noStatusReportCount (nsrc)

Access	Read only
Description	This attribute counts the number of times when no status report or an invalid status report comes from the external network. This attribute is incremented in two cases: i) after a status enquiry is sent out and t391 timer expires without

	having a status report received. ii) an invalid status report is received. When the maximum count is reached it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967275)
Default	0

COMPONENT FrMux DataLinkConnectionIdentifier (Dlci)

Instance	Decimal (16..1007)
Groups	"GROUP FrMux Dlci Operational (Oper)" "GROUP FrMux Dlci OsiState (State)" "GROUP FrMux Dlci ABitStatus (Abit)" "GROUP FrMux Dlci Statistics (Stats)"
Scope	Application
Description	*FrMux/n Dlci/n* This component is responsible for the Frame Relay U-plane (User-plane) protocol for the specified instance. The instance value is used to identify the logical connection, multiplexed within the physical channel, with which a frame is associated. All frames carried within a particular physical channel and having the same DLCI value are associated with the same logical connection.
Mib	FrameRelayMux
Subcomponents	"COMPONENT FrMux Dlci ApplicationInfo (ApplInfo)"
Common Verbs	Help List Display Add DELete

GROUP FrMux Dlci Operational (Oper)

Properties	Operational

Description

This group contains the name of the application associated with this *Dlci*.

Mib FrameRelayMux

ATTRIBUTE FrMux Dlci applicationName (applName)

Access Read only

Description

This attribute contains the name of the application associated with this *Dlci*.

Mib FrameRelayMux

Values The name of the component

Default No default

GROUP FrMux Dlci OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib FrameRelayMux

ATTRIBUTE FrMux Dlci adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: FrameRelayMux

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE FrMux Dlci operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: FrameRelayMux

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE FrMux Dlci usageState (osiUsage)

Access: Read only

Description

This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib

FrameRelayMux

Values

idle
active (activ)
busy

Default

idle

GROUP FrMux Dlci ABitStatus (Abit)

Properties

Operational

Description

This group contains the A-Bit status information for this *Dlci*.

Mib

FrameRelayMux

ATTRIBUTE FrMux Dlci aBitStatusFromIf (abfi)

Access

Read only

Description

This attribute is the most recent A-Bit status received from the interface.

Mib

FrameRelayMux

Values

inactive
active

Default

inactive

GROUP FrMux Dlci Statistics (Stats)

Properties

Operational

Description

This group contains the operational statistics for the *FrMux Dlci*.

Mib FrameRelayMux

ATTRIBUTE FrMux Dlci frmToIf (fti)

Access Read only

Description

This attribute counts the frames sent to the interface. When the maximum count is reached the count wraps to zero.

Mib FrameRelayMux

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrMux Dlci bytesToIf (bti)

Access Read only

Description

This attribute counts the bytes sent to the interface. When the maximum count is reached the count wraps to zero.

Mib FrameRelayMux

Values Long Integer

Default No default

ATTRIBUTE FrMux Dlci frmFromIf (ffi)

Access Read only

Description

This attribute counts the frames received from the interface. Frames that are discarded are not included in this count. When the maximum count is reached the count wraps to zero.

Mib FrameRelayMux

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrMux Dlci deFrmFromIf (defi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci bytesFromIf (bfi)

Access	Read only
Description	This attribute counts the bytes received from the interface. Frames that are discarded are not included in this count. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayMux
Values	Long Integer
Default	No default

ATTRIBUTE FrMux Dlci deBytesFromIf (debi)

Access	Read only
Description	This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Long Integer
Default	No default

ATTRIBUTE FrMux Dlci fecnFrmToIf (fecnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci fecnFrmFromIf (fecnfi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci becnFrmToIf (becnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci becnFrmFromIf (becnfi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci discCongestedFromIf (disccfi)

Access	Read only
Description	This attribute counts the number of frames discarded in the receive direction due to local congestion. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci discCongestedFromIfBytes (disccfib)

Access	Read only
Description	This attribute counts the number of bytes discarded in the receive direction due to local congestion. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci discDeCongestedFromIf (discdecfi)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) frames discarded in the receive direction due to local congestion. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci discDeCongestedFromIfBytes (discdecfib)

Access	Read only
Description	This attribute counts the number of bytes of discard eligible (DE=1) traffic discarded in the receive direction due to local congestion. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci errorShortFrmFromIf (shortfi)

Access	Read only
Description	This attribute counts the frames received with 0 octets in the information field. When the count reaches maximum it wraps to zero.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrMux Dlci errorLongFrmFromIf (longfi)

Access	Read only
Description	This attribute counts the frames received with number of octets in the information field greater than the maximum frame size provisioned in the component pointed to by the *applicationName*. When the count reaches maximum it wraps to zero. Frames whose lengths are greater than the hardware receive buffer are discarded by the *Framer* and are therefore not included in this count.
Mib	FrameRelayMux
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrMux Dlci ApplicationInfo (ApplInfo)

Groups	"GROUP FrMux Dlci ApplInfo Provisioned (Prov)"
Scope	Application
Description	*FrMux/n Dlci/n ApplicationInfo* This component contains provisionable attributes of this *Dlci*.
Mib	FrameRelayMux
Common Verbs	Help List Display

GROUP FrMux Dlci ApplInfo Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes of this *Dlci*.
Mib	FrameRelayMux

ATTRIBUTE FrMux Dlci ApplInfo applicationName (applName)

Access	Read and write

Description	This attribute is the link to the application associated with this *Dlci*.
Mib	FrameRelayMux
Values	Link (Service, dlciName)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component FrMux

Release 6.1

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7400/15000/20000

Component FrNni

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Component FrNni

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COMPONENT FrameRelayNni (FrNni)

Instance	Decimal (1..4294967295)
Groups	"GROUP FrNni CustomerIdentifierData (CidData)" "GROUP FrNni OsiState (State)" "GROUP FrNni Statistics (Stats)" "GROUP FrNni IfEntryProv (IfEntry)" "GROUP FrNni OperationalStatus (OperStatus)" "GROUP FrNni EmissionPriorityQs" "GROUP FrNni TrafficStatistics (TrafficStats)"
Scope	Application
Description	*FrameRelayNni/n* This component defines an instance of the Frame Relay Network-to-Network Interface (NNI) service. This service allows two networks to be interconnected using the Frame Relay protocol. The component instance value n is a unique positive integer within a module. The *FrNni* interface must have either a *Framer* or a *VirtualFramer* subcomponent. As a default, a *Framer* is created whenever the *FrNni* is added. Users who need a

	VirtualFramer should delete the *Framer* and then add the *VirtualFramer*.
Mib	FrameRelayNni
Subcomponents	"COMPONENT FrNni DataNetworkAddress (Dna)" "COMPONENT FrNni LocalManagementInterface (Lmi)" "COMPONENT FrNni ConnectionAdministrator (Ca)"
Opt. Subcomp.	"COMPONENT FrNni Framer" "COMPONENT FrNni VirtualFramer (VFramer)" "COMPONENT FrNni Signaling (Sig)" "COMPONENT FrNni LoadTestSystem (Lts)" "COMPONENT FrNni ServiceTrace (SrvTrace)" "COMPONENT FrNni BnxProtocol (Bp)"
Opt. Subcomp.	"COMPONENT FrNni DataLinkConnectionIdentifier (Dlci)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP FrNni CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	FrameRelayNni

ATTRIBUTE FrNni customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute;

otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	FrameRelayNni
Values	Decimal (0; 1..8191)
Default	0

GROUP FrNni OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayNni

ATTRIBUTE FrNni adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component.

When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	FrameRelayNni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrNni operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayNni

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrNni usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayNni
Values	idle active (activ) busy
Default	idle

ATTRIBUTE FrNni availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: FrameRelayNni

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE FrNni proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been

initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	FrameRelayNni
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrNni controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: FrameRelayNni

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE FrNni alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: FrameRelayNni

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE FrNni standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	FrameRelayNni
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE FrNni unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FrameRelayNni
Values	false true
Default	false

GROUP FrNni Statistics (Stats)

Properties	Operational
Description	This group contains the statistics about the operational behavior of the service at the interface level.
Mib	FrameRelayNni

ATTRIBUTE FrNni lastUnknownDlci (ludlc)

Access	Read only
Description	This attribute identifies the most recent DLCI which user frames were received on for which a DLCI has not been provisioned on the port.

Mib	FrameRelayNni
Values	Decimal (0..1023)
Default	0

ATTRIBUTE FrNni unknownDlciFramesFromIf (unknown)

Access	Read only
Description	This attribute contains a count of the number of frames received from the interface with an unknown DLCI (DLCI which is not provisioned). When the maximum is exceeded the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni invalidHeaderFramesFromIf (invalid)

Access	Read only
Description	This attribute counts the number of frames received from the interface with an invalid header format. When the maximum is exceeded the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

GROUP FrNni IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	FrameRelayNni

ATTRIBUTE FrNni ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayNni
Values	up down testing
Default	up

ATTRIBUTE FrNni ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayNni
Values	Decimal (1..65535)
Default	No default

GROUP FrNni OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	FrameRelayNni

ATTRIBUTE FrNni snmpOperStatus

Access	Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayNni
Values	up down testing
Default	up

GROUP FrNni EmissionPriorityQs

Properties	Provisioned
Description	This group contains the provisionable attribute to specify the number of Frame Relay egress emission priority queues to be used on that Frame Relay Interface
Mib	FrameRelayNni

ATTRIBUTE FrNni numberOfEmissionQs

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of egress emission priority queues that will be used for that Frame Relay interface. For V.35, V.11, HSSI, E1, DS1, E3, DS3 or 8pDS1 the possible values are: ***2*** (in which case they are hardware queues), or ***4*** (in which case they are software queues). For DS1C, E1C or DS3C the possible values are ***2, 4*** (in all cases they are software queues). For 32 port Msa cards the possible values are ***2, 4*** (in all cases they are hardware queues). For 4pDS3Ch, 1pSTM1ChSmIr PQC6v2 (also known as PQC2)

	the possible values are ***2, 4*** (in all cases they are hardware queues). For 4pDS3Ch PQC12, setting this attribute has no effect on the number of egress emission priority queues, four hardware queues are always used.
Mib	FrameRelayNni
Values	Decimal (2; 4)
Default	2

GROUP FrNni TrafficStatistics (TrafficStats)

Properties	Operational
Description	This operational group provides the traffic statistics of the service at the interface level. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	FrameRelayNni

ATTRIBUTE FrNni frmToIfByQueue

Access	Read only
Description	This attribute counts the frames transmitted to the interface through each of the egress queues. The number of queues is determined by the attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, and egress queue 3 has the highest priority. The attribute is displayed only on SBIC cards when *numberOfEmissionQs* is 4.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

ATTRIBUTE FrNni octetToIfByQueue

Access	Read only
Description	This attribute counts the octets transmitted to the interface through each of the egress queues. The number of queues is determined by the attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, and egress queue 3 has the highest priority. The attribute is displayed only on SBIC cards when *numberOfEmissionQs* is 4.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

COMPONENT FrNni DataNetworkAddress (Dna)

Groups	"GROUP FrNni Dna Address" "GROUP FrNni Dna OutgoingOptions" "GROUP FrNni Dna CallOptions"
Scope	Application
Description	This group contains a superset of all attributes which may apply to a VC. Particular applications will typically offer only a subset of these attributes by providing a definition of their own DNA subcomponent.
Mib	FrameRelayNni
Opt. Subcomp.	"COMPONENT FrNni Dna HuntGroupMember (HgM)"
Common Verbs	Help List Display

GROUP FrNni Dna Address

Properties	Provisioned

Description	This group contains attributes common to all DNAs. Every DNA used in the network is defined with this group of 2 attributes.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Process
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the DNA that is entered. Address may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Mib	FrameRelayNni
Values	x121 e164
Default	x121

ATTRIBUTE FrNni Dna dataNetworkAddress (dna)

Access	Read and write
Criticality	Process
Description	This attribute indicates the customer's unique identifier. It is the equivalent of the telephone number in the telephone network.
Mib	FrameRelayNni
Values	BCD (1..15)
Default	No default

GROUP FrNni Dna OutgoingOptions

Properties	Provisioned
Description	This group defines DNA call options for calls made from the interface. These options are not used for calls arriving to the interface represented by this *DNA*.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dna outDefaultPriority (odf)

Access	Read and write
Description	This attribute indicates the default priority of outgoing calls from the DTE to the network. It can be overridden by the *discardPriority* under *DLCI Direct Call* subcomponent. This option can be also included in X.25 signaling, in such case it will be overruled.
Mib	FrameRelayNni
Values	normal high
Default	normal

ATTRIBUTE FrNni Dna outDefaultPathReliability (opr)

Access	Read and write
Description	This attribute specifies the default class of routing for reliability routing for all outgoing calls (from the DTE to the network) using this particular DNA. The chosen default class of routing applies to all outgoing calls established using this DNA, and applies to the packets travelling in both directions on all outgoing calls (local to remote, and remote to local). For incoming calls, the default class of routing is chosen by the calling party (as opposed to DPN, where either end of the call can choose the default routing class). This attribute, if set to a value of *normal*, indicates that the default class of routing is normal reliability routing. If set to a value of *high*, then the default class of routing is high reliability routing. High reliability is the standard choice for most DPN and Nortel Networks Multiservice Switch services. It usually indicates that packets are overflowed or retransmitted at various routing levels. Typically high reliability results in duplication and disordering of packets in the network when errors are detected or during link congestion. However, the VC handles the duplication and

disordering to ensure that packets are delivered to the DTE properly.
For the Frame Relay service, duplication of packets is not desired, in which case, normal reliability may be chosen as the preferred class of routing.

Mib: FrameRelayNni

Values: normal
high

Default: normal

ATTRIBUTE FrNni Dna defaultTransferPriority (dtp)

Access: Read and write

Description: This attribute specifies the default transfer priority for all outgoing calls using this particular *DNA*. It can be overridden by the *transferPriority* provisioned in the *Dlci DirectCall* sub-component.

The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 levels from 0 to 15.

Each transfer priority n, where n indicates the transfer priority index, contains a default setting for routing class of service (multimedia, delay or throughput) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required.

The default *defaultTransferPriority* is ***0***.

Mib: FrameRelayNni

Values: 0
1

	2 3 4 5 6 7 8 9 10 11 12 13 14 15
Default	0

ATTRIBUTE FrNni Dna transferPriorityOverRide (tpor)

Access	Read and write
Description	When this attribute is set to ***yes*** in the call request, the called end will use the calling end provisioning data on transfer priority to override its own provisioning data. If it is set ***no***, the called end will use its own provisioning data on transfer priority. This attribute is not applicable for Frame Relay SVCs. For more information about transfer priority, please refer to the previous attribute *defaultTransferPriority.* The default of *transferPriorityOverRide* is ***yes***.
Mib	FrameRelayNni
Values	yes no
Default	yes

GROUP FrNni Dna CallOptions

Properties	Provisioned

Description	This group defines additional all options for not related to direction of the call.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dna accountClass (acl)

Access	Read and write
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. Use of this attribute is decided by network operator. This attribute is returned by the local VC in the accounting record for all calls that are set up using this particular DNA.
Mib	FrameRelayNni
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrNni Dna accountCollection (aco)

Access	Read and write
Description	This attribute indicates that accounting records are to be collected by the network for the various reasons: billing, test, study, auditing. The last of the parameters, force, indicates that accounting records are to be collected irrespective of other collection reasons. The force option is available for X.75 Gateways only. If none of these reasons are set, then accounting will be suppressed. To set a specific accounting collection reason, the reason is entered and the corresponding bit in the structure is set to a value of 1. To turn off a specific accounting collection reason, the reason is entered preceded with the '~' character, and the corresponding bit in the structure is set to a value of 0. The bit placement for the accounting collection reasons is as follows: Bit 0 - Bill Bit 1 - Test Bit 2 - Study

	Bit 3 - Audit Bit 4 - Force
Mib	FrameRelayNni
Set of	bill test study audit force
Default	(bill)

ATTRIBUTE FrNni Dna serviceExchange (sre)

Access	Read and write
Description	This attribute is an arbitrary number, Data Service Exchange, as entered by the network operator and reported in accounting record. It is converted into an internal 8-bit integer value for use in the accounting record as well as in various X.25 and X.75 Tariff utilities.
Mib	FrameRelayNni
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrNni Dna egressAccounting (ega)

Access	Read and write
Description	This attribute specifies if egress accounting is enabled by the frame relay service. If egress accounting is disabled, only segment counts are collected by the VC. No frame relay counts appear in the accounting records for the frame relay service. If egress accounting is enabled, the accounting records for the frame relay service will contain frame relay specific counts.
Mib	FrameRelayNni
Values	yes no
Default	no

ATTRIBUTE FrNni Dna dataPath (dpa)

Access	Read and write
Description	This attribute specifies the data path to be used by Virtual Circuits on this interface. If the connection has a *DirectCall* component then the value can be overridden by the *dataPath* attribute of the *DirectCall* component. This value applies to the connection after data transfer state is reached. All the data and control traffic will be sent using this data path. If the provisioned *dataPath* is not available the connection is not established. The value of the *dataPath* is signaled by both ends of the connection. If this value is not the same at both ends ***dprsOnly*** is used for the duration of the connection. A virtual circuit connection is always established using ***dprsOnly*** even if this attribute is provisioned as some other value. ***dprsOnly*** - dynamic packet routing system is used ***dprsMcsOnly*** - DPRS Multiservice Cut-Through Switching path is used. ***dprsMcsFirst*** - DPRS Multiservice Cut-Through Switching path is used if it is available. If it is not available ***dprsOnly*** is used.
Mib	FrameRelayNni
Values	dprsOnly dprsMcsOnly dprsMcsFirst
Default	dprsOnly

COMPONENT FrNni Dna HuntGroupMember (HgM)

Groups	"GROUP FrNni Dna HgM Interface (If)" "GROUP FrNni Dna HgM Operational (Op)"

Scope	Application
Description	*FrNni/n Dna HuntGroupMember* This component specifies the interaction of this *DNA* with one or more hunt groups to which it is expected to belong. Note that is not possible to automatically verify the consistency of the hunt group membership specified under this component with the hunt group provisioning on the DPN Hunt Group Server(s).
Mib	FrameRelayNni
Subcomponents	"COMPONENT FrNni Dna HgM HuntGroupAddress (HgAddr)"
Common Verbs	Help List Display Add DELete

GROUP FrNni Dna HgM Interface (If)

Properties	Provisioned
Description	This group contains the interface parameters between the *HuntGroupMember* and the hunt group server.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dna HgM availabilityUpdateThreshold (aut)

Access	Read and write
Description	This attribute specifies how much *availableAggregateCIR* can change before an Availability Message Packet (AMP) is sent to the hunt group server informing it of the change. If the value specified is not a multiple of 2048, the value actually used as the threshold will be the next higher multiple of 2048.
Mib	FrameRelayNni
Values	Decimal (2048..16777216)
Units	bit/s

Default	8192

GROUP FrNni Dna HgM Operational (Op)

Properties	Operational
Description	This group contains the operational attributes of the *HuntGroupMember* component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dna HgM availabilityDelta (ad)

Access	Read only
Description	This attribute indicates the net change in the available aggregate CIR since the last Availability Message Packet (AMP) was sent to the Hunt Group. Once the absolute value of this attribute reaches the *availabilityUpdateThreshold* an AMP is sent to the hunt group server(s) and the *availabilityDelta* is re-computed.
Mib	FrameRelayNni
Values	Signed (-16777216..16777215)
Units	bit/s
Default	No default

ATTRIBUTE FrNni Dna HgM availableDlcis (adl)

Access	Read only
Description	This attribute indicates the number of DLCIs available for SVCs on the interface associated with this DNA. If this value reaches 0, an AMP with zero availability is sent to the hunt group server(s). Both this attribute and the *availableAggregateCir* attribute must be non zero for this DNA to receive calls on the hunt group.
Mib	FrameRelayNni
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE FrNni Dna HgM maximumAvailableAggregateCir (mcir)

Access	Read only
Description	This attribute indicates the maximum available bandwidth for this hunt group member. This value represents the total sum of the sixteen egress bandwidth pools. It is the sum of the sixteen indices of the *FrNni Ca egressBandwidthPool* attribute multiplied by the link speed.
Mib	FrameRelayNni
Values	Long Integer
Units	bit/s
Default	No default

ATTRIBUTE FrNni Dna HgM availableAggregateCir (acir)

Access	Read only
Description	This attribute indicates the current total available bandwidth reported to the hunt group server in the Availability Message Packet (AMP). This value represents the sum of the sixteen currently available egress bandwidth pools. It is the sum of the sixteen indices of the *FrNni Ca egressPoolAvailableBandwidth* attribute. It increments when a connection is released. It decrements when a connection is accepted. Both this attribute and the *availableDlcis* attribute must be non zero for this interface to receive calls on a hunt group.
Mib	FrameRelayNni
Values	Long Integer
Units	bit/s
Default	No default

COMPONENT FrNni Dna HgM HuntGroupAddress (HgAddr)

Instance	Decimal (0..63)
Groups	"GROUP FrNni Dna HgM HgAddr Address (Addr)"
Scope	Application

Description	*FrNni/n Dna HgM HuntGroupAddress/n* This component specifies a hunt group address to which this member belongs. A hunt group member belongs to at least one hunt group.
Mib	FrameRelayNni
Common Verbs	Help List Display Add DELete

GROUP FrNni Dna HgM HgAddr Address (Addr)

Properties	Provisioned
Description	This group contains attributes common to all DNAs. Every DNA used in the network is defined with this group of 2 attributes.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dna HgM HgAddr numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *DNA*. The address may belong to X.121 or E.164 plans.
Mib	FrameRelayNni
Values	x121 e164
Default	x121

ATTRIBUTE FrNni Dna HgM HgAddr dataNetworkAddress (dna)

Access	Read and write
Description	This attribute contains digits which form the unique identifier of the customer interface. It can be compared (approximation only) to a telephone number where the phone number identifies a unique telephone set. *DNA* digits are selected and assigned by network operators.

Mib	FrameRelayNni
Values	BCD (1..15)
Default	No default

COMPONENT FrNni Framer

Groups	"GROUP FrNni Framer Provisioned (Prov)" "GROUP FrNni Framer LinkOptions (Link)" "GROUP FrNni Framer OsiState (State)" "GROUP FrNni Framer Statistics (Stats)" "GROUP FrNni Framer LinkUtilization (Util)"

"COLLECTED STATS FrameRelayNni Framer"

Scope	Application
Description	*FrUni/n Framer* *FrNni/n Framer* *FrAtm/n Framer* This component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link

interface datapath statistics (such as frame counts and aborts).

Mib	FrameRelayNni
Common Verbs	Help List Display Add DELete

GROUP FrNni Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	FrameRelayNni

ATTRIBUTE FrNni Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	FrameRelayNni
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP FrNni Framer LinkOptions (Link)

Properties	Provisioned

Description

This group contains attributes defining the framing of data on the link interface.

Mib FrameRelayNni

ATTRIBUTE FrNni Framer dataInversion

Access Read and write

Description

This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed.

This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density.

Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted.

This attribute may only take its default value for non-MSA cards.

Mib FrameRelayNni

Values off
on

Default off

ATTRIBUTE FrNni Framer frameCrcType

Access Read and write

Description

This attribute defines the type of CRC used.

The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness. NoCrc means that CRC is not used.

This attribute may take only its default value for non-MSA cards.

Mib FrameRelayNni

Values crc16
crc32
noCrc

Default crc16

ATTRIBUTE FrNni Framer flagsBetweenFrames

Access Read and write

Description

This attribute defines the number of flags that are inserted between frames sent to the link interface. The flagBetweenFrames can be set to only 1, 2, 4, 8 or 16 for 4pDS3Ch FrameRelay FP.

Mib FrameRelayNni

Values Decimal (1..16)

Default 1

GROUP FrNni Framer OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib FrameRelayNni

ATTRIBUTE FrNni Framer adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	FrameRelayNni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrNni Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayNni
Values	enabled (ena) disabled (dis)

Default	disabled

ATTRIBUTE FrNni Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayNni
Values	idle active (activ) busy
Default	idle

GROUP FrNni Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Framer aborts

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE FrNni Framer crcErrors

Access	Read only
Description	This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Framer lrcErrors

Access	Read only
Description	This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Framer nonOctetErrors

Access	Read only
Description	This attribute is the total number of frames that were non octet aligned.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Framer overruns

Access	Read only

Description

This attribute is the total number of frames received from the link for which overruns occurred.

Mib FrameRelayNni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrNni Framer underruns

Access Read only

Description

This attribute is the total number of frames transmitted to the link for which underruns occurred.

Mib FrameRelayNni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrNni Framer largeFrmErrors

Access Read only

Description

This attribute is the total number of frames received which were too large. The frame exceeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.

Mib FrameRelayNni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrNni Framer frmModeErrors

Access Read only

Description

This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are

	inconsistent with the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	FrameRelayNni
Values	Long Integer

Default	No default

ATTRIBUTE FrNni Framer ingressFrameDiscards

Access	Read only
Description	This attribute is the total number of frames discarded at ingress PQC.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

GROUP FrNni Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	FrameRelayNni
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE FrNni Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	FrameRelayNni
Values	Decimal (0..100)
Units	%
Default	0

COLLECTED STATS FrameRelayNni Framer

Description	The statistics record generated by the FrameRelayNni Framer component.

ATTRIBUTE FrNni Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE FrNni Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE FrNni Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE FrNni Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE FrNni Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT FrNni LocalManagementInterface (Lmi)

Groups	"GROUP FrNni Lmi ProtocolParameters (Parms)" "GROUP FrNni Lmi NniProtocolParameters (NniParms)" "GROUP FrNni Lmi OsiState (State)" "GROUP FrNni Lmi ProtocolStatusInfo (Psi)" "GROUP FrNni Lmi Statistics (Stats)"
Scope	Application
Description	*FrNni/n LocalManagementInterface* This component defines the parameters for implementing the Frame Relay NNI Local Management Interface protocol. This differs from its UNI counterpart in that bi-directional LMI procedures are supported and protocols other than ANSI and CCITT are not supported.
Mib	FrameRelayNni
Common Verbs	Help List Display

GROUP FrNni Lmi ProtocolParameters (Parms)

Properties	Provisioned

Description

This group contains the provisionable attributes of the Local Management Interface component.

Mib FrameRelayNni

ATTRIBUTE FrNni Lmi procedures (proc)

Access Read and write

Criticality Process

Description

This attribute selects the procedures to be used for the Local Management Interface. The following are the supported procedures:

none: Local Management Interface procedures are not running on this interface. This accommodates Frame Relay user equipment which didn't implement any LMI procedures. In this case, the remaining attributes of this group are ignored.

For the ***4pDS3Ch*** card, when the *timeslot* of the *channel* component linked to this *FrNni* is set to ***none***, only ***none*** is permitted for the *procedures* attribute of this *Lmi* component.

ansi: Local Management Interface procedures from the ANSI specification are supported. *DLCI 0* is used for the LMI protocol.

itu: Local Management Interface procedures from the ITU-T specification are supported. *DLCI 0* is used for the LMI protocol. Was previously ***ccitt***.

autoConfigure:The interface determines automatically which Local Management Interface procedures to use.

The procedures currently being used can be seen in the operational attribute *opProcedures*.

Mib FrameRelayNni

Values none
ansi

	itu (ccitt) autoConfigure
Default	autoConfigure

ATTRIBUTE FrNni Lmi asyncStatusReport (asr)

Access	Read and write
Description	This attribute selects the use of asynchronous PVC status report procedures as specified in ANSI and CCITT specification.
Mib	FrameRelayNni
Values	off on
Default	off

ATTRIBUTE FrNni Lmi errorEventThreshold (n392)

Access	Read and write
Description	For the network-side-procedure, an event is defined as follows: (1) receipt of a STATUS ENQUIRY message, or (2) expiration of timer T392. An error event is (1) nonreceipt of STATUS ENQUIRY in T392 seconds; (2) invalid format of a LMI message; (3) invalid receive sequence number. For the user-side-procedure, an event is defined as a polling cycle or a status enquiry and status report exchange. An error event is (1) non-receipt of a STATUS within the polling cycle, or (2) invalid format of a LMI message, or (3) invalid sequence number This attribute specifies the number of error events which, if they occur within *eventCount* events, will cause a protocol error condition. The condition is cleared after *eventCount* sequential correct events occur. It must be less than or equal to *eventCount* (n393)
Mib	FrameRelayNni
Values	Decimal (1..10)

Default	3

ATTRIBUTE FrNni Lmi eventCount (n393)

Access	Read and write
Description	This attribute specifies the number of contiguous events within which no more than *eventErrorThreshold* error events are allowed. It must be greater than or equal to *errorEventThreshold* (n392).
Mib	FrameRelayNni
Values	Decimal (1..10)
Default	4

ATTRIBUTE FrNni Lmi checkPointTimer (t392)

Access	Read and write
Description	This attribute selects the time (in seconds) within which a STATUS ENQUIRY message is expected. It must be greater than *linkVerificationTimer (t391).*
Mib	FrameRelayNni
Values	Decimal (1; 2; 3; 4; 5; 10; 15; 20; 25; 30)
Units	seconds
Default	15

ATTRIBUTE FrNni Lmi ignoreActiveBit (inab)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the Frame Relay LMI Active Bit (A-bit) has a bearing on the transfer of user data across this Frame Relay interface for both directions of traffic flow.

When this attribute is set to ***yes***, the A-bit status of a user DLCI connection does not affect data transfer.

When this attribute is set to ***no,*** data received from the local interface is discarded if an A-bit =0 condition exists towards the local user. Data being sent to the local interface is discarded if an A-bit = 0 condition exists towards the local user.

Mib FrameRelayNni

Values no
yes

Default no

ATTRIBUTE FrNni Lmi pvcAlarmsReporting (pvcAlarms)

Access Read and write

Description This attribute specifies if alarms are generated when PVCs change state in the local network, an adjacent network or in remote networks.

When the value is ***internal***, PVCs operational status change in the local network are reported in alarms. When the value is ***external***, PVCs operational status change in an adjacent or remote networks are reported in alarms. When the value is ***both***, PVCs status change in local and adjacent or remote networks are reported in alarms. When the value is ***none***, no alarms are issued for PVCs status change.

There are four kinds of alarms controlled by the attribute.
Alarm 7007 200x reports PVCs that have lost connectivity in an adjacent or remote networks.
Alarm 7007 201x reports PVCs that have reached the data transfer state in an adjacent or remote networks.
Alarm 7007 202x reports PVCs that have lost connectivity in the local network.
Alarm 7007 203x reports PVCs that have reached the data transfer state in the local network.

Each alarm can report a maximum of 112 DLCIs. Up to nine

alarms of the same kind may be required to report all PVCs that have changed state if all these PVCs have experienced the same condition at the *FrNni* interface.

Mib: FrameRelayNni

Values:
external
internal
both
none

Default: external

GROUP FrNni Lmi NniProtocolParameters (NniParms)

Properties: Provisioned

Description:
This group contains the provisionable attributes of the Local Management Interface component which are unique to NNI.

Mib: FrameRelayNni

ATTRIBUTE FrNni Lmi fullStatusPollingCycles (n391)

Access: Read and write

Description: This attribute specifies how frequently the Frame Relay NNI service should initiate a Status Enquiry for a full PVC status report. A polling cycle is a Status Enquiry and Status Report exchange.

Mib: FrameRelayNni

Values: Decimal (1..255)

Default: 6

ATTRIBUTE FrNni Lmi linkVerificationTimer (t391)

Access: Read and write

Description:
This attribute specifies how frequently the Frame Relay NNI service should initiate a Status Enquiry for link integrity verification. It must be less than *checkPointTimer (t392)*.

Mib	FrameRelayNni
Values	Decimal (1; 2; 3; 4; 5; 10; 15; 20; 25; 30)
Units	seconds
Default	10

GROUP FrNni Lmi OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lmi adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayNni

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrNni Lmi operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayNni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrNni Lmi usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	FrameRelayNni
Values	idle active (activ) busy
Default	idle

GROUP FrNni Lmi ProtocolStatusInfo (Psi)

Properties	Operational
Description	This group provides the protocol status of the Local Management Interface.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lmi protocolStatus

Access	Read only
Description	This attribute indicates whether the LMI is in an error condition or whether the LMI procedures are behaving normally. When operating with no LMI protocol, this attribute is always set to ***normalCondition***. When operating with LMI procedures, this attribute is set to ***errorCondition*** after n392 of the last n393 events are in error. The consequence of an ***errorCondition*** is that all DLCIs on this interface will become inactive in both directions. The ***errorCondition*** is lifted and a ***normalCondition*** is indicated when a sufficient number of events have occurred without error. In ANSI, this occurs when n393 consecutive good events take place. If the *procedures* attribute is set to ***autoConfigure***, this attribute is se to ***configuring*** while adaptive LMI determines which LMI procedures are running on the link. A single LMI error event during auto configuration causes the attribute value to change to ***errorCondition***. If during ***configuring*** no LMI message is received, an LMI ***errorCondition*** is raised after n392 x t392 seconds.
Mib	FrameRelayNni

Values	errorCondition normalCondition configuring
Default	No default

ATTRIBUTE FrNni Lmi opProcedures (opproc)

Access	Read only
Criticality	Process
Description	This attribute indicates the procedures being used for the Local Management Interface. This attribute should be ignored if *protocolStatus* is not ***normalCondition***. The following procedures are supported: ***none***: Local Management Interface procedures are not running on this interface. This accommodates Frame Relay user equipment that has not implemented any LMI procedures. ***ansi***: Local Management Interface procedures from the ANSI specification are running. *DLCI 0* is used for the LMI protocol. ***itu***: Local Management Interface procedures from the ITU-T specification are running. *DLCI 0* is used for the LMI protocol. Was previously ***ccitt***. ***unknown***: Local Management Interface procedures have yet to be determined by Adaptive LMI.
Mib	FrameRelayNni
Values	none ansi itu unknown
Default	No default

GROUP FrNni Lmi Statistics (Stats)

Properties	Operational

Description

This group contains the operational statistics for the Frame Relay NNI Local Management Interface.

Mib FrameRelayNni

ATTRIBUTE FrNni Lmi keepAliveStatusToIf (kasti)

Access Read only

Description

This attribute counts the number of Local Management Interface keep alive status messages sent to the external network in response to a status enquiry for keep alive status. When the maximum count is exceeded it wraps to zero.

Mib FrameRelayNni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrNni Lmi fullStatusToIf (fsti)

Access Read only

Description

This attribute counts the number of Local Management Interface full status messages sent to the external network in response to a status enquiry for keep alive or full status. When the maximum count is exceeded it wraps to zero.

Mib FrameRelayNni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrNni Lmi keepAliveStatusEnqFromIf (kafi)

Access Read only

Description

This attribute counts the number of Local Management Interface valid keep alive status enquiry messages received from the

	external network. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi fullStatusEnqFromIf (fsfi)

Access	Read only
Description	This attribute counts the number of Local Management Interface valid full status enquiry messages received from the external network. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi networkSideEventHistory (nsh)

Access	Read only
Description	This attribute displays the Local Management Interface network side procedure event history in order of occurrence. An event is represented by a single symbol. A ‘+’ symbol indicates a good event. An ‘X‘ symbol indicates a protocol error event. The leftmost event is the most recent to occur. The provisioned *eventCount* (nN3/N393) dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status enquiry message. An error event is either a nT2/T392 timer expiry or receipt of a status enquiry with bad sequence numbers.
Mib	FrameRelayNni
Values	String (1..10, ASCII)
Default	No default

ATTRIBUTE FrNni Lmi userSideEventHistory (ush)

Access	Read only
Description	This attribute displays the Local Management Interface user side procedure event history in order of occurrence. An event is represented by a single symbol. A '+' symbol indicates a good event. An 'X' symbol indicates a protocol error event. The leftmost event is the most recent to occur. The provisioned *eventCount* (nN3/N393) dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status message. An error event is either a nT1/T391 timer expiry or receipt of a status message with bad sequence numbers.
Mib	FrameRelayNni
Values	String (1..10, ASCII)
Default	No default

ATTRIBUTE FrNni Lmi protocolErrors (proto)

Access	Read only
Description	This attribute counts the number of Local Management Interface protocol errors. It is the sum of the sequence (*sequenceErrors* and *statusSequenceErrors*) and timeout (*pollingVerifTimeouts* and *noStatusReportCount*) errors. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi unexpectedIes (uie)

Access	Read only
Description	This attribute counts the number of Local Management Interface frames received with an Information Element identifier that is unknown or unexpected. An unexpected Information Element is

	not a protocol error. When the maximum count is exceeded, this counter wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi sequenceErrors (seq)

Access	Read only
Description	This attribute counts the number of Local Management Interface Status Enquiry message sequence errors. A sequence error is receipt of a Status Enquiry message with a receive sequence number not equal to the last send sequence number. When the maximum count is exceeded the counter wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi statusSequenceErrors (stseq)

Access	Read only
Description	This attribute counts the number of Local Management Interface Status message sequence errors. A sequence error is receipt of a Status message with a receive sequence number not equal to the last send sequence number. When the maximum count is exceeded the counter wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lmi unexpectedReports (ur)

Access	Read only

Description

This attribute counts the number of Local Management Interface frames received with an unknown or unexpected report type. An unexpected report type is not a protocol error. When the maximum count is exceeded the counter wraps to zero.

Mib FrameRelayNni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrNni Lmi pollingVerifTimeouts (tmo)

Access Read only

Description

This attribute counts the number of checkPointTImer (t392) timer expiries occurring on the Local Management Interface. When the maximum count is exceeded the counter wraps to zero.

Mib FrameRelayNni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrNni Lmi noStatusReportCount (nsrc)

Access Read only

Description

This attribute counts the number of times when no status report or an invalid status report comes from the external network. This attribute is incremented in two cases:
i) after a status enquiry is sent out and T391 timer expires without having a status report received.
ii) an invalid status report is received.

When the maximum count is exceeded it wraps to zero.

Mib FrameRelayNni

Values Decimal (0..4294967295)

Default 0

COMPONENT FrNni DataLinkConnectionIdentifier (Dlci)

Instance	Decimal (16..1007)
Groups	"GROUP FrNni Dlci OsiState (State)" "GROUP FrNni Dlci ABitStatus (Abit)" "GROUP FrNni Dlci ServiceParametersOp (SpOp)" "GROUP FrNni Dlci Statistics (Stats)" "GROUP FrNni Dlci IntervalData (Int)" "GROUP FrNni Dlci CallData (Calld)"
Scope	Application
Description	*FrNni/n DataLinkConnectionIdentifier/n* This component represents a Data Link Connection Identifier. It is responsible for the Frame Relay U-plane (User-plane) protocol for the specified instance. There can be many instances of *Dlci* for each *FrNni*. The instance value is used to identify the logical connection, multiplexed within the physical channel, with which a frame is associated. All frames carried within a particular physical channel and having the same DLCI value are associated with the same logical connection. A DLCI instance can be a permanent virtual circuit (PVC) or switched permanent virtual circuit (P-SPVC) added through provisioning, or a switched virtual circuit (SVC) or S-SPVC which is created dynamically through signaling. The *lock* and *unlock* commands apply to permanent DLCIs. The *clear* command applies to switched DLCIs. For the ***4pDS3Ch*** card, when the *timeslot* of the *channel*

component linked to this *FrNni* is set to ***none***, no *Dlci* component is allowed under this *FrNni*.

Mib	FrameRelayNni
Subcomponents	"COMPONENT FrNni Dlci ServiceParametersProv (Sp)" "COMPONENT FrNni Dlci EgressServiceParameters (EgressSp)"
Opt. Subcomp.	"COMPONENT FrNni Dlci DirectCall (Dc)" "COMPONENT FrNni Dlci BnxInterworkingFunction (BnxIwf)"
Dyn. Subcomp.	"COMPONENT FrNni Dlci Vc" "COMPONENT FrNni Dlci LoopBack (Lb)"
Common Verbs	Help List Display Add DELete LOCK Unlock

VERB CLEAR FrNni Dlci

Impact	Service
Description	This command is used to clear a Frame Relay switched (SVC or S-SPVC) connection.

GROUP FrNni Dlci OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayNni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrNni Dlci operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: FrameRelayNni

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE FrNni Dlci usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: FrameRelayNni

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE FrNni Dlci availabilityStatus (osiAvail)

Access: Read only

Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is

one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	FrameRelayNni
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE FrNni Dlci proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required

before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	FrameRelayNni
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrNni Dlci controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	FrameRelayNni
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE FrNni Dlci alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: FrameRelayNni

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE FrNni Dlci standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and

containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: FrameRelayNni

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE FrNni Dlci unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: FrameRelayNni

Values:
false
true

Default: false

GROUP FrNni Dlci ABitStatus (Abit)

Properties: Operational

Description: This group contains the A-Bit status information for this Data Link Connection Identifier.

Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci aBitStatusToIf (abti)

Access	Read only
Description	This attribute is the most recent A-bit status sent to the interface. The A-bit status is part of the LMI protocol, and indicates willingness to accept data from the local interface. ***inactive*** - the Frame Relay service discards all data offered from the local interface. ***active*** - the Frame Relay service tries to process all data offered from the local interface. ***notApplicable*** - the DLCI is switched, so this attribute is ignored.
Mib	FrameRelayNni
Values	inactive active notApplicable
Default	inactive

ATTRIBUTE FrNni Dlci aBitReasonToIf (abrti)

Access	Read only
Description	This attribute provides the reason (if any) for an ***inactive*** status to be sent to the interface. This reason is ***notApplicable*** for an ***active*** status.
Mib	FrameRelayNni
Values	notApplicable remoteUserSignaled localLmiError remoteLmiError localLinkDown remoteLinkDown pvcSpvcDown userNotAuthorized

	resourceNotAvailable dlciCollisionAtNni
Default	notApplicable

ATTRIBUTE FrNni Dlci aBitStatusFromIf (abfi)

Access	Read only
Description	This attribute is the most recent A-Bit status received from the interface. ***inactive*** - the Frame Relay service informs the remote DLCI not to send user data to this interface. ***active*** - the Frame Relay service informs the remote DLCI that it is okay to send user data to this interface. ***notApplicable*** - the DLCI is switched, so this attribute is ignored.
Mib	FrameRelayNni
Values	inactive active notApplicable
Default	inactive

ATTRIBUTE FrNni Dlci aBitReasonFromIf (abrfi)

Access	Read only
Description	This attribute provides the reason (if any) for an ***inactive*** status to be sent to the subnet. This reason is ***notApplicable*** for an ***active*** status.
Mib	FrameRelayNni
Values	notApplicable remoteUserSignaled localLmiError localLinkDown missingFromLmiReport
Default	notApplicable

ATTRIBUTE FrNni Dlci loopbackState

Access	Read only
Description	This attribute has the value ***on*** when the DLCI is in loopback mode and ***off*** otherwise. The loopback command verbs *start* and *stop* are used to initiate and terminate the loopback mode for a DLCI. While *loopbackState* is ***on***, the local LMI will report to the interface the A-bit status as active. Also an active A-bit signal will be reliably propagated across the subnet to the remote DLCI.
Mib	FrameRelayNni
Values	off on
Default	off

GROUP FrNni Dlci ServiceParametersOp (SpOp)

Properties	Operational
Description	This group defines the service and traffic parameters specific to this instance of DLCI. In the case of permanent (PVC and P-SPVC) DLCIs, the values of attributes with the exception of the *measurementInterval* reflect the provisioning under the *FrNni Dlci Sp* component. In the case of switched (SVC and S-SPVC) DLCIs, the values of attributes reflect the service parameter negotiations between what is provisioned under the *FrNni Sig* component and the signaled parameters.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci maximumFrameSize (n203)

Access	Read only
Description	This attribute indicates the maximum number of octets which may be included in the information field. The frame relay header and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.
Mib	FrameRelayNni

Values	Decimal (1..8187)
Units	octets
Default	No default

ATTRIBUTE FrNni Dlci committedInformationRate (cir)

Access	Read only
Description	This attribute indicates the committed information rate (CIR) in bits per second (bit/s). When *rateEnforcement* is set to ***on***, *cir* is the rate at which the network agrees to transfer information under normal conditions. This rate is measured over a measurement interval (*t*) that is determined internally based on CIR and the committed burst size (Bc). An exception to this occurs when CIR is provisioned to be zero, in which case the measurement interval (*t*) must be provisioned explicitly. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayNni
Values	Decimal (0..2048000)
Units	bit/s
Default	No default

ATTRIBUTE FrNni Dlci committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (Bc) in bits. *bc* is the amount of data that a network agrees to transfer under normal conditions over a measurement interval (*t*). Data marked DE=1 is not accounted for in Bc. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayNni
Values	Decimal (0..2048000)
Units	bits

Default	No default

ATTRIBUTE FrNni Dlci excessBurstSize (be)

Access	Read only
Description	This attribute indicates the excess burst size (Be) in bits. Be is the amount of uncommitted data that the network will attempt to deliver over measurement interval T. Data marked DE=1 by the user or by the network is accounted for here. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayNni
Values	Decimal (0..2048000)
Units	bits
Default	No default

ATTRIBUTE FrNni Dlci measurementInterval (t)

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE FrNni Dlci accounting (ac)

Access	Read only
Description	This attribute indicates whether accounting data collection and record generation is turned on at this DLCI. For accounting data collection and record generation to be turned on, the

accountingOn bit and at least one of the ***accountCollection*** bits in the ***DataNetworkAddress*** component must be set to on.

Mib: FrameRelayNni

Values: off
on

Default: No default

ATTRIBUTE FrNni Dlci emissionPriorityToIf (epToIf)

Access: Read only

Description: This attribute indicates the emission priority of frames sent to the interface. A larger value denotes a higher priority.

Mib: FrameRelayNni

Values: Decimal (0; 1; 2; 3)

Default: No default

ATTRIBUTE FrNni Dlci transferPriorityToNetwork (tpToNwk)

Access: Read only

Description: This attribute indicates the priority at which data is transferred to the network.

The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 indices from 0 to 15.

Each transfer priority n, where n specifies the transfer priority index, contains a default setting for routing class of service (***multimedia***, ***delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user

if required.

Mib	FrameRelayNni
Values	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Dlci transferPriorityFromNetwork (tpFromNwk)

Access	Read only
Description	This attribute indicates the priority at which data is transferred from the network. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 indices from 0 to 15. Each transfer priority n, where n specifies the transfer priority index, contains a default setting for routing class of service (***multimedia***, ***delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required.
Mib	FrameRelayNni
Values	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Dlci correlationTag (ctag)

Access	Read only
Description	This attribute indicates the unique string which identifies this connection. The value of this attribute is provisioned under the

correlationTag attribute under *Service Parameters* subcomponent. If required for correlation purposes, the attribute is provisioned with the same value at both endpoints of the connection.

An empty string value for this attribute indicates that the user either does not want to use the correlation tag functionality, or wants the correlation tag string to be an empty string.

This attribute can be used for off-switch data correlation purposes. Downstream processing uses this attribute to correlate data records (accounting etc.) issued at different nodes in the network. In accounting, the value of this attribute appears as the *circuitId* (circuit identifier) for the endpoint.

There is no system-generated value for the correlationTag. Therefore, this attribute does not appear for SVC DLCIs.

Mib	FrameRelayNni
Values	String (0..32, ASCII)
Default	""

GROUP FrNni Dlci Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for the Frame Relay Data Link Connection Identifier. When the DLCI is in local loopback mode, the DLCI statistics do not increment.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci frmToIf (fti)

Access	Read only
Description	This attribute counts the frames sent out the interface. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayNni

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci fecnFrmToIf (fecnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci becnFrmToIf (becnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci bciToSubnet (bcits)

Access	Read only
Description	This attribute counts the frames sent into the local network with the Backward Congestion Indication (BCI) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci deFrmToIf (deti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discCongestedToIf (discardcti)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay service due to local congestion in the direction toward the interface. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discDeCongestedToIf (discarddecti)

Access	Read only
Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set, at the Frame Relay service, due to local congestion in the direction toward the interface. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci frmFromIf (ffi)

Access	Read only

Description	This attribute counts the frames received from the interface. It includes the frames that are discarded due to error or excess. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci fecnFrmFromIf (fecnfi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci becnFrmFromIf (becnfi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci fciFromSubnet (fcifs)

Access	Read only
Description	This attribute counts the frames received from the network with the Forward Congestion Indication (FCI) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci bciFromSubnet (bcifsb)

Access	Read only
Description	This attribute counts the frames received from the network with the Backward Congestion Indication (BCI) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci deFrmFromIf (defi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci excessFrmFromIf (excess)

Access	Read only
Description	This attribute counts the frames received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discExcessFromIf (discardefi)

Access	Read only
Description	This attribute counts the frames which were discarded due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discFrameAbit (discfab)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay Service, due to an inactive PVC status, in the direction toward the local network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discCongestedFromIf (discardcfi)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay service due to local congestion in the direction toward the network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discDeCongestedFromIf (discarddecfi)

Access	Read only

Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set, at the Frame Relay service, due to local congestion, in the direction toward the local network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci errorShortFrmFromIf (shortfi)

Access	Read only
Description	This attribute counts the frames received with 0 octets in the information field. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci errorLongFrmFromIf (longfi)

Access	Read only
Description	This attribute counts the frames received with number of octets in the information field greater than the subscribed maximum. When the count reaches maximum it wraps to zero. Frames whose lengths are greater than the hardware receive buffer are ignored by the hardware and are therefore not included in this count.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci becnFrmSetByService (becnset)

Access	Read only

Description	This attribute counts the number of frames with BECN set by the Frame Relay service. It is incremented whenever the Frame Relay service sets BECN on a frame upon detecting local congestion. This count is incremented regardless of whether the frame already bears a set BECN bit since its use is to determine the place of congestion. When the count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci bytesToIf (bti)

Access	Read only
Description	This attribute counts the bytes sent out the interface. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci deBytesToIf (debti)

Access	Read only
Description	This attribute counts the bytes sent to the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discCongestedToIfBytes (discardctib)

Access	Read only

Description	This attribute counts the number of byte discards at the Frame Relay service due to local congestion in the direction toward the link. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discDeCongestedToIfBytes (discarddectib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the Frame Relay service due to local congestion in the direction toward the link. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci bytesFromIf (bfi)

Access	Read only
Description	This attribute counts the bytes received from the interface. Bytes that are discarded due to error or excess are not counted. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci deBytesFromIf (debi)

Access	Read only
Description	This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.

Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci excessBytesFromIf (excessb)

Access	Read only
Description	This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discExcessFromIfBytes (discardebi)

Access	Read only
Description	This attribute counts the bytes which were discarded due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discByteAbit (discbab)

Access	Read only
Description	This attribute counts the bytes which were discarded due to aBit turned off.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discCongestedFromIfBytes (discardcbib)

Access	Read only
Description	This attribute counts the number of byte discards at the Frame Relay service due to local congestion in the direction toward the network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci discDeCongestedFromIfBytes (discarddecbib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the Frame Relay service due to local congestion in the direction toward the network. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci errorShortBytesFromIf (shortbi)

Access	Read only
Description	This attribute counts the bytes received with 0 octets in the information field. When the count reaches maximum it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci errorLongBytesFromIf (longbi)

Access	Read only

Description	This attribute counts the bytes received with number of octets in the information field greater than the subscribed maximum. When the count reaches maximum it wraps to zero. Bytes whose lengths are greater than the hardware receive buffer are ignored by the hardware and are therefore not included in this count.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci rateAdaptReduct (rar)

Access	Read only
Description	This attribute counts the number of rate reductions due to rate adaptation. Rate adaptation causes the allowed rate to be reduced in steps. After each reduction, a period of time is awaited before further action is taken. At the end of this period, the allowed rate is further reduced if congestion is still prevalent. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci rateAdaptReductPeriod (rarp)

Access	Read only
Description	This attribute provides a cumulative count of the amount of time that rate adaptation procedures have been in effect. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE FrNni Dlci cirPresent

Access	Read only
Description	This attribute provides the actual Committed Information Rate (CIR) enforced for this DLCI. This number is in units of 800 bit/s, since that is the internal resolution of rate enforcement. If *rateEnforcement* is **off**, then this number does not have meaning. Normally, this attribute matches the provisioned CIR for the DLCI. But when Rate Adaptation is active, then this number will vary to represent the actual Allowed CIR at the moment that this attribute is collected.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

ATTRIBUTE FrNni Dlci eirPresent

Access	Read only
Description	This attribute provides the actual Excess Information Rate (EIR) enforced for this DLCI. This number is in units of 800 bit/s, since that is the internal resolution of rate enforcement. If *rateEnforcement* is **off**, then this number does not have meaning. Normally, this attribute matches the provisioned EIR for the DLCI. But when Rate Adaptation is active, then this number will vary to represent the actual Allowed EIR at the moment that this attribute is collected.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP FrNni Dlci IntervalData (Int)

Properties	Operational

Description	This group contains the operational statistics for the Frame Relay Data Link Connection Identifier interval data (accounting data).
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci startTime

Access	Read only
Description	This attribute indicates the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes. A new interval period is started each time an accounting record is generated.
Mib	FrameRelayNni
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrNni Dlci totalIngressBytes (tib)

Access	Read only
Description	This attribute counts the total bytes received from the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni Dlci totalEgressBytes

Access	Read only
Description	This attribute counts the total bytes sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.

Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni Dlci eirIngressBytes

Access	Read only
Description	This attribute counts the total bytes with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni Dlci eirEgressBytes

Access	Read only
Description	This attribute counts the total bytes with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni Dlci discardedBytes

Access	Read only
Description	This attribute counts the total bytes in invalid frames received from the interface and discarded at the DLCI since the start of the interval period. This count is a sum of octets in frames discarded due to the number of octets in the information field greater than

	the subscribed maximum or equal to 0, due to aBit turned off, or due to rate enforcement. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni Dlci totalIngressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the total number of segments in frames received from the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the total number of frames received from the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci totalEgressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the total number of segments in frames sent to the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the total number of frames sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.

Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci eirIngressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of segments in frames with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci eirEgressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of segments in frames with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated
Mib	FrameRelayNni
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE FrNni Dlci discardedSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of segments in invalid frames received from the interface and discarded at the DLCI. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of invalid frames received from the interface and discarded at the DLCI. Segments of frames are counted since the start of the interval period. The count is reset to zero when an accounting record is generated. The count is a sum of segments in frames or frames discarded due to the number of octets in the information field greater than the subscribed maximum or equal to 0, due to aBit turned off, or due to rate enforcement.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci localRateAdaptOccurred

Access	Read only
Description	This attribute indicates whether rate adaptation has occurred on this user Data Link Connection on this Frame Relay interface. The value is set to ***no*** when an accounting record is generated.
Mib	FrameRelayNni
Values	yes no
Default	no

ATTRIBUTE FrNni Dlci elapsedDifference

Access	Read only

Description	This attribute indicates the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since the call started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci egressProtocol (ep)

Access	Read only
Description	This attribute indicates whether the egress protocol is active at this DLCI. The activation of the egress protocol is negotiated at the call setup and it depends on the remote end supporting OAM frame exchanges and the record generation mode.
Mib	FrameRelayNni
Values	off on
Default	No default

ATTRIBUTE FrNni Dlci callRefNumber

Access	Read only
Description	This attribute indicates the call reference number which is a unique number generated by the switch. The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the connection.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

GROUP FrNni Dlci CallData (CallId)

Properties	Operational

Description	This group of attributes describes the characteristics of the call such as call type and call state.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci callType (ct)

Access	Read only
Description	This attribute indicates whether this DLCI is a permanent virtual circuit (PVC), a switched virtual circuit (SVC), or a switched permanent virtual circuit (SPVC).
Mib	FrameRelayNni
Values	pvc svc spvc
Default	No default

ATTRIBUTE FrNni Dlci callState

Access	Read only
Description	This attribute indicates the FRF.10 state of a switched call. The value of this attribute for a permanent (PVC and P-SPVC) DLCI is always ***notApplicable***. In the description that follows, “calling STE” refers to the network who has initiated the SETUP request, and “called STE” refers to the network that receives the request. State description: In the ***null*** state, the network has neither received nor sent call setup requests for this DLCI. In the ***callInitiated*** state, the called STE has received a SETUP message from the calling STE. In the ***callProceedingSent*** state, the called STE has sent a CALL PROCEEDING message to the calling STE in response to the SETUP message. In the ***callPresent*** state, the calling STE has sent a SETUP message to the called STE but has not received a response.

In the ***callProceedingReceived*** state, the calling STE has received a CALL PROCEEDING message from the called STE in response to a SETUP message.

In the ***active*** state, either the called STE has sent a CONNECT message to the calling STE, or the calling STE has received a CONNECT from the called STE.

In the ***releaseRequest*** state, the STE has sent a RELEASE message to release the call and is waiting for a RELEASE COMPLETE message.

In the ***releaseIndication*** state, the STE has received a RELEASE and sends a RELEASE COMPLETE message after releasing the relevant call resources.

In the ***restartRequest*** state, the STE has sent a RESTART request to the other STE and is waiting for an acknowledgement.

In the ***restart*** state, the STE has received a request for a restart from the other STE and this STE has not returned an acknowledgement.

Mib	FrameRelayNni
Values	null callInitiated callProceedingSent callPresent callProceedingReceived active releaseRequest releaseIndication restartRequest restart notApplicable
Default	No default

ATTRIBUTE FrNni Dlci callReference (callref)

Access	Read only
Description	This attribute indicates the FRF.10 call reference number associated with this DLCI. The value of this attribute for a provisioned (PVC or P-SPVC) DLCI is always ***0***.
Mib	FrameRelayNni
Values	Decimal (0..32767)
Default	No default

COMPONENT FrNni Dlci DirectCall (Dc)

Groups	"GROUP FrNni Dlci Dc Options"
Scope	Application
Description	*FrUni/n Dlci/n DirectCall* *FrNni/n Dlci/n DirectCall* This component defines direct call options for calls issued without operator intervention. Connection is complete and can be initiated automatically. Frequency of connection tries is controlled by retry timer. If no BnxProtocol component is provisioned under a FrUni or FrNni, a DirectCall component is automatically added to all the Dlci components added to the FrUni or FrNni. If a BnxProtocol component is provisioned under a FrUni or FrNni, no DirectCall is automatically added under the Dlci component.
Mib	FrameRelayNni
Common Verbs	Help List Display Add DELete

GROUP FrNni Dlci Dc Options

Properties	Provisioned
Description	This group defines attributes associated with a direct call. It defines connection in terms of path and call option parameters. This connection can be permanent (PVC), switched (SVC), or switched permanent (SPVC). It can have four facilities: - CCITT Facilities - DTE Facilities - National Facilities - International Facilities The total number of bytes of facilities including the facility codes and all of the facility data from all of the four classes of facilities must not exceed 512 bytes.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci Dc remoteNpi (rnpi)

Access	Read and write
Description	This attribute specifies the Numbering Plan Indicator (NPI) of the *remoteDna*.
Mib	FrameRelayNni
Values	x121 e164
Default	x121

ATTRIBUTE FrNni Dlci Dc remoteDna (rdna)

Access	Read and write
Description	This attribute specifies the Data Network Address (DNA) of the service at the remote end of the DLCI. This is the called (destination) DCE address (DNA) of this PVC.
Mib	FrameRelayNni
Values	BCD (1..15)
Default	No default

ATTRIBUTE FrNni Dlci Dc remoteDlci (rdlci)

Access	Read and write
Description	This attribute specifies the remote DLCI of the PVC connection.
Mib	FrameRelayNni
Values	Decimal (16..1007)
Default	No default

ATTRIBUTE FrNni Dlci Dc type

Access	Read and write
Description	This attribute specifies the type of VC call. If the value is set to ***permanentMaster,*** then a permanent connection will be established between two ends. The remote end must be defined as a ***permanentSlave, permanentBackupSlave,*** or ***permanentSlaveWithBackup***. The connection cannot be established if the remote end is defined as anything else. The end defined as ***permanentMaster*** always initiates the calls. It attempts to call once per minute. If the value is set to ***permanentSlave*** then a permanent connection will be established between two ends. The remote end must be defined as a ***permanentMaster.*** The connection cannot be established if the remote end is defined as anything else. The ***permanentSlave*** end attempts to call once per minute. If the value is set to ***permanentSlaveWithBackup*** then a permanent connection will be established between the two ends. The remote end must be defined as a ***permanentMaster.*** The connection cannot be established if the remote interface is defined as anything else. The ***permanentSlaveWithBackup*** attempts to call once per minute. When *type* is set to ***permanentSlaveWithBackup,*** the connection is cleared if the interface becomes unavailable. This enables a retry of the connection which can be redirected to the ***permanentBackupSlave***.

If the value is set to ***permanentBackupSlave*** then a permanent connection is established between the two ends only if the ***permanentMaster*** end is disconnected from the ***permanentSlaveWithBackup*** end and a backup call is established by the call redirection system. If the ***permanentSlaveWithBackup*** interface becomes available again, the ***permanentBackupSlave*** end is disconnected and the ***permanentSlaveWithBackup*** end is reconnected to the ***permanentMaster*** end. The ***permanentBackupSlave*** end does not try to establish a call.

Mib FrameRelayNni

Values
permanentMaster (master)
permanentSlave (slave)
permanentBackupSlave (backSl)
permanentSlaveWithBackup (slavWB)
spvcMaster (spvcM)
spvcSlave (spvcS)
spvcBackupSlave (spvcBackS)
spvcSlaveWithBackup (spvcSWBack)

Default permanentMaster

ATTRIBUTE FrNni Dlci Dc transferPriority (tp)

Access Read and write

Description This attribute specifies the transfer priority to the local network for the outgoing calls using this particular DLCI. It overrides the *defaultTransferPriority* provisioned in its associated *Dna* component.

The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 levels from 0 to 15.

Each transfer priority n, where n is the transfer priority index, has a default setting for routing class of service (multimedia, delay, or throughput) and Frame Relay egress queue (depending on the

number of supported egress queues on the remote end interface). These settings are specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned under the *Mod Frs DprsNet Tpm/n* component.

Specifying ***useDnaDefTP*** means using the value given by *defaultTransferPriority* in the associated *Dna* for this DLCI.

Mib: FrameRelayNni

Values:
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
useDnaDefTP

Default: useDnaDefTP

ATTRIBUTE FrNni Dlci Dc discardPriority (dp)

Access: Read and write

Description: This attribute specifies the discard priority for outgoing call using this DLCI.

The discard priority has three provisioning values: ***normal***, ***high***, and ***useDnaDefPriority***. Under congestion conditions, traffic with ***normal*** priority is discarded before traffic with ***high*** priority. The *Dna* default value (provisioned by *outDefaultPriority*) is taken if this attribute is set to the value ***useDnaDefPriority***.

Mib	FrameRelayNni
Values	normal high useDnaDefPriority
Default	useDnaDefPriority

ATTRIBUTE FrNni Dlci Dc deDiscardPriority (ddp)

Access	Read and write
Description	This attribute specifies whether the *discardPriority* applies to DE frames for this DLCI. When set to ***determinedByDiscardPriority***, traffic with DE bit set will be discarded according to the setting of the *discardPriority.* When set to ***lowest***, all traffic with DE bit set is treated the same and is sent to the subnet at the lowest discard priority.
Mib	FrameRelayNni
Values	lowest determinedByDiscardPriority
Default	determinedByDiscardPriority

ATTRIBUTE FrNni Dlci Dc dataPath (dpa)

Access	Read and write
Description	This attribute specifies the data path to be used by Virtual Circuits on this interface. The value of the *dataPath* attribute in the *Dna* component is overridden by this attribute if the value is not ***useDnaValue***. This value applies to the connection after data transfer state is reached. All the data and control traffic will be sent using this data path. If the provisioned *dataPath* is not available the connection is not established. The value of the *dataPath* is signaled by both ends of the

connection. If this value is not the same at both ends ***dprsOnly*** is used for the duration of the connection.

A virtual circuit connection is always established using ***dprsOnly*** even if this attribute is provisioned as some other value.

dprsOnly - The dynamic packet routing system is used.

dprsMcsOnly - The DPRS Multi-Service Cut-Through Switching path is used.

dprsMcsFirst - The DPRS Multi-Service Cut-Through Switching path is used if it is available. If it is not available, ***dprsOnly*** is used.

useDnaValue - The routing system used is based on the value provisioned in the *Dna* component.

Mib: FrameRelayNni

Values:
dprsOnly (dpOnly)
dprsMcsOnly (mcOnly)
dprsMcsFirst (mcFrst)
useDnaValue (dnaVal)

Default: useDnaValue

ATTRIBUTE FrNni Dlci Dc cugIndex (ci)

Access: Read and write

Description

This attribute specifies the CUG index which is to be signaled in PVC and SPVC call requests to the remote end.

The type of CUG signaling is defined in attribute *cugType* in this component.

Mib: FrameRelayNni

Values: Decimal (0..255)

Default: 0

ATTRIBUTE FrNni Dlci Dc cugType (ct)

Access: Read and write

Description:

This attribute specifies the type of CUG signaling to be used in PVC and SPVC call requests. Index of CUG to be used is defined in attribute *cugIndex* in this component.

Possible values are:
cug **-** signal CUG
cugOa **-** signal CUG with outgoing access
doNotSignal **-** no CUG in call request

Mib: FrameRelayNni

Values:
cug
cugOa
doNotSignal

Default: doNotSignal

ATTRIBUTE FrNni Dlci Dc mapIpCosToFrQos (mapctof)

Access: Read and write

Description: This attribute specifies whether an IP TOS value is mapped to an FR QOS. The mapping used is provisioned in the *Mod Frs IpCosToFrQos* component.

When this attribute is set to ***yes***, at Frame Relay egress, the IP TOS byte in each frame is checked. The TOS value determines the egress emission queue and the discard priority for that frame.

When this attribute is set to ***no***, FR QOS is determined by the provisioned discard priority and transfer priority.

When this attribute is set to ***protocolDependent*** at Frame Relay egress, the IP version field in each frame is checked. If the IP version is IP version Four, the TOS value determines the egress emission queue and the discard priority for that frame. If not, the FR QOS is determined by the provisioned discard priority and transfer priority.

	A semantic check error is generated when this attribute is set to either ***yes*** or ***protocolDependent***, and a *FrUni DirectConnection* component is provisioned under the same *FrUni* component.
Mib	FrameRelayNni
Values	no yes protocolDependent
Default	no

COMPONENT FrNni Dlci Vc

Groups	"GROUP FrNni Dlci Vc CallData (Cad)" "GROUP FrNni Dlci Vc IntervalData (Intd)" "GROUP FrNni Dlci Vc FrameRelayData (Frd)"
Scope	Application
Description	This component defines attributes collected by Frame Relay *Vc*.
Mib	FrameRelayNni
Common Verbs	Help List Display

VERB Ping FrNni Dlci Vc

Impact Passive

Description Ping *[-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)]* FrUni/<*n*> Dlci/<*n*> Vc

Ping causes a query packet to be sent to the destination module where the Frame Relay DLCI VC terminates. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the ping query packet will be the same as that of the Frame Relay data except at the source and destination module. The ping packets originate from the CP rather than the Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the Frame Relay FP.

Note that this command does not provide any information regarding the status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified.

The ping command can be issued with or without options. If no options are specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the roundTripDelay option is specified, the command reports the time taken to reach the destination and back. For the roundTripDelay option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the ping packets are generated and bounced back by the CP rather than the Frame Relay DLCI's FP.

The ping command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the

value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

GROUP FrNni Dlci Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.
Mib	FrameRelayNni
Values	pvc svc spvc frf10spvc
Default	No default

ATTRIBUTE FrNni Dlci Vc state

Access	Read only

Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	FrameRelayNni
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE FrNni Dlci Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	FrameRelayNni
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE FrNni Dlci Vc diagnosticCode

Access	Read only

Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrameRelayNni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrNni Dlci Vc previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrameRelayNni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrNni Dlci Vc calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	FrameRelayNni
Values	x121 e164
Default	No default

ATTRIBUTE FrNni Dlci Vc calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	FrameRelayNni
Values	BCD (1..15)

Default	No default

ATTRIBUTE FrNni Dlci Vc calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	FrameRelayNni
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE FrNni Dlci Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	FrameRelayNni
Values	x121 e164
Default	No default

ATTRIBUTE FrNni Dlci Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	FrameRelayNni
Values	BCD (1..15)
Default	No default

ATTRIBUTE FrNni Dlci Vc callingLcn

Access	Read only

Description	This attribute displays the Logical Channel Number of the calling end.
Mib	FrameRelayNni
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE FrNni Dlci Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	FrameRelayNni
Values	yes no
Default	No default

ATTRIBUTE FrNni Dlci Vc fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	FrameRelayNni
Values	yes no
Default	No default

ATTRIBUTE FrNni Dlci Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	FrameRelayNni

Values	high normal
Default	No default

ATTRIBUTE FrNni Dlci Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	FrameRelayNni
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE FrNni Dlci Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	FrameRelayNni
Values	normal high
Default	No default

ATTRIBUTE FrNni Dlci Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	FrameRelayNni
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE FrNni Dlci Vc maxSubnetPktSize

Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	FrameRelayNni
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE FrNni Dlci Vc rcosToNetwork (rcosto)

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	FrameRelayNni
Values	throughput delay multimedia
Default	No default

ATTRIBUTE FrNni Dlci Vc rcosFromNetwork (rcosfrom)

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	FrameRelayNni
Values	throughput delay multimedia
Default	No default

ATTRIBUTE FrNni Dlci Vc emissionPriorityToNetwork (epto)

Access	Read only

Description	This attribute displays the network internal emission priority to the network.
Mib	FrameRelayNni
Values	normal high interrupting
Default	No default

ATTRIBUTE FrNni Dlci Vc emissionPriorityFromNetwork (epfrom)

Access	Read only
Description	This attribute displays the network internal emission priority from the network.
Mib	FrameRelayNni
Values	normal high interrupting
Default	No default

ATTRIBUTE FrNni Dlci Vc dataPath (dapa)

Access	Read only
Description	This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed value of this attribute can be different from the provisioned value. If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system) If the connection is using ***dprsMcsOnly*** data path, the string ***dprsMcsOnly*** is displayed. If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.

Mib	FrameRelayNni
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE FrNni Dlci Vc dprsMcsEndPoint (dmep)

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components. If the connection is using ***dprsOnly*** data path, this attribute is empty. If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.
Mib	FrameRelayNni
List of	The name of the component
Default	No default

GROUP FrNni Dlci Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	FrameRelayNni

Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE FrNni Dlci Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	FrameRelayNni
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE FrNni Dlci Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	FrameRelayNni
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE FrNni Dlci Vc startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	FrameRelayNni
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrNni Dlci Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	No default

GROUP FrNni Dlci Vc FrameRelayData (Frd)

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is

	disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods. Frame Relay *Vc* uses a best effort data packet delivery protocol and a different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*. Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci Vc frmCongestedToSubnet

Access	Read only
Description	This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc cannotForwardToSubnet

Access	Read only
Description	This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion. Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.
Mib	FrameRelayNni
Values	Decimal (0..5000)

Default	No default

ATTRIBUTE FrNni Dlci Vc notDataXferToSubnet

Access	Read only
Description	This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.
Mib	FrameRelayNni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrNni Dlci Vc combErrorsFromSubnet

Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc duplicatesFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc notDataXferFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc frmLossTimeouts

Access	Read only
Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc ooSeqByteCntExceeded

Access	Read only

Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc peakOoSeqPktCount

Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal subnet packet disorder (not due to subnet packet discard). Current implementation also uses

	this statistics to set a maximum size for the out-of-sequenced queue.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc sendSequenceNumber

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	FrameRelayNni
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE FrNni Dlci Vc pktRetryTimeouts

Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc peakRetryQueueSize

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.

Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc subnetRecoveries

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.
Mib	FrameRelayNni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrNni Dlci Vc ooSeqPktCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	FrameRelayNni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrNni Dlci Vc peakOoSeqByteCount

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue

length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.

Mib FrameRelayNni

Values Decimal (0..50000)

Default No default

COMPONENT FrNni Dlci ServiceParametersProv (Sp)

Groups "GROUP FrNni Dlci Sp ServiceParametersProv (Parms)"

Scope Application

Description *FrNni/n Dlci/n ServiceParametersProv*
This component contains the provisionable traffic control attributes for its parent *Dlci* component.

Mib FrameRelayNni

Common Verbs
Help
List
Display

GROUP FrNni Dlci Sp ServiceParametersProv (Parms)

Properties Provisioned

Description
This group contains the provisionable attributes for the Data Link Connection Identifier. These attributes reflect the service parameters specific to this instance of DLCI . The congestion control attributes in this group are defined in T1.606 Addendum 1.

Mib FrameRelayNni

ATTRIBUTE FrNni Dlci Sp maximumFrameSize (n203)

Access Read and write

Description
This attribute specifies the maximum number of octets which may be included in the information field. The frame relay header

and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.

Mib FrameRelayNni

Values Decimal (1..8187)

Units octets

Default 2100

ATTRIBUTE FrNni Dlci Sp rateEnforcement (re)

Access Read and write

Description

This attribute specifies whether rate enforcement is in effect for this user Data Link Connection on this Frame Relay interface. Turning on rate enforcement means that CIR and DE=1 traffic will be measured and enforced. Turning off rate enforcement means that all frames from the user will be accepted and no modifications to the frame with respect to the DE bit will be made.

Mib FrameRelayNni

Values off
on

Default off

ATTRIBUTE FrNni Dlci Sp committedInformationRate (cir)

Access Read and write

Description

This attribute specifies the committed information rate (CIR) in bits per second (bit/s). When *rateEnforcement* is set to ***on***, *cir* is the rate at which the network agrees to transfer information under normal conditions. This rate is measured over a measurement interval (*t*) that is determined internally based on CIR and the committed burst size (Bc). An exception to this occurs when CIR is provisioned to be zero, in which case the measurement interval (*t*) must be provisioned explicitly.

This attribute is ignored when *rateEnforcement* is ***off***. If *rateEnforcement* is ***on*** and this attribute is ***0***, *Bc* must also be ***0***.

Mib FrameRelayNni

Values Decimal (0..50000000)

Units bit/s

Default 64000

ATTRIBUTE FrNni Dlci Sp committedBurstSize (bc)

Access Read and write

Description

This attribute specifies the committed burst size (Bc) in bits. *bc* is the amount of data that a network agrees to transfer under normal conditions over a measurement interval (*t*). Data marked DE=1 is not accounted for in Bc.

This attribute is ignored when *rateEnforcement* is ***off***. If *rateEnforcement* is ***on*** and this attribute is ***0***, *cir* must also be ***0***.

Mib FrameRelayNni

Values Decimal (0..50000000)

Units bits

Default 64000

ATTRIBUTE FrNni Dlci Sp excessBurstSize (be)

Access Read and write

Description

This attribute specifies the excess burst size (Be) in bits. Be is the amount of uncommitted data that the network will attempt to deliver over measurement interval T. Data marked DE=1 by the user or by the network is accounted for here.

CIR, Bc, and Be cannot all be zero when rateEnforcement is on.

Mib FrameRelayNni

Values	Decimal (0..50000000)
Units	bits
Default	0

ATTRIBUTE FrNni Dlci Sp measurementInterval (t)

Access	Read and write
Description	When *cir* and *bc* are zero and *rateEnforcement* is on, this attribute must be provisioned to specify the time interval (in milliseconds) over which rates and burst sizes are measured. When *cir* and *bc* are non-zero, the time interval is internally calculated and is *not shown*. In that situation, this field is ignored, and is not representative of the time interval. This attribute is ignored when *rateEnforcement* is ***off***, or when *cir* and *bc* are ***non-zero***. If *rateEnforcement* is ***on*** and both *cir* and *bc* are ***zero***, this field must be ***non-zero***.
Mib	FrameRelayNni
Values	Decimal (0..25500)
Units	msec
Default	0

ATTRIBUTE FrNni Dlci Sp rateAdaptation (ra)

Access	Read and write
Description	This attribute specifies whether rate adaptation is in effect for this user Data Link Connection on this Frame Relay interface. Rate adaptation is a feature that, in periods of congestion, adapts the rate at which the user is allowed to send data into the network to that which the network is able to handle at that time. This pro-active measure of handling congestion optimizes network resources by causing the ingress to discard frames that would otherwise be discarded in the network. If this attribute is set to ***on***, then, at the onset of congestion, the

excess information rate (EIR) is reduced to a very low rate. If congestion persists, then the allowed CIR is reduced geometrically by 25% of the current value at that time. The minimum to which CIR can be reduced is 1/16th (6.25%) of the provisioned value. As congestion alleviates, CIR is increased linearly by 6.25% of the provisioned value specified in *committedInformationRate*.

If set to ***eirOnly***, then rate adaptation will only apply to the excess information rate (EIR). At the onset of congestion, the allowed EIR is reduced by 25% of its provisioned value. If congestion persists, EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR.

If set to ***cirProportionate***, then rate adaptation will also only apply to the excess information rate (EIR). At the onset of congestion the initial allowed EIR is set to a multiple of the provisioned CIR. If congestion persists, the allowed EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR. Note that the allowed EIR may be set higher than the provisioned EIR, since it is calculated initially using another parameter, the provisioned CIR. If the allowed EIR at the moment is higher than the provisioned EIR, then the provisioned EIR is used instead.

This attribute can only be set to ***on eirOnly*** or ***cirProportionate*** if *rateEnforcement* is turned ***on***.

This attribute must be set to ***off*** if the *BnxIwf* component is provisioned under this *Dlci*.

Mib	FrameRelayNni
Values	off on eirOnly cirProportionate
Default	off

ATTRIBUTE FrNni Dlci Sp accounting (ac)

Access	Read and write
Description	This attribute specifies whether accounting data collection and record generation is turned on at this DLCI. For accounting data collection and record generation to be turned on, the ***accountingOn*** bit and at least one of the ***accountCollection*** bits in the ***DataNetworkAddress*** component must be set to on.
Mib	FrameRelayNni
Values	off on
Default	on

ATTRIBUTE FrNni Dlci Sp raSensitivity (rasens)

Access	Read and write
Description	This attribute specifies the sensitivity of the rate adaptation system. A higher number indicates a higher sensitivity and therefore a quicker reaction time to network conditions. A quicker reaction time allows the network to discard frames at the access and protect network resources, but can lead to false alarms and a greater fluctuation of the allowed rate. A higher setting therefore tends to favour the protection of the network over the allowed throughput of the user. A lower number indicates a lower sensitivity and therefore a slower reaction to network conditions. A slower reaction time results in a greater amount of user traffic allowed into the network, but can lead to a waste of network bandwidth since the traffic may be discarded at the congested resource. A lower setting therefore tends to favour the allowed throughput of the user over the protection of the network. This attribute is applicable for adapting EIR when *rateAdaptation* is ***eirOnly*** or ***cirProportionate***, or CIR when *rateAdaptation* is ***on***.

This attribute is ignored if *rateAdaptation* is turned ***off***.

Mib FrameRelayNni

Values Decimal (1..20)

Default 7

ATTRIBUTE FrNni Dlci Sp updateBCI (updBCI)

Access Read and write

Description

This attribute specifies whether internal Backward Congestion Indication (BCI) bits will report congestion external to the network, as communicated through incoming BECN bits.

If *updateBCI* is set to ***on***, then BCI bits for incoming frames will be set if the BECN on the frame is set. If *updatBCI* is set to ***off***, then incoming BECN bits have no effect.

Setting *updateBCI* ***on*** for a DLCI means that the remote end of the DLCI, that is specified by the *remoteDna* and *remoteDlci* attributes of the *dc* component of the *dlci*, may perform Rate Adaptation using the flow of incoming BECN bits, in addition to internal congestion management systems.

If the *rateAdaptation* attribute of the remote DLCI is provisioned as ***eirOnly***, ***cirProportionate***, or ***on***, then congestion from another network may trigger dynamic congestion management. If the *rateAdaptation* attribute of the remote DLCI is provisioned to ***off***, then the setting of *updateBCI* attribute here has no effect.

Mib FrameRelayNni

Values off
on

Default off

ATTRIBUTE FrNni Dlci Sp correlationTag (ctag)

Access Read and write

Description	This attribute specifies the unique string which identifies each end of a connection. If required for correlation purposes, the attribute must be provisioned with the same value at both ends of the connection. This attribute can be left as an empty string when the functionality is not required, or when the user requires an empty circuit identifier string against the DLCI. This attribute can be used for off-switch data correlation purposes. Downstream processing uses this attribute to correlate data records (accounting etc.) issued at different nodes in the network. In the accounting record, the value for the *correlationTag* attribute appears as the attribute *circuitId* (circuit identifier) for the endpoint.
Mib	FrameRelayNni
Values	String (0..32, ASCII)
Default	""

COMPONENT FrNni Dlci LoopBack (Lb)

Groups	"GROUP FrNni Dlci Lb Statistics (Stats)"
Scope	Application
Description	*FrUni/n Dlci/n LoopBackFrNni/n Dlci/n LoopBack*This component is the data loopback tool for the parent *DLCI*.
Mib	FrameRelayNni
Common Verbs	Help List Display

VERB START FrNni Dlci Lb

Impact	Service
Description	*start FrUni/n Dlci/n LoopBack* *start FrNni/n Dlci/n LoopBack*This command resets the *LoopbackStatistics* and initiates the loopback mode. The *loopbackState* for this *DLCI* is set to ***on*** for the duration of the loopback mode. When a *DLCI* is in loopback mode, frames coming from the link are returned to the link, incrementing the local loopback statistics. Also, frames coming from the VC are returned to the VC, incrementing the remote loopback statistics. The loopback mode is ended using the stop command.

VERB STOP FrNni Dlci Lb

Impact	Service
Description	*stop FrUni/n Dlci/n LoopBack stop FrNni/n Dlci/n LoopBack* This command terminates the loopback mode and displays the loopback statistics.

GROUP FrNni Dlci Lb Statistics (Stats)

Properties	Operational
Description	This group contains all the statistics for the data loopback tool.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci Lb localTotalFrm (ltf)

Access	Read only
Description	This attribute records the number of frames looped back to the link since loopback was last started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb localTotalBytes (ltb)

Access	Read only

Description	This attribute records the number of bytes looped back to the link since loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb localFecnFrm (lff)

Access	Read only
Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb localBecnFrm (lbf)

Access	Read only
Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb localDeFrm (ldf)

Access	Read only
Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayNni

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb localDeBytes (ldb)

Access	Read only
Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb remoteTotalFrm (rtf)

Access	Read only
Description	This attribute records the number of frames looped back to the subnet since loopback was last started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb remoteTotalBytes (rtb)

Access	Read only
Description	This attribute records the number of bytes looped back to the subnet since loopback was last started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb remoteFecnFrm (rff)

Access	Read only

Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb remoteBecnFrm (rbf)

Access	Read only
Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb remoteDeFrm (rdf)

Access	Read only
Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Lb remoteDeBytes (rdb)

Access	Read only
Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayNni

Values	Decimal (0..4294967295)
Default	0

COMPONENT FrNni Dlci EgressServiceParameters (EgressSp)

Groups	"GROUP FrNni Dlci EgressSp Provisioned (Prov)"
Scope	Application
Description	*FrNni/n Dlci/n EgressServiceParameters* This component contains the provisionable attributes of the egress direction for the parent *Dlci* component.
Mib	FrameRelayNni
Common Verbs	Help List Display

GROUP FrNni Dlci EgressSp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for this component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Dlci EgressSp committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR) for the egress direction. It is used for Call Admission Control (CAC) at the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as the *committedInformationRate* attribute under the *ServiceParameters* component.
Mib	FrameRelayNni
Values	Decimal (0..50000000) sameAsServiceParameters (sameAsSp)

Units	bit/s
Default	sameAsServiceParameters

ATTRIBUTE FrNni Dlci EgressSp committedBurstSize (bc)

Access	Read and write
Description	This attribute specifies the committed burst size (Bc) for the egress direction. It is used for performing Call Admission Control (CAC) at the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as the *committedBurstSize* attribute under the *ServiceParameters* component.
Mib	FrameRelayNni
Values	Decimal (0..50000000) sameAsServiceParameters (sameAsSp)
Units	bits
Default	sameAsServiceParameters

ATTRIBUTE FrNni Dlci EgressSp excessBurstSize (be)

Access	Read and write
Description	This attribute specifies the excess burst size (Be) for the egress direction. It is used for Call Admission Control (CAC) function towards the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as the *excessBurstSize* attribute under the *ServiceParameters* component.
Mib	FrameRelayNni
Values	Decimal (0..50000000) sameAsServiceParameters (sameAsSp)
Units	bits
Default	sameAsServiceParameters

ATTRIBUTE FrNni Dlci EgressSp measurementInterval (t)

Access	Read and write
Description	This attribute specifies the time interval over which rates and burst sizes are measured in the egress direction. It is used for bandwidth reservation for Call Admission Control (CAC) towards the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as the *measurementInterval* attribute under the *ServiceParameters* component.
Mib	FrameRelayNni
Values	Decimal (0..25500) sameAsServiceParameters (sameAsSp)
Units	msec
Default	sameAsServiceParameters

COMPONENT FrNni Dlci BnxInterworkingFunction (BnxIwf)

Groups	"GROUP FrNni Dlci BnxIwf Provisioned (Prov)" "GROUP FrNni Dlci BnxIwf Operational (Op)"
Scope	Application
Description	*FrUni/n Dlci/n BnxInterworkingFunction* *FrNni/n Dlci/n BnxInterworkingFunction* This component specifies that the parent DLCI uses BNX frame relay over an IP network as its networking mechanism. It contains the networking parameters specific to BNX networking.
Mib	FrNniPvcBnx
Common Verbs	Help List Display Add DELete

VERB Redirect FrNni Dlci BnxIwf

Impact	Service
Description	*Redirect [-**force**] -**destination**(<**destination**>) FrUni/n Dlci/n BnxInterworkingFunction* or *Redirect [-**force**] -**destination**(<**destination**>) FrNni/n Dlci/n BnxInterworkingFunction* This verb is used to manually select the PVC destination between the primary and backup destinations, or to enable the automatic redirection. The primary destination and the backup destination are specified by the *BnxInterworkingFunction* component. The ***-destination*** option indicates the destination of PVC redirection. The value of this option can be ***primary***, ***backup,*** or ***onDemand***. The value ***primary*** means that the destination for this PVC has been manually selected to be the primary destination, automatic redirection is disabled. This redirect action corresponds to the “Redirect to Primary” redirect action in the BNX implementation. The value ***backup*** means that the destination for this PVC has been manually selected to be the backup destination, and automatic redirection is disabled. The backup destination must be provisioned. This redirect action corresponds to the “Redirect to Backup” redirect action in the BNX implementation. The value ***onDemand*** means this PVC is redirected automatically

to either the primary destination or the backup destination based on the cross-net status of the primary destination. This automatic switch-over mechanism is revertive to the primary destination. The *crossNetListenEnabled* attribute of the *BnxProtocol* component must be ***yes*** and the backup destination must be provisioned. This redirect action corresponds to the “Switch on Demand” redirect action in the BNX implementation.

The ***-force*** option specifies that the PVC is redirected to either the primary destination or the backup destination indicated by the ***-destination*** option even if the destination is not active. When the value of ***-destination*** is ***onDemand***, this option is ignored.

GROUP FrNni Dlci Bnxlwf Provisioned (Prov)

Properties	Provisioned
Description	This group defines the provisioning attributes associated with a PVC using BNX frame relay interworking.
Mib	FrNniPvcBnx

ATTRIBUTE FrNni Dlci Bnxlwf calledIpAddress (cia)

Access	Read and write
Description	This attribute specifies the IP address of the primary destination which receives the datagrams.
Mib	FrNniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrNni Dlci Bnxlwf calledDlci (cdlci)

Access	Read and write
Description	This attribute specifies the DLCI of the primary destination which receives the datagrams.
Mib	FrNniPvcBnx
Values	Decimal (16..1007)

Default	No default

ATTRIBUTE FrNni Dlci Bnxlwf trafficPriority (tp)

Access	Read and write
Description	This attribute specifies the user control on traffic priority. The value is transmitted in the traffic priority field of the BNX header. Possible values are: ***1*** - High Priority ***2*** - Normal Priority ***3*** - Low Priority ***useBpDefault*** - use the *defaultTrafficPriority* attribute value from the *BnxProtocol* component.
Mib	FrNniPvcBnx
Values	1 2 3 useBpDefault
Default	useBpDefault

ATTRIBUTE FrNni Dlci Bnxlwf backupCalledIpAddress (bcia)

Access	Read and write
Description	This attribute specifies the IP address of the backup destination which receives the datagrams. A value of ***0.0.0.0*** for this attribute and a value of ***undefined*** for the *backupCalledDlci* attribute specify that there is no backup destination.
Mib	FrNniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrNni Dlci Bnxlwf backupCalledDlci (bcdlci)

Access	Read and write
Description	This attribute specifies the DLCI of the backup destination which receives the datagrams. A value of ***undefined*** for this attribute

and a value of ***0.0.0.0*** for the *backupCalledIpAddress* attribute specify that there is no backup destination.

Mib: FrNniPvcBnx

Values: Decimal (16..1007)
undefined

Default: undefined

ATTRIBUTE FrNni Dlci Bnxlwf redirectType (rtype)

Access: Read and write

Description: This attribute indicates the type of DTE notification when a PVC redirection between primary and backup destinations occurs.

transparent means no notification is sent to the DTE.

aIntrusive means that an asynchronous update with the A-bit not set is sent to the DTE.

nIntrusive means that an asynchronous update with the N-bit set is sent to the DTE.

Mib: FrNniPvcBnx

Values: transparent
aIntrusive
nIntrusive

Default: aIntrusive

ATTRIBUTE FrNni Dlci Bnxlwf minActiveIntervals (mai)

Access: Read and write

Description: This attribute specifies the minimum number of consecutive time intervals for which the primary destination must be active before the PVC is redirected back to the primary destination from the backup destination in ***switchOnDemand*** mode. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component. This attribute is ignored if the *BnxProtocol* attribute *crossNetListenEnabled* is set to ***no***.

If the value of this attribute is ***0***, the PVC is redirected back to the primary destination as soon as an active cross-net message is received from the primary destination.

Mib FrNniPvcBnx

Values Decimal (0..4)

Default 0

ATTRIBUTE FrNni Dlci Bnxlwf redirectAction (ra)

Access Read and write

Description This attribute indicates the redirect action for a PVC. The Redirect command can be used to override this redirect action.

switchOnDemand means this PVC is redirected automatically to either the primary destination or the backup destination based on the cross-net status of the primary destination. This automatic switch-over mechanism is revertive to the primary destination. The *crossNetListenEnabled* attribute of the *BnxProtocol* component must be ***yes*** and the backup destination must be provisioned. This redirect action corresponds to the “Switch on Demand” redirect action in the BNX implementation.

manualPrimary means that the destination for this PVC has been manually selected to be the primary destination, automatic redirection is disabled. This redirect action corresponds to the “Redirect to Primary” redirect action in the BNX implementation.

manualBackup means that the destination for this PVC has been manually selected to be the backup destination, and automatic redirection is disabled. The backup destination must be provisioned. This redirect action corresponds to the “Redirect to Backup” redirect action in the BNX implementation.

Mib FrNniPvcBnx

Values	switchOnDemand manualPrimary manualBackup
Default	manualPrimary

GROUP FrNni Dlci Bnxlwf Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the BNX frame relay interworking functionality.
Mib	FrNniPvcBnx

ATTRIBUTE FrNni Dlci Bnxlwf timeOfLastStateChange (tlsc)

Access	Read only
Description	This attribute indicates the time at which the state of the DLCI last changed.
Mib	FrNniPvcBnx
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrNni Dlci Bnxlwf crossNetSent (cnsent)

Access	Read only
Description	This attribute indicates if a cross-net status message was sent to the primary destination during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component.
Mib	FrNniPvcBnx
Values	unsent sent
Default	No default

ATTRIBUTE FrNni Dlci Bnxlwf crossNetStatus (cns)

Access	Read only

Description	This attribute indicates the state of the PVC when the remote end is the primary destination. If the *crossNetListenEnabled* attribute of the *BnxProtocol* component is set to ***yes***, this attribute reflects the state as reported by the remote end. If the *crossNetListenEnabled* attribute is set to ***no***, the PVC is assumed to be up and this attribute has a value of ***active***.
Mib	FrNniPvcBnx
Values	inactive active
Default	inactive

ATTRIBUTE FrNni Dlci Bnxlwf crossNetReceived (cnr)

Access	Read only
Description	This attribute indicates if the DLCI has received a cross-net status message from the primary destination during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component. This attribute is ignored if the *BnxProtocol* attribute *crossNetListenEnabled* is set to ***no***.
Mib	FrNniPvcBnx
Values	unrecv recv
Default	unrecv

ATTRIBUTE FrNni Dlci Bnxlwf crossNetErrors (cne)

Access	Read only
Description	This attribute counts how many polling intervals have elapsed without receiving an error free cross-net status message from the primary destination of the PVC. Errors are generally caused by time-outs. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE FrNni Dlci Bnxlwf ipAddressMismatches (iam)

Access	Read only
Description	This attribute counts the received datagrams which were dropped because the source IP address in the IP header did not match the value of *calledIpAddress* or *backupCalledIpAddress* attribute. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Bnxlwf lastMismatchedIpAddress (lmia)

Access	Read only
Description	This attribute indicates the source IP address in the IP header of the most recently received datagram which was dropped because this IP address did not match the value of *calledIpAddress* or *backupCalledIpAddress* attribute.
Mib	FrNniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrNni Dlci Bnxlwf backupCrossNetSent (bcnsent)

Access	Read only
Description	This attribute indicates if a cross-net status message was sent to the backup destination during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component.
Mib	FrNniPvcBnx
Values	unsent sent

Default — No default

ATTRIBUTE FrNni Dlci Bnxlwf backupCrossNetStatus (bcns)

Access — Read only

Description — This attribute indicates the state of the PVC when the remote end is the backup destination. If the *crossNetListenEnabled* attribute of the *BnxProtocol* component is set to ***yes***, this attribute reflects the state as reported by the remote end. If the *crossNetListenEnabled* attribute is set to ***no***, the PVC is assumed to be up and this attribute has a value of ***active***.

Mib — FrNniPvcBnx

Values — inactive
active

Default — inactive

ATTRIBUTE FrNni Dlci Bnxlwf backupCrossNetReceived (bcnr)

Access — Read only

Description — This attribute indicates if the DLCI has received a cross-net status message from the backup destination of the PVC during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol*. This attribute is ignored if the *BnxProtocol* attribute *crossNetListenEnabled* is set to ***no***.

Mib — FrNniPvcBnx

Values — unrecv
recv

Default — unrecv

ATTRIBUTE FrNni Dlci Bnxlwf backupCrossNetErrors (bcne)

Access — Read only

Description — This attribute counts how many polling intervals have elapsed without receiving an error free cross-net status message from the backup destination of the PVC. Errors are generally caused by

	time-outs. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Bnxlwf redirectMode (rmode)

Access	Read only
Description	This attribute indicates the mode of the PVC redirection. The value ***switchOnDemand*** means this PVC is redirected automatically to either the primary destination or the backup destination based on the cross-net status of the primary destination. This automatic switch-over mechanism is revertive to the primary destination. The value ***manual*** means that the destination for this PVC has been manually selected and automatic redirection is disabled. When the value is ***noBackup***, the PVC does not have a backup destination provisioned.
Mib	FrNniPvcBnx
Values	switchOnDemand manual noBackup
Default	No default

ATTRIBUTE FrNni Dlci Bnxlwf currentDestination (cdest)

Access	Read only
Description	This attribute indicates if the current destination is the primary destination or the backup destination.
Mib	FrNniPvcBnx

Values	primary backup
Default	No default

ATTRIBUTE FrNni Dlci Bnxlwf remoteIpAddress (ria)

Access	Read only
Description	This attribute indicates the IP address of the current destination.
Mib	FrNniPvcBnx
Values	IP address
Default	No default

ATTRIBUTE FrNni Dlci Bnxlwf remoteDlci (rdlci)

Access	Read only
Description	This attribute indicates the DLCI of the current destination.
Mib	FrNniPvcBnx
Values	Decimal (16..1007)
Default	No default

ATTRIBUTE FrNni Dlci Bnxlwf ipFragFromSubnet (fragfs)

Access	Read only
Description	This attribute counts the IP fragments received from subnet by this Dlci. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Bnxlwf discardedIpFragments (discFrag)

Access	Read only

Description	This attribute counts the IP fragments that are dropped by this Dlci. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Bnxlwf discMisorderedFrm (dmfrm)

Access	Read only
Description	This attribute counts the frames from subnet that are dropped due to misordered fragments. A misordered fragment occurs when the offset in the IP header is not equal to the expected offset, or the timer expires before the last fragment is received. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Dlci Bnxlwf lastDroppedIpFragmentId (lastid)

Access	Read only
Description	This attribute indicates the Id of the last misordered frame that was dropped.
Mib	FrNniPvcBnx
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrNni VirtualFramer (VFramer)

Groups	"GROUP FrNni VFramer Provisioned (Prov)" "GROUP FrNni VFramer OsiState (State)" "GROUP FrNni VFramer Statistics (Stats)"
Scope	Application

Description	*FrUni/n VirtualFramer* *FrDte/n VirtualFramer* The *VirtualFramer* component binds two services together to provide data transfer between them. It is mutually exclusive from *Framer* component.
Mib	FrameRelayNni
Common Verbs	Help List Display Add DELete

GROUP FrNni VFramer Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *VirtualFramer* component.
Mib	FrameRelayNni

ATTRIBUTE FrNni VFramer otherVirtualFramer (ovf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the other *VirtualFramer* to which the service is linked, for example, *FrUni/n VirtualFramer*, *FrDte/n VirtualFramer*.
Mib	FrameRelayNni
Values	Link (Service, otherVirtualFramer)
Default	No default

ATTRIBUTE FrNni VFramer logicalProcessor (lp)

Access	Read and write
Criticality	Process

Description	This attribute specifies the logical processor on which the service component will reside.
Mib	FrameRelayNni
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP FrNni VFramer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayNni

ATTRIBUTE FrNni VFramer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayNni

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrNni VFramer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayNni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrNni VFramer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	FrameRelayNni
Values	idle active (activ) busy
Default	idle

GROUP FrNni VFramer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *VirtualFramer* component.
Mib	FrameRelayNni

ATTRIBUTE FrNni VFramer frmToOtherVFramer

Access	Read only
Description	This attribute counts the frames transmitted to the *otherVirtualFramer.*
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni VFramer frmFromOtherVFramer

Access	Read only
Description	This attribute counts the frames received from the *otherVirtualFramer.*
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni VFramer octetFromOtherVFramer

Access	Read only

Description	This attribute counts the octets received from the *otherVirtualFramer*.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

ATTRIBUTE FrNni VFramer discFrmFromOtherVFramer (discFrmFromOvf)

Access	Read only
Description	This attribute counts the discarded frames from the *otherVirtualFramer*. Incrementing of this counter indicates that some incoming traffic cannot be handled by the FP.
Mib	FrameRelayNni
Values	Long Integer
Default	No default

COMPONENT FrNni Signaling (Sig)

Groups	"GROUP FrNni Sig Prov" "GROUP FrNni Sig ServiceParameters (ServParms)" "GROUP FrNni Sig SystemParameters (SysParms)" "GROUP FrNni Sig LapfSystemParameters (LapfSys)" "GROUP FrNni Sig LastSvcClearCodes (Codes)" "GROUP FrNni Sig OsiState (State)" "GROUP FrNni Sig Statistics (Stats)" "GROUP FrNni Sig LapfStatus" "GROUP FrNni Sig LapfStatistics (LapfStats)" "GROUP FrNni Sig FrsSvcAcc (Svcacc)"
Scope	Application
Description	*FrNni/n Signaling* This component defines the FRF.10 and Q.922 (LAPF) parameters for Frame Relay switched virtual circuits at the

	Network-Network interface. This component must be provisioned for the *FrNni* interface to support switched connections.
Mib	FriNniSig
Common Verbs	Help List Display Add DELete

GROUP FrNni Sig Prov

Properties	Provisioned
Description	This group contains common provisionable attributes for signaling at the interface.
Mib	FriNniSig

ATTRIBUTE FrNni Sig dlciAllocation

Access	Read and write
Criticality	Process
Description	This attribute specifies the order in which DLCIs are dynamically allocated for SVCs. The purpose of this attribute is to prevent DLCI collisions between SVCs initiated by two FrNni interfaces talking to each other. This is achieved by provisioning a different value for this attribute at each end of the NNI link. A value of ***fromLowEnd*** specifies that the DLCI number assignment for SVC connections is initiated from the lowest value of the range (that is, *highestPvcDlci*+1 up to 1007). A value of ***fromHighEnd*** specifies that the DLCI number assignment for SVC connections is initiated from the highest value of the range (that is, 1007 down to *highestPvcDlci*+1).
Mib	FriNniSig
Values	fromLowEnd fromHighEnd

Default	fromLowEnd

ATTRIBUTE FrNni Sig highestPvcDlci

Access	Read and write
Criticality	Process
Description	This attribute specifies the highest DLCI value that can be provisioned for a permanent connection. It partitions the DLCI space into permanent and switched connections. Permanent DLCI numbers higher than this value cannot be provisioned. The value ***0*** is used to indicate that no permanent connections are allowed on this interface. The value ***1007*** indicates that no switched connections are allowed on this interface.
Mib	FriNniSig
Values	Decimal (0; 16..1007)
Default	500

GROUP FrNni Sig ServiceParameters (ServParms)

Properties	Provisioned
Description	This group contains the provisionable service parameters.
Mib	FriNniSig

ATTRIBUTE FrNni Sig maximumFrameSize (dn1)

Access	Read and write
Description	This attribute specifies the maximum number of octets that may be included in the information field of the user DLCI of any switched connections using this interface. Its value must not be smaller than the value of *defaultMaximumFrameSize*.
Mib	FriNniSig
Values	Decimal (1..8187)
Units	octets
Default	4096

ATTRIBUTE FrNni Sig defaultMaximumFrameSize (defaultdn1)

Access	Read and write
Description	This attribute specifies the default maximum number of octets that may be included in the information field of the user DLCI assigned for any switched connections using this interface. This value is used during call parameter negotiation for switched calls on this interface when the maximum frame size is not specified in the user's SETUP message. The value of this attribute must not exceed the value of the *maximumFrameSize* attribute.
Mib	FriNniSig
Values	Decimal (1..8187)
Units	octets
Default	2100

ATTRIBUTE FrNni Sig defaultCommittedInformationRate (defaultCir)

Access	Read and write
Description	This attribute specifies the default user to network direction CIR. This value is used during call parameter negotiation for switched calls on this interface when the CIR is not specified in the user's SETUP message.
Mib	FriNniSig
Values	Decimal (0..52000000)
Units	bit/s
Default	64000

ATTRIBUTE FrNni Sig defaultCommittedBurstSize (defaultBc)

Access	Read and write
Description	This attribute specifies the default user to network direction Bc. This value is used during call parameter negotiation for switched calls on this interface when the Bc is not specified in the user's SETUP message.

Mib	FriNniSig
Values	Decimal (0..52000000)
Units	bits
Default	64000

ATTRIBUTE FrNni Sig defaultExcessBurstSize (defaultBe)

Access	Read and write
Description	This attribute specifies the default user to network direction Be. This value is used during call parameter negotiation for switched calls on this interface when the Be is not specified in the user's SETUP message.
Mib	FriNniSig
Values	Decimal (0..52000000)
Units	bits
Default	0

ATTRIBUTE FrNni Sig rateEnforcement (re)

Access	Read and write
Description	This attribute specifies whether rate enforcement is in effect for SVCs on this interface.
Mib	FriNniSig
Values	off on
Default	on

ATTRIBUTE FrNni Sig rateAdaptation (ra)

Access	Read and write
Description	This attribute specifies whether closed-loop rate adaptation is in effect for SVCs on this interface. Rate adaptation is a feature that, in periods of congestion, adapts the rate at which the user is allowed to send data into the network to that which the network is

able to handle at that time. This proactive measure of handling congestion optimizes network resources by causing the ingress to discard frames that would otherwise be discarded in the network.

If this attribute is set to ***on***, then, at the onset of congestion, the excess information rate (EIR) is reduced to a very low rate. If congestion persists, then the allowed CIR is reduced geometrically by 25% of the current value at that time. The minimum to which CIR can be reduced is 1/16th (6.25%) of the provisioned value. As congestion alleviates, CIR is increased linearly by 6.25% of the provisioned value specified in *committedInformationRate*.

If set to ***eirOnly***, then rate adaptation will only apply to the excess information rate (EIR). At the onset of congestion, the allowed EIR is reduced by 25% of its provisioned value. If congestion persists, EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR.

If set to ***cirProportionate***, then rate adaptation will also only apply to the excess information rate (EIR). At the onset of congestion the initial allowed EIR is set to a multiple of the provisioned CIR. If congestion persists, the allowed EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR. Note that the allowed EIR may be set higher than the provisioned EIR, since it is calculated initially using another parameter, the provisioned CIR. If the allowed EIR at the moment is higher than the provisioned EIR, then the provisioned EIR is used instead.

This attribute can only be set to ***on*** or ***eirOnly*** if *rateEnforcement* is set to ***on***.

Mib FriNniSig

Values
off
on
eirOnly
cirProportionate

Default	off

ATTRIBUTE FrNni Sig raSensitivity (rasens)

Access	Read and write
Description	This attribute specifies the sensitivity of the rate adaptation system for all switched connections on this interface. A higher number indicates a higher sensitivity and therefore a quicker reaction time to network conditions. A quicker reaction time allows the network to discard frames at the access and protect network resources, but can lead to false alarms and a greater fluctuation of the allowed rate. A higher setting therefore tends to favor the protection of the network over the allowed throughput of the user. A lower number indicates a lower sensitivity and therefore a slower reaction to network conditions. A slower reaction time results in a greater amount of user traffic allowed into the network, but can lead to a waste of network bandwidth since the traffic may be discarded at the congested resource. A lower setting therefore tends to favour the allowed throughput of the user over the protection of the network. This attribute is applicable for adapting EIR when *rateAdaptation* is ***eirOnly*** or ***cirProportionate***, or CIR when *rateAdaptation* is ***on***. This attribute is ignored if *rateAdaptation* is ***off***.
Mib	FriNniSig
Values	Decimal (1..20)
Default	7

ATTRIBUTE FrNni Sig updateBCI (updBCI)

Access	Read and write
Description	This attribute specifies whether internal Backward Congestion Indication (BCI) bits will report congestion external to the network, as communicated through incoming BECN bits.

If *updateBCI* is set to ***on***, then BCI bits for incoming frames will be set if the BECN on the frame is set. If *updateBCI* is set to ***off***, then incoming BECN bits has no effect.

Setting *updateBCI* ***on*** for a DLCI means that the remote end of the DLCI, which is specified by the *remoteDna* and *remoteDlci* attributes of the *Dc* component of the *Dlci*, may perform Rate Adaptation using the flow of incoming BECN bits, in addition to internal congestion management systems.

If the *rateAdaptation* attribute of the remote DLCI is provisioned as ***eirOnly***, ***cirProportionate***, or ***on***, then congestion from another network may trigger dynamic congestion management. If there is no rate adaptation at the other end, then the setting of *updateBCI* attribute here has no effect.

Mib	FriNniSig
Values	off on
Default	off

GROUP FrNni Sig SystemParameters (SysParms)

Properties	Provisioned
Description	This group contains the provisionable FRF.10 system parameters.
Mib	FriNniSig

ATTRIBUTE FrNni Sig callSetupTimer (t303)

Access	Read and write
Description	This attribute specifies the time this interface waits for a response to the SETUP message sent to the adjacent network. Upon timer expiry, the SETUP message is retransmitted. The second expiry of this timer causes the call to be cleared.
Mib	FriNniSig
Values	Decimal (1..255)

Units	seconds
Default	4

ATTRIBUTE FrNni Sig releaseTimer (t308)

Access	Read and write
Description	This attribute specifies the time this interface waits for a response to the RELEASE message sent to the adjacent network. Upon timer expiry, the RELEASE message is retransmitted. The second expiry of the timer causes the call to be released.
Mib	FriNniSig
Values	Decimal (1..255)
Units	seconds
Default	4

ATTRIBUTE FrNni Sig callProceedingTimer (t310)

Access	Read and write
Description	This attribute specifies the time this interface waits for the CONNECT message from the adjacent network after the network has received the optional CALL PROCEEDING message from the adjacent network. Upon timer expiry, the call is cleared.
Mib	FriNniSig
Values	Decimal (1..255)
Units	seconds
Default	30

ATTRIBUTE FrNni Sig restartReqTimer (t316)

Access	Read and write
Description	This attribute specifies the time this interface waits for the RESTART ACKNOWLEDGE message from the adjacent network after sending a first RESTART message. Upon timer expiry, another RESTART message is sent. After the second expiry, the interface is treated as idle.

	If the *restartReqTimer* attribute is set to the default value, then the interface is treated as idle when it receives an indication that the link is up and does not send a RESTART message.
Mib	FriNniSig
Values	Decimal (0..255)
Units	seconds
Default	0

ATTRIBUTE FrNni Sig restartRcvTimer (t317)

Access	Read and write
Description	This attribute specifies the time this interface waits for the processing of a RESTART message received by the interface. Upon expiry of this timer, an alarm will be displayed to report the problem. The timer value must be less than the *restartReqTimer* provisioned value at the adjacent node.
Mib	FriNniSig
Values	Decimal (1..255)
Units	seconds
Default	110

ATTRIBUTE FrNni Sig statusEnqTimer (t322)

Access	Read and write
Description	This attribute specifies the time the network waits for the requested STATUS message from the adjacent network. Upon expiry of this timer, another STATUS ENQUIRY message will be sent.
Mib	FriNniSig
Values	Decimal (1..255)
Units	seconds
Default	4

ATTRIBUTE FrNni Sig networkType (type)

Access	Read and write
Description	This attribute specifies whether this Frame Relay service is running on a public or a private network. This value is used solely in populating applicable information elements within those signaling messages that require a public or private network indication.
Mib	FriNniSig
Values	private public
Default	private

GROUP FrNni Sig LapfSystemParameters (LapfSys)

Properties	Provisioned
Description	This group contains the provisionable attributes for the SVC data link layer. The data link layer is governed primarily through ITU specification Q.922, and operates over DLCI 0.
Mib	FriNniSig

ATTRIBUTE FrNni Sig windowSize (ws)

Access	Read and write
Description	This attribute specifies the window size. This is the maximum number of unacknowledged sequenced frames that may be outstanding from or to this interface at any one time.
Mib	FriNniSig
Values	Decimal (1..127)
Default	7

ATTRIBUTE FrNni Sig retransmitLimit (rtl)

Access	Read and write

Description	This attribute specifies the number of times a frame can be retransmitted by the SVC data link layer before appropriate recovery action is taken.
Mib	FriNniSig
Values	Decimal (0..20)
Default	3

ATTRIBUTE FrNni Sig ackTimer (at)

Access	Read and write
Description	This attribute specifies how long the layer 2 protocol waits for an acknowledgment to a sent frame. The value set for *ackTimer* must be less than the value set for *idleProbeTimer*.
Mib	FriNniSig
Values	Decimal (1000..10000)
Units	msec
Default	1500

ATTRIBUTE FrNni Sig ackDelayTimer (adt)

Access	Read and write
Description	This attribute specifies how long the network waits before sending an acknowledgment for a received in-sequence I-frame. A value of 0 means that every frame is acknowledged and there will be no delay in acknowledgment. A non-zero value means that one acknowledgement is sent for a number of frames.
Mib	FriNniSig
Values	Decimal (0..10000)
Units	msec
Default	0

ATTRIBUTE FrNni Sig idleProbeTimer (ipt)

Access	Read and write

Description	This attribute specifies how long the link is permitted to remain idle (that is, no frames are exchanged on the data link). Upon expiry of this timer, the network side's link layer polls its peer for status. The value set for *idleProbeTimer* must be greater than the value set for *ackTimer.*
Mib	FriNniSig
Values	Decimal (1000..65535000)
Units	msec
Default	30000

GROUP FrNni Sig LastSvcClearCodes (Codes)

Properties	Operational
Description	This group contains the remote data network address, the last SVC clear cause and the last SVC diagnostic code coming from the subnet or the local VC.
Mib	FriNniSig

ATTRIBUTE FrNni Sig lastClearRemoteDataNetworkAddress

Access	Read only
Description	This attribute indicates the Data Network Address (DNA) of the remote (the other end of the SVC connection) of the call which cleared last and whose clear and diagnostic codes were recorded.
Mib	FriNniSig
Values	BCD (0..15)
Default	No default

ATTRIBUTE FrNni Sig lastClearCause

Access	Read only
Description	This attribute indicates the last SVC clear cause signalled at the end of the connection or failure to connect. It is updated only if the clear request comes from the subnet or the call is rejected

	locally by the VC. The same set of possible values provides the clear cause field in the accounting record.
Mib	FriNniSig
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrNni Sig lastDiagnosticCode

Access	Read only
Description	This attribute indicates the last SVC diagnostic code signalled at the end of the connection or failure to connect. It is updated if the clear request comes from the subnet or the call is rejected locally by the VC. The same set of possible values provides the diagnostic code field in the accounting record.
Mib	FriNniSig
Values	Decimal (0..255)
Default	0

GROUP FrNni Sig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FriNniSig

ATTRIBUTE FrNni Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	FriNniSig
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrNni Sig operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FriNniSig
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrNni Sig usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FriNniSig
Values	idle active (activ) busy
Default	idle

GROUP FrNni Sig Statistics (Stats)

Properties	Operational
Description	This group contains the statistics related to the SVC signaling layer at the interface level.
Mib	FriNniSig

ATTRIBUTE FrNni Sig currentNumberOfSvcCalls (ncall)

Access	Read only
Description	This attribute indicates the number of Frame Relay SVCs currently existing on this interface.
Mib	FriNniSig
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrNni Sig inCalls (incall)

Access	Read only
Description	This attribute indicates the current number of incoming SVCs on this interface (that is, the number of SVCs for which this interface represents the destination end of the call).
Mib	FriNniSig
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrNni Sig inCallsRefused (icr)

Access	Read only
Description	This attribute counts the incoming SVC call requests that are rejected by either this interface or by the called user. When this count exceeds the maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig outCalls (outcall)

Access	Read only
Description	This attribute indicates the current number of outgoing SVCs on this interface (that is, the number of SVCs for which this interface represents the source end of the call).
Mib	FriNniSig
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrNni Sig outCallsFailed (ocf)

Access	Read only

Description	This attribute counts the outgoing SVC call requests that are rejected by either this interface, or by the network side of the destination end, or by the called user. When this count exceeds the maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig protocolErrors (pe)

Access	Read only
Description	This attribute counts the number of times a FRF.10 protocol error has occurred. Any one of the following events constitutes a protocol error: 1. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, *Cir*, *Bc* and *Be* are all zero; 2. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, *Cir* is zero but *Bc* is non-zero, or *Bc* is zero but *Cir* is non-zero; 3. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, the *Minimum Acceptable CIR* is greater than *Cir*; 4. At the destination end, any of the destination to source direction link layer core parameters has been increased in the CONNECT message from the called user; 5. At the destination end, the destination to source direction *Cir* in the CONNECT message is smaller than the corresponding *minimum acceptable Cir* signaled to the called user; 6. At the source end, any of the source to destination direction link layer core parameters in the CONNECT message from the destination end has been increased; 7. At the source end, the source to destination direction *Cir*, after negotiation, is smaller than the corresponding *minimum acceptable Cir*; 8. The network has received a STATUS message from the user with an incompatible FRF.10 state. When this count reaches maximum, it wraps to zero.

Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig qualityOfServiceNotAvailable (qosna)

Access	Read only
Description	This attribute counts the number of incoming and outgoing SVCs that are rejected because the quality of service requested cannot be met by the network. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig setupTimeout (setupt)

Access	Read only
Description	This attribute counts the number of times the T303 setup timer has expired. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig lastCauseInStatusMsgReceived (lcis)

Access	Read only
Description	This attribute indicates the cause value in the last received user's STATUS message to an existing call. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is **0** which means that no STATUS message has been received for an existing call yet.
Mib	FriNniSig

Values	Decimal (0..255)
Default	0

ATTRIBUTE FrNni Sig lastStateInStatusMsgReceived (lsis)

Access	Read only
Description	This attribute indicates the state value in the last received user's STATUS message to an existing call. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is ***notApplicable***.
Mib	FriNniSig
Values	null callInitiated outgoingCallProceeding callPresent incomingCallProceeding active releaseRequest releaseIndication restartRequest restart notApplicable 2 4 5 7 8 13 14 15 16 17 18 19 21 22 23

	24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 63
Default	notApplicable

ATTRIBUTE FrNni Sig lastDlciReceivedStatus (ldrs)

Access	Read only
Description	This attribute shows the value of the DLCI that has most recently received a STATUS message from the user. The initial value of this attribute is ***0***.
Mib	FriNniSig
Values	Decimal (0; 16..1007)
Default	0

ATTRIBUTE FrNni Sig lastStateReceivedStatus (lsrs)

Access	Read only
Description	This attribute shows the network FRF.10 state of the DLCI that has most recently received a STATUS message from the user. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is ***notApplicable***.
Mib	FriNniSig
Values	null callInitiated outgoingCallProceeding callPresent incomingCallProceeding active releaseRequest releaseIndication restartRequest restart notApplicable
Default	notApplicable

ATTRIBUTE FrNni Sig dlciCollisions

Access	Read only

Description	This attribute counts the number of call failures due to DLCI collisions.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig bandwidthNotAvailable

Access	Read only
Description	This attribute counts the number of call failures for each bandwidth pool due to the requested bandwidth not being available.
Mib	FriNniSig
Vector of	Decimal (0..4294967295)
Index	Decimal (0..15)
Default	No default

GROUP FrNni Sig LapfStatus

Properties	Operational
Description	This group contains the Q.922 SVC data link layer status.
Mib	FriNniSig

ATTRIBUTE FrNni Sig currentState (currState)

Access	Read only
Description	This attribute shows the current state of the SVC data link layer interface.
Mib	FriNniSig
Values	disconnected linkSetup disconnectRequest informationTransfer waitingAck

Default	No default

ATTRIBUTE FrNni Sig lastStateChangeReason (lscr)

Access	Read only
Description	This attribute shows the reason for the most recent state change. ***notStarted*** - this is the default state after SVC data link has just been created. ***abmeEntered*** - SVC data link has entered Asynchronous Balanced Mode after SABME or UA has been received. ***abmeReset*** - the data link has been reset. ***dmReceived*** - DM response received. ***dmSent*** - DM sent. ***discReceived*** - DISC response received. ***discSent*** - DISC sent. ***frmrReceived*** - FRMR received. ***n200RetranTimeOut*** - *retransmitLimit* has been exceeded. ***other*** - unspecified state change reasons. The most likely reason for this is the transition from state ***waitingAck*** to state ***informationTransfer***.
Mib	FriNniSig
Values	notStarted abmeEntered abmeReset dmReceived dmSent discReceived discSent frmrReceived n200RetranTimeOut other
Default	notStarted

ATTRIBUTE FrNni Sig frmrReceive (frmrr)

Access	Read only
Description	This attribute shows the information field of the Frame Reject (FRMR) most recently received.

Mib	FriNniSig
Values	String (0..8, Hex)
Default	No default

ATTRIBUTE FrNni Sig currentQueueSize (queues)

Access	Read only
Description	This attribute shows the current number of frames in the SVC data link layer transmit queue.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

GROUP FrNni Sig LapfStatistics (LapfStats)

Properties	Operational
Description	This group contains the statistics for the SVC data link layer.
Mib	FriNniSig

ATTRIBUTE FrNni Sig remoteBusy

Access	Read only
Description	This attribute counts the number of times transmission of an I-frame was unsuccessful due to a perceived remote busy condition (window closed or remote busy). When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig receiveRejectFrame

Access	Read only
Description	This attribute counts the number of REJ frames received by the interface. When this count reaches maximum, it wraps to zero.

Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig ackTimeout

Access	Read only
Description	This attribute counts the number of times the *ackTimer* has expired. Frequent increments of this counter indicate a problem at the link or improper values have been chosen for *ackTimer* and *ackDelayTimer* between the local and remote sides. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig iFramesTransmitted

Access	Read only
Description	This attribute counts the number of SVC I-frames transmitted to the interface on DLCI 0. An I-frame may be counted more than once if there are retransmissions at the SVC data link layer. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig iFramesTxDiscarded

Access	Read only
Description	This attribute counts the number of SVC I-frames that are bound for the link but have been discarded. Discard reasons may be one of the following: 1. the frame length is beyond the allowed limit. 2. the SVC data link layer is in ***disconnected*** state.

	3. the transmit queue has been purged because the queue length has reached the reset threshold. 4. the transmit queue or the queue waiting for acknowledgment has been purged because the link cannot be re-established. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig iFramesReceived

Access	Read only
Description	This attribute counts the number of SVC I-frames received from the interface. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig iFramesRcvdDiscarded

Access	Read only
Description	This attribute counts the number of SVC I-frames received but have been discarded. The discard reasons are: 1. incorrect frame size 2. frame is out of sequence 3. frame received while the network side of the SVC data link layer is not in the ***informationTransfer*** or ***waitingAck*** state. When this count reaches maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrNni Sig stateChange

Access	Read only
Description	This attribute counts the number of times the SVC data link layer interface has changed state. While the data link layer is in ***informationTransfer*** state, this counter will increment on each expiry of *idleProbeTimer* as its state goes from ***informationTransfer*** to ***waitingAck*** and back. When this count exceeds the maximum, it wraps to zero.
Mib	FriNniSig
Values	Decimal (0..4294967295)
Default	No default

GROUP FrNni Sig FrsSvcAcc (Svcacc)

Properties	Provisioned
Description	This group contains the provisionable attribute which controls accounting for this interface.
Mib	FriNniSig

ATTRIBUTE FrNni Sig defaultAccounting (defAcc)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether accounting data collection and record generation is turned on for switched connections at this interface. For accounting data collection and record generation to occur, this attribute must be ***on*** and at least one of the *accountCollection* reasons in the *Dna* component must be present.
Mib	FriNniSig
Values	off on
Default	on

COMPONENT FrNni LoadTestSystem (Lts)

Groups	"GROUP FrNni Lts Setup (Setup)" "GROUP FrNni Lts OperationalState (State)" "GROUP FrNni Lts Results (Results)"
Scope	Application
Description	*FrUni/n LoadTestSystem* *FrNni/n LoadTestSystem* This component defines an instance of the Frame Relay Load Test System (UNI) service. The component instance value n is a unique positive integer within a module.
Mib	FrameRelayNni
Subcomponents	"COMPONENT FrNni Lts Pattern (Pat)"
Common Verbs	Help List Display Add DELete

VERB START FrNni Lts

Impact	Service
Description	*START FrUni/n Lts* This verb starts the load generator. The load generator can be stopped by issuing the stop verb.

VERB STOP FrNni Lts

Impact	Service
Description	*STOP FrUni/n Lts* This verb stops the traffic generator.

VERB RESET FrNni Lts

Impact	Service
Description	*RESET FrUni/n Lts* This verb clears the TestStatistics

GROUP FrNni Lts Setup (Setup)

Properties	Operational
Description	This attribute group contains the parameters used to configure the behavior of the Frame Relay Load Test System.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lts duration (dur)

Access	Read and write
Description	This attribute specifies the duration of the test in milliseconds. The test will run until the duration expires or the STOP command is issued. A value of 0 is used to indicate infinity.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE FrNni Lts algorithm (alg)

Access	Read and write
Description	This attribute specifies which algorithm is used to generate the frames. **ContinuousBurst** This mode of traffic generation creates traffic at the maximum rate possible until all of the frames have been sent. The generator then waits until the end of the timeInterval to begin again. **IntervalBurst** This algorithm attempts to generate 10 ms bursts of burstSize frames. It will generate as many of the burstSize frames as it can per sub-interval. **DelayedBurst** This algorithm generates bursts of burstSize frames separated by 10 ms delays.

FixedBurst
This aglorithm is similar to IntervalBurst, except a fixed burst size of 12 frames is used.

delayMeasurement
This algorithm is used to measure delay. The specified number of frames in the indicated pattern are generated, one at a time, with a maximum wait of maxDelay before sending the next frame. This algorithm is not implemented yet.

Mib	FrameRelayNni
Values	continousBurst (cont) intervalBurst (int) delayBurst (delay) fixedBurst (fixed)
Default	continousBurst

ATTRIBUTE FrNni Lts burstSize (fpb)

Access	Read and write
Description	This attribute specifies the number of frames per burst under the delayedBurst and intervalBurst algorithms.
Mib	FrameRelayNni
Values	Decimal (1..250)
Default	50

ATTRIBUTE FrNni Lts timeInterval (tint)

Access	Read and write
Description	This attribute specifies the time interval to the specified number of seconds. Granuality is in centiseconds. Maximum is 1 minute.
Mib	FrameRelayNni
Values	Decimal (1..60000)
Units	csec

Default	100

GROUP FrNni Lts OperationalState (State)

Properties	Operational
Description	This group contains the operation statistics of the load generator.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lts generatorState (gstate)

Access	Read only
Description	This attribute indicates whether the Lts is generating traffic.
Mib	FrameRelayNni
Values	stopped running
Default	stopped

ATTRIBUTE FrNni Lts cycleIncomplete (cycle)

Access	Read only
Description	This attribute indicates whether the time required to generate all of the enabled patterns is more than timeInterval by a true value. Otherwise, this flag is set to false. Default is True.
Mib	FrameRelayNni
Values	false true
Default	true

ATTRIBUTE FrNni Lts lastActiveInterval (actInt)

Access	Read only
Description	This attribute indicates the actual time it took to generate all of the enabled patterns in the last cycle. If cycleIncomplete is true, this value should be zero.
Mib	FrameRelayNni

Values	Decimal (0..4294967295)
Units	microsec
Default	No default

ATTRIBUTE FrNni Lts load

Access	Read only
Description	This attribute indicates the load being generated. This value represents that calculated using the set number of ticks. The actual burstTimeInterval may differ. One entire cycle of the patterns is completed in activeInterval and thus most of the load may be concentrated early in the set interval.
Mib	FrameRelayNni
Values	Decimal (0.000..4294967.295)
Units	kbit/s
Default	No default

ATTRIBUTE FrNni Lts elapsedGenerationTime (etime)

Access	Read only
Description	This attribute indicates how many milliseconds have elapsed since the start of this test.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	msec
Default	No default

GROUP FrNni Lts Results (Results)

Properties	Operational
Description	This group contains the frame counting attributes for the LTS component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lts framesTx

Access	Read only
Description	This attribute specifies the number of frames send to the network since the last time these statistics were cleared. This is similar to the framesToIf attribute of the FRAMER component.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrNni Lts bytesTx

Access	Read only
Description	This attribute indicates the number of bytes sent.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	bytes
Default	0

ATTRIBUTE FrNni Lts bitRateTx

Access	Read only
Description	This attribute indicates the bit rate being sent to the link. It should only differ from the load if the burstTimeInterval would be >= the timeInterval or burstSize frames cannot be generated in 10ms (intervalBurst algorithm).
Mib	FrameRelayNni
Values	Decimal (0.000..4294967.295)
Units	kbit/s
Default	0.000

ATTRIBUTE FrNni Lts frameRateTx

Access	Read only

Description	This attribute indicates the frame rate being sent to the link. It is calculated using the number of frames sent to the link in one cycle of the patterns.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Units	frame/s
Default	0

COMPONENT FrNni Lts Pattern (Pat)

Instance	Decimal (0..29)
Groups	"GROUP FrNni Lts Pat Defaults (Defaults)" "GROUP FrNni Lts Pat Setup (Setup)" "GROUP FrNni Lts Pat OperationalData (OpData)" "GROUP FrNni Lts Pat OperationalState (OpState)"
Scope	Application
Description	FrUni/n Lts Pattern FrNni/n Lts Pattern Each instance of this component specifies a pattern to be generated as part of each cycle. One cycle represents one pass through each pattern.
Mib	FrameRelayNni
Common Verbs	Help List Display Add DELete

VERB TRIGGER FrNni Lts Pat

Impact	Service
Description	TRIGGER FrUni/x Lts Pattern/y This verb triggers the single execution of the specified pattern. In order for this command to be executed, the Lts component cannot be generating traffic.

GROUP FrNni Lts Pat Defaults (Defaults)

Properties	Provisioned
Description	This attribute group contains the specifications of the pattern.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lts Pat defaultDlci (dDlci)

Access	Read and write
Description	This attribute specifies for which DLCI (on the local end) the frames are destined.
Mib	FrameRelayNni
Values	Decimal (16..1007)
Default	16

ATTRIBUTE FrNni Lts Pat defaultNumFrames (dNum)

Access	Read and write
Description	This attribute specifies the number of frames in this pattern. This is the number of frames of this type that are generated in one time interval.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	100

ATTRIBUTE FrNni Lts Pat defaultDataSize (dSize)

Access	Read and write

Description	This attribute specifies the payload size of each frame in bytes. This is in excess to the header.
Mib	FrameRelayNni
Values	Decimal (0..8200)
Units	octets
Default	512

ATTRIBUTE FrNni Lts Pat defaultHeaderBits (dBits)

Access	Read and write
Description	This attribute specifies whether specific bits are on/off in the header of each frame.
Mib	FrameRelayNni
Set of	becn fecn cr de
Default	No default

ATTRIBUTE FrNni Lts Pat defaultHeaderLength (dLen)

Access	Read and write
Description	This attribute specifies the size of the frame relay header in bytes. Only 2-byte headers are supported at this time.
Mib	FrameRelayNni
Values	Decimal (0; 2..4)
Units	octets
Default	2

ATTRIBUTE FrNni Lts Pat defaultEABits (dEABits)

Access	Read and write

Description	This attribute specifies how the address field extension bits are set in the frame header. Consider the value to be a four bit binary number. For example, 4 = 0100. Only the first *headerLength* bits are used. For instance, suppose headerLength is 3, then the appropriate EABits is 2, or 0010. This attribute can be used to create a header of length greater than two bytes or to specify incorrect EABits in the header.
Mib	FrameRelayNni
Values	Hex (H.0..H.f)
Default	H.4

ATTRIBUTE FrNni Lts Pat defaultPayloadPattern (dPattern)

Access	Read and write
Description	This attribute specifies the payload of each frame. The value specified is in hexadecimal, where every two digits represent a byte. A maximum of 24 digits (12 bytes) may be set, after which the pattern will repeat in the payload (depending on the *repeatPattern* attribute). NOTE: If an RFC 1490 header is specified, via the 1490Header attribute, the specified pattern will begin following the header (that is, at the 9th byte in the payload).
Mib	FrameRelayNni
Values	String (1..12, Hex)
Default	55

ATTRIBUTE FrNni Lts Pat defaultRfc1490Header (d1490)

Access	Read and write
Description	This attribute specifies the appropriate RFC 1490 encapsulated header of the frame. A value of 0 indicates no 1490 header. NOTE: This header resides in the first 8 bytes of the payload. If the specified value is non-zero, then the payload pattern provisioned will begin at the 9th byte.
Mib	FrameRelayNni

Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 none
Default	none

ATTRIBUTE FrNni Lts Pat defaultUseBadLrc (dBadLrc)

Access	Read and write
Description	This attribute specifies whether the frames from this pattern are to have a bad LRC prior to being sent to the framer. The LRC is checked while the frame is being put onto the link and the failure should cause an abort frame to be sent.
Mib	FrameRelayNni
Values	no yes
Default	no

GROUP FrNni Lts Pat Setup (Setup)

Properties	Operational
Description	This attribute group contains the specifications of the pattern.

Mib	FrameRelayNni

ATTRIBUTE FrNni Lts Pat dlci

Access	Read and write
Description	This attribute specifies for which DLCI (on the local end) the frames are destined.
Mib	FrameRelayNni
Values	Decimal (16..1007)
Default	16

ATTRIBUTE FrNni Lts Pat numFrames (num)

Access	Read and write
Description	This attribute specifies the number of frames in this pattern. This is the number of frames of this type that are generated in one time interval.
Mib	FrameRelayNni
Values	Decimal (0..4294967295)
Default	100

ATTRIBUTE FrNni Lts Pat dataSize (size)

Access	Read and write
Description	This attribute specifies the payload size of each frame in bytes. This is in excess to the header.
Mib	FrameRelayNni
Values	Decimal (0..8200)
Units	octets
Default	512

ATTRIBUTE FrNni Lts Pat headerBits (bits)

Access	Read and write

Description	This attribute specifies whether the following bits are on/off in the header of each frame.
Mib	FrameRelayNni
Set of	becn fecn cr de
Default	No default

ATTRIBUTE FrNni Lts Pat headerLength (len)

Access	Read and write
Description	This attribute specifies the size of the frame relay header in bytes. Only 2-byte headers are supported at this time. Valid values are 0, 2, 3, 4. 0 indicates to use no header. That is, the frame starts with either the payload or an RFC 1490 header.
Mib	FrameRelayNni
Values	Decimal (0; 2..4)
Units	octets
Default	2

ATTRIBUTE FrNni Lts Pat eaBits

Access	Read and write
Description	This attribute specifies how the address field extension bits are set in the frame header. Consider the value to be a four bit binary number. For example, 4 = 0100. Only the first headerLength bits are used. For instance, suppose headerLength is 3, then the appropriate eaBits is 2, or 0010. This attribute can be used to create a header of length greater than two bytes or to specify incorrect eaBits in the header.
Mib	FrameRelayNni
Values	Hex (H.0..H.f)
Default	H.4

ATTRIBUTE FrNni Lts Pat payloadPattern (pattern)

Access	Read and write
Description	This attribute specifies the payload of each frame. The value specified is in hexadecimal, where every two digits represent a byte. A maximum of 24 digits (12 bytes) may be set, after which the pattern repeats in the payload (depending on *repeatPattern* attribute). NOTE: If an RFC 1490 header is specified, via the *1490Header* attribute, the specified pattern begina following the header (that is, at the 9th byte in the payload).
Mib	FrameRelayNni
Values	String (1..12, Hex)
Default	55

ATTRIBUTE FrNni Lts Pat rfc1490Header (rfc)

Access	Read and write
Description	This attribute specifies the appropriate RFC 1490 encapsulated header of the frame. A value of 0 indicates no 1490 header. NOTE: This header resides in the first 8 bytes of the payload. If the specified value is non-zero, then the payload pattern provisioned will begin at the 9th byte.
Mib	FrameRelayNni
Values	0 1 2 3 4 5 6 7 8 9 10

	11 12 13 14 15 16 17 none
Default	none

ATTRIBUTE FrNni Lts Pat useBadLrc

Access	Read and write
Description	This attribute specifies whether the frames from this pattern are to have a bad LRC prior to being sent to the framer. The LRC is checked while the frame is being put onto the link and the failure should cause an abort frame to be sent.
Mib	FrameRelayNni
Values	no yes
Default	no

GROUP FrNni Lts Pat OperationalData (OpData)

Properties	Operational
Description	This group contains the operational attributes which allow changing the pattern outside of provisioning mode.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lts Pat framePattern

Access	Read only
Description	This attribute displays the first 20 to 24 bytes of the frame payload, depending on the frame relay header size selected. This attribute represents the frame if it were at least 20 to 24 bytes in size. That is, the actual frame may be smaller.
Mib	FrameRelayNni

Values	String (20..24, Hex)
Default	No default

ATTRIBUTE FrNni Lts Pat hdlcBitsInserted (hdlc)

Access	Read only
Description	This attribute displays how many times a zero bit will be inserted after 5 consecutive 1 bits when a frame from this pattern is sent out.
Mib	FrameRelayNni
Values	Decimal (0..65535)
Default	No default

GROUP FrNni Lts Pat OperationalState (OpState)

Properties	Operational
Description	This group contains the attributes containing the operational statistics of the pattern.
Mib	FrameRelayNni

ATTRIBUTE FrNni Lts Pat load

Access	Read only
Description	This attribute indicates the load due to this particular pattern. The loads associated with all of the provisioned patterns are summed to arrive at the FrLts load.
Mib	FrameRelayNni
Values	Decimal (0.000..4294967.295)
Units	kbit/s
Default	No default

ATTRIBUTE FrNni Lts Pat status

Access	Read and write

Description	This attributes specifies the administrative state of the pattern. A disabled pattern is not generated, although it can still be triggered.
Mib	FrameRelayNni
Values	disabled enabled
Default	enabled

COMPONENT FrNni ServiceTrace (SrvTrace)

Groups	"GROUP FrNni SrvTrace Operational"
Scope	Application
Description	*FrUni/n ServiceTrace* *FrNni/n ServiceTrace* The *ServiceTrace* component of the Frame Relay service determines if the trace capability is allowed on this interface. If it is not provisioned, then a service trace session cannot be started on this service. Frame Relay service trace is restricted to use FrameRelay, X25 or ATM service trace receiver. If the *SrvTrace rcvr* operational attribute is set to a string name of FrAtm service trace receiver, *Start* command will return a “Receiver Not Supported” response.
Mib	FrameRelayNniTrace
Dyn. Subcomp.	"COMPONENT FrNni SrvTrace Filter"
Common Verbs	Help List Display Add DELete

VERB Start FrNni SrvTrace

Impact	Service
Description	*Start FrUni/n ServiceTrace* *Start FrNni/n ServiceTrace* This command starts a Frame Relay service trace session.

VERB Stop FrNni SrvTrace

Impact	Service
Description	*Stop FrUni/n ServiceTrace* *Stop FrNni/n ServiceTrace* This command stops a Frame Relay service trace session.

GROUP FrNni SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	FrameRelayNniTrace

ATTRIBUTE FrNni SrvTrace receiverName (rcvr)

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	FrameRelayNniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE FrNni SrvTrace duration

Access	Read and write

Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	FrameRelayNniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE FrNni SrvTrace queueLimit

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	FrameRelayNniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE FrNni SrvTrace session

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	FrameRelayNniTrace
Values	The name of the component
Default	No default

COMPONENT FrNni SrvTrace Filter

Groups	"GROUP FrNni SrvTrace Filter Operational"
Scope	Application
Description	*FrUni/n SrvTrace Filter* *FrNni/n SrvTrace Filter* The *Filter* component defines the type of traced data that is sent to the receiver. The *Filter* component provides default values for all its attributes which are sufficient to start a trace session. If required, these attributes may be changed before or during a trace session.
Mib	FrameRelayNniTrace
Common Verbs	Help List Display

GROUP FrNni SrvTrace Filter Operational

Properties	Operational
Description	This group provides the operational attributes for the Frame Relay *SrvTrace Filter* component.
Mib	FrameRelayNniTrace

ATTRIBUTE FrNni SrvTrace Filter traceType (type)

Access	Read and write
Description	This attribute specifies the level of filtering required for this trace session. A value of ***lmi*** indicates that LMI frames are traced. A value of ***dlci*** indicates that frames from the *Dlci* specified by the *tracedDlci* attribute are traced. A value of ***badFrames*** indicates that bad received frames (overruns, CRC errors, aborts) are traced. The default is to trace all frames. This attribute can be set while a trace is active and takes effect immediately.

Mib	FrameRelayNniTrace
Set of	lmi dlci badFrames
Default	(lmi, dlci, badFrames)

ATTRIBUTE FrNni SrvTrace Filter tracedDlci (dlci)

Access	Read and write
Description	This attribute specifies a particular DLCI to trace. A value of ***0*** specifies that all DLCIs are to be traced. This attribute can be set while a trace is active and takes effect immediately.
Mib	FrameRelayNniTrace
Values	Decimal (0..1007)
Default	0

ATTRIBUTE FrNni SrvTrace Filter direction (dir)

Access	Read and write
Description	This attribute specifies the direction of the data to be traced as viewed by the service. The values can be ***egress*** and ***ingress***. An ***egress*** value indicates frames outbound from the service. An ***ingress*** value indicates frames inbound to the service. This attribute can be set while a trace is active and takes effect immediately.
Mib	FrameRelayNniTrace
Set of	egress ingress
Default	(egress, ingress)

ATTRIBUTE FrNni SrvTrace Filter tracedLength (len)

Access	Read and write
Description	This attribute specifies the maximum number of octets to trace per frame starting from the octet following the frame flag. If the

frame length is longer than the value specified by this attribute, then the traced frame is truncated. If set to ***disabled***, the traced frame is not truncated.

This attribute can be set while a trace is active and takes effect immediately.

If the Frame Relay *SrvTrace* is started with an ATM service trace receiver, the *tracedLength* attribute of ATM service trace receiver is ignored.

Mib	FrameRelayNniTrace
Values	Decimal (1..4000) disabled
Units	octets
Default	2000

COMPONENT FrNni ConnectionAdministrator (Ca)

Groups	"GROUP FrNni Ca Provisioned (Prov)" "GROUP FrNni Ca IngressCac" "GROUP FrNni Ca EgressCac" "GROUP FrNni Ca Operational (Op)"
Scope	Application
Description	*FrNni/n ConnectionAdministrator* The *Ca* component allows the network operator to specify common subscription options for the parent interface. It defines the call admission control parameters in the ingress and egress direction for the parent interface.
Mib	FrameRelayNni
Opt. Subcomp.	"COMPONENT FrNni Ca TransferPriorityMapping (Tpm)"
Common Verbs	Help List Display

GROUP FrNni Ca Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the common provisionable attributes of the *Ca* component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Ca overrideLinkRate (ovLinkRate)

Access	Read and write
Criticality	Process
Description	This attribute allows the link rate to be overridden for this interface. This allows the user to specify a value other than the actual physical link rate computed when a *Framer* component is provisioned. When a *VFramer* component is provisioned, this attribute overrides a link rate set to the maximum value supported by CAC . This attribute serves to provide the user control on the amount of bandwidth available for performing CAC.
Mib	FrameRelayNni
Values	Decimal (0..429496729)
Units	bit/s
Default	0

ATTRIBUTE FrNni Ca maximumBandwidthPerCall (maxBwCall)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum bandwidth that can be allocated per connection.
Mib	FrameRelayNni
Values	Decimal (0..520000000)
Units	bit/s

Default	520000000

GROUP FrNni Ca IngressCac

Properties	Provisioned
Description	This attribute group contains the common provisionable attributes for ingress call admission control.
Mib	FrameRelayNni

ATTRIBUTE FrNni Ca ingressApplyToCos (ingCos)

Access	Read and write
Criticality	Process
Description	This attribute specifies which Classes of Service (CoS) have ingress Call Admission Control (CAC) applied to them. Ingress CAC applies only to switched connections (SVCs and S-SPVCs). ***none*** - Ingress CAC is turned off for all classes of service. ***cirOnly*** - Ingress CAC is applied only to the CIR portion of a connection's bandwidth requirements for CIR>0 classes of service. ***cirAndEir*** - Ingress CAC is applied to both CIR and EIR portions of a connections bandwidth requirements for all classes of service.
Mib	FrameRelayNni
Values	none cirOnly cirAndEir
Default	cirOnly

ATTRIBUTE FrNni Ca ingressMaximumEirOnlyCalls

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of connections in the ingress direction with EIR only traffic that can be up at a given time.

Mib	FrameRelayNni
Values	Decimal (0..992)
Default	992

ATTRIBUTE FrNni Ca ingressCirBandwidthPool (ingCirBP)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the ingress CIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayNni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

ATTRIBUTE FrNni Ca ingressEirBandwidthPool (ingEirBp)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the ingress EIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less

	than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayNni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

GROUP FrNni Ca EgressCac

Properties	Provisioned
Description	This attribute group contains the common provisionable attributes for egress call admission control.
Mib	FrameRelayNni

ATTRIBUTE FrNni Ca egressApplyToCos (egCos)

Access	Read and write
Criticality	Process
Description	This attribute specifies which Classes of Service (CoS) have egress Call Admission Control (CAC) applied to them. Egress CAC applies only to switched connections (SVCs and S-SPVCs). ***none*** - Egress CAC is turned off for all classes of service. ***cirOnly*** - Egress CAC is applied only to the CIR portion of a connection's bandwidth requirements for CIR>0 classes of service. ***cirAndEir*** - Egress CAC is applied to both CIR and EIR portions of a connections bandwidth requirements for all classes of service.
Mib	FrameRelayNni

Values	none cirOnly cirAndEir
Default	none

ATTRIBUTE FrNni Ca egressMaximumEirOnlyCalls

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of connections in the egress direction with EIR only traffic that can be up at a given time.
Mib	FrameRelayNni
Values	Decimal (0..992)
Default	992

ATTRIBUTE FrNni Ca egressCirBandwidthPool (egCirBp)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the egress CIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayNni
Vector of	Decimal (0..1000)

Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

ATTRIBUTE FrNni Ca egressEirBandwidthPool (egEirBp)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the egress EIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayNni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

GROUP FrNni Ca Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the *Ca* component.
Mib	FrameRelayNni

ATTRIBUTE FrNni Ca linkRate (linkRate)

Access	Read only

Description	This attribute indicates the link rate used by both ingress and egress CAC to calculate the effective bandwidth pool sizes. If the provisionable attribute *overrideLinkRate* under this component is 0, then the link rate reported is the actual link rate of the port or channel. Otherwise, the link rate reported is the *overrideLinkRate* under this component.
Mib	FrameRelayNni
Values	Decimal (0..520000000)
Units	bit/s
Default	No default

ATTRIBUTE FrNni Ca ingressCirPoolAdmittedBandwidth (ingCirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted CIR bandwidth from each CIR bandwidth pool in the ingress direction. Each value is the sum of the equivalent bit rates of the admitted connections.
Mib	FrameRelayNni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca ingressCirPoolAvailableBandwidth (ingCirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available CIR bandwidth in each ingress CIR bandwidth pool.
Mib	FrameRelayNni
Vector of	Decimal (0..52000000)

Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca egressCirPoolAdmittedBandwidth (egCirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted CIR bandwidth from each CIR bandwidth pool in the egress direction. Each value is the sum of the equivalent bit rates of the admitted connections.
Mib	FrameRelayNni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca egressCirPoolAvailableBandwidth (egCirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available CIR bandwidth in each egress CIR bandwidth pool.
Mib	FrameRelayNni
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca ingressEirPoolAdmittedBandwidth (ingEirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted EIR bandwidth from each EIR bandwidth pool in the ingress direction. Each value is the sum of the equivalent bit rates of the admitted connections.

	If the *ingressApplyToCos* attribute is set to ***none***, all ingress CIR bandwidth pools are set to 0.
Mib	FrameRelayNni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca ingressEirPoolAvailableBandwidth (ingEirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available EIR bandwidth in each ingress EIR bandwidth pool. If the *ingressApplyToCos* attribute is set to either ***none*** or ***cirOnly***, all ingress EIR bandwidth pools are set to 0.
Mib	FrameRelayNni
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca egressEirPoolAdmittedBandwidth (egEirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted EIR bandwidth from each EIR bandwidth pool in the egress direction. Each value is the sum of the equivalent bit rates of the admitted connections. If the *egressApplyToCos* attribute is set to ***none***, all egress CIR bandwidth pools are set to 0.

Mib	FrameRelayNni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca egressEirPoolAvailableBandwidth (egEirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available EIR bandwidth in each egress EIR bandwidth pool. If the *egressApplyToCos* attribute is set to either ***none*** or ***cirOnly***, all egress EIR bandwidth pools are set to 0.
Mib	FrameRelayNni
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrNni Ca numberRejectedEgressCirPermConn (numRegEgCirPerm)

Access	Read only
Description	This attribute indicates the number of permanent connections (that is, PVC and P-SPVC) that are rejected by egress CAC. A connection is rejected by egress CAC if it requests more egress CIR bandwidth than is available, and the *egressApplyToCos* attribute is set to either ***cirOnly*** or ***cirAndEir***.
Mib	FrameRelayNni
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrNni Ca numberRejectedEgressEirPermConn (numRegEgEirPerm)

Access	Read only
Description	This attribute indicates the number of permanent connections (that is, PVC and P-SPVC) that are rejected by egress CAC. A connection is rejected by egress CAC if it requests more egress EIR bandwidth than is available, and the *egressApplyToCos* attribute is set to ***cirAndEir***.
Mib	FrameRelayNni
Values	Decimal (0..992)
Default	No default

COMPONENT FrNni Ca TransferPriorityMapping (Tpm)

Instance	Decimal (0..15)
Groups	"GROUP FrNni Ca Tpm Provisioned (Prov)"
Scope	Application
Description	*FrNni/n Ca TransferPriorityMapping/n* The *Tpm* component defines the corresponding traffic management subscription options on a *FrNni* interface corresponding to a particular transfer priority. This component is needed only if there is a requirement to override the *Mod Frs DprsNet Tpm* component defaults.
Mib	FrameRelayNni
Common Verbs	Help List Display Add DELete

GROUP FrNni Ca Tpm Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *Tpm* component at this interface.

Mib	FrameRelayNni

ATTRIBUTE FrNni Ca Tpm assignedIngressBandwidthPool (asgInBwPool)

Access	Read and write
Criticality	Process
Description	This attribute specifies the ingress bandwidth pool which is used to support this transfer priority at this interface. When this attribute is set to ***sameAsModule***, the bandwidth pool that is used is obtained from the *assignedIngressBandwidthPool* attribute under the *Mod Frs DprsNet Tpm/n* component.
Mib	FrameRelayNni
Values	Decimal (0..15) sameAsModule
Default	sameAsModule

ATTRIBUTE FrNni Ca Tpm assignedEgressBandwidthPool (asgEgBwPool)

Access	Read and write
Criticality	Process
Description	This attribute specifies the egress bandwidth pool which is used to support this transfer priority at this interface. When this attribute is set to ***sameAsModule***, the bandwidth pool that is used is obtained from the *assignedEgressBandwidthPool* attribute under the *Mod Frs DprsNet Tpm/n* component.
Mib	FrameRelayNni
Values	Decimal (0..15) sameAsModule
Default	sameAsModule

COMPONENT FrNni BnxProtocol (Bp)

Groups	"GROUP FrNni Bp Provisioned (Prov)" "GROUP FrNni Bp OsiState (State)" "GROUP FrNni Bp Operational (Op)"

Scope	Application
Description	*FrUni/n BnxProtocol* *FrNni/n BnxProtocol* This component defines how the Frame Relay interface handles the BNX protocol.
Mib	FrNniPvcBnx
Common Verbs	Help List Display Add DELete

GROUP FrNni Bp Provisioned (Prov)

Properties	Provisioned
Description	This group defines the provisioning attributes to control the BNX protocol running on the Frame Relay interface.
Mib	FrNniPvcBnx

ATTRIBUTE FrNni Bp linkToIpServer (linkToIp)

Access	Read and write
Description	This attribute specifies the link to a Frame Relay IP server.
Mib	FrNniPvcBnx
Values	Link (Service, linkToFrameRelayApps)
Default	No default

ATTRIBUTE FrNni Bp ipAddress (ipadd)

Access	Read and write
Description	This attribute specifies the IP address associated with the Frame Relay interface. This address must be in the same subnet as the *ProtocolPort* associated with the *FrIpServer.*
Mib	FrNniPvcBnx

Values	IP address
Default	0.0.0.0

ATTRIBUTE FrNni Bp crossNetEnabled (cne)

Access	Read and write
Description	This attribute specifies whether or not cross-net status messages are sent from the Frame Relay interface.
Mib	FrNniPvcBnx
Values	no yes
Default	yes

ATTRIBUTE FrNni Bp crossNetPollingInterval (cnpi)

Access	Read and write
Description	This attribute specifies the time interval between two cross-net status messages. This attribute is used for both sending and expecting status messages. The two ends of a PVC should be provisioned with values within a close range. Otherwise, it could result in PVC failure.
Mib	FrNniPvcBnx
Values	Decimal (30..86400)
Units	seconds
Default	120

ATTRIBUTE FrNni Bp crossNetAsyncUpdate (cnau)

Access	Read and write
Description	This attribute specifies when a cross-net status message is sent following a BNX DLCI state change. If set to ***enabled***, the status message is sent as soon as the state change occurs. If set to ***disabled***, the state of the BNX DLCI will be sent in a cross-net status message only at the next polling interval. The polling interval is determined by *crossNetPollingInterval* attribute. The

crossNetAsyncUpdate attribute is ignored if *crossNetEnabled* is set to ***no***.

Mib: FrNniPvcBnx

Values: disabled
enabled

Default: enabled

ATTRIBUTE FrNni Bp crossNetListenEnabled (cnle)

Access: Read and write

Description: This attribute specifies whether or not to expect cross-net status messages. When set to ***yes***, this interface wait for a cross-net status message from the remote end to declare the PVCs up or down. When set to ***no***, the interface assumes the PVCs are always up.

Mib: FrNniPvcBnx

Values: no
yes

Default: yes

ATTRIBUTE FrNni Bp crossNetErrorThreshold (cnet)

Access: Read and write

Description: This attribute specifies how many *crossNetPollingIntervals* without receiving a status message from the remote end are permitted to elapse before declaring the PVC down.

Mib: FrNniPvcBnx

Values: Decimal (1..30)

Default: 3

ATTRIBUTE FrNni Bp trafficPriorityEnabled (tpe)

Access: Read and write

Description: This attribute specifies how to set the "Priority Level" field of the BNX header. When set to ***no***, both the *defaultTrafficPriority*

attribute of the *BnxProtocol* component and the *trafficPriority* attribute of the *BnxIwf* component are ignored, and the "Priority Level" field is set to ***2***. When set to ***yes***, the "Priority Level" field is set to the value of the *trafficPriority* attribute of the *BnxIwf*, unless the *trafficPriority* attribute has a value of ***useDefault***. In this case the “Priority Level” field is set to the value of the *defaultTrafficPriority* attribute.

Mib: FrNniPvcBnx

Values: no
yes

Default: no

ATTRIBUTE FrNni Bp defaultTrafficPriority (dtp)

Access: Read and write

Description: This attribute specifies the default traffic priority used to tag all the ingress traffic. This attribute is used when the *trafficPriority* attribute of the *BnxIwf* is set to ***useDefault***. A larger value denotes a lower priority. This attribute is ignored if the *trafficPriorityEnabled* is set to ***no***.

Mib: FrNniPvcBnx

Values: Decimal (1..3)

Default: 2

ATTRIBUTE FrNni Bp trafficDiscardLevel (tdl)

Access: Read and write

Description: This attribute specifies the discard level used to tag ingress traffic.This value is ignored when the attribute *discardLevelEnabled* is set to ***no***. In this case, the "Discard Level" field of BNX header is set to ***2*** for DE=1 datagrams and to ***4*** for DE=0 datagrams. When *discardLevelEnabled* is set to ***yes***, the "Discard Level" field is tagged with the value of *trafficDiscardLevel* attribute. The "Discard Level" value is used as follows:
Discard Level=***1***: drop datagrams when congestion level >= 1
Discard Level=***2***: drop datagrams when congestion level >= 2

	Discard Level=***3***: drop datagrams when congestion level >= 3 Discard Level=***4***: drop datagrams when congestion level >= 4
Mib	FrNniPvcBnx
Values	Decimal (1..4)
Default	4

ATTRIBUTE FrNni Bp discardLevelEnabled (dle)

Access	Read and write
Description	This attribute specifies how to use discard level to tag ingress traffic. When set to ***yes***, the provisioned *trafficDiscardLevel* is used. Otherwise ingress DE=1 datagrams are tagged with discard level ***2*** and DE=0 datagrams are tagged with discard level ***4***.
Mib	FrNniPvcBnx
Values	no yes
Default	no

GROUP FrNni Bp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrNniPvcBnx

ATTRIBUTE FrNni Bp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	FrNniPvcBnx
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrNni Bp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	FrNniPvcBnx
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrNni Bp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrNniPvcBnx
Values	idle active (activ) busy
Default	idle

ATTRIBUTE FrNni Bp availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: FrNniPvcBnx

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE FrNni Bp proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: FrNniPvcBnx

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE FrNni Bp controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is

unlocked.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: FrNniPvcBnx

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE FrNni Bp alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: FrNniPvcBnx

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE FrNni Bp standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

	The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	FrNniPvcBnx
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE FrNni Bp unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FrNniPvcBnx
Values	false true
Default	false

GROUP FrNni Bp Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the *BnxProtocol* component.
Mib	FrNniPvcBnx

ATTRIBUTE FrNni Bp invalidBnxHeader (ibh)

Access	Read only

Description	This attribute counts the datagrams dropped because the BNX header was invalid. It could be caused by a invalid header version, invalid protocol type, or that discard level or priority level is out of range.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp lastInvalidBnxHeader (libh)

Access	Read only
Description	This attribute indicates the BNX header of the datagram which was last dropped by the *BnxProtocol* because one or more fields of the BNX header are invalid. The invalid field could be any of the following: header version, protocol type, discard level out of range, priority level out of range.
Mib	FrNniPvcBnx
Values	Hex (H.0..H.ffffffff)
Default	No default

ATTRIBUTE FrNni Bp invalidIpProtocolId (ipid)

Access	Read only
Description	This attribute counts the datagrams dropped because the protocol ID in IP header was invalid.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp discardedIpFragment (dipf)

Access	Read only
Description	This attribute counts the total number of fragmented datagrams dropped by this interface. The case could be unknown Dlci, or unknown ID in IP header when misordering happened.

Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp sourceIpAddressLastDropped (ldsia)

Access	Read only
Description	This attribute indicates the source IP address of the datagram that was last dropped by the *BnxProtocol* because one or more fields of the IP header are invalid. The invalid field could be any of the following: header version, protocol ID, or Identification of a fragmented datagram.
Mib	FrNniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrNni Bp droppedUnknownDlci (dud)

Access	Read only
Description	This attribute counts the datagrams dropped because the DLCI was unknown.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp lastUnknownDlci (lud)

Access	Read only
Description	This attribute indicates the DLCI of datagram last dropped.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp droppedUnknownDlciXnet (dudx)

Access	Read only
Description	This attribute counts the received cross-net status messages that were dropped because the DLCI was unknown.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp lastUnknownDlciXnet (ludx)

Access	Read only
Description	This attribute indicates the DLCI of last received cross-net status message that was dropped because the DLCI was unknown.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp ipFragFromSubnet (fragfs)

Access	Read only
Description	This attribute counts the IP fragments received from subnet by this frame relay interface. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp lastInvalidIpFragId (lastid)

Access	Read only
Description	This attribute indicates the Id in the IP header of the last fragment dropped by the frame relay interface.
Mib	FrNniPvcBnx

Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrNni Bp lastDlciWithIpFragment (lfdlci)

Access	Read only
Description	This attribute indicates the Dlci which last received IP fragment. This attribute is used for tracking fragmented IP traffic.
Mib	FrNniPvcBnx
Values	Decimal (0..429496729)
Default	0

Nortel Networks Multiservice Switch 7400/15000/20000

Component FrNni

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component FrUni

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component FrUni

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COMPONENT FrameRelayUni (FrUni)

Instance	Decimal (1..4294967295)
Groups	"GROUP FrUni CustomerIdentifierData (CidData)" "GROUP FrUni OsiState (State)" "GROUP FrUni Statistics (Stats)" "GROUP FrUni IfEntryProv (IfEntry)" "GROUP FrUni OperationalStatus (OperStatus)" "GROUP FrUni EmissionPriorityQs" "GROUP FrUni TrafficStatistics (TrafficStats)"
Scope	Application
Description	*FrameRelayUni/n* This component defines an instance of the Frame Relay UNI service. The component instance value n is a unique positive integer within a module. Framer is created whenever the FrUni is

	added. Users who need VirtualFramer should delete the Framer first, then add the VirtualFramer.
Mib	FrameRelayUni
Subcomponents	"COMPONENT FrUni DataNetworkAddress (Dna)" "COMPONENT FrUni LocalManagementInterface (Lmi)" "COMPONENT FrUni ConnectionAdministrator (Ca)"
Opt. Subcomp.	"COMPONENT FrUni Framer" "COMPONENT FrUni Signaling (Sig)" "COMPONENT FrUni VirtualFramer (VFramer)" "COMPONENT FrUni LoadTestSystem (Lts)" "COMPONENT FrUni DirectConnection (Dconn)" "COMPONENT FrUni ServiceTrace (SrvTrace)" "COMPONENT FrUni Isdn" "COMPONENT FrUni BnxProtocol (Bp)"
Opt. Subcomp.	"COMPONENT FrUni DataLinkConnectionIdentifier (Dlci)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP FrUni CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	FrameRelayUni

ATTRIBUTE FrUni customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	FrameRelayUni
Values	Decimal (0; 1..8191)
Default	0

GROUP FrUni OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayUni

ATTRIBUTE FrUni adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	FrameRelayUni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrUni operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	FrameRelayUni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrUni usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrameRelayUni
Values	idle active (activ) busy
Default	idle

ATTRIBUTE FrUni availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: FrameRelayUni

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE FrUni proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	FrameRelayUni
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrUni controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is

unlocked.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: FrameRelayUni

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE FrUni alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: FrameRelayUni

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE FrUni standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

	The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	FrameRelayUni
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE FrUni unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FrameRelayUni
Values	false true
Default	false

GROUP FrUni Statistics (Stats)

Properties	Operational
Description	FrUni/n Statistics This group contains the statistics about the operational behavior of the service at the interface level.
Mib	FrameRelayUni

ATTRIBUTE FrUni lastUnknownDlci (ludlc)

Access	Read only

Description	This attribute identifies the most recent DLCI which user frames were received on for which a DLCI has not been provisioned on the port.
Mib	FrameRelayUni
Values	Decimal (0..1023)
Default	0

ATTRIBUTE FrUni unknownDlciFramesFromIf (unknown)

Access	Read only
Description	This attribute contains a count of the number of frames received from the interface with an unknown DLCI (DLCI which is not provisioned). When the maximum is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni invalidHeaderFramesFromIf (invalid)

Access	Read only
Description	This attribute counts the number of frames received from the interface with an invalid header format. When the maximum is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

GROUP FrUni IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.

Mib	FrameRelayUni

ATTRIBUTE FrUni ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayUni
Values	up down testing
Default	up

ATTRIBUTE FrUni ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	FrameRelayUni
Values	Decimal (1..65535)
Default	No default

GROUP FrUni OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	FrameRelayUni

ATTRIBUTE FrUni snmpOperStatus

Access	Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	FrameRelayUni
Values	up down testing
Default	up

GROUP FrUni EmissionPriorityQs

Properties	Provisioned
Description	This group contains the provisionable attribute to specify the number of Frame Relay egress emission priority queues to be used on that Frame Relay Interface
Mib	FrameRelayUni

ATTRIBUTE FrUni numberOfEmissionQs

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of egress emission priority queues that will be used for that Frame Relay interface. For V.35, V.11, HSSI, E1, DS1, E3, DS3 or 8pDS1 the possible values are: ***2*** (in which case they are hardware queues), or ***4*** (in which case they are software queues). For DS1C, E1C or DS3C the possible values are ***2, 4*** (in all cases they are software queues). For 32 port Msa cards the possible values are ***2, 4*** (in all cases they are hardware queues). For 4pDS3Ch, 1pSTM1ChSmIr PQC6v2 (also known as PQC2)

	the possible values are ***2, 4*** (in all cases they are hardware queues). For 4pDS3Ch PQC12, setting this attribute has no effect on the number of egress emission priority queues, four hardware queues are always used.
Mib	FrameRelayUni
Values	Decimal (2; 4)
Default	2

GROUP FrUni TrafficStatistics (TrafficStats)

Properties	Operational
Description	This operational group provides the traffic statistics of the service at the interface level. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	FrameRelayUni

ATTRIBUTE FrUni frmToIfByQueue

Access	Read only
Description	This attribute counts the frames transmitted to the interface through each of the egress queues. The number of queues is determined by the attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, and egress queue 3 has the highest priority. The attribute is displayed only on SBIC cards when *numberOfEmissionQs* is 4.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

ATTRIBUTE FrUni octetToIfByQueue

Access	Read only
Description	This attribute counts the octets transmitted to the interface through each of the egress queues. The number of queues is determined by the attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, and egress queue 3 has the highest priority. The attribute is displayed only on SBIC cards when *numberOfEmissionQs* is 4.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

COMPONENT FrUni DataNetworkAddress (Dna)

Groups	"GROUP FrUni Dna Address" "GROUP FrUni Dna OutgoingOptions" "GROUP FrUni Dna IncomingOptions" "GROUP FrUni Dna CallOptions"
Scope	Application
Description	This group contains a superset of all attributes which may apply to a VC. Particular applications will typically offer only a subset of these attributes by providing a definition of their own DNA subcomponent.
Mib	FrameRelayUni
Opt. Subcomp.	"COMPONENT FrUni Dna ClosedUserGroup (Cug)" "COMPONENT FrUni Dna HuntGroupMember (HgM)" "COMPONENT FrUni Dna SpareDna (SDna)"
Common Verbs	Help List Display

GROUP FrUni Dna Address

Properties	Provisioned
Description	This group contains attributes common to all DNAs. Every DNA used in the network is defined with this group of 2 attributes.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Process
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the DNA that is entered. Address may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Mib	FrameRelayUni
Values	x121 e164
Default	x121

ATTRIBUTE FrUni Dna dataNetworkAddress (dna)

Access	Read and write
Criticality	Process
Description	This attribute specifies digits which form the unique identifier of the customer interface. When a *SpareDna* component is provisioned this attribute specifies the main *dna*, that is the one on the *mainCard* supporting the interface. It is the equivalent of a telephone number in the telephone network.
Mib	FrameRelayUni
Values	BCD (1..15)

Default	No default

GROUP FrUni Dna OutgoingOptions

Properties	Provisioned
Description	This group defines DNA call options for calls made from the interface. These options are not used for calls arriving to the interface represented by this *DNA*.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna outDefaultPriority (odf)

Access	Read and write
Description	This attribute indicates the default priority of outgoing calls from the DTE to the network. It can be overridden by the *discardPriority* under *DLCI Direct Call* subcomponent. This option can be also included in X.25 signaling, in such case it will be overruled.
Mib	FrameRelayUni
Values	normal high
Default	normal

ATTRIBUTE FrUni Dna outDefaultPathReliability (opr)

Access	Read and write
Description	This attribute specifies the default class of routing for reliability routing for all outgoing calls (from the DTE to the network) using this particular DNA. The chosen default class of routing applies to all outgoing calls established using this DNA, and applies to the packets travelling in both directions on all outgoing calls (local to remote, and remote to local). For incoming calls, the default class of routing is chosen by the calling party (as opposed to DPN, where either end of the call can choose the default routing class).

This attribute, if set to a value of *normal*, indicates that the default class of routing is normal reliability routing. If set to a value of *high*, then the default class of routing is high reliability routing.

High reliability is the standard choice for most DPN and Nortel Networks Multiservice Switch services. It usually indicates that packets are overflowed or retransmitted at various routing levels. Typically high reliability results in duplication and disordering of packets in the network when errors are detected or during link congestion. However, the VC handles the duplication and disordering to ensure that packets are delivered to the DTE properly.

For the Frame Relay service, duplication of packets is not desired, in which case, normal reliability may be chosen as the preferred class of routing.

Mib: FrameRelayUni

Values: normal
high

Default: normal

ATTRIBUTE FrUni Dna outAccess (oua)

Access: Read and write

Description: This attribute is an extension of the Closed User Group (CUG) facility, as follows:
This attribute, if set to a value of *allowed* indicates that outgoing calls (from the DTE to the network) to the open (non-CUG) part of the network are permitted. It also permits outgoing calls to DTEs that have Incoming Access capabilities. If set to a value of *disallowed*, then such calls cannot be made using this DNA. Such calls will be cleared by the local DCE.
This attribute corresponds to the CCITT 'Closed User Group with Outgoing Access' feature for DNAs in that outgoing access is granted if this attribute is set to a value of *allowed*.

Mib: FrameRelayUni

Values	disallowed allowed
Default	disallowed

ATTRIBUTE FrUni Dna defaultTransferPriority (dtp)

Access	Read and write
Description	This attribute specifies the default transfer priority for all outgoing calls using this particular *DNA*. It can be overridden by the *transferPriority* provisioned in the *Dlci DirectCall* sub-component. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 levels from 0 to 15. Each transfer priority n, where n indicates the transfer priority index, contains a default setting for routing class of service (multimedia, delay or throughput) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required. The default *defaultTransferPriority* is ***0***.
Mib	FrameRelayUni
Values	0 1 2 3 4 5 6 7 8 9

	10 11 12 13 14 15
Default	0

ATTRIBUTE FrUni Dna transferPriorityOverRide (tpor)

Access	Read and write
Description	When this attribute is set to ***yes*** in the call request, the called end will use the calling end provisioning data on transfer priority to override its own provisioning data. If it is set ***no***, the called end will use its own provisioning data on transfer priority. This attribute is not applicable for Frame Relay SVCs. For more information about transfer priority, please refer to the previous attribute *defaultTransferPriority.* The default of *transferPriorityOverRide* is ***yes***.
Mib	FrameRelayUni
Values	yes no
Default	yes

GROUP FrUni Dna IncomingOptions

Properties	Provisioned
Description	This group defines options for incoming calls. These options are used for calls arriving to the interface represented by this *DNA.* For calls originated from the interface, *IncomingOptions* attributes are not used.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna incAccess (ina)

Access	Read and write
Description	This attribute, if set to a value of *allowed* specifies that incoming calls (from the network to the DTE) from the open (non-CUG) part of the network are permitted. It also permits incoming calls from DTEs that have outgoing access capabilities. If set to a value of *disallowed*, such calls cannot be made to this DNA. They will be cleared by the local DCE. This attribute corresponds to the CCITT 'Closed User Group with Incoming Access' feature for DNAs in that incoming access is granted if this attribute is set to a value of *allowed*.
Mib	FrameRelayUni
Values	disallowed allowed
Default	disallowed

GROUP FrUni Dna CallOptions

Properties	Provisioned
Description	This group defines additional all options for not related to direction of the call.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna accountClass (acl)

Access	Read and write
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. Use of this attribute is decided by network operator. This attribute is returned by the local VC in the accounting record for all calls that are set up using this particular DNA.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrUni Dna accountCollection (aco)

Access	Read and write
Description	This attribute indicates that accounting records are to be collected by the network for the various reasons: billing, test, study, auditing. The last of the parameters, force, indicates that accounting records are to be collected irrespective of other collection reasons. The force option is available for X.75 Gateways only. If none of these reasons are set, then accounting will be suppressed. To set a specific accounting collection reason, the reason is entered and the corresponding bit in the structure is set to a value of 1. To turn off a specific accounting collection reason, the reason is entered preceded with the '~' character, and the corresponding bit in the structure is set to a value of 0. The bit placement for the accounting collection reasons is as follows: Bit 0 - Bill Bit 1 - Test Bit 2 - Study Bit 3 - Audit Bit 4 - Force
Mib	FrameRelayUni
Set of	bill test study audit force
Default	(bill)

ATTRIBUTE FrUni Dna serviceExchange (sre)

Access	Read and write
Description	This attribute is an arbitrary number, Data Service Exchange, as entered by the network operator and reported in accounting record. It is converted into an internal 8-bit integer value for use in the accounting record as well as in various X.25 and X.75 Tariff utilities.

Mib	FrameRelayUni
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrUni Dna egressAccounting (ega)

Access	Read and write
Description	This attribute specifies if egress accounting is enabled by the frame relay service. If egress accounting is disabled, only segment counts are collected by the VC. No frame relay counts appear in the accounting records for the frame relay service. If egress accounting is enabled, the accounting records for the frame relay service will contain frame relay specific counts.
Mib	FrameRelayUni
Values	yes no
Default	no

ATTRIBUTE FrUni Dna dataPath (dpa)

Access	Read and write
Description	This attribute specifies the data path to be used by Virtual Circuits on this interface. If the connection has a *DirectCall* component then the value can be overridden by the *dataPath* attribute of the *DirectCall* component. This value applies to the connection after data transfer state is reached. All the data and control traffic will be sent using this data path. If the provisioned *dataPath* is not available the connection is not established. The value of the *dataPath* is signaled by both ends of the connection. If this value is not the same at both ends ***dprsOnly*** is used for the duration of the connection. A virtual circuit connection is always established using ***dprsOnly***

even if this attribute is provisioned as some other value.

dprsOnly - dynamic packet routing system is used

dprsMcsOnly - dprs Multi-Service Cut-Through Switching path is used.

dprsMcsFirst - dprs Multi-Service Cut-Through Switching path is used if it is available. If it is not available ***dprsOnly*** is used.

Mib FrameRelayUni

Values dprsOnly
dprsMcsOnly
dprsMcsFirst

Default dprsOnly

COMPONENT FrUni Dna ClosedUserGroup (Cug)

Instance Decimal (0..255)

Groups "GROUP FrUni Dna Cug CugOptions"

Scope Application

Description

FrUni/n Dna ClosedUserGroup
This group defines options associated with national or international *CUG* Identifier. Other *DNAs* in the network can have *CUGs* defined which groups these *DNAs* by *CUG interlockCode*. If *DNAs* are defined with *CUGs*, calls from *DNAs* which do not have the same *interlockCode* defined are refused. Attributes *incAccess* and *outAccess* can override this rule.

A CUG is provisioned by default as a SELECTABLE CUG. If a SELECTABLE CUG is provisioned, the DTE can include a CUG facility in the call request. If it does, the DTE selects a specific CUG by signaling the CUG's index. A DTE can subscribe to as many as 256 SELECTABLE CUGs.

A SIMPLE CUG is provisioned by setting a SELECTABLE CUG's preferential attribute to the value **yes**. There are two

prerequisites: a single SELECTABLE CUG must exist; its attributes incCalls and outCalls must both be set to **allowed**. If a SIMPLE CUG is provisioned, it is the default CUG used to establish a call when the call request sent by the DTE does not include any CUG facility. If the DTE includes any CUG facility in the call request, the call is cleared. A DTE subscribing to a SIMPLE CUG cannot subscribe to any other CUG.

Mib FrameRelayUni

Common Verbs
Help
List
Display
Add
DELete

GROUP FrUni Dna Cug CugOptions

Properties Provisioned

Description Attributes in this group define *ClosedUserGroup* options associated with *interlockCode*. *DNA's* with the same *CUG* (*interlockCode*) can make calls within this group. Various combinations which permit or prevent calls in the same *CUG* group are defined here.

Mib FrameRelayUni

ATTRIBUTE FrUni Dna Cug type

Access Read and write

Description This attribute specifies the CUG type - the CUG is either a national CUG, or an international CUG. International closed user groups are usually established between DTEs for which there is an X.75 Gateway between; whereas national closed user groups are usually established between DTEs for which there is no X.75 Gateway between. (National CUGs cannot normally traverse an X.75 Gateway).
If this attribute is set to ***national***, then the *CUG* is a national *CUG*, in which case, the *dnic* should be left at its default value since it is not part of a national *CUG*. If this attribute is set to ***international***, then the *CUG* is an international *CUG*, in which

	case, the *dnic* should be set appropriately as part of the *CUG interlockCode*.
Mib	FrameRelayUni
Values	national international
Default	national

ATTRIBUTE FrUni Dna Cug dnic

Access	Read and write
Description	This attribute specifies the *dnic* (Data Network ID Code) of the *CUG* by which packet networks are identified. This attribute is not applicable if the *CUG* is a ***national*** *CUG*, as specified by the CUG *type* attribute. There are usually 1 or 2 *dnics* assigned per country, for public networks. The U.S. is an exception where each BOC has a *dnic*. Also, a group of private networks can have its own *dnic*. *dnic* value is not an arbitrary number. It is assigned by international agreement and controlled by CCITT.
Mib	FrameRelayUni
Values	BCD (4)
Default	0000

ATTRIBUTE FrUni Dna Cug interlockCode (ilc)

Access	Read and write
Description	This attribute specifies the *CUG* identifier of a national or international *CUG* call. It is an arbitrary number and it also can be called CUG in some descriptions. Interfaces (*DNA's*) defined with this number can make calls to *DNA's* with the same *interlockCode*.
Mib	FrameRelayUni
Values	Decimal (0..65535)
Default	65535

ATTRIBUTE FrUni Dna Cug preferential (pre)

Access	Read and write
Description	The attribute “preferential”, if set to ***yes*** indicates that this CUG is the SIMPLE CUG (as defined in ITU X.36 [10/96]), in which case it will be used during the call establishment phase if the DTE has not explicitly specified a CUG index in the call request packet. If set to ***no***, then this CUG is not the SIMPLE CUG, but an instance of the SELECTABLE CUG. The attribute “preferential” is set to ***no*** by CAS when a CUG instance is created. If only one CUG instance exists under a DNA, and if this CUG’s attributes “incCalls” and “outCall” are both set to ***allowed, t***hen this CUG instance can be changed to a SIMPLE CUG by setting the attribute “preferential” to ***yes***. If more than one CUG instances exist under a DNA, none of the CUGs can be set by the user as “preferential”. Essentially, the attribute “preferential” distinguishes a SIMPLE CUG from a SELECTABLE CUG. In the case of a FRUNI DNA with a single CUG instance, the CUG can be a SIMPLE CUG (preferential = ***yes***) or the only instance of a SELECTABLE CUG (preferential = ***no***).
Mib	FrameRelayUni
Values	no yes
Default	no

ATTRIBUTE FrUni Dna Cug outCalls (ouc)

Access	Read and write
Description	This attribute, if set to ***allowed*** indicates that outgoing calls (from the DTE into the network) can be made using this particular CUG. If set to a value of ***disallowed***, then outgoing calls cannot be made using this CUG - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Outgoing Calls Barred'

feature for CUGs in that outgoing calls are barred if this attribute is set to a value of ***disallowed***.

Mib: FrameRelayUni

Values: disallowed
allowed

Default: allowed

ATTRIBUTE FrUni Dna Cug incCalls (inc)

Access: Read and write

Description: This attribute, if set to ***allowed*** indicates that incoming calls (from the network to the DTE) can be made using this particular CUG. If set to ***disallowed***, then incoming calls cannot be made using this CUG - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Incoming Calls Barred' feature for CUGs in that incoming calls are barred if this attribute is set to a value of ***disallowed***.

Mib: FrameRelayUni

Values: disallowed
allowed

Default: allowed

COMPONENT FrUni Dna HuntGroupMember (HgM)

Groups: "GROUP FrUni Dna HgM Interface (If)"
"GROUP FrUni Dna HgM Operational (Op)"

Scope: Application

Description: *FrUni/n Dna HuntGroupMember*
This component specifies the interaction of this *DNA* with one or more hunt groups to which it is expected to belong.
Note that is not possible to automatically verify the consistency of the hunt group membership specified under this component

	with the hunt group provisioning on the DPN Hunt Group Server(s).
Mib	FrameRelayUni
Subcomponents	"COMPONENT FrUni Dna HgM HuntGroupAddress (HgAddr)"
Common Verbs	Help List Display Add DELete

GROUP FrUni Dna HgM Interface (If)

Properties	Provisioned
Description	This group contains the interface parameters between the *HuntGroupMember* and the hunt group server.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna HgM availabilityUpdateThreshold (aut)

Access	Read and write
Description	This attribute specifies how much *availableAggregateCIR* can change before an Availability Message Packet (AMP) is sent to the hunt group server informing it of the change. If the value specified is not a multiple of 2048, the value actually used as the threshold will be the next higher multiple of 2048.
Mib	FrameRelayUni
Values	Decimal (2048..16777216)
Units	bit/s
Default	8192

GROUP FrUni Dna HgM Operational (Op)

Properties	Operational

Description	This group contains the operational attributes of the *HuntGroupMember* component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna HgM maximumAvailableAggregateCir (mcir)

Access	Read only
Description	This attribute indicates the maximum available bandwidth for this hunt group member. This value represents the total sum of the sixteen egress bandwidth pools. It is the sum of the sixteen indices of the *FrUni Ca egressBandwidthPool* attribute multiplied by the link speed.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE FrUni Dna HgM availableAggregateCir (acir)

Access	Read only
Description	This attribute indicates the current total available bandwidth reported to the hunt group server in the Availability Message Packet (AMP). This value represents the sum of the sixteen currently available egress bandwidth pools. It is the sum of the sixteen indices of the *FrUni Ca egressPoolAvailableBandwidth* attribute. It increments when a connection is released. It decrements when a connection is accepted. Both this attribute and the *availableDlcis* attribute must be non zero for this interface to receive calls on a hunt group.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE FrUni Dna HgM availabilityDelta (ad)

Access	Read only
Description	This attribute indicates the net change in the available aggregate CIR since the last Availability Message Packet (AMP) was sent to the Hunt Group. Once the absolute value of this attribute reaches the *availabilityUpdateThreshold* an AMP is sent to the hunt group server(s) and the *availabilityDelta* is re-computed.
Mib	FrameRelayUni
Values	Signed (-16777216..16777215)
Units	bit/s
Default	No default

ATTRIBUTE FrUni Dna HgM availableDlcis (adl)

Access	Read only
Description	This attribute indicates the number of DLCIs available for SVCs on the interface associated with this DNA. If this value reaches 0, an AMP with zero availability is sent to the hunt group server(s). Both this attribute and the *availableAggregateCir* attribute must be non zero for this DNA to receive calls on the hunt group.
Mib	FrameRelayUni
Values	Decimal (0..4096)
Default	No default

COMPONENT FrUni Dna HgM HuntGroupAddress (HgAddr)

Instance	Decimal (0..1)
Groups	"GROUP FrUni Dna HgM HgAddr Address (Addr)"
Scope	Application
Description	*FrUni/n Dna HgM HuntGroupAddress/n* This component specifies a hunt group address to which this

member belongs. A hunt group member belongs to at least one hunt group.

Mib FrameRelayUni

Common Verbs
Help
List
Display
Add
DELete

GROUP FrUni Dna HgM HgAddr Address (Addr)

Properties Provisioned

Description This group contains attributes common to all DNAs. Every DNA used in the network is defined with this group of 2 attributes.

Mib FrameRelayUni

ATTRIBUTE FrUni Dna HgM HgAddr numberingPlanIndicator (npi)

Access Read and write

Description This attribute indicates the Numbering Plan Indicator (NPI) of the *DNA*. The address may belong to X.121 or E.164 plans.

Mib FrameRelayUni

Values
x121
e164

Default x121

ATTRIBUTE FrUni Dna HgM HgAddr dataNetworkAddress (dna)

Access Read and write

Description This attribute contains digits which form the unique identifier of the customer interface. It can be compared (approximation only) to a telephone number where the phone number identifies a unique telephone set. *DNA* digits are selected and assigned by network operators.

Mib FrameRelayUni

Values	BCD (1..15)
Default	No default

COMPONENT FrUni Dna SpareDna (SDna)

Groups	"GROUP FrUni Dna SDna Address (Addr)"
Scope	Application
Description	*FrUni/n Dna SpareDna* This component represents the Data Network Address associated with the FrUni on the *spareCard* when the ***frUniPvcSparingDprs*** feature is provisioned. When this component is provisioned, the spare Dna is supported by the *spareCard* and the main Dna is supported by the *mainCard*. The remote *FrUni* must have a *SpareDc* component provisioned, otherwise hot standby sparing will not be provided by this DNA.
Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

GROUP FrUni Dna SDna Address (Addr)

Properties	Provisioned
Description	This group contains attributes common to all DNAs. Every DNA used in the network is defined with this group of 2 attributes.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dna SDna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Process
Description	This attribute specifies the Numbering Plan Indicator (NPI) of the *dna*. The address may belong to X.121 or E.164 plans.

Mib	FrameRelayUni
Values	x121 e164
Default	x121

ATTRIBUTE FrUni Dna SDna dataNetworkAddress (dna)

Access	Read and write
Criticality	Process
Description	This attribute specifies digits which form the alternate identifier of the customer interface used for hot standby sparing. This spare *dna* is supported by the *spareCard*. It is the equivalent of a telephone number in the telephone network. DNA digits are selected and assigned by network operators.
Mib	FrameRelayUni
Values	BCD (1..15)
Default	No default

COMPONENT FrUni Framer

Groups	"GROUP FrUni Framer Provisioned (Prov)" "GROUP FrUni Framer LinkOptions (Link)" "GROUP FrUni Framer OsiState (State)" "GROUP FrUni Framer Statistics (Stats)" "GROUP FrUni Framer LinkUtilization (Util)"

"COLLECTED STATS FrameRelayUni Framer"

Scope	Application
Description	*FrUni/n Framer* *FrNni/n Framer* *FrAtm/n Framer* This component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib FrameRelayUni

Common Verbs

Help
List
Display
Add
DELete

GROUP FrUni Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib FrameRelayUni

ATTRIBUTE FrUni Framer interfaceName

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This

defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib FrameRelayUni

Values Link (Hardware, applicationFramerName)

Default No default

GROUP FrUni Framer LinkOptions (Link)

Properties Provisioned

Description

This group contains attributes defining the framing of data on the link interface.

Mib FrameRelayUni

ATTRIBUTE FrUni Framer dataInversion

Access Read and write

Description

This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed.

This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density.

Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted.

This attribute may only take its default value for non-MSA cards.

Mib FrameRelayUni

Values off
on

Default off

ATTRIBUTE FrUni Framer frameCrcType

Access	Read and write
Description	This attribute defines the type of CRC used. The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness. NoCrc means that CRC is not used. This attribute may take only its default value for non-MSA cards.
Mib	FrameRelayUni
Values	crc16 crc32 noCrc
Default	crc16

ATTRIBUTE FrUni Framer flagsBetweenFrames

Access	Read and write
Description	This attribute defines the number of flags that are inserted between frames sent to the link interface. The flagBetweenFrames can be set to only 1, 2, 4, 8 or 16 for 4pDS3Ch FrameRelay FP.
Mib	FrameRelayUni
Values	Decimal (1..16)
Default	1

GROUP FrUni Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state

combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib FrameRelayUni

ATTRIBUTE FrUni Framer adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib FrameRelayUni

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE FrUni Framer operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be

providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: FrameRelayUni

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE FrUni Framer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: FrameRelayUni

Values: idle
active (activ)
busy

Default: idle

GROUP FrUni Framer Statistics (Stats)

Properties: Operational

Description:

This group contains the operational statistics data for a Framer component.

Mib	FrameRelayUni

ATTRIBUTE FrUni Framer aborts

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Framer crcErrors

Access	Read only
Description	This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Framer lrcErrors

Access	Read only
Description	This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Framer nonOctetErrors

Access	Read only

Description

This attribute is the total number of frames that were non octet aligned.

Mib FrameRelayUni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrUni Framer overruns

Access Read only

Description

This attribute is the total number of frames received from the link for which overruns occurred.

Mib FrameRelayUni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrUni Framer underruns

Access Read only

Description

This attribute is the total number of frames transmitted to the link for which underruns occurred.

Mib FrameRelayUni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrUni Framer largeFrmErrors

Access Read only

Description

This attribute is the total number of frames received which were too large. The frame exceeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.

Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Framer frmModeErrors

Access	Read only
Description	This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are inconsistent with the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	FrameRelayUni

Values	Long Integer
Default	No default

ATTRIBUTE FrUni Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Framer ingressFrameDiscards

Access	Read only
Description	This attribute is the total number of frames discarded at ingress PQC.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

GROUP FrUni Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic

with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.

Mib FrameRelayUni

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE FrUni Framer normPrioLinkUtilFromIf

Access Read only

Description

This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.

Mib FrameRelayUni

Values Decimal (0..100)

Units %

Default 0

COLLECTED STATS FrameRelayUni Framer

Description The statistics record generated by the FrameRelayUni Framer component.

ATTRIBUTE FrUni Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrUni Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE FrUni Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE FrUni Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE FrUni Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT FrUni LocalManagementInterface (Lmi)

Groups	"GROUP FrUni Lmi ProtocolParameters (Parms)" "GROUP FrUni Lmi OsiState (State)" "GROUP FrUni Lmi ProtocolStatusInfo (Psi)" "GROUP FrUni Lmi Statistics (Stats)" "GROUP FrUni Lmi UspProtocolParameters (UspParms)"
Scope	Application
Description	*FrUni/n LocalManagementInterface* *FrNni/n LocalManagementInterface* *FrAtm/n LocalManagementInterface*

This component defines the parameters for implementing the Local Management Interface protocol.

Mib FrameRelayUni

Common Verbs
Help
List
Display

GROUP FrUni Lmi ProtocolParameters (Parms)

Properties Provisioned

Description

This group contains the provisionable attributes of the *LMI* component.

Mib FrameRelayUni

ATTRIBUTE FrUni Lmi procedures (proc)

Access Read and write

Criticality Process

Description

This attribute selects the procedures to be used for the Local Management Interface. The following procedures are supported:

none: no Local Management Interface procedures are running on this interface. This accommodates Frame Relay user equipment that has not implemented any LMI procedures. The remaining attributes of this group are ignored.

For the ***4pDS3Ch*** card, when the *timeslot* of the *channel* component linked to this *FrUni* is set to ***none***, only ***none*** is permitted for the *procedures* attribute of this *Lmi* component.

vendorForum: Local Management Interface procedures from the Vendor Forum specification are supported on this interface. *DLCI 1023* is used for the LMI protocol. This value cannot be used if the side attribute is both.

ansi: Local Management Interface procedures from the ANSI specification are supported. *DLCI 0* is used for the LMI protocol.

itu: Local Management Interface procedures from the ITU-T specification are supported. *DLCI 0* is used for the LMI protocol. Was previously ***ccitt***.

autoConfigure: The interface determines automatically which Local Management Interface procedures to use. This value cannot be used if the side attribute is user.

The procedures currently in use can be seen in the operational attribute *opProcedures*.

Mib: FrameRelayUni

Values:
none
vendorForum
ansi
itu (ccitt)
autoConfigure

Default: autoConfigure

ATTRIBUTE FrUni Lmi asyncStatusReport (asr)

Access: Read and write

Description

This attribute selects the use of asynchronous PVC status report procedures as specified in ANSI, CCITT, and Vendor Forum.

This attribute can be set to ***on*** or ***off***. If *procedure*s is set to ***none***, this attribute is ignored.

Mib: FrameRelayUni

Values:
off
on

Default: off

ATTRIBUTE FrUni Lmi errorEventThreshold (n392)

Access	Read and write
Description	An event is defined as follows: (1) receipt of a STATUS ENQUIRY message; or (2) expiration of timer T392. An error event is (1) nonreceipt of STATUS ENQUIRY in T392 seconds; (2) invalid contents of a LMI message; (3) invalid receive sequence number. This attribute specifies the number of error events which, if they occur within *eventCount* events, cause a protocol error condition. The condition is cleared after *eventCount* sequential correct events occur. This attribute corresponds to the nN2 parameter described in the Vendor Forum Specification. It must be less than or equal to *eventCount*.
Mib	FrameRelayUni
Values	Decimal (1..10)
Default	3

ATTRIBUTE FrUni Lmi eventCount (n393)

Access	Read and write
Description	This attribute specifies the number of contiguous events within which no more than *eventErrorThreshold* error events are allowed. This attribute corresponds to the nN3 parameter described in the Vendor Forum Specification. It must be greater than or equal to *errorEventThreshold*.
Mib	FrameRelayUni
Values	Decimal (1..10)
Default	4

ATTRIBUTE FrUni Lmi checkPointTimer (t392)

Access	Read and write

Description	This attribute selects the time (in seconds) within which a STATUS ENQUIRY message is expected. This attribute corresponds to the nT2 parameter described in the Vendor Forum Specification. It must be less than *messageCountTimer.*
Mib	FrameRelayUni
Values	Decimal (1; 2; 3; 4; 5; 10; 15; 20; 25; 30)
Units	seconds
Default	15

ATTRIBUTE FrUni Lmi messageCountTimer (nt3)

Access	Read and write
Description	This attribute selects the time (in seconds) within which at most five (this is a fixed value and corresponds to maximum message count in VendorForum) STATUS ENQUIRY messages are expected. This attribute applies only when the *lmiProcedures* is set to ***vendorForum***. *messageCountTimer* must always be greater than *checkPointTimer.*
Mib	FrameRelayUni
Values	Decimal (5; 10; 15; 20; 25; 30)
Units	seconds
Default	20

ATTRIBUTE FrUni Lmi ignoreActiveBit (inab)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the Frame Relay LMI Active Bit (A-bit) has a bearing on the transfer of user data across this

Frame Relay interface for both directions of traffic flow.

When this attribute is set to ***yes***, the A-bit status of a user DLCI connection does not affect data transfer.

When this attribute is set to ***no,*** data received from the local interface will be discarded if an A-bit =0 condition exists towards the local user. Data being sent to the local interface is discarded if an A-bit = 0 condition exists towards the subnet.

Mib: FrameRelayUni

Values:
no
yes

Default: no

ATTRIBUTE FrUni Lmi side

Access: Read and write

Criticality: Process

Description

This attribute can be set to ***user, network,*** or ***both***.

When this attribute is set to ***user***, USP LMI procedures are running. When this attribute is set to ***network***, NSP LMI procedures are running. When this attribute is set to ***both***, USPNSP LMI procedures are running.
When the value is ***both***, the *procedures* attribute must not be set to ***vendorForum***.
Setting the value to ***user*** when the *procedures* attribute is set to ***autoConfigure*** is disallowed semantically.

Mib: FrameRelayUni

Values:
network
user
both

Default: network

ATTRIBUTE FrUni Lmi pvcConfigParmsInFsr (pvcConfig)

Access	Read and write
Description	When this attribute is set to ***yes***, additional Q.933 information elements are included in the LMI Full Status message to facilitate CPE PVC parameter configuring. When set to ***yes***, the *Check Prov* command fails if the *Lmi side* is not set to ***network***. When set to ***yes***, *Check Prov* fails if the number of DLCIs on the *FrUni* is greater than 300. This attribute should be set to ***no*** if the *BnxProtocol* component is provisioned under this *FrUni* for BNX Frame Relay interworking. If the service is not a *FrUni* this attribute is ignored.
Mib	FrameRelayUni
Values	no yes
Default	no

ATTRIBUTE FrUni Lmi pvcAlarmsReporting (pvcAlarms)

Access	Read and write
Description	This attribute specifies if alarms are generated when PVCs change state in the local network, an adjacent network or in remote networks. When the value is ***internal***, PVCs operational status change in the local network are reported in alarms. When the value is ***external***, PVCs operational status change in an adjacent or remote networks are reported in alarms. When the value is ***both***, PVCs status change in local and adjacent or remote networks are reported in alarms. When the value is ***none***, no alarms are issued for PVCs status change.

There are four kinds of alarms controlled by the attribute.
Alarm 7007 200x reports PVCs that have lost connectivity in an adjacent or remote networks.
Alarm 7007 201x reports PVCs that have reached the data transfer state in an adjacent or remote networks.
Alarm 7007 202x reports PVCs that have lost connectivity in the local network.
Alarm 7007 203x reports PVCs that have reached the data transfer state in the local network.

Each alarm can report a maximum of 112 DLCIs. Up to nine alarms of the same kind may be required to report all PVCs that have changed state if all these PVCs have experienced the same condition at the *FrUni* interface.

Mib: FrameRelayUni

Values:
external
internal
both
none

Default: external

GROUP FrUni Lmi OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: FrameRelayUni

ATTRIBUTE FrUni Lmi adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	FrameRelayUni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrUni Lmi operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FrameRelayUni
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrUni Lmi usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FrameRelayUni
Values	idle active (activ) busy
Default	idle

GROUP FrUni Lmi ProtocolStatusInfo (Psi)

Properties	Operational
Description	This group provides the protocol status of the Local Management Interface.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lmi protocolStatus

Access	Read only
Description	This attribute indicates whether the LMI is in an error condition or whether the LMI procedures are behaving normally. When operating with no LMI protocol, this attribute is always set to ***normalCondition***. When operating with LMI procedures, this attribute is set to ***errorCondition*** after n392 of the last n393 events are in error. The consequence of an ***errorCondition*** is that all DLCIs on this interface will become inactive in both

directions. The ***errorCondition*** is cleared and a ***normalCondition*** is indicated when a sufficient number of events have occurred without error. In ANSI, this occurs when n393 consecutive good events take place.

If the *procedures* attribute is set to ***autoConfigure***, this attribute is set to ***configuring*** while adaptive LMI determines which LMI procedures are running on the link. A single LMI error event during auto configuration causes the attribute value to change to ***errorCondition***. If during ***configuring*** no LMI message is received, an LMI ***errorCondition*** is raised after n392 x t392 seconds.

Mib: FrameRelayUni

Values:
errorCondition
normalCondition
configuring

Default: No default

ATTRIBUTE FrUni Lmi opProcedures (opproc)

Access: Read only

Criticality: Process

Description

The *opProcedures* attribute indicates the procedures being used for the Local Management Interface. This attribute should be ignored if *protocolStatus* is not ***normalCondition***. The following procedures are supported:

none: Local Management Interface procedures are not running on this interface. This accommodates Frame Relay user equipment that has not implemented any LMI procedures.

vendorForum: Local Management Interface procedures from the Vendor Forum specification are running on this interface. *DLCI 1023* is used for the LMI protocol.

ansi: Local Management Interface procedures from the ANSI specification are running. *DLCI 0* is used for the LMI protocol.

itu: Local Management Interface procedures from the ITU-T specification are running. *DLCI 0* is used for the LMI protocol. Was previously ***ccitt***.

unknown: Local Management Interface procedures have yet to be determined by Adaptive LMI.

Mib FrameRelayUni

Values
none
vendorForum
ansi
itu
unknown

Default No default

GROUP FrUni Lmi Statistics (Stats)

Properties Operational

Description

This group contains the operational statistics for the Frame Relay Local Management Interface.

Mib FrameRelayUni

ATTRIBUTE FrUni Lmi keepAliveStatusToIf (kasti)

Access Read only

Description

This attribute counts the number of Local Management Interface keep alive status messages sent to the external user device in response to a status enquiry for keep alive status. When the maximum count is exceeded it wraps to zero.

Mib FrameRelayUni

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE FrUni Lmi fullStatusToIf (fsti)

Access	Read only
Description	This attribute counts the number of Local Management Interface full status messages sent to the external user device in response to a status enquiry for keep alive or full status. When the maximum count is reached it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi keepAliveStatusEnqFromIf (kafi)

Access	Read only
Description	This attribute counts the number of Local Management Interface valid keep alive status enquiry messages received from the external user device. When the maximum count is reached it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi fullStatusEnqFromIf (fsfi)

Access	Read only
Description	This attribute counts the number of Local Management Interface valid full status enquiry messages received from the external user device. When the maximum count is reached it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi networkSideEventHistory (nsh)

Access	Read only
Description	This attribute displays the Local Management Interface network side procedure event history in order of occurrence. An event is represented by a single symbol. A '+' symbol indicates a good event. An 'X' symbol indicates a protocol error event. The leftmost event is the most recent to occur. The provisioned *eventCount* (nN3/N393) dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status enquiry message. An error event is one of three possibilities, either a nT2/T392 timer expiry, receipt of a status enquiry message with bad sequence numbers, or when *lmiProcedures* is provisioned to vendorForum and we receive more than nN4 status enquiry messages within the provisioned *messageCountTimer* (nT3).
Mib	FrameRelayUni
Values	String (1..10, ASCII)
Default	No default

ATTRIBUTE FrUni Lmi protocolErrors (proto)

Access	Read only
Description	This attribute counts the number of Local Management Interface protocol errors. It is the sum of the sequence (*sequenceErrors*), timeout (*pollingVerifTimeouts*) and too many status enquiry messages received within the *messageCountTimer* (nT3) errors. The too many status enquiries error only applies when *lmiProcedures* is set to ***vendorForum***. When the maximum count is exceeded it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi unexpectedIes (uie)

Access	Read only
Description	This attribute counts the number of Local Management Interface frames received with an Information Element identifier that is unknown or unexpected. An unexpected Information Element is not a protocol error. When the maximum count is reached, this counter wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi sequenceErrors (seq)

Access	Read only
Description	This attribute counts the number of Local Management Interface Status Enquiry message sequence errors. A sequence error is receipt of a Status Enquiry message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi unexpectedReports (ur)

Access	Read only
Description	This attribute counts the number of Local Management Interface frames received with an unknown or unexpected report type. An unexpected report type is not a protocol error. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayUni

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi pollingVerifTimeouts (tmo)

Access	Read only
Description	This attribute counts the number of *checkPointTImer* (t392) timer expiries occurring on the Local Management Interface. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi keepAliveEnqToIf (kaeti)

Access	Read only
Description	This attribute counts the number of Local Management Interface keep alive enquiry status messages sent to the external user device for keep alive status. When the maximum count is reached it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi fullStatusEnqToIf (fseti)

Access	Read only
Description	This attribute counts the number of Local Management Interface full status messages sent to the external user device in response to a status enquiry for keep alive or full status. When the maximum count is reached it wraps to zero.
Mib	FrameRelayUni

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi userSideEventHistory (ush)

Access	Read only
Description	This attribute displays the Local Management Interface user side procedure event history in order of occurrence. An event is represented by a single symbol. A '+' symbol indicates a good event. An 'X' symbol indicates a protocol error event. The left most event is the most recent to occur. The provisioned *eventCount* (nN3/N393) dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status message. An error event is either a nT1/T391 timer expiry or receipt of a status message with bad sequence numbers.
Mib	FrameRelayUni
Values	String (1..10, ASCII)
Default	No default

ATTRIBUTE FrUni Lmi statusSequenceErrors (stseq)

Access	Read only
Description	This attribute counts the number of Local Management Interface Status message sequence errors. A sequence error is receipt of a Status message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lmi noStatusReportCount (nsrc)

Access	Read only

Description

This attribute counts the number of times when no status report or an invalid status report comes from the external network. This attribute is incremented in two cases:
i) after a status enquiry is sent out and T391 timer expires without having a status report received.
ii) an invalid status report is received.

When the maximum count is reached it wraps to zero.

Mib: FrameRelayUni

Values: Decimal (0..4294967295)

Default: 0

GROUP FrUni Lmi UspProtocolParameters (UspParms)

Properties: Provisioned

Description

This group contains the provisionable attributes of the Local Management Interface user side procedure.

Mib: FrameRelayUni

ATTRIBUTE FrUni Lmi fullStatusPollingCycles (n391)

Access: Read and write

Description

This attribute specifies how frequently the Frame Relay UNI service should initiate a Status Enquiry for a full PVC status report. A polling cycle is a Status Enquiry and Status Report exchange.

This attribute is used only if the *side* attribute is either ***user*** or ***both***.

Mib: FrameRelayUni

Values: Decimal (1..255)

Default: 6

ATTRIBUTE FrUni Lmi linkVerificationTimer (t391)

Access	Read and write
Description	This attribute specifies how frequently the Frame Relay UNI service should initiate a Status Enquiry for link integrity verification. It must be less than *checkPointTimer (t392)*. When the Lmi *side* is ***network***, this attribute is ignored.
Mib	FrameRelayUni
Values	Decimal (1; 2; 3; 4; 5; 10; 15; 20; 25; 30)
Units	seconds
Default	10

COMPONENT FrUni DataLinkConnectionIdentifier (Dlci)

Instance	Decimal (16..1007)
Groups	"GROUP FrUni Dlci OsiState (State)" "GROUP FrUni Dlci ABitStatus (Abit)" "GROUP FrUni Dlci CallData (Calld)" "GROUP FrUni Dlci ServiceParametersOp (SpOp)" "GROUP FrUni Dlci Statistics (Stats)" "GROUP FrUni Dlci IntervalData (Int)"
Scope	Application
Description	*FrUni/n DataLinkConnectionIdentifier/n* This component represents a Data Link Connection Identifier. It is responsible for the Frame Relay U-plane (User-plane) protocol for the specified instance. There can be many instances of *Dlci* for each *FrUni*. The instance value is used to identify the logical connection, multiplexed within the physical channel, with which a frame is associated. All frames carried within a particular physical channel and having the same DLCI value are associated with the same logical connection. A DLCI instance can be a permanent virtual circuit (PVC) or switched permanent virtual circuit (P-SPVC) added through

provisioning, or a switched virtual circuit (SVC) which is created dynamically through signaling.

The *lock* and *unlock* commands apply to permanent (PVC and P-SPVC) DLCIs. The *clear* command applies to switched (SVC) DLCIs.

For the ***4pDS3Ch*** card, when the *timeslot* of the *channel* component linked to this *FrUni* is set to ***none***, no *Dlci* component is allowed under this *FrUni*.

A *Dlci* must have one (and only one) instance of *DirectCall*, *IpConnection*, or *BnxInterworkingFunction* under it.

A *DirectConnection* can not be provisioned on a *FrUni* with an *IpConnection* or *BnxInterworkingFunction* component provisioned under any of its *Dlci subcomponents*.

Mib	FrameRelayUni
Subcomponents	"COMPONENT FrUni Dlci ServiceParametersProv (Sp)" "COMPONENT FrUni Dlci EgressServiceParameters (EgressSp)"
Opt. Subcomp.	"COMPONENT FrUni Dlci DirectCall (Dc)" "COMPONENT FrUni Dlci SpareDirectCall (SpareDc)" "COMPONENT FrUni Dlci BnxInterworkingFunction (BnxIwf)" "COMPONENT FrUni Dlci IpConnection (IpConn)"
Dyn. Subcomp.	"COMPONENT FrUni Dlci Vc" "COMPONENT FrUni Dlci LoopBack (Lb)" "COMPONENT FrUni Dlci StandbyVc (StbyVc)" "COMPONENT FrUni Dlci Frf12Stats (Frf12)"
Common Verbs	Help List Display Add DELete

VERB CLEAR FrUni Dlci

Impact	Service
Description	This command is used to clear a Frame Relay switched (SVC) connection.

VERB LOCK FrUni Dlci

Impact	Service
Description	*Lock [-force] <component name>* This verb will cause the specified component to enter the OSI ***shuttingDown*** administrative state. While shutting down, the component continues to provide service to existing clients but rejects any new requests for service. In some cases, locking a component causes all its subcomponents to shut down also. When the component is no longer providing service, it enters the OSI ***locked*** administrative state. **Options:** *-force* If this option is present, service to current clients is terminated and the ***locked*** state is entered immediately (that is, without first going through the ***shuttingDown*** state). Without this option, *Lock* behaves as described above.

VERB UNLOCK FrUni Dlci

Impact	Service
Description	This command is used to unlock a Frame Relay PVC DLCI.

GROUP FrUni Dlci OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific

information and the valid state combinations, refer to the appropriate NTP.

Mib FrameRelayUni

ATTRIBUTE FrUni Dlci adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib FrameRelayUni

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE FrUni Dlci operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: FrameRelayUni

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE FrUni Dlci usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: FrameRelayUni

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE FrUni Dlci availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: FrameRelayUni

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE FrUni Dlci proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	FrameRelayUni
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrUni Dlci controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	FrameRelayUni
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE FrUni DIci alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently

being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib — FrameRelayUni

Set of — underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default — No default

ATTRIBUTE FrUni Dlci standbyStatus (osiStby)

Access — Read only

Description — If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	FrameRelayUni
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE FrUni Dlci unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FrameRelayUni
Values	false true
Default	false

GROUP FrUni Dlci ABitStatus (Abit)

Properties	Operational
Description	This group contains the A-Bit status information for this Data Link Connection Identifier.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci aBitStatusToIf (abti)

Access	Read only
Description	This attribute is the most recent A-bit status sent to the interface. The A-bit status is part of the LMI protocol, and indicates willingness to accept data from the local interface. ***inactive*** - the Frame Relay service discards all data offered from the local interface. ***active*** - the Frame Relay service tries to process all data offered from the local interface. ***notApplicable*** - the DLCI is switched, so this attribute is ignored.
Mib	FrameRelayUni
Values	inactive active notApplicable
Default	inactive

ATTRIBUTE FrUni Dlci aBitReasonToIf (abrti)

Access	Read only
Description	This attribute provides the reason (if any) for an ***inactive*** status to be sent to the interface. This reason is ***notApplicable*** for an ***active*** status.
Mib	FrameRelayUni
Values	notApplicable remoteUserSignaled

	localLmiError remoteLmiError localLinkDown remoteLinkDown pvcSpvcDown userNotAuthorized resourceNotAvailable dlciCollisionAtNni
Default	notApplicable

ATTRIBUTE FrUni Dlci aBitStatusFromIf (abfi)

Access	Read only
Description	This attribute is the most recent A-Bit status received from the interface. ***inactive*** - the Frame Relay service informs the remote DLCI not to send user data to this interface. ***active*** - the Frame Relay service informs the remote DLCI that it is okay to send user data to this interface. ***notApplicable*** - the DLCI is switched, so this attribute is ignored.
Mib	FrameRelayUni
Values	inactive active notApplicable
Default	inactive

ATTRIBUTE FrUni Dlci aBitReasonFromIf (abrfi)

Access	Read only
Description	This attribute provides the reason (if any) for an ***inactive*** status to be sent to the subnet. This reason is ***notApplicable*** for an ***active*** status.
Mib	FrameRelayUni

Values	notApplicable remoteUserSignaled localLmiError localLinkDown missingFromLmiReport
Default	notApplicable

ATTRIBUTE FrUni Dlci loopbackState

Access	Read only
Description	This attribute has the value ***on*** when the DLCI is in loopback mode and ***off*** otherwise. The loopback command verbs *start* and *stop* are used to initiate and terminate the loopback mode for a DLCI. While *loopbackState* is ***on***, the local LMI will report to the interface the A-bit status as active. Also an active A-bit signal will be reliably propagated across the subnet to the remote DLCI.
Mib	FrameRelayUni
Values	off on
Default	off

GROUP FrUni Dlci CallData (CallId)

Properties	Operational
Description	This group of attributes describes the characteristics of the call such as call type and call state.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci callType (ct)

Access	Read only
Description	This attribute indicates whether this DLCI is a permanent virtual circuit (PVC), a switched virtual circuit (SVC) or a switched permanent virtual circuit (SPVC).
Mib	FrameRelayUni

Values	pvc svc spvc
Default	No default

ATTRIBUTE FrUni Dlci callState

Access	Read only
Description	This attribute indicates the FRF.4 state of an SVC call. The value of this attribute for a permanent (PVC and P-SPVC) DLCI is always ***notApplicable***. In the description that follows, “local” refers to the user who has initiated the SETUP request, and “remote” refers to the user to whom the local user wishes to connect. State description: In the ***null*** state, the network has neither received nor sent call setup requests for this DLCI. In the ***callInitiated*** state, the network has received a SETUP message from the local user. In the ***outgoingCallProceeding*** state, the network has sent a CALL PROCEEDING message to the local user in response to the SETUP message. In the ***callPresent*** state, the network has sent a SETUP message to the remote user. In the ***incomingCallProceeding*** state, the network has received a CALL PROCEEDING message from the remote user in response to a SETUP message. In the ***active*** state, either the network has sent a CONNECT message to the local user, or the network has received a CONNECT from the remote user. In the ***disconnectRequest*** state, the network has received a DISCONNECT message from the local user.

In the ***disconnectIndication*** state, the network has sent a DISCONNECT to the local user.

In the ***releaseRequest*** state, the network has sent out a RELEASE message to the local user.

In the ***restartRequest*** state, the network has sent a RESTART request to the local user and is waiting for an acknowledgement.

In the ***restart*** state, the network has received a request for a restart from the local user and the network has not returned an acknowledgement.

Mib	FrameRelayUni
Values	null callInitiated callProceedingSent callPresent callProceedingReceived active disconnectRequest disconnectIndication releaseRequest restartRequest restart notApplicable
Default	No default

ATTRIBUTE FrUni Dlci callReference (callref)

Access	Read only
Description	This attribute indicates the FRF.4 call reference number associated with this DLCI. The value of this attribute for a provisioned (PVC or P-SPVC) DLCI is always ***0***.
Mib	FrameRelayUni
Values	Decimal (0..32767)
Default	No default

GROUP FrUni Dlci ServiceParametersOp (SpOp)

Properties	Operational
Description	This group defines the service and traffic parameters specific to this instance of DLCI. For permanent (PVC and P-SPVC) DLCIs, the values of attributes with the exception of the *measurementInterval* should be identical to those in the group *FrsDataLinkConnectionProv* under the *FrsUniServiceParametersProv* component. For switched (SVC) DLCIs, the values of attributes may be different from the values provisioned under the *FrUni Sig* component, if signaling negotiations have occurred to alter the service parameters.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci maximumFrameSize (n203)

Access	Read only
Description	This attribute indicates the maximum number of octets which may be included in the information field. The frame relay header and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.
Mib	FrameRelayUni
Values	Decimal (1..8187)
Units	octets
Default	No default

ATTRIBUTE FrUni Dlci committedInformationRate (cir)

Access	Read only
Description	This attribute indicates the committed information rate (CIR) in bits per second (bit/s). When *rateEnforcement* is set to ***on***, *cir* is the rate at which the network agrees to transfer information under normal conditions. This rate is measured over a measurement interval (*t*) that is determined internally based on CIR and the committed burst size (Bc). An exception to this occurs when CIR is provisioned to be zero, in which case the measurement interval

(*t*) must be provisioned explicitly.

This attribute should be ignored when *rateEnforcement* is ***off***.

Mib	FrameRelayUni
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE FrUni Dlci committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (Bc) in bits. *bc* is the amount of data that a network agrees to transfer under normal conditions over a measurement interval (*t*). Data marked DE=1 is not accounted for in Bc. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayUni
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE FrUni Dlci excessBurstSize (be)

Access	Read only
Description	This attribute indicates the excess burst size (Be) in bits. Be is the amount of uncommitted data that the network will attempt to deliver over measurement interval T. Data marked DE=1 by the user or by the network is accounted for here. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayUni
Values	Decimal (0..50000000)

Units	bits
Default	No default

ATTRIBUTE FrUni Dlci measurementInterval (t)

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured. This attribute should be ignored when *rateEnforcement* is ***off***.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE FrUni Dlci accounting (ac)

Access	Read only
Description	This attribute indicates whether accounting data collection and record generation is turned on at this DLCI. For accounting data collection and record generation to be turned on, the ***accountingOn*** bit and at least one of the ***accountCollection*** bits in the ***DataNetworkAddress*** component must be set to on.
Mib	FrameRelayUni
Values	off on
Default	No default

ATTRIBUTE FrUni Dlci emissionPriorityToIf (epToIf)

Access	Read only
Description	This attribute indicates the emission priority of frames sent to the interface. A larger value denotes a higher priority.
Mib	FrameRelayUni

Values	Decimal (0; 1; 2; 3)
Default	No default

ATTRIBUTE FrUni Dlci transferPriorityToNetwork (tpToNwk)

Access	Read only
Description	This attribute indicates the priority at which data is transferred to the network. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 indices from 0 to 15. Each transfer priority n, where n specifies the transfer priority index, contains a default setting for routing class of service (***multimedia***, ***delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required.
Mib	FrameRelayUni
Values	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Dlci transferPriorityFromNetwork (tpFromNwk)

Access	Read only
Description	This attribute indicates the priority at which data is transferred from the network. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with

lower priority. The transfer priority standard is defined to have 16 indices from 0 to 15.

Each transfer priority n, where n specifies the transfer priority index, contains a default setting for routing class of service (***multimedia***, ***delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required.

Mib	FrameRelayUni
Values	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Dlci correlationTag (ctag)

Access	Read only
Description	This attribute indicates the unique string which identifies this connection. The value of this attribute is provisioned under the *correlationTag* attribute under *Service Parameters* subcomponent. If required for correlation purposes, the attribute is provisioned with the same value at both endpoints of the connection. An empty string value for this attribute indicates that the user either does not want to use the correlation tag functionality, or wants the correlation tag string to be an empty string. This attribute can be used for off-switch data correlation purposes. Downstream processing uses this attribute to correlate data records (accounting etc.) issued at different nodes in the network. In accounting, the value of this attribute appears as the *circuitId* (circuit identifier) for the endpoint. There is no system-generated value for the correlationTag. Therefore, this attribute does not appear for SVC DLCIs.

Mib	FrameRelayUni
Values	String (0..32, ASCII)
Default	""

GROUP FrUni Dlci Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for the Frame Relay Data Link Connection Identifier. When the DLCI is in local loopback mode, the DLCI statistics do not increment.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci frmToIf (fti)

Access	Read only
Description	This attribute counts the frames sent out the interface. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci fecnFrmToIf (fecnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci becnFrmToIf (becnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci bciToSubnet (bcits)

Access	Read only
Description	This attribute counts the frames sent into the local network with the Backward Congestion Indication (BCI) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci deFrmToIf (deti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discCongestedToIf (discardcti)

Access	Read only

Description	This attribute counts the number of frame discards at the Frame Relay service due to local congestion in the direction toward the interface. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discDeCongestedToIf (discarddecti)

Access	Read only
Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set, at the Frame Relay service, due to local congestion in the direction toward the interface. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci frmFromIf (ffi)

Access	Read only
Description	This attribute counts the frames received from the interface. It includes the frames that are discarded due to error or excess. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci fecnFrmFromIf (fecnfi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.

Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci becnFrmFromIf (becnfi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci fciFromSubnet (fcifs)

Access	Read only
Description	This attribute counts the frames received from the network with the Forward Congestion Indication (FCI) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci bciFromSubnet (bcifsb)

Access	Read only
Description	This attribute counts the frames received from the network with the Backward Congestion Indication (BCI) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci deFrmFromIf (defi)

Access	Read only
Description	This attribute counts the frames received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci excessFrmFromIf (excess)

Access	Read only
Description	This attribute counts the frames received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discExcessFromIf (discardefi)

Access	Read only
Description	This attribute counts the frames which were discarded due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discFrameAbit (discfab)

Access	Read only

Description	This attribute counts the number of frame discards at the Frame Relay Service, due to an inactive PVC status, in the direction toward the local network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discCongestedFromIf (discardcfi)

Access	Read only
Description	This attribute counts the number of frame discards at the Frame Relay service due to local congestion in the direction toward the network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discDeCongestedFromIf (discarddecfi)

Access	Read only
Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set, at the Frame Relay service, due to local congestion, in the direction toward the local network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci errorShortFrmFromIf (shortfi)

Access	Read only
Description	This attribute counts the frames received with 0 octets in the information field. When the count reaches maximum it wraps to zero.

Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci errorLongFrmFromIf (longfi)

Access	Read only
Description	This attribute counts the frames received with number of octets in the information field greater than the subscribed maximum. When the count reaches maximum it wraps to zero. Frames whose lengths are greater than the hardware receive buffer are ignored by the hardware and are therefore not included in this count.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci becnFrmSetByService (becnset)

Access	Read only
Description	This attribute counts the number of frames with BECN set by the Frame Relay service. It is incremented whenever the Frame Relay service sets BECN on a frame upon detecting local congestion. This count is incremented regardless of whether the frame already bears a set BECN bit since its use is to determine the place of congestion. When the count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci bytesToIf (bti)

Access	Read only

Description	This attribute counts the bytes sent out the interface. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci deBytesToIf (debti)

Access	Read only
Description	This attribute counts the bytes sent to the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discCongestedToIfBytes (discardctib)

Access	Read only
Description	This attribute counts the number of byte discards at the Frame Relay service due to local congestion in the direction toward the link. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discDeCongestedToIfBytes (discarddectib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the Frame Relay service due to local congestion in the direction toward the link. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayUni

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci bytesFromIf (bfi)

Access	Read only
Description	This attribute counts the bytes received from the interface. Bytes that are discarded due to error or excess are not counted. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci deBytesFromIf (debi)

Access	Read only
Description	This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci excessBytesFromIf (excessb)

Access	Read only
Description	This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discExcessFromIfBytes (discardebi)

Access	Read only
Description	This attribute counts the bytes which were discarded due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discByteAbit (discbab)

Access	Read only
Description	This attribute counts the bytes which were discarded due to aBit turned off.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discCongestedFromIfBytes (discardcbib)

Access	Read only
Description	This attribute counts the number of byte discards at the Frame Relay service due to local congestion in the direction toward the network. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discDeCongestedFromIfBytes (discarddecbib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the Frame Relay service due to local congestion in the

	direction toward the network. When the maximum count is reached the count wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci errorShortBytesFromIf (shortbi)

Access	Read only
Description	This attribute counts the bytes received with 0 octets in the information field. When the count reaches maximum it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci errorLongBytesFromIf (longbi)

Access	Read only
Description	This attribute counts the bytes received with number of octets in the information field greater than the subscribed maximum. When the count reaches maximum it wraps to zero. Bytes whose lengths are greater than the hardware receive buffer are ignored by the hardware and are therefore not included in this count.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci rateAdaptReduct (rar)

Access	Read only
Description	This attribute counts the number of rate reductions due to rate adaptation. Rate adaptation causes the allowed rate to be reduced in steps. After each reduction, a period of time is awaited before further action is taken. At the end of this period, the allowed rate

	is further reduced if congestion is still prevalent. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci rateAdaptReductPeriod (rarp)

Access	Read only
Description	This attribute provides a cumulative count of the amount of time that rate adaptation procedures have been in effect. When this count reaches maximum, it wraps to zero.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE FrUni Dlci cirPresent

Access	Read only
Description	This attribute provides the actual Committed Information Rate (CIR) enforced for this DLCI. This number is in units of 800 bit/s, since that is the internal resolution of rate enforcement. If *rateEnforcement* is **off**, then this number does not have meaning. Normally, this attribute matches the provisioned CIR for the DLCI. But when Rate Adaptation is active, then this number will vary to represent the actual Allowed CIR at the moment that this attribute is collected.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

ATTRIBUTE FrUni Dlci eirPresent

Access	Read only
Description	This attribute provides the actual Excess Information Rate (EIR) enforced for this DLCI. This number is in units of 800 bit/s, since that is the internal resolution of rate enforcement. If *rateEnforcement* is **off**, then this number does not have meaning. Normally, this attribute matches the provisioned EIR for the DLCI. But when Rate Adaptation is active, then this number will vary to represent the actual Allowed EIR at the moment that this attribute is collected.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP FrUni Dlci IntervalData (Int)

Properties	Operational
Description	This group contains the operational statistics for the Frame Relay Data Link Connection Identifier interval data (accounting data).
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci startTime

Access	Read only
Description	This attribute indicates the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes. A new interval period is started each time an accounting record is generated.
Mib	FrameRelayUni
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrUni Dlci totalIngressBytes (tib)

Access	Read only
Description	This attribute counts the total bytes received from the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Dlci totalEgressBytes

Access	Read only
Description	This attribute counts the total bytes sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Dlci eirIngressBytes

Access	Read only
Description	This attribute counts the total bytes with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Dlci eirEgressBytes

Access	Read only
Description	This attribute counts the total bytes with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Dlci discardedBytes

Access	Read only
Description	This attribute counts the total bytes in invalid frames received from the interface and discarded at the DLCI since the start of the interval period. This count is a sum of octets in frames discarded due to the number of octets in the information field greater than the subscribed maximum or equal to 0, due to aBit turned off, or due to rate enforcement. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni Dlci totalIngressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the total number of segments in frames received from the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the total number of frames received from the interface since the start of

	the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci totalEgressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the total number of segments in frames sent to the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the total number of frames sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci eirIngressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of segments in frames with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.

Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci eirEgressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of segments in frames with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci discardedSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of segments in invalid frames received from the interface and discarded at the DLCI. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of invalid frames received from the interface and discarded at the DLCI. Segments of frames are counted since the start of the interval period. The count is reset to zero when an accounting record is generated. The count is a sum of segments in frames or frames discarded due to the number of octets in the information field greater than the subscribed maximum or equal to 0, due to aBit turned off, or due to rate enforcement.
Mib	FrameRelayUni

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci localRateAdaptOccurred

Access	Read only
Description	This attribute indicates whether rate adaptation has occurred on this user Data Link Connection on this Frame Relay interface. The value is reset to ***no*** when an accounting record is generated.
Mib	FrameRelayUni
Values	yes no
Default	no

ATTRIBUTE FrUni Dlci elapsedDifference

Access	Read only
Description	This attribute indicates the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since the call started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci egressProtocol (ep)

Access	Read only
Description	This attribute indicates whether the egress protocol is active at this DLCI. The activation of the egress protocol is negotiated at the call setup and it depends on the remote end supporting OAM frame exchanges and the record generation mode.
Mib	FrameRelayUni
Values	off on

Default	No default

ATTRIBUTE FrUni Dlci callRefNumber

Access	Read only
Description	This attribute indicates the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrUni Dlci DirectCall (Dc)

Groups	"GROUP FrUni Dlci Dc Options"
Scope	Application
Description	*FrUni/n Dlci/n DirectCall* *FrNni/n Dlci/n DirectCall* This component defines direct call options for calls issued without operator intervention. Connection is complete and can be initiated automatically. Frequency of connection tries is controlled by retry timer. If no BnxProtocol component is provisioned under a FrUni or FrNni, a DirectCall component is automatically added to all the Dlci components added to the FrUni or FrNni. If a BnxProtocol component is provisioned under a FrUni or

	FrNni, no DirectCall is automatically added under the Dlci component.
Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

GROUP FrUni Dlci Dc Options

Properties	Provisioned
Description	This group defines attributes associated with a direct call. It defines connection in terms of path and call option parameters. This connection can be permanent (PVC), switched (SVC), or switched permanent (SPVC). It can have four facilities: - CCITT Facilities - DTE Facilities - National Facilities - International Facilities The total number of bytes of facilities including the facility codes and all of the facility data from all of the four classes of facilities must not exceed 512 bytes.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci Dc remoteNpi (rnpi)

Access	Read and write
Description	This attribute specifies the Numbering Plan Indicator (NPI) of the *remoteDna*.
Mib	FrameRelayUni
Values	x121 e164
Default	x121

ATTRIBUTE FrUni Dlci Dc remoteDna (rdna)

Access	Read and write
Description	This attribute specifies the Data Network Address (DNA) of the service at the remote end of the DLCI. This is the called (destination) DCE address (DNA) of this PVC.
Mib	FrameRelayUni
Values	BCD (1..15)
Default	No default

ATTRIBUTE FrUni Dlci Dc remoteDlci (rdlci)

Access	Read and write
Description	This attribute specifies the remote DLCI of the PVC connection.
Mib	FrameRelayUni
Values	Decimal (16..1007)
Default	No default

ATTRIBUTE FrUni Dlci Dc type

Access	Read and write
Description	This attribute specifies the type of VC call. If the value is set to ***permanentMaster,*** then a permanent connection will be established between two ends. The remote end must be defined as a ***permanentSlave, permanentBackupSlave,*** or ***permanentSlaveWithBackup***. The connection cannot be established if the remote end is defined as anything else. The end defined as ***permanentMaster*** always initiates the calls. It attempts to call once per minute. If the value is set to ***permanentSlave*** then a permanent connection will be established between two ends. The remote end must be defined as a ***permanentMaster.*** The connection cannot be established if the remote end is defined as anything else. The ***permanentSlave*** end attempts to call once per minute. If the value is set to ***permanentSlaveWithBackup*** then a

permanent connection will be established between the two ends. The remote end must be defined as a ***permanentMaster.*** The connection cannot be established if the remote interface is defined as anything else. The ***permanentSlaveWithBackup*** attempts to call once per minute. When *type* is set to ***permanentSlaveWithBackup,*** the connection is cleared if the interface becomes unavailable. This enables a retry of the connection which can be redirected to the ***permanentBackupSlave***.

If the value is set to ***permanentBackupSlave*** then a permanent connection is established between the two ends only if the ***permanentMaster*** end is disconnected from the ***permanentSlaveWithBackup*** end and a backup call is established by the call redirection system. If the ***permanentSlaveWithBackup*** interface becomes available again, the ***permanentBackupSlave*** end is disconnected and the ***permanentSlaveWithBackup*** end is reconnected to the ***permanentMaster*** end. The ***permanentBackupSlave*** end does not try to establish a call.

Mib	FrameRelayUni
Values	permanentMaster (master) permanentSlave (slave) permanentBackupSlave (backSl) permanentSlaveWithBackup (slavWB) spvcMaster (spvcM) spvcSlave (spvcS) spvcBackupSlave (spvcBackS) spvcSlaveWithBackup (spvcSWBack)
Default	permanentMaster

ATTRIBUTE FrUni Dlci Dc transferPriority (tp)

Access	Read and write
Description	This attribute specifies the transfer priority to the local network for the outgoing calls using this particular DLCI. It overrides the *defaultTransferPriority* provisioned in its associated *Dna* component.

The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 levels from 0 to 15.

Each transfer priority n, where n is the transfer priority index, has a default setting for routing class of service (multimedia, delay, or throughput) and Frame Relay egress queue (depending on the number of supported egress queues on the remote end interface). These settings are specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned under the *Mod Frs DprsNet Tpm/n* component.

Specifying ***useDnaDefTP*** means using the value given by *defaultTransferPriority* in the associated *Dna* for this DLCI.

Mib FrameRelayUni

Values
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
useDnaDefTP

Default useDnaDefTP

ATTRIBUTE FrUni Dlci Dc discardPriority (dp)

Access	Read and write
Description	This attribute specifies the discard priority for outgoing call using this DLCI. The discard priority has three provisioning values: ***normal***, ***high***, and ***useDnaDefPriority***. Under congestion conditions, traffic with ***normal*** priority is discarded before traffic with ***high*** priority. The *Dna* default value (provisioned by *outDefaultPriority*) is taken if this attribute is set to the value ***useDnaDefPriority***.
Mib	FrameRelayUni
Values	normal high useDnaDefPriority
Default	useDnaDefPriority

ATTRIBUTE FrUni Dlci Dc deDiscardPriority (ddp)

Access	Read and write
Description	This attribute specifies whether the *discardPriority* applies to DE frames for this DLCI. When set to ***determinedByDiscardPriority***, traffic with DE bit set will be discarded according to the setting of the *discardPriority.* When set to ***lowest***, all traffic with DE bit set is treated the same and is sent to the subnet at the lowest discard priority.
Mib	FrameRelayUni
Values	lowest determinedByDiscardPriority
Default	determinedByDiscardPriority

ATTRIBUTE FrUni Dlci Dc dataPath (dpa)

Access	Read and write
Description	This attribute specifies the data path to be used by Virtual Circuits

on this interface. The value of the *dataPath* attribute in the *Dna* component is overridden by this attribute if the value is not ***useDnaValue***.

This value applies to the connection after data transfer state is reached. All the data and control traffic will be sent using this data path. If the provisioned *dataPath* is not available the connection is not established.

The value of the *dataPath* is signaled by both ends of the connection. If this value is not the same at both ends ***dprsOnly*** is used for the duration of the connection.

A virtual circuit connection is always established using ***dprsOnly*** even if this attribute is provisioned as some other value.

dprsOnly - The dynamic packet routing system is used.

dprsMcsOnly - The DPRS Multi-Service Cut-Through Switching path is used.

dprsMcsFirst - The DPRS Multi-Service Cut-Through Switching path is used if it is available. If it is not available, ***dprsOnly*** is used.

useDnaValue - The routing system used is based on the value provisioned in the *Dna* component.

Mib FrameRelayUni

Values dprsOnly (dpOnly)
dprsMcsOnly (mcOnly)
dprsMcsFirst (mcFrst)
useDnaValue (dnaVal)

Default useDnaValue

ATTRIBUTE FrUni Dlci Dc cugIndex (ci)

Access Read and write

Description

This attribute specifies the CUG index which is to be signaled in

PVC and SPVC call requests to the remote end.

The type of CUG signaling is defined in attribute *cugType* in this component.

Mib FrameRelayUni

Values Decimal (0..255)

Default 0

ATTRIBUTE FrUni Dlci Dc cugType (ct)

Access Read and write

Description

This attribute specifies the type of CUG signaling to be used in PVC and SPVC call requests. Index of CUG to be used is defined in attribute *cugIndex* in this component.

Possible values are:
cug **-** signal CUG
cugOa **-** signal CUG with outgoing access
doNotSignal **-** no CUG in call request

Mib FrameRelayUni

Values cug
cugOa
doNotSignal

Default doNotSignal

ATTRIBUTE FrUni Dlci Dc mapIpCosToFrQos (mapctof)

Access Read and write

Description This attribute specifies whether an IP TOS value is mapped to an FR QOS. The mapping used is provisioned in the *Mod Frs IpCosToFrQos* component.

When this attribute is set to ***yes***, at Frame Relay egress, the IP TOS byte in each frame is checked. The TOS value determines the egress emission queue and the discard priority for that frame.

When this attribute is set to ***no***, FR QOS is determined by the provisioned discard priority and transfer priority.

When this attribute is set to ***protocolDependent*** at Frame Relay egress, the IP version field in each frame is checked. If the IP version is IP version Four, the TOS value determines the egress emission queue and the discard priority for that frame. If not, the FR QOS is determined by the provisioned discard priority and transfer priority.

A semantic check error is generated when this attribute is set to either ***yes*** or ***protocolDependent***, and a *FrUni DirectConnection* component is provisioned under the same *FrUni* component.

Mib	FrameRelayUni
Values	no yes protocolDependent
Default	no

COMPONENT FrUni Dlci Vc

Groups	"GROUP FrUni Dlci Vc CallData (Cad)" "GROUP FrUni Dlci Vc IntervalData (Intd)" "GROUP FrUni Dlci Vc FrameRelayData (Frd)"
Scope	Application
Description	This component defines attributes collected by Frame Relay *Vc*.
Mib	FrameRelayUni
Common Verbs	Help List Display

VERB Ping FrUni Dlci Vc

Impact	Passive
Description	Ping *[-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)]* FrUni/<*n*> Dlci/<*n*> Vc

Ping causes a query packet to be sent to the destination module where the Frame Relay DLCI VC terminates. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the ping query packet will be the same as that of the Frame Relay data except at the source and destination module. The ping packets originate from the CP rather than the Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the Frame Relay FP.

Note that this command does not provide any information regarding the status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified.

The ping command can be issued with or without options. If no options are specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the roundTripDelay option is specified, the command reports the time taken to reach the destination and back. For the roundTripDelay option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the ping packets are generated and bounced back by the CP rather than the Frame Relay DLCI's FP.

The ping command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the

value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

GROUP FrUni Dlci Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.
Mib	FrameRelayUni
Values	pvc svc spvc frf10spvc
Default	No default

ATTRIBUTE FrUni Dlci Vc state

Access	Read only

Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	FrameRelayUni
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE FrUni Dlci Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	FrameRelayUni
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE FrUni Dlci Vc diagnosticCode

Access	Read only

Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrUni Dlci Vc previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrUni Dlci Vc calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	FrameRelayUni
Values	x121 e164
Default	No default

ATTRIBUTE FrUni Dlci Vc calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	FrameRelayUni
Values	BCD (1..15)

Default	No default

ATTRIBUTE FrUni Dlci Vc calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	FrameRelayUni
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE FrUni Dlci Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	FrameRelayUni
Values	x121 e164
Default	No default

ATTRIBUTE FrUni Dlci Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	FrameRelayUni
Values	BCD (1..15)
Default	No default

ATTRIBUTE FrUni Dlci Vc callingLcn

Access	Read only

Description	This attribute displays the Logical Channel Number of the calling end.
Mib	FrameRelayUni
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE FrUni Dlci Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	FrameRelayUni
Values	yes no
Default	No default

ATTRIBUTE FrUni Dlci Vc fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	FrameRelayUni
Values	yes no
Default	No default

ATTRIBUTE FrUni Dlci Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	FrameRelayUni

Values	high normal
Default	No default

ATTRIBUTE FrUni Dlci Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	FrameRelayUni
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE FrUni Dlci Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	FrameRelayUni
Values	normal high
Default	No default

ATTRIBUTE FrUni Dlci Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	FrameRelayUni
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE FrUni Dlci Vc maxSubnetPktSize

Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	FrameRelayUni
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE FrUni Dlci Vc rcosToNetwork (rcosto)

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	FrameRelayUni
Values	throughput delay multimedia
Default	No default

ATTRIBUTE FrUni Dlci Vc rcosFromNetwork (rcosfrom)

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	FrameRelayUni
Values	throughput delay multimedia
Default	No default

ATTRIBUTE FrUni Dlci Vc emissionPriorityToNetwork (epto)

Access	Read only

Description	This attribute displays the network internal emission priority to the network.
Mib	FrameRelayUni
Values	normal high interrupting
Default	No default

ATTRIBUTE FrUni Dlci Vc emissionPriorityFromNetwork (epfrom)

Access	Read only
Description	This attribute displays the network internal emission priority from the network.
Mib	FrameRelayUni
Values	normal high interrupting
Default	No default

ATTRIBUTE FrUni Dlci Vc dataPath (dapa)

Access	Read only
Description	This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed value of this attribute can be different from the provisioned value. If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system) If the connection is using ***dprsMcsOnly*** data path, the string ***dprsMcsOnly*** is displayed. If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.

Mib	FrameRelayUni
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE FrUni Dlci Vc dprsMcsEndPoint (dmep)

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components. If the connection is using ***dprsOnly*** data path, this attribute is empty. If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.
Mib	FrameRelayUni
List of	The name of the component
Default	No default

GROUP FrUni Dlci Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	FrameRelayUni

Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE FrUni Dlci Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	FrameRelayUni
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE FrUni Dlci Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	FrameRelayUni
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE FrUni Dlci Vc startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	FrameRelayUni
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrUni Dlci Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	No default

GROUP FrUni Dlci Vc FrameRelayData (Frd)

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is

disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods.
Frame Relay *Vc* uses a best effort data packet delivery protocol and a different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*. Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers

Mib FrameRelayUni

ATTRIBUTE FrUni Dlci Vc frmCongestedToSubnet

Access Read only

Description This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.

Mib FrameRelayUni

Values Decimal (0..5000)

Default No default

ATTRIBUTE FrUni Dlci Vc cannotForwardToSubnet

Access Read only

Description This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion. Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.

Mib FrameRelayUni

Values Decimal (0..5000)

Default	No default

ATTRIBUTE FrUni Dlci Vc notDataXferToSubnet

Access	Read only
Description	This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrUni Dlci Vc combErrorsFromSubnet

Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc duplicatesFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc notDataXferFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc frmLossTimeouts

Access	Read only
Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc ooSeqByteCntExceeded

Access	Read only

Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc peakOoSeqPktCount

Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal subnet packet disorder (not due to subnet packet discard). Current implementation also uses

	this statistics to set a maximum size for the out-of-sequenced queue.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc sendSequenceNumber

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	FrameRelayUni
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE FrUni Dlci Vc pktRetryTimeouts

Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc peakRetryQueueSize

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.

Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc subnetRecoveries

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.
Mib	FrameRelayUni
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE FrUni Dlci Vc ooSeqPktCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrUni Dlci Vc peakOoSeqByteCount

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue

length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.

Mib FrameRelayUni

Values Decimal (0..50000)

Default No default

COMPONENT FrUni Dlci ServiceParametersProv (Sp)

Groups "GROUP FrUni Dlci Sp ServiceParametersProv (Parms)"

Scope Application

Description *FrUni/n Dlci/n ServiceParametersProv*
This component contains the provisionable traffic control attributes for its parent *Dlci* component.

Mib FrameRelayUni

Common Verbs
Help
List
Display

GROUP FrUni Dlci Sp ServiceParametersProv (Parms)

Properties Provisioned

Description
This group contains the provisionable attributes for the Data Link Connection Identifier. These attributes reflect the service parameters specific to this instance of DLCI. The congestion control attributes in this group are defined in T1.606 Addendum 1.

Mib FrameRelayUni

ATTRIBUTE FrUni Dlci Sp maximumFrameSize (n203)

Access Read and write

Description
This attribute specifies the maximum number of octets which may be included in the information field. The frame relay header

and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Vendor Forum Specification.

Mib FrameRelayUni

Values Decimal (1..8187)

Units octets

Default 2100

ATTRIBUTE FrUni Dlci Sp rateEnforcement (re)

Access Read and write

Description

This attribute specifies whether rate enforcement is in effect for this user Data Link Connection on this Frame Relay interface. Turning on rate enforcement means that CIR and DE=1 traffic will be measured and enforced. Turning off rate enforcement means that all frames from the user will be accepted and no modifications to the frame with respect to the DE bit will be made.

Mib FrameRelayUni

Values off
on

Default on

ATTRIBUTE FrUni Dlci Sp committedInformationRate (cir)

Access Read and write

Description

This attribute specifies the committed information rate (CIR) in bits per second (bit/s). When *rateEnforcement* is set to ***on***, *cir* is the rate at which the network agrees to transfer information under normal conditions. This rate is measured over a measurement interval (*t*) that is determined internally based on CIR and the committed burst size (Bc). An exception to this occurs when CIR is provisioned to be zero, in which case the measurement interval (*t*) must be provisioned explicitly.

This attribute is ignored when *rateEnforcement* is ***off***. If *rateEnforcement* is ***on*** and this attribute is ***0***, *Bc* must also be ***0***.

Mib FrameRelayUni

Values Decimal (0..50000000)

Units bit/s

Default 64000

ATTRIBUTE FrUni Dlci Sp committedBurstSize (bc)

Access Read and write

Description

This attribute specifies the committed burst size (Bc) in bits. *bc* is the amount of data that a network agrees to transfer under normal conditions over a measurement interval (*t*). Data marked DE=1 is not accounted for in Bc.

This attribute is ignored when *rateEnforcement* is ***off***. If *rateEnforcement* is ***on*** and this attribute is ***0***, *cir* must also be ***0***.

Mib FrameRelayUni

Values Decimal (0..50000000)

Units bits

Default 64000

ATTRIBUTE FrUni Dlci Sp excessBurstSize (be)

Access Read and write

Description

This attribute specifies the excess burst size (Be) in bits. Be is the amount of uncommitted data that the network will attempt to deliver over measurement interval T. Data marked DE=1 by the user or by the network is accounted for here.

CIR, Bc, and Be cannot all be zero when rateEnforcement is on.

Mib FrameRelayUni

Values	Decimal (0..50000000)
Units	bits
Default	0

ATTRIBUTE FrUni Dlci Sp measurementInterval (t)

Access	Read and write
Description	When *cir* and *bc* are zero and *rateEnforcement* is on, this attribute must be provisioned to specify the time interval (in milliseconds) over which rates and burst sizes are measured. When *cir* and *bc* are non-zero, the time interval is internally calculated and is *not shown*. In that situation, this field is ignored, and is not representative of the time interval. This attribute is ignored when *rateEnforcement* is ***off***, or when *cir* and *bc* are ***non-zero***. If *rateEnforcement* is ***on*** and both *cir* and *bc* are ***zero***, this field must be ***non-zero***.
Mib	FrameRelayUni
Values	Decimal (0..25500)
Units	msec
Default	0

ATTRIBUTE FrUni Dlci Sp rateAdaptation (ra)

Access	Read and write
Description	This attribute specifies whether rate adaptation is in effect for this user Data Link Connection on this Frame Relay interface. Rate adaptation is a feature that, in periods of congestion, adapts the rate at which the user is allowed to send data into the network to that which the network is able to handle at that time. This pro-active measure of handling congestion optimizes network resources by causing the ingress to discard frames that would otherwise be discarded in the network. If this attribute is set to ***on***, then, at the onset of congestion, the excess information rate (EIR) is reduced to a very low rate. If

congestion persists, then the allowed CIR is reduced geometrically by 25% of the current value at that time. The minimum to which CIR can be reduced is 1/16th (6.25%) of the provisioned value. As congestion alleviates, CIR is increased linearly by 6.25% of the provisioned value specified in *committedInformationRate*.

If set to ***eirOnly***, then rate adaptation will only apply to the excess information rate (EIR). At the onset of congestion, the allowed EIR is reduced by 25% of its provisioned value. If congestion persists, EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR.

If set to ***cirProportionate***, then rate adaptation will also only apply to the excess information rate (EIR). At the onset of congestion the initial allowed EIR is set to a multiple of the provisioned CIR. If congestion persists, the allowed EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR. Note that the allowed EIR may be set higher than the provisioned EIR, since it is calculated initially using another parameter, the provisioned CIR. If the allowed EIR at the moment is higher than the provisioned EIR, then the provisioned EIR is used instead.

This attribute can only be set to ***on eirOnly*** or ***cirProportionate*** if *rateEnforcement* is turned ***on***.

This attribute must be set to ***off*** if the *BnxIwf* component is provisioned under this *Dlci*.

Mib	FrameRelayUni
Values	off on eirOnly cirProportionate
Default	off

ATTRIBUTE FrUni Dlci Sp accounting (ac)

Access	Read and write
Description	This attribute specifies whether accounting data collection and record generation is turned on at this DLCI. For accounting data collection and record generation to be turned on, the ***accountingOn*** bit and at least one of the ***accountCollection*** bits in the ***DataNetworkAddress*** component must be set to on.
Mib	FrameRelayUni
Values	off on
Default	on

ATTRIBUTE FrUni Dlci Sp raSensitivity (rasens)

Access	Read and write
Description	This attribute specifies the sensitivity of the rate adaptation system. A higher number indicates a higher sensitivity and therefore a quicker reaction time to network conditions. A quicker reaction time allows the network to discard frames at the access and protect network resources, but can lead to false alarms and a greater fluctuation of the allowed rate. A higher setting therefore tends to favour the protection of the network over the allowed throughput of the user. A lower number indicates a lower sensitivity and therefore a slower reaction to network conditions. A slower reaction time results in a greater amount of user traffic allowed into the network, but can lead to a waste of network bandwidth since the traffic may be discarded at the congested resource. A lower setting therefore tends to favour the allowed throughput of the user over the protection of the network. This attribute is applicable for adapting EIR when *rateAdaptation* is ***eirOnly*** or ***cirProportionate***, or CIR when *rateAdaptation* is ***on***. This attribute is ignored if *rateAdaptation* is turned ***off***.

Mib	FrameRelayUni
Values	Decimal (1..20)
Default	7

ATTRIBUTE FrUni Dlci Sp updateBCI (updBCI)

Access	Read and write
Description	This attribute specifies whether internal Backward Congestion Indication (BCI) bits will report congestion external to the network, as communicated through incoming BECN bits. If *updateBCI* is set to ***on***, then BCI bits for incoming frames will be set if the BECN on the frame is set. If *updateBCI* is set to ***off***, then incoming BECN bits have no effect. Setting *updateBCI* ***on*** for a DLCI means that the remote end of the DLCI, which is specified by the *remoteDna* and *remoteDlci* attributes of the *dc* component of the DLCI, may perform Rate Adaptation using the flow of incoming BECN bits, in addition to internal congestion management systems. If the *rateAdaptation* attribute of the remote DLCI is provisioned as ***eirOnly***, ***cirProportionate***, or ***on***, then congestion from another network may trigger dynamic congestion management. If the *rateAdaptation* attribute of the remote DLCI is provisioned to ***off***, then the setting of *updateBCI* attribute here will have no effect.
Mib	FrameRelayUni
Values	off on
Default	off

ATTRIBUTE FrUni Dlci Sp correlationTag (ctag)

Access	Read and write
Description	This attribute specifies the unique string which identifies each end of a connection.

If required for correlation purposes, the attribute must be provisioned with the same value at both ends of the connection. This attribute can be left as an empty string when the functionality is not required, or when the user requires an empty circuit identifier string against the DLCI.

This attribute can be used for off-switch data correlation purposes. Downstream processing uses this attribute to correlate data records (accounting etc.) issued at different nodes in the network. In the accounting record, the value for the *correlationTag* attribute appears as the attribute *circuitId* (circuit identifier) for the endpoint.

Mib	FrameRelayUni
Values	String (0..32, ASCII)
Default	""

ATTRIBUTE FrUni Dlci Sp frf12EndToEnd (frf12)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether FRF.12 End-to-End fragmentation is turned on for this *Dlci* component. When this attribute is set to ***on***, ingress End-to-End FRF.12 fragments are reassembled to frame relay packets, and egress frame relay packets are fragmented to End-to-End FRF.12 fragments.
Mib	FrameRelayUni
Values	off on
Default	off

ATTRIBUTE FrUni Dlci Sp frf12FragmentSize (fragSize)

Access	Read and write

Description	This attribute specifies the maximum payload in octets for a FRF.12 fragment on this *Dlci* component. The frame relay header, FRF.12 header and CRC octets are not included.
Mib	FrameRelayUni
Values	Decimal (40; 48; 60; 80; 120; 240; 480)
Units	octets
Default	60

COMPONENT FrUni Dlci LoopBack (Lb)

Groups	"GROUP FrUni Dlci Lb Statistics (Stats)"
Scope	Application
Description	*FrUni/n Dlci/n LoopBackFrNni/n Dlci/n LoopBack*This component is the data loopback tool for the parent *DLCI*.
Mib	FrameRelayUni
Common Verbs	Help List Display

VERB START FrUni Dlci Lb

Impact	Service
Description	*start FrUni/n Dlci/n LoopBack* *start FrNni/n Dlci/n LoopBack*This command resets the *LoopbackStatistics* and initiates the loopback mode. The *loopbackState* for this *DLCI* is set to ***on*** for the duration of the loopback mode. When a *DLCI* is in loopback mode, frames coming from the link are returned to the link, incrementing the local loopback statistics. Also, frames coming from the VC are returned to the VC, incrementing the remote loopback statistics. The loopback mode is ended using the stop command.

VERB STOP FrUni Dlci Lb

Impact	Service
Description	*stop FrUni/n Dlci/n LoopBack stop FrNni/n Dlci/n LoopBack* This command terminates the loopback mode and displays the loopback statistics.

GROUP FrUni Dlci Lb Statistics (Stats)

Properties	Operational
Description	This group contains all the statistics for the data loopback tool.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci Lb localTotalFrm (ltf)

Access	Read only
Description	This attribute records the number of frames looped back to the link since loopback was last started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb localTotalBytes (ltb)

Access	Read only
Description	This attribute records the number of bytes looped back to the link since loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb localFecnFrm (lff)

Access	Read only

Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb localBecnFrm (lbf)

Access	Read only
Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb localDeFrm (ldf)

Access	Read only
Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb localDeBytes (ldb)

Access	Read only
Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.
Mib	FrameRelayUni

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb remoteTotalFrm (rtf)

Access	Read only
Description	This attribute records the number of frames looped back to the subnet since loopback was last started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb remoteTotalBytes (rtb)

Access	Read only
Description	This attribute records the number of bytes looped back to the subnet since loopback was last started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb remoteFecnFrm (rff)

Access	Read only
Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb remoteBecnFrm (rbf)

Access	Read only

Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb remoteDeFrm (rdf)

Access	Read only
Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Lb remoteDeBytes (rdb)

Access	Read only
Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrUni Dlci EgressServiceParameters (EgressSp)

Groups	"GROUP FrUni Dlci EgressSp Provisioned (Prov)"
Scope	Application

Description	*FrNni/n Dlci/n EgressServiceParameters* This component contains the provisionable attributes of the egress direction for the parent *Dlci* component.
Mib	FrameRelayUni
Common Verbs	Help List Display

GROUP FrUni Dlci EgressSp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for this component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci EgressSp committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR) for the egress direction. It is used for Call Admission Control (CAC) at the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as the *committedInformationRate* attribute under the *ServiceParameters* component.
Mib	FrameRelayUni
Values	Decimal (0..50000000) sameAsServiceParameters (sameAsSp)
Units	bit/s
Default	sameAsServiceParameters

ATTRIBUTE FrUni Dlci EgressSp committedBurstSize (bc)

Access	Read and write

Description	This attribute specifies the committed burst size (Bc) for the egress direction. It is used for performing Call Admission Control (CAC) at the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as the *committedBurstSize* attribute under the *ServiceParameters* component.
Mib	FrameRelayUni
Values	Decimal (0..50000000) sameAsServiceParameters (sameAsSp)
Units	bits
Default	sameAsServiceParameters

ATTRIBUTE FrUni Dlci EgressSp excessBurstSize (be)

Access	Read and write
Description	This attribute specifies the excess burst size (Be) for the egress direction. It is used for Call Admission Control (CAC) function towards the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the same as the *excessBurstSize* attribute under the *ServiceParameters* component.
Mib	FrameRelayUni
Values	Decimal (0..50000000) sameAsServiceParameters (sameAsSp)
Units	bits
Default	sameAsServiceParameters

ATTRIBUTE FrUni Dlci EgressSp measurementInterval (t)

Access	Read and write
Description	This attribute specifies the time interval over which rates and burst sizes are measured in the egress direction. It is used for bandwidth reservation for Call Admission Control (CAC) towards the egress link. If the value is set to ***sameAsSp***, the value of this attribute is the

	same as the *measurementInterval* attribute under the *ServiceParameters* component.
Mib	FrameRelayUni
Values	Decimal (0..25500) sameAsServiceParameters (sameAsSp)
Units	msec
Default	sameAsServiceParameters

COMPONENT FrUni Dlci StandbyVc (StbyVc)

Groups	"GROUP FrUni Dlci StbyVc CallData (Cad)"
Scope	Application
Description	*FrUni/n Dlci/n StandbyVc* This component represents the call data of the Standby Frame Relay VC on the active FP. This is the VC that becomes active if the FP of the remote FrUni fails and a switchover occurs.
Mib	FrameRelayUni
Common Verbs	Help List Display

GROUP FrUni Dlci StbyVc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to Frame Relay *StandbyVc* on the active FP.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci StbyVc state

Access	Read only
Description	This attribute indicates the state of call control. P5 state is not supported but is listed for completeness. Transitions from one

state to another take very short time. *state* most often displayed is ***dataTransferP4***.

Mib FrameRelayUni

Values
creating
readyP1
dteWaitingP2
dceWaitingP3
dataTransferP4
unsupportedP5
dteClearRequestP6
dceClearIndicationP7
termination

Default No default

ATTRIBUTE FrUni Dlci StbyVc previousState

Access Read only

Description This attribute indicates the previous state of call control. This is a valuable field to determine how the processing is progressing.

Mib FrameRelayUni

Values
creating
readyP1
dteWaitingP2
dceWaitingP3
dataTransferP4
unsupportedP5
dteClearRequestP6
dceClearIndicationP7
termination

Default No default

ATTRIBUTE FrUni Dlci StbyVc diagnosticCode

Access Read only

Description This attribute indicates the internal substate of call control. It is used to further refine *state* of call processing.

Mib	FrameRelayUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrUni Dlci StbyVc previousDiagnosticCode

Access	Read only
Description	This attribute indicates the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrameRelayUni
Values	Decimal (0..255)
Default	No default

ATTRIBUTE FrUni Dlci StbyVc calledNpi

Access	Read only
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the called end.
Mib	FrameRelayUni
Values	x121 e164
Default	No default

ATTRIBUTE FrUni Dlci StbyVc calledDna

Access	Read only
Description	This attribute indicates the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete the *StandbyVc* connection.
Mib	FrameRelayUni
Values	BCD (1..15)
Default	No default

ATTRIBUTE FrUni Dlci StbyVc calledLcn

Access	Read only
Description	This attribute indicates the Logical Channel Number of the called end. It is valid only after both ends of the *StandbyVc* exchanged relevant information.
Mib	FrameRelayUni
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE FrUni Dlci StbyVc callingNpi

Access	Read only
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the calling end.
Mib	FrameRelayUni
Values	x121 e164
Default	No default

ATTRIBUTE FrUni Dlci StbyVc callingDna

Access	Read only
Description	This attribute indicates the active Data Network Address (*Dna*) of the calling end.
Mib	FrameRelayUni
Values	BCD (1..15)
Default	No default

ATTRIBUTE FrUni Dlci StbyVc callingLcn

Access	Read only
Description	This attribute indicates the Logical Channel Number of the calling end.
Mib	FrameRelayUni

Values	Decimal (1..65535)
Default	No default

COMPONENT FrUni Dlci SpareDirectCall (SpareDc)

Groups	"GROUP FrUni Dlci SpareDc Options"
Scope	Application
Description	*FrUni/n Dlci/n SpareDirectCall* This component defines the Remote Data Network Address of the *SpareDirectCall*, all other direct call options will be the same as the *FrUni/n Dlci/n DirectCall*. The provisioning of this component will create a standby permanent (PVC) call, used for the ***frUniPvcSparingDprs*** feature. This *SpareDirectCall* should only be provisioned when the remote *FrUni* is provisioned with a *SpareDna*. If this component is provisioned, the value of *FrUni Dc type* must be ***pemanentMaster*** or ***permanentSlave***.
Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

GROUP FrUni Dlci SpareDc Options

Properties	Provisioned
Description	This group contains attributes associated with a *SpareDirectCall*. It defines the connection path. This connection can only be permanent (PVC).
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci SpareDc spareRemoteNpi (srnpi)

Access	Read and write

Description	This attribute specifies the Numbering Plan Indicator (NPI) of the *spareRemoteDna*. This should be set to the *SpareDna npi* of the remote *FrUni*.
Mib	FrameRelayUni
Values	x121 e164
Default	x121

ATTRIBUTE FrUni Dlci SpareDc spareRemoteDna (srdna)

Access	Read and write
Description	This attribute specifies the Spare Data Network Address (SDNA) of the service at the remote end of the DLCI. This is the called (destination) DCE address (DNA) of this PVC. This should be set to the *SpareDna dna* of the remote *FrUni*.
Mib	FrameRelayUni
Values	BCD (1..15)
Default	No default

COMPONENT FrUni Dlci Frf12Stats (Frf12)

Groups	"GROUP FrUni Dlci Frf12 Frf12Stats (Stats)"
Scope	Application
Description	*FrUni/n Dlci/n Frf12Stats* This component represents the End-to-End FRF.12 statistics of a Data Link Connection Identifier. FRF.12 provides the capability to fragment frames that are sent to the link, and reassemble fragments that arrive from the link. The *Frf12Stats* component may be used to monitor the functioning of the End-to-End FRF.12 feature when the feature is enabled.

	This component is only visible when the feature is enabled.
Mib	FrameRelayUni
Common Verbs	Help List Display

GROUP FrUni Dlci Frf12 Frf12Stats (Stats)

Properties	Operational
Description	This group contains the operational attributes for the *Frf12Stats* component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dlci Frf12 fragFromIf (ffi)

Access	Read only
Description	This attribute counts the End-to-End FRF.12 fragments received from the link.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 peakFragSizeFromIf (pkSize)

Access	Read only
Description	This attribute indicates the size of the largest fragment received from the link. It is reset on every accounting collection period.
Mib	FrameRelayUni
Values	Decimal (0..65535)
Default	0

ATTRIBUTE FrUni Dlci Frf12 expectedSequenceNumber (expSeq)

Access	Read only
Description	This attribute indicates the expected sequence number in the next fragment received from the link. The attribute is set to the sequence number of the last fragment received plus one.
Mib	FrameRelayUni
Values	Decimal (0..4095)
Default	0

ATTRIBUTE FrUni Dlci Frf12 outOfSequenceEvent (outOfSeq)

Access	Read only
Description	This attribute counts the times an out of sequence number event occurs. An out of sequence number event occurs when a fragment received from the link has a sequence number that is different from the one indicated by the *expectedSequenceNumber* attribute.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 headerErrorEvent (hdrErr)

Access	Read only
Description	This attribute counts the times an End-to-End FRF.12 header error event occurs. The header must comply with the End-to-End FRF.12 Implementation Agreement.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 cpuExhaustionFromIfEvent (extnfi)

Access	Read only

Description	This attribute counts the times a CPU exhaustion event occurs. A CPU exhaustion event occurs when ingress fragments requiring reassembly are discarded due to CPU exhaustion.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 discFragFromIf (discfi)

Access	Read only
Description	This attribute counts fragments received from the link that have been discarded. Fragments are discarded when header error, out of sequence number or CPU exhaustion event occurs.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 fragToIf (fti)

Access	Read only
Description	This attribute counts the End-to-End FRF.12 fragments sent to the link.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 sendSequenceNumber (sndSeq)

Access	Read only
Description	This attribute indicates the sequence number of the next fragment to be sent to the link.
Mib	FrameRelayUni
Values	Decimal (0..4095)

Default	0

ATTRIBUTE FrUni Dlci Frf12 cpuExhaustionToIfEvent (extnti)

Access	Read only
Description	This attribute counts the times a CPU exhaustion event occurs. A CPU exhaustion event occurs when egress frames requiring fragmentation are discarded due to CPU exhaustion.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 longFrameToIfEvent (longti)

Access	Read only
Description	This attribute counts the times a long frame event occurs. A long frame event occurs when an egress frame requiring fragmentation is discarded because it will generate more than fourty fragments.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Frf12 fragmentationErrorsToIf (fragerr)

Access	Read only
Description	This attribute counts the egress frames discarded due to an internal error during fragmentation.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrUni Dlci BnxInterworkingFunction (BnxIwf)

Groups	"GROUP FrUni Dlci BnxIwf Provisioned (Prov)" "GROUP FrUni Dlci BnxIwf Operational (Op)"

Scope	Application
Description	*FrUni/n Dlci/n BnxInterworkingFunction* *FrNni/n Dlci/n BnxInterworkingFunction* This component specifies that the parent DLCI uses BNX frame relay over an IP network as its networking mechanism. It contains the networking parameters specific to BNX networking.
Mib	FrUniPvcBnx
Common Verbs	Help List Display Add DELete

VERB Redirect FrUni Dlci BnxIwf

Impact	Service
Description	*Redirect [-**force**] -**destination**(<**destination**>) FrUni/n Dlci/n BnxInterworkingFunction* or *Redirect [-**force**] -**destination**(<**destination**>) FrNni/n Dlci/n BnxInterworkingFunction* This verb is used to manually select the PVC destination between the primary and backup destinations, or to enable the automatic redirection. The primary destination and the backup destination are specified by the *BnxInterworkingFunction* component. The ***-destination*** option indicates the destination of PVC redirection. The value of this option can be ***primary***, ***backup,*** or ***onDemand***. The value ***primary*** means that the destination for this PVC has been manually selected to be the primary destination, automatic redirection is disabled. This redirect action corresponds to the “Redirect to Primary” redirect action in the BNX implementation.

The value ***backup*** means that the destination for this PVC has been manually selected to be the backup destination, and automatic redirection is disabled. The backup destination must be provisioned. This redirect action corresponds to the “Redirect to Backup” redirect action in the BNX implementation.

The value ***onDemand*** means this PVC is redirected automatically to either the primary destination or the backup destination based on the cross-net status of the primary destination. This automatic switch-over mechanism is revertive to the primary destination. The *crossNetListenEnabled* attribute of the *BnxProtocol* component must be ***yes*** and the backup destination must be provisioned. This redirect action corresponds to the “Switch on Demand” redirect action in the BNX implementation.

The ***-force*** option specifies that the PVC is redirected to either the primary destination or the backup destination indicated by the ***-destination*** option even if the destination is not active. When the value of ***-destination*** is ***onDemand***, this option is ignored.

GROUP FrUni Dlci Bnxlwf Provisioned (Prov)

Properties	Provisioned
Description	This group defines the provisioning attributes associated with a PVC using BNX frame relay interworking.
Mib	FrUniPvcBnx

ATTRIBUTE FrUni Dlci Bnxlwf calledIpAddress (cia)

Access	Read and write
Description	This attribute specifies the IP address of the primary destination which receives the datagrams.
Mib	FrUniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrUni Dlci Bnxlwf calledDlci (cdlci)

Access	Read and write

Description	This attribute specifies the DLCI of the primary destination which receives the datagrams.
Mib	FrUniPvcBnx
Values	Decimal (16..1007)
Default	No default

ATTRIBUTE FrUni Dlci Bnxlwf trafficPriority (tp)

Access	Read and write
Description	This attribute specifies the user control on traffic priority. The value is transmitted in the traffic priority field of the BNX header. Possible values are: ***1*** - High Priority ***2*** - Normal Priority ***3*** - Low Priority ***useBpDefault*** - use the *defaultTrafficPriority* attribute value from the *BnxProtocol* component.
Mib	FrUniPvcBnx
Values	1 2 3 useBpDefault
Default	useBpDefault

ATTRIBUTE FrUni Dlci Bnxlwf backupCalledIpAddress (bcia)

Access	Read and write
Description	This attribute specifies the IP address of the backup destination which receives the datagrams. A value of ***0.0.0.0*** for this attribute and a value of ***undefined*** for the *backupCalledDlci* attribute specify that there is no backup destination.
Mib	FrUniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrUni Dlci Bnxlwf backupCalledDlci (bcdlci)

Access	Read and write
Description	This attribute specifies the DLCI of the backup destination which receives the datagrams. A value of ***undefined*** for this attribute and a value of ***0.0.0.0*** for the *backupCalledIpAddress* attribute specify that there is no backup destination.
Mib	FrUniPvcBnx
Values	Decimal (16..1007) undefined
Default	undefined

ATTRIBUTE FrUni Dlci Bnxlwf redirectType (rtype)

Access	Read and write
Description	This attribute indicates the type of DTE notification when a PVC redirection between primary and backup destinations occurs. ***transparent*** means no notification is sent to the DTE. ***aIntrusive*** means that an asynchronous update with the A-bit not set is sent to the DTE. ***nIntrusive*** means that an asynchronous update with the N-bit set is sent to the DTE.
Mib	FrUniPvcBnx
Values	transparent aIntrusive nIntrusive
Default	aIntrusive

ATTRIBUTE FrUni Dlci Bnxlwf minActiveIntervals (mai)

Access	Read and write
Description	This attribute specifies the minimum number of consecutive time intervals for which the primary destination must be active before

the PVC is redirected back to the primary destination from the backup destination in ***switchOnDemand*** mode. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component. This attribute is ignored if the *BnxProtocol* attribute *crossNetListenEnabled* is set to ***no***.

If the value of this attribute is ***0***, the PVC is redirected back to the primary destination as soon as an active cross-net message is received from the primary destination.

Mib	FrUniPvcBnx
Values	Decimal (0..4)
Default	0

ATTRIBUTE FrUni Dlci BnxIwf redirectAction (ra)

Access	Read and write
Description	This attribute indicates the redirect action for a PVC. The Redirect command can be used to override this redirect action. ***switchOnDemand*** means this PVC is redirected automatically to either the primary destination or the backup destination based on the cross-net status of the primary destination. This automatic switch-over mechanism is revertive to the primary destination. The *crossNetListenEnabled* attribute of the *BnxProtocol* component must be ***yes*** and the backup destination must be provisioned. This redirect action corresponds to the “Switch on Demand” redirect action in the BNX implementation. ***manualPrimary*** means that the destination for this PVC has been manually selected to be the primary destination, automatic redirection is disabled. This redirect action corresponds to the “Redirect to Primary” redirect action in the BNX implementation. ***manualBackup*** means that the destination for this PVC has been manually selected to be the backup destination, and automatic redirection is disabled. The backup destination must be provisioned. This redirect action corresponds to the “Redirect to

Backup" redirect action in the BNX implementation.

Mib	FrUniPvcBnx
Values	switchOnDemand manualPrimary manualBackup
Default	manualPrimary

GROUP FrUni Dlci Bnxlwf Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the BNX frame relay interworking functionality.
Mib	FrUniPvcBnx

ATTRIBUTE FrUni Dlci Bnxlwf timeOfLastStateChange (tlsc)

Access	Read only
Description	This attribute indicates the time at which the state of the DLCI last changed.
Mib	FrUniPvcBnx
Values	Time (DHMS)
Default	No default

ATTRIBUTE FrUni Dlci Bnxlwf crossNetSent (cnsent)

Access	Read only
Description	This attribute indicates if a cross-net status message was sent to the primary destination during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component.
Mib	FrUniPvcBnx
Values	unsent sent

Default	No default

ATTRIBUTE FrUni Dlci Bnxlwf crossNetStatus (cns)

Access	Read only
Description	This attribute indicates the state of the PVC when the remote end is the primary destination. If the *crossNetListenEnabled* attribute of the *BnxProtocol* component is set to ***yes***, this attribute reflects the state as reported by the remote end. If the *crossNetListenEnabled* attribute is set to ***no***, the PVC is assumed to be up and this attribute has a value of ***active***.
Mib	FrUniPvcBnx
Values	inactive active
Default	inactive

ATTRIBUTE FrUni Dlci Bnxlwf crossNetReceived (cnr)

Access	Read only
Description	This attribute indicates if the DLCI has received a cross-net status message from the primary destination during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component. This attribute is ignored if the *BnxProtocol* attribute *crossNetListenEnabled* is set to ***no***.
Mib	FrUniPvcBnx
Values	unrecv recv
Default	unrecv

ATTRIBUTE FrUni Dlci Bnxlwf crossNetErrors (cne)

Access	Read only
Description	This attribute counts how many polling intervals have elapsed without receiving an error free cross-net status message from the primary destination of the PVC. Errors are generally caused by

	time-outs. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci BnxIwf ipAddressMismatches (iam)

Access	Read only
Description	This attribute counts the received datagrams which were dropped because the source IP address in the IP header did not match the value of *calledIpAddress* or *backupCalledIpAddress* attribute. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci BnxIwf lastMismatchedIpAddress (lmia)

Access	Read only
Description	This attribute indicates the source IP address in the IP header of the most recently received datagram which was dropped because this IP address did not match the value of *calledIpAddress* or *backupCalledIpAddress* attribute.
Mib	FrUniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrUni Dlci BnxIwf backupCrossNetSent (bcnsent)

Access	Read only
Description	This attribute indicates if a cross-net status message was sent to the backup destination during the current polling interval. The

	interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol* component.
Mib	FrUniPvcBnx
Values	unsent sent
Default	No default

ATTRIBUTE FrUni Dlci Bnxlwf backupCrossNetStatus (bcns)

Access	Read only
Description	This attribute indicates the state of the PVC when the remote end is the backup destination. If the *crossNetListenEnabled* attribute of the *BnxProtocol* component is set to ***yes***, this attribute reflects the state as reported by the remote end. If the *crossNetListenEnabled* attribute is set to ***no***, the PVC is assumed to be up and this attribute has a value of ***active***.
Mib	FrUniPvcBnx
Values	inactive active
Default	inactive

ATTRIBUTE FrUni Dlci Bnxlwf backupCrossNetReceived (bcnr)

Access	Read only
Description	This attribute indicates if the DLCI has received a cross-net status message from the backup destination of the PVC during the current polling interval. The interval duration is controlled by the *crossNetPollingInterval* attribute of the *BnxProtocol*. This attribute is ignored if the *BnxProtocol* attribute *crossNetListenEnabled* is set to ***no***.
Mib	FrUniPvcBnx
Values	unrecv recv
Default	unrecv

ATTRIBUTE FrUni Dlci Bnxlwf backupCrossNetErrors (bcne)

Access	Read only
Description	This attribute counts how many polling intervals have elapsed without receiving an error free cross-net status message from the backup destination of the PVC. Errors are generally caused by time-outs. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Bnxlwf redirectMode (rmode)

Access	Read only
Description	This attribute indicates the mode of the PVC redirection. The value ***switchOnDemand*** means this PVC is redirected automatically to either the primary destination or the backup destination based on the cross-net status of the primary destination. This automatic switch-over mechanism is revertive to the primary destination. The value ***manual*** means that the destination for this PVC has been manually selected and automatic redirection is disabled. When the value is ***noBackup***, the PVC does not have a backup destination provisioned.
Mib	FrUniPvcBnx
Values	switchOnDemand manual noBackup
Default	No default

ATTRIBUTE FrUni Dlci Bnxlwf currentDestination (cdest)

Access	Read only

Description	This attribute indicates if the current destination is the primary destination or the backup destination.
Mib	FrUniPvcBnx
Values	primary backup
Default	No default

ATTRIBUTE FrUni Dlci Bnxlwf remoteIpAddress (ria)

Access	Read only
Description	This attribute indicates the IP address of the current destination.
Mib	FrUniPvcBnx
Values	IP address
Default	No default

ATTRIBUTE FrUni Dlci Bnxlwf remoteDlci (rdlci)

Access	Read only
Description	This attribute indicates the DLCI of the current destination.
Mib	FrUniPvcBnx
Values	Decimal (16..1007)
Default	No default

ATTRIBUTE FrUni Dlci Bnxlwf ipFragFromSubnet (fragfs)

Access	Read only
Description	This attribute counts the IP fragments received from subnet by this Dlci. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Bnxlwf discardedIpFragments (discFrag)

Access	Read only
Description	This attribute counts the IP fragments that are dropped by this Dlci. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Bnxlwf discMisorderedFrm (dmfrm)

Access	Read only
Description	This attribute counts the frames from subnet that are dropped due to misordered fragments. A misordered fragment occurs when the offset in the IP header is not equal to the expected offset, or the timer expires before the last fragment is received. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Dlci Bnxlwf lastDroppedIpFragmentId (lastid)

Access	Read only
Description	This attribute indicates the Id of the last misordered frame that was dropped.
Mib	FrUniPvcBnx
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrUni Dlci IpConnection (IpConn)

Groups	"GROUP FrUni Dlci IpConn Provisioned (Prov)"

Scope	Application
Description	*FrUni/n Dlci/n IpConnection* This component represents direct frame relay access to IP (IPoFR) for this *Dlci*. This *Dlci* must be linked to an *IpDlciGroup FrConnection*.
Mib	FrUniIpConn
Common Verbs	Help List Display Add DELete

GROUP FrUni Dlci IpConn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *IpConnection* component.
Mib	FrUniIpConn

ATTRIBUTE FrUni Dlci IpConn linkToIpDlciGrp (dlcGrp)

Access	Read and write
Description	This attribute specifies the *IpDlciGroup FrConnection* associated with this component.
Mib	FrUniIpConn
Values	Link (Service, linkToFrDlci)
Default	No default

ATTRIBUTE FrUni Dlci IpConn de0DiscardPriority (de0Dp)

Access	Read and write
Description	This attribute specifies the discard priority for frames received on this DLCI whose DE bit is not set after being processed by the frame relay service.

low specifies that the packet is least likely to be discarded. This value should be used for traffic that requires a high probability of being forwarded.

high specifies that the packet is most likely to be discarded. This value should be used for traffic that is given a low probability of being forwarded.

The value of this attribute must not be higher than the value of the *de1DiscardPriority* attribute.

Mib: FrUniIpConn

Values:
low
medium
high

Default: medium

ATTRIBUTE FrUni Dlci IpConn de1DiscardPriority (de1Dp)

Access: Read and write

Description: This attribute specifies the discard priority for frames received on this DLCI whose DE bit is set after being processed by the frame relay service.

low specifies that the packet is least likely to be discarded. This value should be used for traffic that requires a high probability of being forwarded.

high specifies that the packet is most likely to be discarded. This value should be used for traffic that is given a low probability of being forwarded.

The value of this attribute must not be lower than the value of the *de0DiscardPriority* attribute.

Mib: FrUniIpConn

Values:
low
medium
high

Default high

ATTRIBUTE FrUni Dlci IpConn dpToDeMapLevel (dpToDe)

Access Read and write

Description This attribute specifies the lowest discard priority that will be mapped to a set DE bit.

All frames with a discard priority of this level or higher, sent on this DLCI, will have the DE bit set to 1 after being processed by the frame relay service.

If the value is ***notApplicable*** then all frames sent on this DLCI will have the DE bit set to 0, after being processed by the frame relay service.

Mib FrUniIpConn

Values
low
medium
high
notApplicable

Default notApplicable

COMPONENT FrUni Signaling (Sig)

Groups
"GROUP FrUni Sig DlciRange (Range)"
"GROUP FrUni Sig ServiceParameters (ServParms)"
"GROUP FrUni Sig SystemParameters (SysParms)"
"GROUP FrUni Sig LapfSystemParameters (LapfSys)"
"GROUP FrUni Sig OsiState (State)"
"GROUP FrUni Sig Statistics (Stats)"
"GROUP FrUni Sig LapfStatus (LapfStatus)"
"GROUP FrUni Sig LapfStatistics (LapfStats)"
"GROUP FrUni Sig FrsSvcAcc (Svcacc)"
"GROUP FrUni Sig LastSvcClearCodes (Codes)"

Scope Application

Description

FrUni/n Signaling
This component defines the FRF.4 and Q.922 (LAPF) parameters

for Frame Relay switched virtual circuits at the User-Network interface. This component must be provisioned for the FrUni interface to support switched connections.

Mib FriUniSig

Common Verbs
Help
List
Display
Add
DELete

GROUP FrUni Sig DlciRange (Range)

Properties Provisioned

Description This group contains the provisionable attribute to define the range of DLCIs for PVCs and SVCs. The purpose of this range is to prevent DLCI collisions between the provisioned PVCs and the dynamic SVCs.

Mib FriUniSig

ATTRIBUTE FrUni Sig highestPvcDlci

Access Read and write

Criticality Process

Description This attribute specifies the highest DLCI value that can be provisioned for a permanent connection. It partitions the DLCI space into permanent and switched connections. Permanent DLCI numbers higher than this value cannot be provisioned. The value ***0*** is used to indicate that no permanent connections are allowed on this interface. The value ***1007*** indicates that no switched connections are allowed on this interface.

Mib FriUniSig

Values Decimal (0; 16..1007)

Default 500

GROUP FrUni Sig ServiceParameters (ServParms)

Properties	Provisioned
Description	This group contains the provisionable FRF.4 service parameters.
Mib	FriUniSig

ATTRIBUTE FrUni Sig maximumFrameSize (dn1)

Access	Read and write
Description	This attribute specifies the maximum number of octets that may be included in the information field of the user DLCI of any switched connections using this interface. Its value must not be smaller than the value of *defaultMaximumFrameSize*.
Mib	FriUniSig
Values	Decimal (1..8187)
Units	octets
Default	4096

ATTRIBUTE FrUni Sig defaultMaximumFrameSize (defaultdn1)

Access	Read and write
Description	This attribute specifies the default maximum number of octets that may be included in the information field of the user DLCI assigned for any switched connections using this interface. This value is used during call parameter negotiation for switched calls on this interface when the maximum frame size is not specified in the user's SETUP message. The value of this attribute must not exceed the value of the *maximumFrameSize* attribute.
Mib	FriUniSig
Values	Decimal (1..8187)
Units	octets
Default	2100

ATTRIBUTE FrUni Sig defaultCommittedInformationRate (defaultCir)

Access	Read and write
Description	This attribute specifies the default user to network direction CIR. This value is used during call parameter negotiation for switched calls on this interface when the CIR is not specified in the user's SETUP message.
Mib	FriUniSig
Values	Decimal (0..52000000)
Units	bit/s
Default	64000

ATTRIBUTE FrUni Sig defaultCommittedBurstSize (defaultBc)

Access	Read and write
Description	This attribute specifies the default user to network direction Bc. This value is used during call parameter negotiation for switched calls on this interface when the Bc is not specified in the user's SETUP message.
Mib	FriUniSig
Values	Decimal (0..52000000)
Units	bits
Default	64000

ATTRIBUTE FrUni Sig defaultExcessBurstSize (defaultBe)

Access	Read and write
Description	This attribute specifies the default user to network direction Be. This value is used during call parameter negotiation for switched calls on this interface when the Be is not specified in the user's SETUP message.
Mib	FriUniSig
Values	Decimal (0..52000000)

Units	bits
Default	0

ATTRIBUTE FrUni Sig rateEnforcement (re)

Access	Read and write
Description	This attribute specifies whether rate enforcement is in effect for SVCs on this interface.
Mib	FriUniSig
Values	off on
Default	on

ATTRIBUTE FrUni Sig rateAdaptation (ra)

Access	Read and write
Description	This attribute specifies whether closed-loop rate adaptation is in effect for SVCs on this interface. Rate adaptation is a feature that, in periods of congestion, adapts the rate at which the user is allowed to send data into the network to that which the network is able to handle at that time. This proactive measure of handling congestion optimizes network resources by causing the ingress to discard frames that would otherwise be discarded in the network. If this attribute is set to ***on***, then, at the onset of congestion, the excess information rate (EIR) is reduced to a very low rate. If congestion persists, then the allowed CIR is reduced geometrically by 25% of the current value at that time. The minimum to which CIR can be reduced is 1/16th (6.25%) of the provisioned value. As congestion alleviates, CIR is increased linearly by 6.25% of the provisioned value specified in *committedInformationRate*. If set to ***eirOnly***, then rate adaptation will only apply to the excess information rate (EIR). At the onset of congestion, the allowed EIR is reduced by 25% of its provisioned value. If congestion persists, EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually

increased linearly by 6.25% of the provisioned EIR.

If set to ***cirProportionate***, then rate adaptation will also only apply to the excess information rate (EIR). At the onset of congestion the initial allowed EIR is set to a multiple of the provisioned CIR. If congestion persists, the allowed EIR is reduced geometrically by 25% of the current value at that time. As congestion alleviates, EIR is gradually increased linearly by 6.25% of the provisioned EIR. Note that the allowed EIR may be set higher than the provisioned EIR, since it is calculated initially using another parameter, the provisioned CIR. If the allowed EIR at the moment is higher than the provisioned EIR, then the provisioned EIR is used instead.

This attribute can only be set to ***on*** or ***eirOnly*** if *rateEnforcement* is set to ***on***.

Mib: FriUniSig

Values:
off
on
eirOnly
cirProportionate

Default: off

ATTRIBUTE FrUni Sig x213IeHandling (x213)

Access: Read and write

Description: The *x213IeHandling* attribute specifies how Frame Relay handles the X.213 Priority IE when it is in the FRF.4 setup message.

When the attribute is set to ***notSupported***, the X.213 Priority IE will not be recognized in the setup message. A FRF.4 status message will be sent to the calling DTE, with the indication that an unrecognized IE was encountered. The call setup then proceeds as normal, and the X.213 Priority IE does not appear in the setup message at the called end.

When the attribute is set to ***proprietary***, and the X.213 Priority IE is present in the FRF.4 setup message, it will be recognized. If there is no Frame Transfer Priority IE in the setup message, the

first data byte of the X.213 Priority IE is used to select the transfer and discard priority values for the connection and the X.213 Priority IE is signaled to the called end in the setup message. If the Frame Transfer Priority IE is present in the FRF.4 setup message, its value is used to select the transfer priority, the discard priority is taken from the *FRUNI Dna* component, and the X.213 Priority IE is ignored.

Refer to the related Application Note for further details before setting the attribute value to ***proprietary***.

Mib: FriUniSig

Values: notSupported
proprietary

Default: notSupported

ATTRIBUTE FrUni Sig raSensitivity (rasens)

Access: Read and write

Description: This attribute specifies the sensitivity of the rate adaptation system for all switched connections on this interface.

A higher number indicates a higher sensitivity and therefore a quicker reaction time to network conditions. A quicker reaction time allows the network to discard frames at the access and protect network resources, but can lead to false alarms and a greater fluctuation of the allowed rate. A higher setting therefore tends to favor the protection of the network over the allowed throughput of the user.

A lower number indicates a lower sensitivity and therefore a slower reaction to network conditions. A slower reaction time results in a greater amount of user traffic allowed into the network, but can lead to a waste of network bandwidth since the traffic may be discarded at the congested resource. A lower setting therefore tends to favour the allowed throughput of the user over the protection of the network.

This attribute is applicable for adapting EIR when *rateAdaptation* is ***eirOnly*** or ***cirProportionate***, or CIR when *rateAdaptation* is

on.

This attribute is ignored if *rateAdaptation* is ***off***.

Mib FriUniSig

Values Decimal (1..20)

Default 7

ATTRIBUTE FrUni Sig updateBCI (updBCI)

Access Read and write

Description This attribute specifies whether internal Backward Congestion Indication (BCI) bits will report congestion external to the network, as communicated through incoming BECN bits.

If *updateBCI* is set to ***on***, then BCI bits for incoming frames will be set if the BECN on the frame is set. If *updateBCI* is set to ***off***, then incoming BECN bits has no effect.

Setting *updateBCI* ***on*** for a DLCI means that the remote end of the DLCI, which is specified by the *remoteDna* and *remoteDlci* attributes of the *Dc* component of the *Dlci*, may perform Rate Adaptation using the flow of incoming BECN bits, in addition to internal congestion management systems.

If the *rateAdaptation* attribute of the remote DLCI is provisioned as ***eirOnly***, ***cirProportionate***, or ***on***, then congestion from another network may trigger dynamic congestion management. If there is no rate adaptation at the other end, then the setting of the *updateBCI* attribute at this end has no effect.

Mib FriUniSig

Values off
on

Default off

ATTRIBUTE FrUni Sig defaultLocCheck (defLoc)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether this end needs to check the location of Cause IE in a Release or a Disc message issued by local DTE. If this bit is set to ***on***, then this end checks the location of Cause IE issued by the local DTE and overwrite it by "user". If it is set to ***off***, then this end does not check the location in Cause IE.
Mib	FriUniSig
Values	off on
Default	on

GROUP FrUni Sig SystemParameters (SysParms)

Properties	Provisioned
Description	This group contains the provisionable FRF.4 system parameters.
Mib	FriUniSig

ATTRIBUTE FrUni Sig callSetupTimer (t303)

Access	Read and write
Description	This attribute specifies the time the network waits for a response to the SETUP message sent to the called user. Upon timer expiry, the SETUP message is retransmitted. The second expiry of this timer causes the call to be cleared.
Mib	FriUniSig
Values	Decimal (1..255)
Units	seconds
Default	4

ATTRIBUTE FrUni Sig disconnectTimer (t305)

Access	Read and write
Description	This attribute specifies the time the network waits for a response to the DISCONNECT message sent to the user. Upon timer expiry, the RELEASE message is sent.
Mib	FriUniSig
Values	Decimal (1..255)
Units	seconds
Default	30

ATTRIBUTE FrUni Sig releaseTimer (t308)

Access	Read and write
Description	This attribute specifies the time the network waits for a response to the RELEASE message sent to the user. Upon timer expiry, the RELEASE message is retransmitted. The second expiry of the timer causes the call to be released.
Mib	FriUniSig
Values	Decimal (1..255)
Units	seconds
Default	4

ATTRIBUTE FrUni Sig callProceedingTimer (t310)

Access	Read and write
Description	This attribute specifies the time the network waits for the CONNECT message from the called user after the network has received the optional CALL PROCEEDING message from the called user. Upon timer expiry, the call is cleared.
Mib	FriUniSig
Values	Decimal (1..255)
Units	seconds

Default	10

ATTRIBUTE FrUni Sig networkType (type)

Access	Read and write
Description	This attribute specifies whether this Frame Relay service is running on a public or a private network. This value is used solely in populating applicable information elements within those FRF.4 messages that require a public or private network indication.
Mib	FriUniSig
Values	private public
Default	private

ATTRIBUTE FrUni Sig restartReqTimer (t316)

Access	Read and write
Description	This attribute specifies the time the network waits for the RESTART ACKNOWLEDGE message from the adjacent network after sending a first RESTART message. Upon timer expiry, another RESTART message is sent. After the second expiry, the interface is treated as idle. If the *restartReqTimer* attribute is set to the default value, then the interface is treated as idle when it receives an indication that the link is up and does not send a RESTART message.
Mib	FriUniSig
Values	Decimal (0..255)
Units	seconds
Default	0

ATTRIBUTE FrUni Sig restartRcvTimer (t317)

Access	Read and write
Description	This attribute specifies the time the local network waits for the processing of a RESTART message received by the interface.

	Upon expiry of this timer, an alarm will be displayed to report the problem. The timer value must be less than the *restartReqTimer* provisioned value at the adjacent node.
Mib	FriUniSig
Values	Decimal (1..255)
Units	seconds
Default	110

ATTRIBUTE FrUni Sig statusEnqTimer (t322)

Access	Read and write
Description	This attribute specifies the time the network waits for the requested STATUS message from the adjacent network. Upon expiry of this timer, another STATUS ENQUIRY message will be sent.
Mib	FriUniSig
Values	Decimal (1..255)
Units	seconds
Default	4

GROUP FrUni Sig LapfSystemParameters (LapfSys)

Properties	Provisioned
Description	This group contains the provisionable attributes for the SVC data link layer. The data link layer is governed primarily through ITU specification Q.922, and operates over DLCI 0..
Mib	FriUniSig

ATTRIBUTE FrUni Sig windowSize (ws)

Access	Read and write
Description	This attribute specifies the window size. This is the maximum number of unacknowledged sequenced frames that may be outstanding from or to this interface at any one time.

Mib	FriUniSig
Values	Decimal (1..127)
Default	7

ATTRIBUTE FrUni Sig retransmitLimit (rtl)

Access	Read and write
Description	This attribute specifies the number of times a frame can be retransmitted by the SVC data link layer before appropriate recovery action is taken.
Mib	FriUniSig
Values	Decimal (0..20)
Default	3

ATTRIBUTE FrUni Sig ackTimer (at)

Access	Read and write
Description	This attribute specifies how long the layer 2 protocol waits for an acknowledgment to a sent frame. The value set for *ackTimer* must be less than the value set for *idleProbeTimer*.
Mib	FriUniSig
Values	Decimal (1000..10000)
Units	msec
Default	1500

ATTRIBUTE FrUni Sig ackDelayTimer (adt)

Access	Read and write
Description	This attribute specifies how long the network waits before sending an acknowledgment for a received in-sequence I-frame. A value of 0 means that every frame is acknowledged and there will be no delay in acknowledgment. A non-zero value means that one acknowledgement is sent for a number of frames.
Mib	FriUniSig

Values	Decimal (0..10000)
Units	msec
Default	0

ATTRIBUTE FrUni Sig idleProbeTimer (ipt)

Access	Read and write
Description	This attribute specifies how long the link is permitted to remain idle (that is, no frames are exchanged on the data link). Upon expiry of this timer, the network side's link layer polls its peer for status. The value set for *idleProbeTimer* must be greater than the value set for *ackTimer.*
Mib	FriUniSig
Values	Decimal (1000..65535000)
Units	msec
Default	30000

GROUP FrUni Sig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FriUniSig

ATTRIBUTE FrUni Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or

Lock command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	FriUniSig
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrUni Sig operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	FriUniSig
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrUni Sig usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FriUniSig
Values	idle active (activ) busy
Default	idle

GROUP FrUni Sig Statistics (Stats)

Properties	Operational
Description	This group contains the statistics related to the SVC signaling layer at the interface level.
Mib	FriUniSig

ATTRIBUTE FrUni Sig currentNumberOfSvcCalls (ncall)

Access	Read only
Description	This attribute indicates the number of Frame Relay SVCs currently existing on this interface.
Mib	FriUniSig
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrUni Sig inCalls (incall)

Access	Read only
Description	This attribute indicates the current number of incoming SVCs on this interface (that is, the number of SVCs for which this interface represents the destination end of the call).
Mib	FriUniSig
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrUni Sig inCallsRefused (icr)

Access	Read only
Description	This attribute counts the incoming SVC call requests that are rejected by either this interface or by the called user. When this count exceeds the maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig outCalls (outcall)

Access	Read only
Description	This attribute indicates the current number of outgoing SVCs on this interface (that is, the number of SVCs for which this interface represents the source end of the call).
Mib	FriUniSig
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrUni Sig outCallsFailed (ocf)

Access	Read only

Description	This attribute counts the outgoing SVC call requests that are rejected by either this interface, or by the network side of the destination end, or by the called user. When this count exceeds the maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig protocolErrors (pe)

Access	Read only
Description	This attribute counts the number of times a FRF.4 protocol error has occurred. Any one of the following events constitutes a protocol error: 1. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, *Cir*, *Bc* and *Be* are all zero; 2. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, *Cir* is zero but *Bc* is non-zero, or *Bc* is zero but *Cir* is non-zero; 3. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, the *Minimum Acceptable CIR* is greater than *Cir*; 4. At the destination end, any of the destination to source direction link layer core parameters has been increased in the CONNECT message from the called user; 5. At the destination end, the destination to source direction *Cir* in the CONNECT message is smaller than the corresponding *minimum acceptable Cir* signaled to the called user; 6. At the source end, any of the source to destination direction link layer core parameters in the CONNECT message from the destination end has been increased; 7. At the source end, the source to destination direction *Cir*, after negotiation, is smaller than the corresponding *minimum acceptable Cir*; 8. The network has received a STATUS message from the user with an incompatible FRF.4 state. When this count reaches maximum, it wraps to zero.

Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig qualityOfServiceNotAvailable (qosna)

Access	Read only
Description	This attribute counts the number of incoming and outgoing SVCs that are rejected because the quality of service requested cannot be met by the network. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig setupTimeout (setupt)

Access	Read only
Description	This attribute counts the number of times the T303 setup timer has expired. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig lastCauseInStatusMsgReceived (lcis)

Access	Read only
Description	This attribute indicates the cause value in the last received user's STATUS message to an existing call. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is **0** which means that no STATUS message has been received for an existing call yet.
Mib	FriUniSig

Values	Decimal (0..255)
Default	0

ATTRIBUTE FrUni Sig lastStateInStatusMsgReceived (lsis)

Access	Read only
Description	This attribute indicates the state value in the last received user's STATUS message to an existing call. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is **notApplicable**.
Mib	FriUniSig
Values	null callInitiated outgoingCallProceeding callPresent incomingCallProceeding active disconnectRequest disconnectIndication releaseRequest restartRequest restart notApplicable 2 4 5 7 8 13 14 15 16 17 18 21 22 23

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Default	notApplicable

ATTRIBUTE FrUni Sig lastDlciReceivedStatus (ldrs)

Access	Read only
Description	This attribute shows the value of the DLCI that has most recently received a STATUS message from the user. The initial value of this attribute is **0**.
Mib	FriUniSig
Values	Decimal (0; 16..1007)
Default	0

ATTRIBUTE FrUni Sig bandwidthNotAvailable

Access	Read only
Description	This attribute counts the number of call failures for each bandwidth pool due to the requested bandwidth not being available.
Mib	FriUniSig
Vector of	Decimal (0..4294967295)
Index	Decimal (0..15)
Default	No default

GROUP FrUni Sig LapfStatus (LapfStatus)

Properties	Operational
Description	This group contains the Q.922 SVC data link layer status.
Mib	FriUniSig

ATTRIBUTE FrUni Sig currentState (currState)

Access	Read only
Description	This attribute shows the current state of the SVC data link layer interface.

Mib	FriUniSig
Values	disconnected linkSetup disconnectRequest informationTransfer waitingAck
Default	No default

ATTRIBUTE FrUni Sig lastStateChangeReason (lscr)

Access	Read only
Description	This attribute shows the reason for the most recent state change. ***notStarted*** - this is the default state after SVC data link has just been created. ***abmeEntered*** - SVC data link has entered Asynchronous Balanced Mode after SABME or UA has been received. ***abmeReset*** - the data link has been reset. ***dmReceived*** - DM response received. ***dmSent*** - DM sent. ***discReceived*** - DISC response received. ***discSent*** - DISC sent. ***frmrReceived*** - FRMR received. ***n200RetranTimeOut*** - *retransmitLimit* has been exceeded. ***other*** - unspecified state change reasons. The most likely reason for this is the transition from state ***waitingAck*** to state ***informationTransfer***.
Mib	FriUniSig
Values	notStarted abmeEntered abmeReset dmReceived dmSent discReceived discSent frmrReceived n200RetranTimeOut other

Default	notStarted

ATTRIBUTE FrUni Sig frmrReceive (frmrr)

Access	Read only
Description	This attribute shows the information field of the Frame Reject (FRMR) most recently received.
Mib	FriUniSig
Values	String (0..8, Hex)
Default	No default

ATTRIBUTE FrUni Sig currentQueueSize (queues)

Access	Read only
Description	This attribute shows the current number of frames in the SVC data link layer transmit queue.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

GROUP FrUni Sig LapfStatistics (LapfStats)

Properties	Operational
Description	This group contains the statistics for the SVC data link layer.
Mib	FriUniSig

ATTRIBUTE FrUni Sig stateChange

Access	Read only
Description	This attribute counts the number of times the SVC data link layer interface has changed state. While the data link layer is in ***informationTransfer*** state, this counter will increment on each expiry of *idleProbeTimer* as its state goes from ***informationTransfer*** to ***waitingAck*** and back. When this count exceeds the maximum, it wraps to zero.

Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig remoteBusy

Access	Read only
Description	This attribute counts the number of times transmission of an I-frame was unsuccessful due to a perceived remote busy condition (window closed or remote busy). When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig receiveRejectFrame

Access	Read only
Description	This attribute counts the number of REJ frames received by the interface. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig ackTimeout

Access	Read only
Description	This attribute counts the number of times the *ackTimer* has expired. Frequent increments of this counter indicate a problem at the link or improper values have been chosen for *ackTimer* and *ackDelayTimer* between the local and remote sides. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE FrUni Sig iFramesTransmitted

Access	Read only
Description	This attribute counts the number of SVC I-frames transmitted to the interface on DLCI 0. An I-frame may be counted more than once if there are retransmissions at the SVC data link layer. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig iFramesTxDiscarded

Access	Read only
Description	This attribute counts the number of SVC I-frames that are bound for the link but have been discarded. Discard reasons may be one of the following: 1. the frame length is beyond the allowed limit. 2. the SVC data link layer is in ***disconnected*** state. 3. the transmit queue has been purged because the queue length has reached the reset threshold. 4. the transmit queue or the queue waiting for acknowledgment has been purged because the link cannot be re-established. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig iFramesReceived

Access	Read only
Description	This attribute counts the number of SVC I-frames received from the interface. When this count reaches maximum, it wraps to zero.

Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE FrUni Sig iFramesRcvdDiscarded

Access	Read only
Description	This attribute counts the number of SVC I-frames received but have been discarded. The discard reasons are: 1. incorrect frame size 2. frame is out of sequence 3. frame received while the network side of the SVC data link layer is not in the ***informationTransfer*** or ***waitingAck*** state. When this count reaches maximum, it wraps to zero.
Mib	FriUniSig
Values	Decimal (0..4294967295)
Default	No default

GROUP FrUni Sig FrsSvcAcc (Svcacc)

Properties	Provisioned
Description	This group contains the provisionable attribute which controls accounting for this interface.
Mib	FriUniSig

ATTRIBUTE FrUni Sig defaultAccounting (defAcc)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether accounting data collection and record generation is turned on for switched connections at this interface. For accounting data collection and record generation to occur, this attribute must be ***on*** and at least one of the *accountCollection* reasons in the *Dna* component must be present.

Mib	FriUniSig
Values	off on
Default	on

GROUP FrUni Sig LastSvcClearCodes (Codes)

Properties	Operational
Description	This group contains the remote data network address, the last SVC clear cause and the last SVC diagnostic code coming from the subnet or the local VC.
Mib	FriUniSig

ATTRIBUTE FrUni Sig lastClearRemoteDataNetworkAddress

Access	Read only
Description	This attribute indicates the Data Network Address (DNA) of the remote (the other end of the SVC connection) of the call which cleared last and whose clear and diagnostic codes were recorded.
Mib	FriUniSig
Values	BCD (0..15)
Default	No default

ATTRIBUTE FrUni Sig lastClearCause

Access	Read only
Description	This attribute indicates the last SVC clear cause signaled at the end of the connection or failure to connect. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The same set of possible values provides the clear cause field in the accounting record.
Mib	FriUniSig
Values	Decimal (0..255)
Default	0

ATTRIBUTE FrUni Sig lastDiagnosticCode

Access	Read only
Description	This attribute indicates the last SVC diagnostic code signaled at the end of the connection or failure to connect. It is updated if the clear request comes from the subnet or the call is rejected locally by the VC. The same set of possible values provides the diagnostic code field in the accounting record.
Mib	FriUniSig
Values	Decimal (0..255)
Default	0

COMPONENT FrUni VirtualFramer (VFramer)

Groups	"GROUP FrUni VFramer Provisioned (Prov)" "GROUP FrUni VFramer OsiState (State)" "GROUP FrUni VFramer Statistics (Stats)"
Scope	Application
Description	*FrUni/n VirtualFramer* *FrDte/n VirtualFramer* The *VirtualFramer* component binds two services together to provide data transfer between them. It is mutually exclusive from *Framer* component.
Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

GROUP FrUni VFramer Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *VirtualFramer* component.

Mib	FrameRelayUni

ATTRIBUTE FrUni VFramer otherVirtualFramer (ovf)

Access	Read and write
Criticality	Process
Description	This attribute specifies the other *VirtualFramer* to which the service is linked, for example, *FrUni/n VirtualFramer*, *FrDte/n VirtualFramer*.
Mib	FrameRelayUni
Values	Link (Service, otherVirtualFramer)
Default	No default

ATTRIBUTE FrUni VFramer logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the logical processor on which the service component will reside.
Mib	FrameRelayUni
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP FrUni VFramer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrameRelayUni

ATTRIBUTE FrUni VFramer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FrameRelayUni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE FrUni VFramer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: FrameRelayUni

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE FrUni VFramer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: FrameRelayUni

Values: idle
active (activ)
busy

Default: idle

GROUP FrUni VFramer Statistics (Stats)

Properties: Operational

Description: This group contains the operational statistics data for a *VirtualFramer* component.

Mib: FrameRelayUni

ATTRIBUTE FrUni VFramer frmToOtherVFramer

Access: Read only

Description	This attribute counts the frames transmitted to the *otherVirtualFramer.*
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni VFramer frmFromOtherVFramer

Access	Read only
Description	This attribute counts the frames received from the *otherVirtualFramer.*
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni VFramer octetFromOtherVFramer

Access	Read only
Description	This attribute counts the octets received from the *otherVirtualFramer.*
Mib	FrameRelayUni
Values	Long Integer
Default	No default

ATTRIBUTE FrUni VFramer discFrmFromOtherVFramer (discFrmFromOvf)

Access	Read only
Description	This attribute counts the discarded frames from the *otherVirtualFramer.* Incrementing of this counter indicates that some incoming traffic cannot be handled by the FP.
Mib	FrameRelayUni
Values	Long Integer
Default	No default

COMPONENT FrUni LoadTestSystem (Lts)

Groups	"GROUP FrUni Lts Setup (Setup)" "GROUP FrUni Lts OperationalState (State)" "GROUP FrUni Lts Results (Results)"
Scope	Application
Description	*FrUni/n LoadTestSystem* *FrNni/n LoadTestSystem* This component defines an instance of the Frame Relay Load Test System (UNI) service. The component instance value n is a unique positive integer within a module.
Mib	FrameRelayUni
Subcomponents	"COMPONENT FrUni Lts Pattern (Pat)"
Common Verbs	Help List Display Add DELete

VERB START FrUni Lts

Impact	Service
Description	*START FrUni/n Lts* This verb starts the load generator. The load generator can be stopped by issuing the stop verb.

VERB STOP FrUni Lts

Impact	Service
Description	*STOP FrUni/n Lts* This verb stops the traffic generator.

VERB RESET FrUni Lts

Impact	Service
Description	*RESET FrUni/n Lts* This verb clears the TestStatistics

GROUP FrUni Lts Setup (Setup)

Properties	Operational
Description	This attribute group contains the parameters used to configure the behavior of the Frame Relay Load Test System.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lts duration (dur)

Access	Read and write
Description	This attribute specifies the duration of the test in milliseconds. The test will run until the duration expires or the STOP command is issued. A value of 0 is used to indicate infinity.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE FrUni Lts algorithm (alg)

Access	Read and write
Description	This attribute specifies which algorithm is used to generate the frames. **ContinuousBurst** This mode of traffic generation creates traffic at the maximum rate possible until all of the frames have been sent. The generator then waits until the end of the timeInterval to begin again. **IntervalBurst** This algorithm attempts to generate 10 ms bursts of burstSize frames. It will generate as many of the burstSize frames as it can per sub-interval. **DelayedBurst** This algorithm generates bursts of burstSize frames separated by 10 ms delays.

FixedBurst
This aglorithm is similar to IntervalBurst, except a fixed burst size of 12 frames is used.

delayMeasurement
This algorithm is used to measure delay. The specified number of frames in the indicated pattern are generated, one at a time, with a maximum wait of maxDelay before sending the next frame. This algorithm is not implemented yet.

Mib	FrameRelayUni
Values	continousBurst (cont) intervalBurst (int) delayBurst (delay) fixedBurst (fixed)
Default	continousBurst

ATTRIBUTE FrUni Lts burstSize (fpb)

Access	Read and write
Description	This attribute specifies the number of frames per burst under the delayedBurst and intervalBurst algorithms.
Mib	FrameRelayUni
Values	Decimal (1..250)
Default	50

ATTRIBUTE FrUni Lts timeInterval (tint)

Access	Read and write
Description	This attribute specifies the time interval to the specified number of seconds. Granuality is in centiseconds. Maximum is 1 minute.
Mib	FrameRelayUni
Values	Decimal (1..60000)
Units	csec

Default	100

GROUP FrUni Lts OperationalState (State)

Properties	Operational
Description	This group contains the operation statistics of the load generator.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lts generatorState (gstate)

Access	Read only
Description	This attribute indicates whether the Lts is generating traffic.
Mib	FrameRelayUni
Values	stopped running
Default	stopped

ATTRIBUTE FrUni Lts cycleIncomplete (cycle)

Access	Read only
Description	This attribute indicates whether the time required to generate all of the enabled patterns is more than timeInterval by a true value. Otherwise, this flag is set to false. Default is True.
Mib	FrameRelayUni
Values	false true
Default	true

ATTRIBUTE FrUni Lts lastActiveInterval (actInt)

Access	Read only
Description	This attribute indicates the actual time it took to generate all of the enabled patterns in the last cycle. If cycleIncomplete is true, this value should be zero.
Mib	FrameRelayUni

Values	Decimal (0..4294967295)
Units	microsec
Default	No default

ATTRIBUTE FrUni Lts load

Access	Read only
Description	This attribute indicates the load being generated. This value represents that calculated using the set number of ticks. The actual burstTimeInterval may differ. One entire cycle of the patterns is completed in activeInterval and thus most of the load may be concentrated early in the set interval.
Mib	FrameRelayUni
Values	Decimal (0.000..4294967.295)
Units	kbit/s
Default	No default

ATTRIBUTE FrUni Lts elapsedGenerationTime (etime)

Access	Read only
Description	This attribute indicates how many milliseconds have elapsed since the start of this test.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	msec
Default	No default

GROUP FrUni Lts Results (Results)

Properties	Operational
Description	This group contains the frame counting attributes for the LTS component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lts framesTx

Access	Read only
Description	This attribute specifies the number of frames send to the network since the last time these statistics were cleared. This is similar to the framesToIf attribute of the FRAMER component.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE FrUni Lts bytesTx

Access	Read only
Description	This attribute indicates the number of bytes sent.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	bytes
Default	0

ATTRIBUTE FrUni Lts bitRateTx

Access	Read only
Description	This attribute indicates the bit rate being sent to the link. It should only differ from the load if the burstTimeInterval would be >= the timeInterval or burstSize frames cannot be generated in 10ms (intervalBurst algorithm).
Mib	FrameRelayUni
Values	Decimal (0.000..4294967.295)
Units	kbit/s
Default	0.000

ATTRIBUTE FrUni Lts frameRateTx

Access	Read only

Description	This attribute indicates the frame rate being sent to the link. It is calculated using the number of frames sent to the link in one cycle of the patterns.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Units	frame/s
Default	0

COMPONENT FrUni Lts Pattern (Pat)

Instance	Decimal (0..29)
Groups	"GROUP FrUni Lts Pat Defaults (Defaults)" "GROUP FrUni Lts Pat Setup (Setup)" "GROUP FrUni Lts Pat OperationalData (OpData)" "GROUP FrUni Lts Pat OperationalState (OpState)"
Scope	Application
Description	FrUni/n Lts Pattern FrNni/n Lts Pattern Each instance of this component specifies a pattern to be generated as part of each cycle. One cycle represents one pass through each pattern.
Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

VERB TRIGGER FrUni Lts Pat

Impact	Service
Description	TRIGGER FrUni/x Lts Pattern/y This verb triggers the single execution of the specified pattern. In order for this command to be executed, the Lts component cannot be generating traffic.

GROUP FrUni Lts Pat Defaults (Defaults)

Properties	Provisioned
Description	This attribute group contains the specifications of the pattern.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lts Pat defaultDlci (dDlci)

Access	Read and write
Description	This attribute specifies for which DLCI (on the local end) the frames are destined.
Mib	FrameRelayUni
Values	Decimal (16..1007)
Default	16

ATTRIBUTE FrUni Lts Pat defaultNumFrames (dNum)

Access	Read and write
Description	This attribute specifies the number of frames in this pattern. This is the number of frames of this type that are generated in one time interval.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	100

ATTRIBUTE FrUni Lts Pat defaultDataSize (dSize)

Access	Read and write

Description	This attribute specifies the payload size of each frame in bytes. This is in excess to the header.
Mib	FrameRelayUni
Values	Decimal (0..8200)
Units	octets
Default	512

ATTRIBUTE FrUni Lts Pat defaultHeaderBits (dBits)

Access	Read and write
Description	This attribute specifies whether specific bits are on/off in the header of each frame.
Mib	FrameRelayUni
Set of	becn fecn cr de
Default	No default

ATTRIBUTE FrUni Lts Pat defaultHeaderLength (dLen)

Access	Read and write
Description	This attribute specifies the size of the frame relay header in bytes. Only 2-byte headers are supported at this time.
Mib	FrameRelayUni
Values	Decimal (0; 2..4)
Units	octets
Default	2

ATTRIBUTE FrUni Lts Pat defaultEABits (dEABits)

Access	Read and write

Description	This attribute specifies how the address field extension bits are set in the frame header. Consider the value to be a four bit binary number. For example, 4 = 0100. Only the first *headerLength* bits are used. For instance, suppose headerLength is 3, then the appropriate EABits is 2, or 0010. This attribute can be used to create a header of length greater than two bytes or to specify incorrect EABits in the header.
Mib	FrameRelayUni
Values	Hex (H.0..H.f)
Default	H.4

ATTRIBUTE FrUni Lts Pat defaultPayloadPattern (dPattern)

Access	Read and write
Description	This attribute specifies the payload of each frame. The value specified is in hexadecimal, where every two digits represent a byte. A maximum of 24 digits (12 bytes) may be set, after which the pattern will repeat in the payload (depending on the *repeatPattern* attribute). NOTE: If an RFC 1490 header is specified, via the 1490Header attribute, the specified pattern will begin following the header (that is, at the 9th byte in the payload).
Mib	FrameRelayUni
Values	String (1..12, Hex)
Default	55

ATTRIBUTE FrUni Lts Pat defaultRfc1490Header (d1490)

Access	Read and write
Description	This attribute specifies the appropriate RFC 1490 encapsulated header of the frame. A value of 0 indicates no 1490 header. NOTE: This header resides in the first 8 bytes of the payload. If the specified value is non-zero, then the payload pattern provisioned will begin at the 9th byte.
Mib	FrameRelayUni

Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 none
Default	none

ATTRIBUTE FrUni Lts Pat defaultUseBadLrc (dBadLrc)

Access	Read and write
Description	This attribute specifies whether the frames from this pattern are to have a bad LRC prior to being sent to the framer. The LRC is checked while the frame is being put onto the link and the failure should cause an abort frame to be sent.
Mib	FrameRelayUni
Values	no yes
Default	no

GROUP FrUni Lts Pat Setup (Setup)

Properties	Operational
Description	This attribute group contains the specifications of the pattern.

Mib	FrameRelayUni

ATTRIBUTE FrUni Lts Pat dlci

Access	Read and write
Description	This attribute specifies for which DLCI (on the local end) the frames are destined.
Mib	FrameRelayUni
Values	Decimal (16..1007)
Default	16

ATTRIBUTE FrUni Lts Pat numFrames (num)

Access	Read and write
Description	This attribute specifies the number of frames in this pattern. This is the number of frames of this type that are generated in one time interval.
Mib	FrameRelayUni
Values	Decimal (0..4294967295)
Default	100

ATTRIBUTE FrUni Lts Pat dataSize (size)

Access	Read and write
Description	This attribute specifies the payload size of each frame in bytes. This is in excess to the header.
Mib	FrameRelayUni
Values	Decimal (0..8200)
Units	octets
Default	512

ATTRIBUTE FrUni Lts Pat headerBits (bits)

Access	Read and write

Description	This attribute specifies whether the following bits are on/off in the header of each frame.
Mib	FrameRelayUni
Set of	becn fecn cr de
Default	No default

ATTRIBUTE FrUni Lts Pat headerLength (len)

Access	Read and write
Description	This attribute specifies the size of the frame relay header in bytes. Only 2-byte headers are supported at this time. Valid values are 0, 2, 3, 4. 0 indicates to use no header. That is, the frame starts with either the payload or an RFC 1490 header.
Mib	FrameRelayUni
Values	Decimal (0; 2..4)
Units	octets
Default	2

ATTRIBUTE FrUni Lts Pat eaBits

Access	Read and write
Description	This attribute specifies how the address field extension bits are set in the frame header. Consider the value to be a four bit binary number. For example, 4 = 0100. Only the first headerLength bits are used. For instance, suppose headerLength is 3, then the appropriate eaBits is 2, or 0010. This attribute can be used to create a header of length greater than two bytes or to specify incorrect eaBits in the header.
Mib	FrameRelayUni
Values	Hex (H.0..H.f)
Default	H.4

ATTRIBUTE FrUni Lts Pat payloadPattern (pattern)

Access	Read and write
Description	This attribute specifies the payload of each frame. The value specified is in hexadecimal, where every two digits represent a byte. A maximum of 24 digits (12 bytes) may be set, after which the pattern repeats in the payload (depending on *repeatPattern* attribute). NOTE: If an RFC 1490 header is specified, via the *1490Header* attribute, the specified pattern begina following the header (that is, at the 9th byte in the payload).
Mib	FrameRelayUni
Values	String (1..12, Hex)
Default	55

ATTRIBUTE FrUni Lts Pat rfc1490Header (rfc)

Access	Read and write
Description	This attribute specifies the appropriate RFC 1490 encapsulated header of the frame. A value of 0 indicates no 1490 header. NOTE: This header resides in the first 8 bytes of the payload. If the specified value is non-zero, then the payload pattern provisioned will begin at the 9th byte.
Mib	FrameRelayUni
Values	0 1 2 3 4 5 6 7 8 9 10

	11 12 13 14 15 16 17 none
Default	none

ATTRIBUTE FrUni Lts Pat useBadLrc

Access	Read and write
Description	This attribute specifies whether the frames from this pattern are to have a bad LRC prior to being sent to the framer. The LRC is checked while the frame is being put onto the link and the failure should cause an abort frame to be sent.
Mib	FrameRelayUni
Values	no yes
Default	no

GROUP FrUni Lts Pat OperationalData (OpData)

Properties	Operational
Description	This group contains the operational attributes which allow changing the pattern outside of provisioning mode.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lts Pat framePattern

Access	Read only
Description	This attribute displays the first 20 to 24 bytes of the frame payload, depending on the frame relay header size selected. This attribute represents the frame if it were at least 20 to 24 bytes in size. That is, the actual frame may be smaller.
Mib	FrameRelayUni

Values	String (20..24, Hex)
Default	No default

ATTRIBUTE FrUni Lts Pat hdlcBitsInserted (hdlc)

Access	Read only
Description	This attribute displays how many times a zero bit will be inserted after 5 consecutive 1 bits when a frame from this pattern is sent out.
Mib	FrameRelayUni
Values	Decimal (0..65535)
Default	No default

GROUP FrUni Lts Pat OperationalState (OpState)

Properties	Operational
Description	This group contains the attributes containing the operational statistics of the pattern.
Mib	FrameRelayUni

ATTRIBUTE FrUni Lts Pat load

Access	Read only
Description	This attribute indicates the load due to this particular pattern. The loads associated with all of the provisioned patterns are summed to arrive at the FrLts load.
Mib	FrameRelayUni
Values	Decimal (0.000..4294967.295)
Units	kbit/s
Default	No default

ATTRIBUTE FrUni Lts Pat status

Access	Read and write

Description	This attributes specifies the administrative state of the pattern. A disabled pattern is not generated, although it can still be triggered.
Mib	FrameRelayUni
Values	disabled enabled
Default	enabled

COMPONENT FrUni DirectConnection (Dconn)

Groups	"GROUP FrUni Dconn DirectFrDteConnData (DirData)"
Scope	Application
Description	‘FrUni/n DirectConnection’ A *DirectConnection* can not be provisioned under a *FrUni* if any of its *Dlci* subcompoentents has an *IpConnection* or *BnxInterworkingFunction* component provisioned under it.
Mib	FrameRelayUni
Common Verbs	Help List Display Add DELete

GROUP FrUni Dconn DirectFrDteConnData (DirData)

Properties	Provisioned
Description	This group contains the attribute for creating a Direct Connection for IP over Frame Relay networking between FrUni and FrDte.
Mib	FrameRelayUni

ATTRIBUTE FrUni Dconn directFrDteConnection (direct)

Access	Read and write
Criticality	Process

Description	This attribute specifies the FrUni to which the FrDte will be connected to via the Direct Connect feature. This attribute must be linked to a *FrDte DirectConnection* component or a semantic check error is generated.
Mib	FrameRelayUni
Values	Link (Service, directFrUniConnection)
Default	No default

COMPONENT FrUni ServiceTrace (SrvTrace)

Groups	"GROUP FrUni SrvTrace Operational"
Scope	Application
Description	*FrUni/n ServiceTrace* *FrNni/n ServiceTrace* The *ServiceTrace* component of the Frame Relay service determines if the trace capability is allowed on this interface. If it is not provisioned, then a service trace session cannot be started on this service. Frame Relay service trace is restricted to use FrameRelay, X25 or ATM service trace receiver. If the *SrvTrace rcvr* operational attribute is set to a string name of FrAtm service trace receiver, *Start* command will return a “Receiver Not Supported” response.
Mib	FrameRelayUniTrace
Dyn. Subcomp.	"COMPONENT FrUni SrvTrace Filter"
Common Verbs	Help List Display Add DELete

VERB Start FrUni SrvTrace

Impact	Service
Description	*Start FrUni/n ServiceTrace* *Start FrNni/n ServiceTrace* This command starts a Frame Relay service trace session.

VERB Stop FrUni SrvTrace

Impact	Service
Description	*Stop FrUni/n ServiceTrace* *Stop FrNni/n ServiceTrace* This command stops a Frame Relay service trace session.

GROUP FrUni SrvTrace Operational

Properties	Operational
Description	This group provides the operational attributes for the *SrvTrace* component.
Mib	FrameRelayUniTrace

ATTRIBUTE FrUni SrvTrace receiverName (rcvr)

Access	Read and write
Description	This attribute should be set to the name of the desired trace receiver before starting a trace session. All available trace receivers are listed under the *SrvTrace Rcvr* component. This attribute cannot be set while the service trace is active. The receiver name is validated by the trace manager when the service *SrvTrace* is started.
Mib	FrameRelayUniTrace
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE FrUni SrvTrace duration

Access	Read and write

Description	This attribute specifies the duration, in minutes, of a trace session. A value of ***0*** indicates unlimited duration in which case a trace session remains active until a *Stop* command is issued. This attribute cannot be set while a trace is active.
Mib	FrameRelayUniTrace
Values	Decimal (0..9999)
Units	minutes
Default	60

ATTRIBUTE FrUni SrvTrace queueLimit

Access	Read and write
Description	This attribute specifies the total number of bytes of traced data which may be queued for transmission to the trace receiver. When this limit is exceeded, incoming traced frames are discarded. This attribute can be set while a trace is active and takes effect immediately.
Mib	FrameRelayUniTrace
Values	Decimal (1..100)
Units	Kbyte
Default	20

ATTRIBUTE FrUni SrvTrace session

Access	Read only
Description	This attribute indicates the *SrvTrace Session* component that is forwarding the trace data. This attribute is set automatically, and is empty unless the service trace is active.
Mib	FrameRelayUniTrace
Values	The name of the component
Default	No default

COMPONENT FrUni SrvTrace Filter

Groups	"GROUP FrUni SrvTrace Filter Operational"
Scope	Application
Description	*FrUni/n SrvTrace Filter* *FrNni/n SrvTrace Filter* The *Filter* component defines the type of traced data that is sent to the receiver. The *Filter* component provides default values for all its attributes which are sufficient to start a trace session. If required, these attributes may be changed before or during a trace session.
Mib	FrameRelayUniTrace
Common Verbs	Help List Display

GROUP FrUni SrvTrace Filter Operational

Properties	Operational
Description	This group provides the operational attributes for the Frame Relay *SrvTrace Filter* component.
Mib	FrameRelayUniTrace

ATTRIBUTE FrUni SrvTrace Filter traceType (type)

Access	Read and write
Description	This attribute specifies the level of filtering required for this trace session. A value of ***lmi*** indicates that LMI frames are traced. A value of ***dlci*** indicates that frames from the *Dlci* specified by the *tracedDlci* attribute are traced. A value of ***badFrames*** indicates that bad received frames (overruns, CRC errors, aborts) are traced. The default is to trace all frames. This attribute can be set while a trace is active and takes effect immediately.

Mib	FrameRelayUniTrace
Set of	lmi dlci badFrames
Default	(lmi, dlci, badFrames)

ATTRIBUTE FrUni SrvTrace Filter tracedDlci (dlci)

Access	Read and write
Description	This attribute specifies a particular DLCI to trace. A value of ***0*** specifies that all DLCIs are to be traced. This attribute can be set while a trace is active and takes effect immediately.
Mib	FrameRelayUniTrace
Values	Decimal (0..1007)
Default	0

ATTRIBUTE FrUni SrvTrace Filter direction (dir)

Access	Read and write
Description	This attribute specifies the direction of the data to be traced as viewed by the service. The values can be ***egress*** and ***ingress***. An ***egress*** value indicates frames outbound from the service. An ***ingress*** value indicates frames inbound to the service. This attribute can be set while a trace is active and takes effect immediately.
Mib	FrameRelayUniTrace
Set of	egress ingress
Default	(egress, ingress)

ATTRIBUTE FrUni SrvTrace Filter tracedLength (len)

Access	Read and write
Description	This attribute specifies the maximum number of octets to trace per frame starting from the octet following the frame flag. If the

	frame length is longer than the value specified by this attribute, then the traced frame is truncated. If set to ***disabled***, the traced frame is not truncated. This attribute can be set while a trace is active and takes effect immediately. If the Frame Relay *SrvTrace* is started with an ATM service trace receiver, the *tracedLength* attribute of ATM service trace receiver is ignored.
Mib	FrameRelayUniTrace
Values	Decimal (1..4000) disabled
Units	octets
Default	2000

COMPONENT FrUni Isdn

Groups	"GROUP FrUni Isdn Provisioned (Prov)" "GROUP FrUni Isdn Operational (Oper)"
Scope	Application
Description	*FrUni/n Isdn* This component defines the parameters associated with the ISDN B- Channel interface. Adding this component makes the *FrUni* behave as an ISDN access to the Frame Relay Network.
Mib	FrameRelayIsdn
Common Verbs	Help List Display Add DELete

GROUP FrUni Isdn Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes of the Isdn component.
Mib	FrameRelayIsdn

ATTRIBUTE FrUni Isdn t320

Access	Read and write
Criticality	Process
Description	This attribute specifies the waiting time for a silent B-Channel (no active VCs associated with the *FrUni*) to be disconnected and made available. Default is 60 seconds. 0 means t320 never times out.
Mib	FrameRelayIsdn
Values	Decimal (0..255)
Units	seconds
Default	60

ATTRIBUTE FrUni Isdn addressSignalling (asig)

Access	Read and write
Criticality	Process
Description	This attribute defines whether the ISDN Calling Party Number is to be signaled to the remote DTE during an SVC call establishment. Otherwise, no changes to the current behavior of SVC call establishment (that is, the DNA is used in the calling party number information element).
Mib	FrameRelayIsdn
Values	IsdnDna normalBehavior
Default	normalBehavior

GROUP FrUni Isdn Operational (Oper)

Properties	Operational

Description	This group contains the operational attributes of the *Isdn* component.
Mib	FrameRelayIsdn

ATTRIBUTE FrUni Isdn dataSigChan

Access	Read only
Description	This attribute indicates the instance number of the *dataSigChan* component controlling the allocation of this *FrUni Isdn* component.
Mib	FrameRelayIsdn
Values	Decimal (1..255)
Default	No default

ATTRIBUTE FrUni Isdn bChannelState (bState)

Access	Read only
Description	This attribute indicates the state of the B-Channel. If the value is ***idle*** it means that no VCs are connected and this B-Channel is available. If the value is ***busy*** it means this B-Channel has been allocated and is not available. If the value is ***disabled*** it means the application interface or the port is locked or disabled.
Mib	FrameRelayIsdn
Values	idle busy disabled
Default	No default

ATTRIBUTE FrUni Isdn lastUsedCgpn (lucgpn)

Access	Read only
Description	This attribute indicates the calling party number currently using the B-Channel. When the B-Channel is free, the null string is displayed.
Mib	FrameRelayIsdn

Values	BCD (0..15)
Default	No default

ATTRIBUTE FrUni Isdn bChanIntState (bInt)

Access	Read only
Description	Debug information
Mib	FrameRelayIsdn
Values	isdnInit waitAccEnable waitLnsResponse waitFramerData enabling waitAccRegAck up down releasing
Default	No default

ATTRIBUTE FrUni Isdn activeVirtualCircuitsCount (vcCount)

Access	Read only
Description	Current number of virtual circuits (switched and permanent) in data transfer.
Mib	FrameRelayIsdn
Values	Decimal (0..4294967295)
Default	0

COMPONENT FrUni ConnectionAdministrator (Ca)

Groups	"GROUP FrUni Ca Provisioned (Prov)" "GROUP FrUni Ca IngressCac" "GROUP FrUni Ca EgressCac" "GROUP FrUni Ca Operational (Op)"
Scope	Application

Description	*FrNni/n ConnectionAdministrator* The *Ca* component allows the network operator to specify common subscription options for the parent interface. It defines the call admission control parameters in the ingress and egress direction for the parent interface.
Mib	FrameRelayUni
Opt. Subcomp.	"COMPONENT FrUni Ca TransferPriorityMapping (Tpm)"
Common Verbs	Help List Display

GROUP FrUni Ca Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the common provisionable attributes of the *Ca* component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Ca overrideLinkRate (ovLinkRate)

Access	Read and write
Criticality	Process
Description	This attribute allows the link rate to be overridden for this interface. This allows the user to specify a value other than the actual physical link rate computed when a *Framer* component is provisioned. When a *VFramer* component is provisioned, this attribute overrides a link rate set to the maximum value supported by CAC . This attribute serves to provide the user control on the amount of bandwidth available for performing CAC.
Mib	FrameRelayUni
Values	Decimal (0..429496729)
Units	bit/s

Default	0

ATTRIBUTE FrUni Ca maximumBandwidthPerCall (maxBwCall)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum bandwidth that can be allocated per connection.
Mib	FrameRelayUni
Values	Decimal (0..520000000)
Units	bit/s
Default	520000000

GROUP FrUni Ca IngressCac

Properties	Provisioned
Description	This attribute group contains the common provisionable attributes for ingress call admission control.
Mib	FrameRelayUni

ATTRIBUTE FrUni Ca ingressApplyToCos (ingCos)

Access	Read and write
Criticality	Process
Description	This attribute specifies which Classes of Service (CoS) have ingress Call Admission Control (CAC) applied to them. Ingress CAC applies only to switched connections (SVCs and S-SPVCs). ***none*** - Ingress CAC is turned off for all classes of service. ***cirOnly*** - Ingress CAC is applied only to the CIR portion of a connection's bandwidth requirements for CIR>0 classes of service. ***cirAndEir*** - Ingress CAC is applied to both CIR and EIR portions of a connections bandwidth requirements for all classes of service.

Mib	FrameRelayUni
Values	none cirOnly cirAndEir
Default	cirOnly

ATTRIBUTE FrUni Ca ingressMaximumEirOnlyCalls

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of connections in the ingress direction with EIR only traffic that can be up at a given time.
Mib	FrameRelayUni
Values	Decimal (0..992)
Default	992

ATTRIBUTE FrUni Ca ingressCirBandwidthPool (ingCirBP)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the ingress CIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayUni
Vector of	Decimal (0..1000)

Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

ATTRIBUTE FrUni Ca ingressEirBandwidthPool (ingEirBp)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the ingress EIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayUni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

GROUP FrUni Ca EgressCac

Properties	Provisioned
Description	This attribute group contains the common provisionable attributes for egress call admission control.
Mib	FrameRelayUni

ATTRIBUTE FrUni Ca egressApplyToCos (egCos)

Access	Read and write
Criticality	Process
Description	This attribute specifies which Classes of Service (CoS) have egress Call Admission Control (CAC) applied to them. Egress CAC applies only to switched connections (SVCs and S-SPVCs). ***none*** - Egress CAC is turned off for all classes of service. ***cirOnly*** - Egress CAC is applied only to the CIR portion of a connection's bandwidth requirements for CIR>0 classes of service. ***cirAndEir*** - Egress CAC is applied to both CIR and EIR portions of a connections bandwidth requirements for all classes of service.
Mib	FrameRelayUni
Values	none cirOnly cirAndEir
Default	none

ATTRIBUTE FrUni Ca egressMaximumEirOnlyCalls

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of connections in the egress direction with EIR only traffic that can be up at a given time.
Mib	FrameRelayUni
Values	Decimal (0..992)
Default	992

ATTRIBUTE FrUni Ca egressCirBandwidthPool (egCirBp)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the egress CIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.
Mib	FrameRelayUni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

ATTRIBUTE FrUni Ca egressEirBandwidthPool (egEirBp)

Access	Read and write
Criticality	Process
Description	Port capacity is partitioned into 16 pools (pool 0 through pool 15) for the egress EIR traffic. This attribute specifies the percentage of port capacity that is allowed for each pool. The percentage for each pool ranges from 0% to 1000% of the link rate. It allows for under or over subscription of the port. Under subscription occurs when the sum of the percentages assigned to the 16 pools is less than 100%. Over subscription occurs when the sum of the percentages for the 16 pools exceeds 100%. The default is full sharing of port capacity with three pre-set partitions.

Mib	FrameRelayUni
Vector of	Decimal (0..1000)
Units	%
Index	Decimal (0..15)
Default	(1000, 1000, 1000, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

GROUP FrUni Ca Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the *Ca* component.
Mib	FrameRelayUni

ATTRIBUTE FrUni Ca linkRate (linkRate)

Access	Read only
Description	This attribute indicates the link rate used by both ingress and egress CAC to calculate the effective bandwidth pool sizes. If the provisionable attribute *overrideLinkRate* under this component is 0, then the link rate reported is the actual link rate of the port or channel. Otherwise, the link rate reported is the *overrideLinkRate* under this component.
Mib	FrameRelayUni
Values	Decimal (0..520000000)
Units	bit/s
Default	No default

ATTRIBUTE FrUni Ca ingressCirPoolAdmittedBandwidth (ingCirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted CIR bandwidth from each CIR bandwidth pool in the ingress direction. Each value is the sum of the equivalent bit rates of the admitted connections.

Mib	FrameRelayUni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca ingressCirPoolAvailableBandwidth (ingCirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available CIR bandwidth in each ingress CIR bandwidth pool.
Mib	FrameRelayUni
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca egressCirPoolAdmittedBandwidth (egCirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted CIR bandwidth from each CIR bandwidth pool in the egress direction. Each value is the sum of the equivalent bit rates of the admitted connections.
Mib	FrameRelayUni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca egressCirPoolAvailableBandwidth (egCirPoolAvailBw)

Access	Read only

Description	This attribute indicates the remaining available CIR bandwidth in each egress CIR bandwidth pool.
Mib	FrameRelayUni
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca ingressEirPoolAdmittedBandwidth (ingEirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted EIR bandwidth from each EIR bandwidth pool in the ingress direction. Each value is the sum of the equivalent bit rates of the admitted connections. If the *ingressApplyToCos* attribute is set to ***none***, all ingress CIR bandwidth pools are set to 0.
Mib	FrameRelayUni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca ingressEirPoolAvailableBandwidth (ingEirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available EIR bandwidth in each ingress EIR bandwidth pool. If the *ingressApplyToCos* attribute is set to either ***none*** or ***cirOnly***, all ingress EIR bandwidth pools are set to 0.
Mib	FrameRelayUni
Vector of	Decimal (0..52000000)

Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca egressEirPoolAdmittedBandwidth (egEirPoolAdmitBw)

Access	Read only
Description	This attribute indicates the total admitted EIR bandwidth from each EIR bandwidth pool in the egress direction. Each value is the sum of the equivalent bit rates of the admitted connections. If the *egressApplyToCos* attribute is set to ***none***, all egress CIR bandwidth pools are set to 0.
Mib	FrameRelayUni
Vector of	Decimal (0..520000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca egressEirPoolAvailableBandwidth (egEirPoolAvailBw)

Access	Read only
Description	This attribute indicates the remaining available EIR bandwidth in each egress EIR bandwidth pool. If the *egressApplyToCos* attribute is set to either ***none*** or ***cirOnly***, all egress EIR bandwidth pools are set to 0.
Mib	FrameRelayUni
Vector of	Decimal (0..52000000)
Units	bit/s
Index	Decimal (0..15)
Default	No default

ATTRIBUTE FrUni Ca numberRejectedEgressCirPermConn (numRegEgCirPerm)

Access	Read only
Description	This attribute indicates the number of permanent connections (that is, PVC and P-SPVC) that are rejected by egress CAC. A connection is rejected by egress CAC if it requests more egress CIR bandwidth than is available, and the *egressApplyToCos* attribute is set to either ***cirOnly*** or ***cirAndEir***.
Mib	FrameRelayUni
Values	Decimal (0..992)
Default	No default

ATTRIBUTE FrUni Ca numberRejectedEgressEirPermConn (numRegEgEirPerm)

Access	Read only
Description	This attribute indicates the number of permanent connections (that is, PVC and P-SPVC) that are rejected by egress CAC. A connection is rejected by egress CAC if it requests more egress EIR bandwidth than is available, and the *egressApplyToCos* attribute is set to ***cirAndEir***.
Mib	FrameRelayUni
Values	Decimal (0..992)
Default	No default

COMPONENT FrUni Ca TransferPriorityMapping (Tpm)

Instance	Decimal (0..15)
Groups	"GROUP FrUni Ca Tpm Provisioned (Prov)"
Scope	Application
Description	*FrNni/n Ca TransferPriorityMapping/n* The *Tpm* component defines the corresponding traffic management subscription options on a *FrNni* interface corresponding to a particular transfer priority. This component is

needed only if there is a requirement to override the *Mod Frs DprsNet Tpm* component defaults.

Mib: FrameRelayUni

Common Verbs:
Help
List
Display
Add
DELete

GROUP FrUni Ca Tpm Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisionable attributes of the *Tpm* component at this interface.

Mib: FrameRelayUni

ATTRIBUTE FrUni Ca Tpm assignedIngressBandwidthPool (asgInBwPool)

Access: Read and write

Criticality: Process

Description: This attribute specifies the ingress bandwidth pool which is used to support this transfer priority at this interface. When this attribute is set to ***sameAsModule***, the bandwidth pool that is used is obtained from the *assignedIngressBandwidthPool* attribute under the *Mod Frs DprsNet Tpm/n* component.

Mib: FrameRelayUni

Values: Decimal (0..15)
sameAsModule

Default: sameAsModule

ATTRIBUTE FrUni Ca Tpm assignedEgressBandwidthPool (asgEgBwPool)

Access: Read and write

Criticality: Process

Description	This attribute specifies the egress bandwidth pool which is used to support this transfer priority at this interface. When this attribute is set to ***sameAsModule***, the bandwidth pool that is used is obtained from the *assignedEgressBandwidthPool* attribute under the *Mod Frs DprsNet Tpm/n* component.
Mib	FrameRelayUni
Values	Decimal (0..15) sameAsModule
Default	sameAsModule

COMPONENT FrUni BnxProtocol (Bp)

Groups	"GROUP FrUni Bp Provisioned (Prov)" "GROUP FrUni Bp OsiState (State)" "GROUP FrUni Bp Operational (Op)"
Scope	Application
Description	*FrUni/n BnxProtocol* *FrNni/n BnxProtocol* This component defines how the Frame Relay interface handles the BNX protocol.
Mib	FrUniPvcBnx
Common Verbs	Help List Display Add DELete

GROUP FrUni Bp Provisioned (Prov)

Properties	Provisioned
Description	This group defines the provisioning attributes to control the BNX protocol running on the Frame Relay interface.
Mib	FrUniPvcBnx

ATTRIBUTE FrUni Bp linkToIpServer (linkToIp)

Access	Read and write
Description	This attribute specifies the link to a Frame Relay IP server.
Mib	FrUniPvcBnx
Values	Link (Service, linkToFrameRelayApps)
Default	No default

ATTRIBUTE FrUni Bp ipAddress (ipadd)

Access	Read and write
Description	This attribute specifies the IP address associated with the Frame Relay interface. This address must be in the same subnet as the *ProtocolPort* associated with the *FrIpServer.*
Mib	FrUniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrUni Bp crossNetEnabled (cne)

Access	Read and write
Description	This attribute specifies whether or not cross-net status messages are sent from the Frame Relay interface.
Mib	FrUniPvcBnx
Values	no yes
Default	yes

ATTRIBUTE FrUni Bp crossNetPollingInterval (cnpi)

Access	Read and write
Description	This attribute specifies the time interval between two cross-net status messages. This attribute is used for both sending and expecting status messages. The two ends of a PVC should be

provisioned with values within a close range. Otherwise, it could result in PVC failure.

Mib: FrUniPvcBnx

Values: Decimal (30..86400)

Units: seconds

Default: 120

ATTRIBUTE FrUni Bp crossNetAsyncUpdate (cnau)

Access: Read and write

Description: This attribute specifies when a cross-net status message is sent following a BNX DLCI state change. If set to ***enabled***, the status message is sent as soon as the state change occurs. If set to ***disabled***, the state of the BNX DLCI will be sent in a cross-net status message only at the next polling interval. The polling interval is determined by *crossNetPollingInterval* attribute. The *crossNetAsyncUpdate* attribute is ignored if *crossNetEnabled* is set to ***no***.

Mib: FrUniPvcBnx

Values: disabled
enabled

Default: enabled

ATTRIBUTE FrUni Bp crossNetListenEnabled (cnle)

Access: Read and write

Description: This attribute specifies whether or not to expect cross-net status messages. When set to ***yes***, this interface wait for a cross-net status message from the remote end to declare the PVCs up or down. When set to ***no***, the interface assumes the PVCs are always up.

Mib: FrUniPvcBnx

Values: no
yes

Default	yes

ATTRIBUTE FrUni Bp crossNetErrorThreshold (cnet)

Access	Read and write
Description	This attribute specifies how many *crossNetPollingIntervals* without receiving a status message from the remote end are permitted to elapse before declaring the PVC down.
Mib	FrUniPvcBnx
Values	Decimal (1..30)
Default	3

ATTRIBUTE FrUni Bp trafficPriorityEnabled (tpe)

Access	Read and write
Description	This attribute specifies how to set the "Priority Level" field of the BNX header. When set to ***no***, both the *defaultTrafficPriority* attribute of the *BnxProtocol* component and the *trafficPriority* attribute of the *BnxIwf* component are ignored, and the "Priority Level" field is set to ***2***. When set to ***yes***, the "Priority Level" field is set to the value of the *trafficPriority* attribute of the *BnxIwf*, unless the *trafficPriority* attribute has a value of ***useDefault***. In this case the “Priority Level” field is set to the value of the *defaultTrafficPriority* attribute.
Mib	FrUniPvcBnx
Values	no yes
Default	no

ATTRIBUTE FrUni Bp defaultTrafficPriority (dtp)

Access	Read and write
Description	This attribute specifies the default traffic priority used to tag all the ingress traffic. This attribute is used when the *trafficPriority* attribute of the *BnxIwf* is set to ***useDefault***. A larger value denotes a lower priority. This attribute is ignored if the *trafficPriorityEnabled* is set to ***no***.

Mib	FrUniPvcBnx
Values	Decimal (1..3)
Default	2

ATTRIBUTE FrUni Bp trafficDiscardLevel (tdl)

Access	Read and write
Description	This attribute specifies the discard level used to tag ingress traffic.This value is ignored when the attribute *discardLevelEnabled* is set to ***no***. In this case, the "Discard Level" field of BNX header is set to ***2*** for DE=1 datagrams and to ***4*** for DE=0 datagrams. When *discardLevelEnabled* is set to ***yes***, the "Discard Level" field is tagged with the value of *trafficDiscardLevel* attribute. The "Discard Level" value is used as follows: Discard Level=***1***: drop datagrams when congestion level >= 1 Discard Level=***2***: drop datagrams when congestion level >= 2 Discard Level=***3***: drop datagrams when congestion level >= 3 Discard Level=***4***: drop datagrams when congestion level >= 4
Mib	FrUniPvcBnx
Values	Decimal (1..4)
Default	4

ATTRIBUTE FrUni Bp discardLevelEnabled (dle)

Access	Read and write
Description	This attribute specifies how to use discard level to tag ingress traffic. When set to ***yes***, the provisioned *trafficDiscardLevel* is used. Otherwise ingress DE=1 datagrams are tagged with discard level ***2*** and DE=0 datagrams are tagged with discard level ***4***.
Mib	FrUniPvcBnx
Values	no yes
Default	no

GROUP FrUni Bp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FrUniPvcBnx

ATTRIBUTE FrUni Bp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrUniPvcBnx
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE FrUni Bp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	FrUniPvcBnx
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE FrUni Bp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: FrUniPvcBnx

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE FrUni Bp availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	FrUniPvcBnx
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE FrUni Bp proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	FrUniPvcBnx
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE FrUni Bp controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.

Mib	FrUniPvcBnx
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE FrUni Bp alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	FrUniPvcBnx
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE FrUni Bp standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	FrUniPvcBnx
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)

Default	notSet

ATTRIBUTE FrUni Bp unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	FrUniPvcBnx
Values	false true
Default	false

GROUP FrUni Bp Operational (Op)

Properties	Operational
Description	This attribute group contains the operational status of the *BnxProtocol* component.
Mib	FrUniPvcBnx

ATTRIBUTE FrUni Bp invalidBnxHeader (ibh)

Access	Read only
Description	This attribute counts the datagrams dropped because the BNX header was invalid. It could be caused by a invalid header version, invalid protocol type, or that discard level or priority level is out of range.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp lastInvalidBnxHeader (libh)

Access	Read only
Description	This attribute indicates the BNX header of the datagram which was last dropped by the *BnxProtocol* because one or more fields of the BNX header are invalid. The invalid field could be any of the following: header version, protocol type, discard level out of range, priority level out of range.
Mib	FrUniPvcBnx
Values	Hex (H.0..H.ffffffff)
Default	No default

ATTRIBUTE FrUni Bp invalidIpProtocolId (ipid)

Access	Read only
Description	This attribute counts the datagrams dropped because the protocol ID in IP header was invalid.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp discardedIpFragment (dipf)

Access	Read only
Description	This attribute counts the total number of fragmented datagrams dropped by this interface. The case could be unknown Dlci, or unknown ID in IP header when misordering happened.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp sourceIpAddressLastDropped (ldsia)

Access	Read only

Description	This attribute indicates the source IP address of the datagram that was last dropped by the *BnxProtocol* because one or more fields of the IP header are invalid. The invalid field could be any of the following: header version, protocol ID, or Identification of a fragmented datagram.
Mib	FrUniPvcBnx
Values	IP address
Default	0.0.0.0

ATTRIBUTE FrUni Bp droppedUnknownDlci (dud)

Access	Read only
Description	This attribute counts the datagrams dropped because the DLCI was unknown.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp lastUnknownDlci (lud)

Access	Read only
Description	This attribute indicates the DLCI of datagram last dropped.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp droppedUnknownDlciXnet (dudx)

Access	Read only
Description	This attribute counts the received cross-net status messages that were dropped because the DLCI was unknown.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)

Default	0

ATTRIBUTE FrUni Bp lastUnknownDlciXnet (ludx)

Access	Read only
Description	This attribute indicates the DLCI of last received cross-net status message that was dropped because the DLCI was unknown.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp ipFragFromSubnet (fragfs)

Access	Read only
Description	This attribute counts the IP fragments received from subnet by this frame relay interface. The value of this attribute wraps to zero when it exceeds the maximum value.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp lastInvalidIpFragId (lastid)

Access	Read only
Description	This attribute indicates the Id in the IP header of the last fragment dropped by the frame relay interface.
Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE FrUni Bp lastDlciWithIpFragment (lfdlci)

Access	Read only
Description	This attribute indicates the Dlci which last received IP fragment. This attribute is used for tracking fragmented IP traffic.

Mib	FrUniPvcBnx
Values	Decimal (0..429496729)
Default	0

Nortel Networks Multiservice Switch 7400/15000/20000

Component FrUni

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Fs

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COMPONENT FileSystem (Fs)

Groups	"GROUP Fs OsiState (State)" "GROUP Fs Operational (Oper)"
Scope	Device
Description	*FILESYSTEM* The *Filesystem* component provides and controls access to files and directories stored on one or two disks. It is automatically created and always present. The Filesystem restricts files and directories names to 40 characters. It also restricts filenames including path to 128 characters. Directory names including the path cannot exceed 125 characters. There must be 112 or less directories and files at the root level on each partition. The maximum hierarchy depth is 10 directory levels. The only characters that can appear in a filename are the alpha-numeric characters, the . (dot) and the _ (underscore). The names are case sensitive. A pathname is a sequence of zero to ten directory names along the path and separated by the / (slash) character. A pathname that begins with a slash is an absolute pathname, otherwise it is a relative pathname. Access to the standby disk is not allowed. When there are two disks, the standby control processor disk is normally synchronized with the disk of the active control processor. After a crash or a disk failure the standby control processor disk becomes unsynchronized with respect to the disk

on the active CP.

Mib	FileSystem
Dyn. Subcomp.	"COMPONENT Fs Disk" "COMPONENT Fs FsPartition (Part)"
Common Verbs	Help List Display LOCK : System_admin Unlock : System_admin

VERB SYNChronize Fs

Impact	Configuration
Description	synchronize Filesystem The ***Synchronize*** command makes the standby disk an exact copy of the active disk. The operation also removes files and directories that exist only in the standby disk. Manual synchronization will set the standby disk volume name equal to the active disk. The synchronization process will fail if the capacity of the standby disk is smaller than the used space size in the active. At boot time, the filesystem selects the active control processor disk as the active disk and automatically attempts to synchronize the standby control processor disk. The automatic synchronization will fail if the volume names of the two disks are not identical. While the synchronization is running, disk testing and formatting are not allowed.

VERB ListFile (LS) Fs

Impact Passive

Description

listFile -path<file or directory> [-status] [-newer<file>] filesystem

The ***List*** verb displays information about files and directories in a directory. For every entry found in the directory, it displays its name, modification time, size, type and write permission.
If the ***status*** option is specified, then the command displays the information about the directory and not its contents. The ***newer*** option tells the list command to display only entries that have been modified more recently than the argument of the option.

Options:
-***path***: The pathname of the file or directory that you want to ***List***.
-***status***: This option causes the ***List*** command to display information about the path not its content.
-***newer***: This option causes the ***List*** command to display only files newer than the argument of this option.
Examples:
list -path(“/tmp”) filesystem
list -path(“/spooled”) -newer(“/spooled/alarm.01”) fs
list -path(“/spooled”) -status filesystem

VERB Move (MV) Fs

Impact

Configuration

Description

move -s <existing-file> -d <new-filename> Filesystem
move -s <existing-directory> -d <new-directory> Filesystem
move -s<existing-file> -d<existing-directory> Filesystem.
move -s<existing-directory> -d<existing-directory>Filesystem.

The ***Move*** command moves or renames files and directories. If the destination does not exist, ***Move*** renames the source. If the destination is a directory, the command moves the source into the destination directory. The ***Move*** command does not move files or directories from one disk to another. The Move command does not overwrite existing files.
Options:
-***source***: The pathname of the file or directory that ***Move*** is going to move.
-***destination***: The pathname of the file or directory where ***Move*** is going to place the source file or directory.
Examples:
move -source(“/spooled/alarm.01”) -destination(“/tmp”) fs
move -source(“/spooled”) -destination(“/tmp”) fs

VERB Copy (CP) Fs

Impact Configuration

Description

copy -s <file1> -d<file> Filesystem
copy -s<directory1> -d<directory2> -recursive Filesystem
copy -s<filename> -d<directory> Filesystem

The ***Copy*** command copies files or directories. The recursive option is required if the source is a directory. The new file is always unprotected. The Copy command does not overwrite existing files.
Options:
-***source***: The pathname of the file or directory that ***Copy*** is going to copy.
-***destination:*** The pathname of the file or directory that ***Copy*** places the resulting copied file or directory in.
-***recursive:*** When the source is a directory, this option causes the ***Copy*** to copy the contents of that directory and any of its subdirectories into the destination directory. The subdirectories themselves are copied as well as the files they contain.
Examples:
copy -source(“/tmp/log.01”) -destination(“/log.old”) fs
copy -s(“/spooled”) -d(“/tmp”) -recursive fs

VERB REMOVE Fs

Impact

Configuration

Description

remove -path <filename> [-force] Filesystem
remove -path <directory> [-recursive, -force] Filesystem

The REMOVE command deletes files and directories. The filesystem component releases the space the file occupied on disk for future use. The recursive option is required to remove any directory including an empty one. If the file or directory is write protected, the command returns an error. The force option causes the command to remove write protected files.
Options:
-path The pathname of the file or directory ***Remove*** is to delete.
-recursive This option causes ***Remove*** to delete the contents of the specified directory, including all its subdirectories, and the directory itself.
-force This option causes ***Remove*** to delete files regardless of whether they are “protected”.
Examples:
remove -path(“/tmp/SCN.001”) filesystem
remove -path(“/tmp”) -recursive filesystem
remove -path(“/tmp/SCN.004”) -force filesystem

VERB Protect Fs

Impact: Configuration

Description:

protect -path< file> Filesystem

The ***Protect*** command protects the specified file against accidental deletion and modification. The REMOVE command will fail unless the ***force*** option is specified. The Protect command has no effect on a directory.

Options:

-path: The pathname of the file to be protected against accidental deletion and/or modification.

Examples:

protect -path("/spooled/alarm.001") filesystem

protect -path("standby:/spooled") filesystem

VERB Unprotect Fs

Impact: Configuration

Description:

unprotect -path< file> Filesystem

The ***Unprotect*** command removes the protection against accidental deletion or modification of the specified file. The Unprotect command has no effect on a directory.

Options:

-path: The pathname of the file to be unprotected against accidental deletion or modification.

Examples:

unprotect -path("/spooled/alarm.001") filesystem

VERB Touch Fs

Impact Configuration

Description

touch -path <filename> Filesystem
The ***Touch*** command updates the file's modification time. ***Touch*** creates the file if it does not exist. If the pathname is a directory, the creation time of the directory is updated.
Options:
-path: The pathname of the file or directory ***Touch*** is to update.
-date: The date and time specified by this option are used to update the file's modification time. If this option is not specified then the file's modification time is updated with the current date and time.
Examples:
touch -path("/tmp/backup.074") filesystem
touch -path("/tmp/backup.074") -date(1998-03-30 19:26:10) filesystem

VERB MakeDirectory (MKDIR) Fs

Impact Configuration

Description

makedirectory -path <directory> Filesystem
The ***MakeDirectory*** command creates a directory. The command returns an error if the parent directory does not exist.
Options:
-path : The pathname of directory that ***MakeDirectory*** creates.
Examples:
mkdir -path("/tmp/temporary") fs

VERB Chdir (CD) Fs

Impact: Passive

Description:

chdir -path <directory> Filesystem
The ***Chdir*** command makes the directory specified as argument of the ***path*** option the current working directory. If the directory does not exist, the command returns an error.
Options:
-path: The pathname of the directory that will become the working directory.
Examples:
cd -path("/tmp/temporary") filesystem

VERB WorkingDir (PWD) Fs

Impact: Passive

Description:

WorkingDir filesystem
The ***WorkingDir*** command displays the current working directory associated with the session. The initial working directory is a provisionable attribute of the *Userid* component which is a subcomponent of the *AccessControl* component. The ***Chdir*** command changes the current working directory to the specified directory.
Examples:
pwd filesystem

GROUP Fs OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: FileSystem

ATTRIBUTE Fs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FileSystem
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Fs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib FileSystem

Values enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE Fs usageState (osiUsage)

Access Read only

Description This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib FileSystem

Values idle
active (activ)
busy

Default idle

GROUP Fs Operational (Oper)

Properties Operational

Description
This group contains the filesystem operational data.

Mib FileSystem

ATTRIBUTE Fs volumeName

Access Read only

Description	This attribute describes the volume name of the filesystem. This is the active disk volume name.
Mib	FileSystem
Values	String (1..11, ASCII)
Default	No default

ATTRIBUTE Fs activeDisk

Access	Read only
Description	The activeDisk attribute value is the Disk component instance value of the active disk. This is also the card number of the active control processor.
Mib	FileSystem
Values	The name of the component
Default	No default

ATTRIBUTE Fs syncStatus

Access	Read only
Description	The synchronization status value indicates whether the file system is synchronized or not.
Mib	FileSystem
Values	synchronized unSynchronized synchronizing
Default	No default

ATTRIBUTE Fs syncProgress

Access	Read only
Description	The synchronization progress value indicates the percentage of the standby disk already synchronized with the active disk. This

	value is equal to 100 if the two disks are synchronized or 0 if they are out of synchronization.
Mib	FileSystem
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Fs capacity

Access	Read only
Description	This attribute indicates the total size of the filesystem (in bytes). This value is equal to the smallest disk size in a synchronized filesystem; otherwise it is the capacity of the active disk. This attribute is not displayed on a disk with multiple partitions. The corresponding information is available under the *FileSystemPartition* subcomponent.
Mib	FileSystem
Values	Decimal (0..4294967295)
Units	bytes
Default	No default

ATTRIBUTE Fs freeSpace

Access	Read only
Description	This attribute describes the free disk space (in bytes) currently available in the filesystem. It is equal to the smallest free disk space size of the active and standby disks in a synchronized filesystem.When the filesystem is unsynchronized it is the free disk space of the active disk. This attribute is not displayed on a disk with multiple partitions. The corresponding information is available under the *FileSystemPartition* subcomponent.
Mib	FileSystem
Values	Decimal (0..4294967295)

Units	bytes
Default	No default

ATTRIBUTE Fs usage

Access	Read only
Description	This attribute describes the percentage of the free space available on the filesystem. This attribute is not displayed on a disk with multiple partitions. The corresponding information is available under the *FileSystemPartition* subcomponent.
Mib	FileSystem
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Fs Disk

Instance	Decimal (0..15)
Groups	"GROUP Fs Disk OsiState (State)" "GROUP Fs Disk Operational (Oper)"
Scope	Device
Description	*Fs Disk/n* A disk component is an operational subcomponent of the filesystem. When the system is in dual-mode configuration, there will be two instances of the disk component. The 0 instance

represents the disk on the card 0 and the instance 15 represents the disk on the card 15.

Mib FileSystem

Dyn. Subcomp. "COMPONENT Fs Disk Test"
"COMPONENT Fs Disk Partition (Part)"

Common Verbs
- Help
- List
- Display
- LOCK
- Unlock

VERB FORMAT Fs Disk

Impact Configuration

Description

format -v<volumeName> filesystem disk/<instance>
This command formats the disk and prepares it to be a part of the filesystem. The disk component must be locked, before the format can start. All disks are formatted before delivery, but this command may be required if disk corruption occurs. A format destroys all the data in the disk. While formatting the disk , synchronizing and testing the disks are not allowed.
Options:
-volumeName: The argument of this option is the volume name of the disk.
-backward: format the disk to 256 MBytes format for backward compatibility. Older releases do not support disks larger than 256 MBytes.
Examples:
format -v(myDisk) filesystem disk/15
format -backward filesystem disk/15

GROUP Fs Disk OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies

about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib FileSystem

ATTRIBUTE Fs Disk adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib FileSystem

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Fs Disk operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for

operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: FileSystem

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Fs Disk usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: FileSystem

Values: idle
active (activ)
busy

Default: idle

GROUP Fs Disk Operational (Oper)

Properties: Operational

Description

This group contains the disk component operational data.

Mib	FileSystem

ATTRIBUTE Fs Disk volumeName

Access	Read and write
Description	This attribute describes the volume name of the disk. The volume names of the disks must be identical to be synchronized.
Mib	FileSystem
Values	String (1..11, ASCII)
Default	No default

ATTRIBUTE Fs Disk capacity

Access	Read only
Description	This attribute describes the total formatted disk size (in bytes) on disk. This attribute is not displayed on a disk with multiple partitions. The corresponding information is available under the *Partition* subcomponent.
Mib	FileSystem
Values	Decimal (0..4294967295)
Units	bytes
Default	No default

ATTRIBUTE Fs Disk freeSpace

Access	Read only
Description	This attribute indicates the available free disk space (in bytes) of the disk. Free space is reduced by bad blocks (if any). If there are different numbers of bad blocks on the disks in a dual-disk system, the reported free space will differ on the two disks. Moreover, due to the DOS file system internal representation of directories and files, adding and deleting files may fragment the disks differently resulting in some disk space wasted. A small discrepancy (less than 1% of the disk size) in the disks free space

	is considered as normal. This attribute is not displayed on a disk with multiple partitions. The corresponding information is available under the *Partition* subcomponent.
Mib	FileSystem
Values	Decimal (0..4294967295)
Units	bytes
Default	No default

ATTRIBUTE Fs Disk badBlocksPercentage

Access	Read only
Description	This attribute records the percentage of the disk space lost because of defects. If this percentage is high, it is recommended to change the disk. This attribute is not displayed on a disk with multiple partitions. The corresponding information is available under *Partition* subcomponent
Mib	FileSystem
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Fs Disk unformattedCapacity

Access	Read only
Description	This attribute indicates the physical disk size (in bytes). The physical disk size may be different from the formatted disk size if there are bad blocks or the disk has been formatted to a smaller disk size for backward compatibility with older releases. This attribute is not displayed on a disk with multiple partitions. The corresponding information is available under the *Partition* subcomponent.
Mib	FileSystem
Values	Decimal (0..4294967295)

Units	bytes
Default	No default

COMPONENT Fs Disk Test

Groups	"GROUP Fs Disk Test OsiState (State)" "GROUP Fs Disk Test Setup (Setup)" "GROUP Fs Disk Test Results (Results)"
Scope	Device
Description	*Test* The Test component embodies logical and physical filesystem tests. It is an operational subcomponent of the Disk component.
Mib	FileSystem
Common Verbs	Help List Display

VERB Start Fs Disk Test

Impact	Configuration
Description	This command invokes a test on the *Disk* component (this includes all underlying partitions). The *Disk* component must be locked before the test can start. Examples: start filesystem disk/15 test

VERB Stop Fs Disk Test

Impact	Configuration
Description	This command stops a test running on the *Disk* component (this includes all underlying partitions). The test stops only after completing the current pass. ***Example***: stop filesystem disk/15 test

GROUP Fs Disk Test OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FileSystem

ATTRIBUTE Fs Disk Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	FileSystem
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Fs Disk Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	FileSystem
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Fs Disk Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FileSystem
Values	idle active (activ) busy
Default	idle

GROUP Fs Disk Test Setup (Setup)

Properties	Operational

Description

This group contains the Test component operational data. The testCount, duration and type can be set to control the duration and the test type which will be run.

Mib FileSystem

ATTRIBUTE Fs Disk Test testCount

Access Read and write

Description

This attribute indicates the number of times that the test will run. Note that the test will not run that many times if “duration” is not long enough to allow the test to complete. The test will execute at least one and then stop at the count where duration has just exceeded.

Mib FileSystem

Values Decimal (0..4294967295)

Default 1

ATTRIBUTE Fs Disk Test duration

Access Read and write

Description

This attribute is the maximum duration (in minutes) that the test will run. The test can finish in less time if the number of tests, as recorded by testCount, is reached before this time. A test may take longer than the specified duration since a test cycle (or pass) is not interruptible.

Mib FileSystem

Values Decimal (0..35791394)

Units minutes

Default 60

ATTRIBUTE Fs Disk Test type

Access Read and write

Description

This attribute is the type of the test to be run. The diskRead test reads every sector on the disk once and reports bad sectors. The filesystemCheck does a sanity check and attempts to repair corruption. The flakyBitDetection test reads every sector on the disk twice and compares the two read results. The surfaceAnalysis test writes a magnetically hard to record pattern to the disk and reads back the pattern to determine the condition of the magnetic surface of the disk. The surface analysis test destroys all the data and disk should be formatted afterward.

Mib FileSystem

Values filesystemCheck
diskRead
flakyBitDetection
surfaceAnalysis

Default filesystemCheck

GROUP Fs Disk Test Results (Results)

Properties Operational

Description

This group contains the results of the test.

Mib FileSystem

ATTRIBUTE Fs Disk Test causeOfTermination

Access Read only

Description

This attribute records the reason why the test was terminated. The reasons are:
testCountReached: the test ran the number of times specified in the attribute testCount and ended normally.
error: the test was terminated by an error that is recorded in the natureOfError attribute.
neverStarted: the test was never started.
stoppedByOperator: the test was terminated by the Stop command.
testTimeExpired: the duration of the test expired.

testRunning: the test is still running.
unknown: the test terminated for unknown reasons.
internalError: An internal error terminated the test.

Mib: FileSystem

Values:
testCountReached
testTimeExpired
stoppedByOperator
neverStarted
testRunning
error
internalError
unknown

Default: No default

ATTRIBUTE Fs Disk Test natureOfError

Access: Read only

Description: This attribute describes the error found by a test. A logical error can be fixed by a filesystemCheck test followed eventually by a synchronization. A media error indicates that a fault in the disk hardware is suspected. A failedToComplete error indicates that the test was terminated.

Mib: FileSystem

Values:
logical
media
noErrorDetected
failedToComplete

Default: No default

ATTRIBUTE Fs Disk Test severity

Access: Read only

Description:

This attribute describes the severity of the error found by a test. There are three types of severity**:** no data was lost, data was lost and hardware problem**.** If the test found no error(s), this will be

	reported as noError. If the test found error(s) but no data was lost, then noDataLost is reported.
Mib	FileSystem
Values	noDataLost dataLost hardwareProblem noError
Default	No default

ATTRIBUTE Fs Disk Test elapsedTime

Access	Read only
Description	This attribute records the elapsed time (in minutes) since the test was started.
Mib	FileSystem
Values	Decimal (0..4294967295)
Units	minutes
Default	No default

ATTRIBUTE Fs Disk Test testExecutionCount

Access	Read only
Description	The number of times the test had actually run.
Mib	FileSystem
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Fs Disk Partition (Part)

Instance	Decimal (1..4)
Groups	"GROUP Fs Disk Part OsiState (State)" "GROUP Fs Disk Part Operational (Oper)"
Scope	Device

Description	*Fs Disk/m Part/n* A *Partition* component is an operational subcomponent of *Disk*. Each instance of this component represents a partition. The instance is the partition number. The first instance is the first partition and fourth instance is the maximum number of partitions that could be defined in the system. The component is only visible on a partitioned disk.
Mib	FileSystem
Common Verbs	Help List Display LOCK Unlock

GROUP Fs Disk Part OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	FileSystem

ATTRIBUTE Fs Disk Part adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users

only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: FileSystem

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Fs Disk Part operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: FileSystem

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Fs Disk Part usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in

use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	FileSystem
Values	idle active (activ) busy
Default	idle

GROUP Fs Disk Part Operational (Oper)

Properties	Operational
Description	This group contains the *Partition* component operational data. The group is only visible on a partitioned disk.
Mib	FileSystem

ATTRIBUTE Fs Disk Part capacity

Access	Read only
Description	This attribute describes the total formatted disk size (in Gbytes) of partition n on disk. The attribute is only visible on a partitioned disk.
Mib	FileSystem
Values	Decimal (0.000000..42.949672)
Units	Gbyte
Default	No default

ATTRIBUTE Fs Disk Part freeSpace

Access	Read only

Description	This attribute indicates the available free disk space (in Gbytes) on the partition n of the disk. Free space is reduced by bad blocks (if any). If there are different numbers of bad blocks on the disks in a dual-disk system, the reported free space will differ on the two disks. The attribute is only visible on a partitioned disk.
Mib	FileSystem
Values	Decimal (0.000000..42.949672)
Units	Gbyte
Default	No default

ATTRIBUTE Fs Disk Part badBlocksPercentage

Access	Read only
Description	This attribute records the percentage of the disk space lost because of defects. If this percentage is high, it is recommended to change the disk. The attribute is only visible on a partitioned disk.
Mib	FileSystem
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Fs FsPartition (Part)

Instance	Decimal (1..4)
Groups	"GROUP Fs Part OsiState (State)" "GROUP Fs Part Operational (Oper)"
Scope	Device
Description	*Fs Part/n* A *FileSystemPartition* component is an operational subcomponent of the *FileSystem* component. Each instance of this component represents a partition. The instance value is the partition number. The first instance is the first partition, and fourth instance is the maximum number of partitions that could

be defined in the system. The component is only visible on a partitioned disk.

Mib FileSystem

Common Verbs
- Help
- List
- Display
- LOCK
- Unlock

GROUP Fs Part OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib FileSystem

ATTRIBUTE Fs Part adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: FileSystem

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Fs Part operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: FileSystem

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Fs Part usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	FileSystem
Values	idle active (activ) busy
Default	idle

GROUP Fs Part Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *FileSystemPartition* component. The group is only visible on a partitioned disk.
Mib	FileSystem

ATTRIBUTE Fs Part capacity

Access	Read only
Description	This attribute describes the total formatted disk size (in Gbytes) of partition n on disk. The attribute is only visible on a partitioned disk.
Mib	FileSystem
Values	Decimal (0.000000..42.949672)
Units	Gbyte
Default	No default

ATTRIBUTE Fs Part freeSpace

Access	Read only
Description	This attribute indicates the available free disk space (in Gbytes) on the partition n of the disk. Free space is reduced by bad blocks (if any). If there are different numbers of bad blocks on the disks

	in a dual-disk system, the reported free space will differ on the two disks. The attribute is only visible on a partitioned disk.
Mib	FileSystem
Values	Decimal (0.000000..42.949672)
Units	Gbyte
Default	No default

ATTRIBUTE Fs Part usage

Access	Read only
Description	This attribute describes the percentage of the free space available on the filesystem for Partition n. The attribute is only visible on a partitioned disk.
Mib	FileSystem
Values	Decimal (0..100)
Units	%
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Fs

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Gips

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Gips

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COMPONENT GprsIpServer (Gips)

Instance	Decimal (1..64)
Groups	"GROUP Gips CustomerIdentifierData (CidData)" "GROUP Gips IfEntryProv (IfEntry)" "GROUP Gips Provisioned (Prov)" "GROUP Gips Statistics (Stats)"
Scope	Application
Description	*GprsIpServer/n* This component represents the host GPRS IP Server on a Logical Processor.
Mib	WirelessGips
Opt. Subcomp.	"COMPONENT Gips IpAddress (Ip)"
Common Verbs	Help List Display Add DELete

GROUP Gips CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib	WirelessGips

ATTRIBUTE Gips customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	WirelessGips
Values	Decimal (0; 1..8191)
Default	0

GROUP Gips IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	WirelessGips

ATTRIBUTE Gips ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is

	not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	WirelessGips
Values	up down testing
Default	up

ATTRIBUTE Gips ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	WirelessGips
Values	Decimal (1..65535)
Default	No default

GROUP Gips Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *GprsIpServer* component.
Mib	WirelessGips

ATTRIBUTE Gips linkToProtocolPort (lToPp)

Access	Read: All Write: All
Description	This attribute specifies the Virtual Router Protocol Port that the *GprsIpServer* associates with.
Mib	WirelessGips
Values	The name of the component

Default	No default

ATTRIBUTE Gips linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor that the *GprsIpServer* and its subcomponents are provisioned on.
Mib	WirelessGips
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Gips defaultTtl (defTtl)

Access	Read: All Write: All
Description	This attribute specifies the default value inserted into the Time-To-Live field of the IP header of datagrams originated at this entity. This is the value used to build the IP header unless it is overridden by an application.
Mib	WirelessGips
Values	Decimal (0..255)
Default	64

ATTRIBUTE Gips reasmTimeout (reasmTo)

Access	Read: All Write: All
Description	This attribute specifies the maximum time that the received fragments of IP packets are held while awaiting reassembly at the *GprsIpServer*.
Mib	WirelessGips
Values	Decimal (0..255)
Units	seconds

Default	5

ATTRIBUTE Gips performUdpChecksum (checksum)

Access	Read: All Write: All
Description	This attribute specifies whether the UDP checksum is generated and checked.
Mib	WirelessGips
Values	no yes
Default	no

GROUP Gips Statistics (Stats)

Properties	Operational
Description	This group contains the GPRS Internet Protocol (IP) related statistical attributes.
Mib	WirelessGips

ATTRIBUTE Gips inPacketForUnknownAddr (inFr)

Access	Read: All Write: Illegal
Description	This attribute counts all the incoming datagrams destined to an address for which there is no *IpAddress* subcomponent. This includes fragmented packets. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips inErrors (inErrs)

Access	Read: All Write: Illegal

Description	This attribute counts the input datagrams discarded due to errors in their IP headers, including bad checksums, version number mismatch, address errors which have not already been filtered by the IP forwarder. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gips IpAddress (Ip)

Instance	IP address
Groups	"GROUP Gips Ip Statistics (Stats)"
Scope	Application
Description	*Gips/n IpAddress/<ipaddress>* This component represents the Internet Protocol (IP) functionality supported by the GPRS for a particular address. The *IpAddress* provides best-effort delivery, inter network-wide addressing, fragmentation and reassembly, time-to-live control of datagrams and checksum verification of header contents. Each *IpAddress* should be unique among *GprsIpServer* Instances. In addition, the IP address should not be the virtual router protocol port logical interface address, the subnet address, or the subnet broadcast address.
Mib	WirelessGips
Subcomponents	"COMPONENT Gips Ip Udp" "COMPONENT Gips Ip Icmp" "COMPONENT Gips Ip Tcp"
Common Verbs	Help List Display Add DELete

GROUP Gips Ip Statistics (Stats)

Properties	Operational
Description	This group contains the Internet Protocol (IP) related statistical attributes.
Mib	WirelessGips

ATTRIBUTE Gips Ip inReceives (inRcvs)

Access	Read: All Write: Illegal
Description	This attribute counts all the incoming datagrams, including those counted in *inErrors* and *inUnknownProtocols*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip inErrors (inErrs)

Access	Read: All Write: Illegal
Description	This attribute counts the input datagrams discarded due to errors in their IP headers, version number mismatch, other format errors, and time-to-live exceeded which have not already been filtered by the Virtual Router's IP forwarder. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip inUnknownProtocols (inUnkProtos)

Access	Read: All Write: Illegal

Description	This attribute counts the locally-addressed datagrams received successfully but discarded because of an unknown or unsupported protocol. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip inDelivers

Access	Read: All Write: Illegal
Description	This attribute counts the input datagrams successfully delivered to the IP user-protocols (including Internet Control Message Protocol (ICMP)). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip outRequests (outReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the datagrams which the local IP user-protocols (including Internet Control Message Protocol (ICMP)) supplied to IP in requests for transmission. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip reasmTimeOuts (reasmTo)

Access	Read: All Write: Illegal
Description	This attribute counts the IP packet reassembly time-outs at the receiving *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip reasmRequireds (reasmReqds)

Access	Read: All Write: Illegal
Description	This attribute counts the IP packets with the reassembly bit set. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip reasmOks

Access	Read: All Write: Illegal
Description	This attribute counts the IP packets successfully reassembled by the *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip reasmFails

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the *GprsIpServer* is unable to assemble IP-fragments for any reason. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gips Ip Udp

Groups	"GROUP Gips Ip Udp Statistics (Stats)"
Scope	Application
Description	*Gips/n Ip/<ipaddress> Udp* This component represents the UDP functionality supported by the GPRS.
Mib	WirelessGips
Opt. Subcomp.	"COMPONENT Gips Ip Udp Port"
Common Verbs	Help List Display

GROUP Gips Ip Udp Statistics (Stats)

Properties	Operational
Description	This group contains all UDP related statistical attributes supported by the *GprsIpServer.*
Mib	WirelessGips

ATTRIBUTE Gips Ip Udp inDatagrams (inDg)

Access	Read: All Write: Illegal
Description	This attribute counts the UDP datagrams delivered to UDP users. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Udp outDatagrams (outDg)

Access	Read: All Write: Illegal
Description	This attribute counts the UDP datagrams sent from the UDP stack. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Udp inUnknownPorts (inUnkPorts)

Access	Read: All Write: Illegal
Description	This attribute counts the UDP datagrams received for which there was no associated application at the destination port. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Udp inErrors (inErr)

Access	Read: All Write: Illegal

Description	This attribute counts the received UDP datagrams that could not be delivered for reasons other than the lack of an application at the destination port. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gips Ip Udp Port

Instance	Decimal (0..65535)
Groups	"GROUP Gips Ip Udp Port Provisioned (Prov)"
Scope	Application
Description	*Gips/n Ip/<ipaddress> Udp Port/n* This component represents a UDP port. GPRS applications link to this port.
Mib	WirelessGips
Common Verbs	Help List Display Add DELete

GROUP Gips Ip Udp Port Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attribute to bind GPRS application to this UDP port.
Mib	WirelessGips

ATTRIBUTE Gips Ip Udp Port linkToApplication (lToApp)

Access	Read: All Write: All

Description	This attribute specifies the user of this UDP port.
Mib	WirelessGips
Values	Link
Default	No default

COMPONENT Gips Ip Icmp

Groups	"GROUP Gips Ip Icmp Statistics (Stats)"
Scope	Application
Description	*Gips/n Ip/<ipaddress> Icmp* This component represents the Internet Control Message Protocol (ICMP) functionality supported by the GPRS. The ICMP provides feedback from an IP router or gateway to a source host. It can be used to report errors or verify the reachability of routers or end-systems.
Mib	WirelessGips
Common Verbs	Help List Display

GROUP Gips Ip Icmp Statistics (Stats)

Properties	Operational
Description	This group contains the Internet Control Message Protocol (ICMP) related statistical attributes.
Mib	WirelessGips

ATTRIBUTE Gips Ip Icmp inMsgs

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) messages received by the *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Icmp inErrors (inErrs)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) messages received by the *GprsIpServer*, but determined as having ICMP specific errors such as bad ICMP checksums or bad length. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Icmp inTimeExceeds (inTimeEx)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) time exceeded messages received by the *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Icmp outTimeExceeds (outTimeExcds)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) time exceeded messages sent by the *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Icmp inEchos (inEc)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) echo request messages received by the *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Icmp outEchoReplies (outEcRe)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) echo reply messages sent by this *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Icmp inTimestamps (inTiSta)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) timestamp request messages received by this *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Icmp outTimestampReplies (outTsRep)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) timestamp reply messages sent by this *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Icmp inDestUnreachs (inDestUnr)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) destination unreachable messages received by the *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Icmp outDestUnreachs (outDestUnr)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) destination unreachable messages sent out by this *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Icmp inParmProbs (inProb)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) parameter problem messages received by the *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Icmp outParmProbs (outProbs)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) parameter problem messages sent by this *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Icmp inSrcQuenchs (inSrcQ)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) source quench messages received by the *GprsIpServer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGips
Values	Decimal (0..4294967295)

Default	No default

COMPONENT Gips Ip Tcp

Groups	"GROUP Gips Ip Tcp Statistics (Stats)"
Scope	Application
Description	*Gips/n Ip/<ipaddress> Tcp* The component represents the TCP functionality supported by the GPRS.
Mib	WirelessGips
Opt. Subcomp.	"COMPONENT Gips Ip Tcp Port"
Dyn. Subcomp.	"COMPONENT Gips Ip Tcp TcpEntry"
Common Verbs	Help List Display

GROUP Gips Ip Tcp Statistics (Stats)

Properties	Operational
Description	This group contains statistics for TCP.
Mib	WirelessGips

ATTRIBUTE Gips Ip Tcp rToAlgorithm

Access	Read only
Description	Indicate which algorithm was used to calculate the timeout value used for retransmitting unackowledged octet.
Mib	WirelessGips
Values	other constant rsre vanJacobson
Default	No default

ATTRIBUTE Gips Ip Tcp rToMin

Access	Read only
Description	Indicate the minimum value, measured in milliseconds, allowed for retransmission timeout.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE Gips Ip Tcp rToMax

Access	Read only
Description	Indicates the maximun value, measured in milliseconds, allowed for retransmission timeout.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Gips Ip Tcp maxConn

Access	Read only
Description	Limit on number of connections the TCP can support. The value is always -1 which indicates that the number of connections supported is dynamic (limited by memory in the system).
Mib	WirelessGips
Values	Signed (-1)
Default	-1

ATTRIBUTE Gips Ip Tcp activeOpens

Access	Read only

Description	The number of times TCP connections have made a direct transition to the ***synSent*** state from the ***closed*** state.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Tcp passiveOpens

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***synRcvd*** state from the ***listen*** state.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Tcp attemptFails

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***synSent*** state or the ***synRcvd*** state, plus the number of times TCP connections have made a direct transition to the ***listen*** state from the ***synRcvd*** state.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Tcp estabResets

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***established*** state or the ***closedWait*** state.
Mib	WirelessGips

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Tcp currEstab

Access	Read only
Description	The number of TCP connections for which the current state is either ***established*** or ***closedWait***.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Tcp inSegs

Access	Read only
Description	The number of segments received, including those received in error. This count includes segments received on currently established connections.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Tcp outSegs

Access	Read only
Description	The number of segments sent, including those on current connections but excluding those containing only retransmitted octets.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Tcp retransSegs

Access	Read only

Description	The number of segments retransmitted that is, the number of TCP segments transmitted containing one or more previously transmitted octets.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Tcp inErrs

Access	Read only
Description	Total number of segments received in error, for example bad TCP checksum.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gips Ip Tcp outRsts

Access	Read only
Description	Number of TCP segments sent containing the RST flag.
Mib	WirelessGips
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gips Ip Tcp Port

Instance	Decimal (0..65535)
Groups	"GROUP Gips Ip Tcp Port Provisioned (Prov)"
Scope	Application
Description	*Gips/n Ip/<ipaddress> Tcp Port/n*

	This component represents a TCP port. GPRS applications using TCP link to this port.
Mib	WirelessGips
Common Verbs	Help List Display Add DELete

GROUP Gips Ip Tcp Port Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attribute to bind a GPRS application to this TCP port.
Mib	WirelessGips

ATTRIBUTE Gips Ip Tcp Port linkToApplication (lToApp)

Access	Read: All Write: All
Description	This attribute specifies the GPRS application which is to use this TCP port number.
Mib	WirelessGips
Values	Link (Service, linkToPort)
Default	No default

COMPONENT Gips Ip Tcp TcpEntry

Instance	localAddress [IP address] localPort [Decimal (0..65535)] remoteAddress [IP address] remotePort [Decimal (0..65535)]
Groups	"GROUP Gips Ip Tcp TcpEntry Operational (Oper)"
Scope	Application

Description	*Gips/n Ip/<ipaddress> Tcp TcpEntry/<lA>, <lP>, <rA>, <rP>* The component defines an entry in the TCP connection table. Each entry corresponds to TCP end-point identified by 4-tuples, *LocalAddress*, *LocalPort*, *RemoteAddress*, and *RemotePort*.
Mib	WirelessGips
Common Verbs	Help List Display

GROUP Gips Ip Tcp TcpEntry Operational (Oper)

Properties	Operational
Description	This group contains columnar entries for each end-point on the TCP.
Mib	WirelessGips

ATTRIBUTE Gips Ip Tcp TcpEntry state

Access	Read and write
Description	This attribute reflects the current state of this Tcp connection.
Mib	WirelessGips
Values	closed listen synSent synReceived established closeWait finWait1 closing lastAck finWait2 timeWait delete
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Gips

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Gsc

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

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COMPONENT GprsSubscriberControl (Gsc)

Instance	Decimal (1..15)
Groups	"GROUP Gsc Provisioned (Prov)" "GROUP Gsc Operational (Oper)" "GROUP Gsc OsiState (State)" "GROUP Gsc Statistics (Stats)" "GROUP Gsc OvldScOper" "GROUP Gsc OvldOper" "GROUP Gsc WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS GprsSubscriberControl"

Scope	Application
Description	*GprsSubscriberControl/n*

This component represents the subscriber control entities such as

	the GPRS Mobility Management (GMM), the Session Management (SM), the *MapClient*, and the *HlrCache*.
Mib	WirelessGsc
Subcomponents	"COMPONENT Gsc MapClient (Mc)" "COMPONENT Gsc GtpMgmt (GtpM)" "COMPONENT Gsc GprsMobilityManagement (Gmm)" "COMPONENT Gsc SessionManagement (Sm)" "COMPONENT Gsc HlrCache (HlrC)" "COMPONENT Gsc BaseStationSystemApplPart (Bssap)" "COMPONENT Gsc ShortMessageService (Sms)" "COMPONENT Gsc ServiceSwitchingFunction (Ssf)"
Opt. Subcomp.	"COMPONENT Gsc PrepaidShortMessageService (PSms)" "COMPONENT Gsc PacketFlowManagement (Pfm)" "COMPONENT Gsc LocationServices (Lcs)"
Dyn. Subcomp.	"COMPONENT Gsc InternationalMobileSubscriberId (Imsi)" "COMPONENT Gsc TemporaryLogicalLinkId (Tlli)" "COMPONENT Gsc RemoteApplicationConnection (RaConn)" "COMPONENT Gsc MobileCountryCode (Mcc)"
Common Verbs	Help List Display Add DELete

GROUP Gsc Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes to link this component to a Logical Processor and to set the engineering parameters for an instance of *GprsSubscriberControl (Gsc)*.
Mib	WirelessGsc

ATTRIBUTE Gsc linkToLogicalProcessor (lp)

Access	Read: All Write: All

Description	This attribute specifies the Logical Processor that the *GprsSubscriberControl (Gsc)* and its subcomponents are provisioned on.
Mib	WirelessGsc
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Gsc sgsnNumber (sgsnNum)

Access	Read: All Write: All
Description	This attribute specifies the designated E.164 number in the international format for this Serving GPRS Support Node (SGSN). This is used to associate the SGSN in the Home Location Register (HLR) and in the MSC-VLR, to identify the SGSN in the SS7 network and to provide the routing capabilities.
Mib	WirelessGsc
Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE Gsc maxAttachedSubscribers (maxAttSubs)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of attached subscribers for this instance of *GprsSubscriberControl (Gsc)*. The current attached subscribers can be obtained from the attribute *currentlyAttached* defined in the *GprsMobilityManagement* component. Currently attached subscribers are unaffected by changes to this value. The sum of the *maxAttachedSubscribers* provisioned on all the *Gsc instances should* not exceed the value of *maxSubscribers* provisioned on the *ServingGprsSupportNode (Sgsn)*.

	Changing the value of this parameter requires a reset of the Gsc card. This attribute together with currentlyAttached are used to determine when subscriber count overload occurs (Refer to Gsc subCountOvldAttachesDiscarded).
Mib	WirelessGsc
Values	Decimal (1..1000000)
Default	500

ATTRIBUTE Gsc avgActivePdpCPerActiveSub (avgPdpC)

Access	Read: All Write: All
Description	This attribute specifies the average number of Packet Data Protocol (PDP) contexts that can be active for an active subscriber in this *GprsSubscriberControl (Gsc)*.
Mib	WirelessGsc
Values	Decimal (1.0..16.0)
Default	1.0

ATTRIBUTE Gsc localPointCode (localPc)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the point code of the node that the MAP layer manages. The point code must be provisioned in one of the following formats: ***basic***: The point code is provisioned as a decimal number in the range ***1..16383*** if the value of the attribute *sccpVariant* in *Gsc/n MapClient* is set to ***itu***.

The point code is provisioned as a decimal number in the range ***1..16777215*** if the value of the attribute *sccpVariant* in *Gsc/n MapClient* is set to ***ansi*** or ***ituChinese***.

segmented: The point code is provisioned as three integers, separated by dots.

If the value of the attribute *sccpVariant* in *Gsc/n MapClient* is set to ***itu***, the first integer must be in the range ***0..7***, the second integer must be in the range ***0..255***, and the third integer must be in the range ***0..7***. A value of ***0.0.0*** is not valid.

If the value of the attribute *sccpVariant* in *Gsc/n MapClient* is set to ***ansi*** or ***ituChinese***, all the three integers must be in the range ***0..255***.

Changing the value of this attribute causes the process to be restarted. When the process is restarted all traffic on the GSC is lost and the Map Client re-registers with the new point code.

Mib	WirelessGsc
Values	Integer Sequence
Default	No default

ATTRIBUTE Gsc linkToLisp

Access	Read: All Write: All
Description	This attribute specifies a link to the *LawfulInterceptAccessFunction (Liaf)* component that is resident on a *LawfulInterceptServiceProcessor (Lisp)* card and that is used by the *GprsSubscriberControl* entities.
Mib	WirelessGsc
Values	Link (Service, linkToLiClient)
Default	No default

ATTRIBUTE Gsc resolveIrauDnsMncAmbiguity (resDnsMncAmb)

Access	Read: All Write: All
Description	This attribute specifies an option for networks to resolve ambiguity in the formulation of the logical name for the Domain Name System (DNS) query for Inter Routing Area Update (IRAU). Ambiguity can result when networks that support two- and three-digit Mobile Network Codes (MNCs) can create identical logical names for the DNS query during IRAU. For example, suppose a network supported a two-digit MNC = 98, and a three-digit MNC = 809, then the resulting DNS logical name is "RACXXXX.LACXXXX.MNC0098.MCCXXXX.GPRS" for both. This ambiguity can be solved by setting the value of the *resolveIrauDnsMncAmbiguity* attribute to ***enabled***. The formulation of the DNS logical name is changed to include a discriminator high order digit of the encoded MNCXXXX. The discriminator digit would be ’2’ for two-digit MNC and ’3’ for three-digit MNC. In the above example, for a two-digit MNC = 98, the DNS logical name would be "RACXXXX.LACXXXX.MNC2098.MCCXXXX.GPRS". For a three-digit MNC = 809, the DNS logical name would be "RACXXXX.LACXXXX.MNC3098.MCCXXXX.GPRS". Setting this attribute to ***enabled*** will affect the formulation of all logical names for IRAU DNS queries. Corresponding changes will have to be made to DNS servers. If no potential ambiguity of the two-digit or three-digit MNC exists in networks, then it is recommended to leave the value of the attribute set to ***disabled***.
Mib	WirelessGsc
Values	disabled enabled

Default	disabled

GROUP Gsc Operational (Oper)

Properties	Operational
Description	This group contains the operational data of the *GprsSubscriberControl (Gsc)* that is needed by the related protocol layers.
Mib	WirelessGsc

ATTRIBUTE Gsc unknownRai

Access	Read: All Write: Illegal
Description	This attribute indicates the unknown Routing Area Identifiers (RAI) and their associated information, and lists them in the following format: "<MCC>.<MNC>.<LAC>.<RAC> <Time>" where <MCC> is the Mobile Country Code <MNC> is the Mobile Network Code <LAC> is the Location Area Code <RAC> is the Routing Area Code <Time> is the time at which this lookup failure occurred When GPRS Subscriber Control (GSC) fails to look up an RAI while handling GPRS Mobility Management (GMM) procedures, the RAI is added to the list. The list is purged either when it gets full, by replacing the oldest entry, or when a previously unknown RAI gets provisioned.
Mib	WirelessGsc
List of	String (1..40, ASCII)
List Size	100
Default	No default

GROUP Gsc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessGsc

ATTRIBUTE Gsc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	WirelessGsc
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE Gsc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	WirelessGsc
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Gsc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: WirelessGsc

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Gsc availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	WirelessGsc
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Gsc proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	WirelessGsc
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Gsc controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.

Mib	WirelessGsc
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Gsc alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	WirelessGsc
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Gsc standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	WirelessGsc
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)

Default	notSet

ATTRIBUTE Gsc unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	WirelessGsc
Values	false true
Default	false

GROUP Gsc Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes for the Mobile Subscriber Purge functionality on the (UMTS) Serving GPRS Support Node (USGSN or SGSN).
Mib	WirelessGsc

ATTRIBUTE Gsc explicitDetachPurge (expDetPurge)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Subscriber (MS) Purge requests initiated due to an explicit mobile detach. Mobile Subscriber Purge requests are initiated upon explicit detach when the *purgeOnExplicitDetach* attribute in (U) SGSN MobileSubscriberPurge is enabled. The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc operatorInitiatedPurge (opInitPurge)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Subscriber (MS) Purge requests initiated by the operator. An operator initiated the Mobile Subscriber Purge request by issuing the *clear* command on an (U) SGSN *Imsi* component. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc contextReusePurge (crPurge)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Subscriber (MS) Purge requests initiated due to context reuse. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc periodicAuditPurge (auditPurge)

Access	Read: All Write: Illegal

Description	This attribute counts the Mobile Subscriber (MS) Purge requests initiated due to periodic audit. During a periodic audit, Mobile Subscribers whose age is greater than the value specified by the auditPurgeMinimumInactiveAge attribute in (U) SGSN MobileSubscriberPurge are considered candidates for purge. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc msPurgeAckFailures (ackFail)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Subscriber (MS) Purge Acknowledgement Failures received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc msPurgeSendFailures (sendFail)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Subscriber (MS) Purge requests that were either not sent from the (UMTS) Serving GPRS Support Node (USGSN or SGSN) or no response was received from the Home Location Register (HLR) due to network related faults such as SS7 IP Gateway (SIG) failure. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc OvldScOper

Properties	Operational
Description	This group contains the operational attributes for overload controls for the *Gsc* and *Usc* components.
Mib	WirelessGsc

ATTRIBUTE Gsc cpuOvldAttachesDiscarded (cpuOvldAttDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of GPRS Mobility Management (GMM) attach request messages that are discarded due to a CPU overload condition on the GSC and USC applications. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc cpuOvldActivationsDiscarded (cpuOvldActDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Session Management (SM) session activate request messages that are discarded due to CPU overload on the GSC and USC applications. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc subCountOvldAttachesDiscarded (subOvldAttDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of GPRS Mobility Management (GMM) attach request messages that are discarded due to subscriber count overload, which occurs when the value of the *currentlyAttached* attribute is equal to the value of the *maxAttachedSubscribers* attribute. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc OvldOper

Properties	Operational
Description	This group contains the operational attributes for overload controls.
Mib	WirelessGsc

ATTRIBUTE Gsc cpuOvldMovingAvg (cpuOvldAvg)

Access	Read: All Write: Illegal
Description	This attribute indicates the CPU moving average calculated from within the defined moving window, the size of which is determined by the value of *cpuOvldWindowSize attribute*.
Mib	WirelessGsc
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Gsc cpuOvldWindowSize (cpuOvldWinSz)

Access	Read: All Write: Illegal
Description	This attribute indicates the CPU moving average window size. The window size is the duration over which the CPU usage measurements are taken before the average CPU usage is calculated. CPU measurements are separated by a fixed interval.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Units	seconds
Default	60

GROUP Gsc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc customCounter2 (customCntr2)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberControl

Description	The statistics record generated by the GprsSubscriberControl component.

ATTRIBUTE Gsc cpuOvldAttachesDiscarded (cpuOvldAttDisc)

Description	This attribute counts the number of GPRS Mobility Management (GMM) attach request messages that are discarded due to a CPU overload condition on the GSC and USC applications. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc cpuOvldActivationsDiscarded (cpuOvldActDisc)

Description	This attribute counts the number of Session Management (SM) session activate request messages that are discarded due to CPU

overload on the GSC and USC applications.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc subCountOvldAttachesDiscarded (subOvldAttDisc)

Description This attribute counts the number of GPRS Mobility Management (GMM) attach request messages that are discarded due to subscriber count overload, which occurs when the value of the *currentlyAttached* attribute is equal to the value of the *maxAttachedSubscribers* attribute.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc cpuOvldMovingAvg (cpuOvldAvg)

Description This attribute indicates the CPU moving average calculated from within the defined moving window, the size of which is determined by the value of *cpuOvldWindowSize* attribute.

The value of the attribute is set at the end of the collection interval.

Values Decimal (0..100)

Units %

ATTRIBUTE Gsc explicitDetachPurge

Description This attribute counts the Mobile Subscriber (MS) Purge requests initiated due to an explicit mobile detach. Mobile Subscriber Purge request are initiated upon explicit detach when the *purgeOnExplicitDetach* attribute in (U) SGSN MobileSubscriberPurge is enabled.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc operatorInitiatedPurge

Description

This attribute counts the number of Mobile Subscriber (MS) Purge requests initiated by the operator.

An operator initiates the Mobile Subscriber Purge request by issuing the *clear* command on an (U) SGSN *Imsi* component.

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc contextReusePurge

Description

This attribute counts the number of Mobile Subscriber (MS) Purge requests initiated due to memory reuse.

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc periodicAuditPurge

Description

This attribute counts the number of Mobile Subscriber (MS) Purge requests initiated due to periodic. During a periodic audit, detached Mobile Subscribers whose age is greater than the value specified by the auditPurgeMinimumInactiveAge attribute in (U) SGSN MobileSubscriberPurge are considered candidates for purge.

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc msPurgeAckFailures

Description

This attribute counts the Mobile Subscriber (MS) Purge Acknowledgement Failures received by the (UMTS) Serving GPRS Support Node (USGSN or SGSN) from the Home Location Register (HLR).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc msPurgeSendFailures

Description	This attribute counts the Mobile Subscriber (MS) Purge requests that were either not sent from the (UMTS) Serving GPRS Support Node (USGSN or SGSN) or no response was received from the Home Location Register (HLR) due to network related faults such as SS7 IP Gateway (SIG) failure and so on. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Gsc MapClient (Mc)

Groups	"GROUP Gsc Mc Provisioned (Prov)" "GROUP Gsc Mc Statistics (Stats)" "GROUP Gsc Mc MapClientSccpUserInfo (McSccpUI)" "GROUP Gsc Mc OsiState (State)" "GROUP Gsc Mc WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS GprsSubscriberControl MapClient"

Scope	Application
Description	*Gsc/n MapClient* This component represents the *MapClient* functionality of the *GprsSubscriberControl (Gsc)*. The *MapClient* component provides the Mobile Application Part (MAP) over SS7 to interact with the Home Location Register (HLR) via the SS7-IP Gateway.
Mib	WirelessGsc
Common Verbs	Help List Display

GROUP Gsc Mc Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes to specify the Port Number and the SS7-IP Gateway information that this *MapClient* uses.

Mib	WirelessGsc

ATTRIBUTE Gsc Mc mscE164Address (mscEAddr)

Access	Read: All Write: All
Description	This attribute supplies the E.164 number associated with the local MSC SCCP subsystem on the SGSN. This E.164 number will be used in the global title address field of the Calling Party Address (CgPA) when the USC MAP Client attribute *mapCgpaRoutingIndicator* is set to ***globalTitle***. If this attribute is changed after the MAP Client has registered with the MAP Stack, the MAP Client will need to deregister with the MAP Stack and then re-register. Any outstanding MAP transactions will be lost as a result of the re-registration. If this attribute is empty, the value of the USC's or GSC's E.164 address specified in the *sgsnNumber* attribute is used for the MAP Client's E.164 address.
Mib	WirelessGsc
Values	String (0..17, NativeAddress)
Default	No default

ATTRIBUTE Gsc Mc linkToMapStack (mapLink)

Access	Read: All Write: All
Description	This attribute specifies the *MapStack* used by this *MapClient*.
Mib	WirelessGsc
Values	Link (Service, linkToMapStackUsers)
Default	No default

GROUP Gsc Mc Statistics (Stats)

Properties	Operational

Description	This group contains statistical attributes of the *MapClient* application.
Mib	WirelessGsc

ATTRIBUTE Gsc Mc currentTransactions (curTr)

Access	Read: All Write: Illegal
Description	This attribute indicates how many MAP transactions are currently being handled by the MAP Client. *currentTransactions* is expressed as a percentage utilization of the number of MAP transactions the MAP Client is capable of handling concurrently. A SET alarm is generated by the MAP Client when the percentage utilization reaches a high threshold. A CLEAR alarm is generated by the MAP Client when the percentage utilization reaches a low threshold and an outstanding SET alarm exists.
Mib	WirelessGsc
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Gsc Mc uglMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-UPDATE GPRS LOCATION messages sent to the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc uglResponseMsgs (uglResp)

Access	Read: All Write: Illegal
Description	This attribute indicates the successful MAP-UPDATE GPRS LOCATION RESPONSE messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc isdMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc isdResponseMsgs (isdResp)

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-INSERT SUBSCRIBER DATA RESPONSE messages sent to the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc dsdMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-DELETE SUBSCRIBER DATA messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc dsdResponseMsgs (dsdResp)

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-DELETE SUBSCRIBER DATA RESPONSE messages sent to the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc clMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-CANCEL LOCATION messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc clResponseMsgs (clResp)

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-CANCEL LOCATION RESPONSE messages sent to the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc rstMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-RESET messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc saiMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-SEND AUTHENTICATION INFO messages sent to the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc saiResponseMsgs (saiResp)

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-SEND AUTHENTICATION INFO ACK messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc transLimitDiscards (trDisc)

Access	Read: All Write: Illegal
Description	This attribute indicates the transactions rejected by the MAP Client when the maximum number of concurrent MAP transactions supported by the MAP Client has been exceeded. The maximum number of MAP transactions is constrained by the MAP Client internal memory available to store the transactions. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc tmrExpiries (tmrEx)

Access	Read: All Write: Illegal
Description	This attribute indicates the times the *mcTimer* (defined in component *Sgsn GprsSubscriberControl* and *Usgsn UmtsSubscriberControl*) expires before receiving a response from the Home Location Register (HLR). This can be used to determine if the provisionable attribute *mcTimer* must be changed, or a problem exists between the Serving GPRS Support

	Node (SGSN) or Umts Serving General Support Node (USGSN) and the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc ofsmMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-MO-FORWARD-SHORT-MESSAGE messages received by the Inter-working Mobile Switching Center (IWMSC) from the MAP Client. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc ofsmResMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-MO-FORWARD-SHORT-MESSAGE response messages received by the MAP Client from the Inter-working Mobile Switching Center (IWMSC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc tfsmMsgs

Access	Read: All Write: Illegal

Description	This attribute indicates the MAP-MT-FORWARD-SHORT-MESSAGE messages received by the MAP Client from the Inter-working Mobile Switching Center (IWMSC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc tfsmResMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-MT-FORWARD-SHORT-MESSAGE response messages received by the Inter-working Mobile Switching Center (IWMSC) from the MAP Client. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc rsmMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-READY-FOR-SM messages received by the Home Location Register (HLR) from the MAP Client. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc rsmResMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-READY-FOR-SM response messages received by the MAP Client from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc sccpServiceRequestTimeouts

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP Stack Service request timeouts. This could occur if the MAP Stack was not responding to Service requests from the MAP Clients, or if there was an SS7-IP Gateway (SIG) or IP network problem. Retries of the Service request are infinite since the MAP Client can not send or receive MAP messages until it is successfully registered with the MAP Stack.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc decodeErrors

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP messages received from HLR and SMSC that are not decodable. The inability to decode the MAP message is caused by the MAP Client receiving

	a message with invalid data. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc dataMissingRespSent

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “data missing” error responses sent to the HLR or SMSC. This error may occur when optional data is missing from a MAP message received, when required data is missing from a MAP message received, or when an internal data structure is missing data. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc unexpectedDataValuesRespSent (unexpDataRespSent)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “unexpected data value” error responses sent to the HLR or SMSC. This error may occur when the parameter type is correct in the MAP message received but contains data which is not relevant for the type of MAP service being invoked. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc systemFailuresRespSent (sysFailRespSent)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “system failure” error responses sent to the HLR or SMSC. This error may occur when a task specified in MAP message received cannot be performed because of a problem with another entity. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc unidentifiedSubscribersRespSent (unidentSubRespSent)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “unidentified subscriber” error responses sent to the HLR or SMSC. This error may occur when the subscriber is not contained in the subscriber database resulting in the failure to establish a call. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc facilityNotSupportedRespSent (facNotSuppRespSent)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “facility not supported” error responses sent to the HLR or SMSC. This error may occur when the requested facility, such as SMS, is not supported. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc smDeliveryFailuresRespSent (smDelFailRespSent)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “short message delivery failure” error responses sent to the SMSC. This error may occur when the mobile runs out of memory to store short messages. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc illegalSubscribersRespSent (illegalSubRespSent)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “illegal subscriber” error responses sent to the HLR or SMSC. This error may occur when an illegal access attempt is determined during the authentication process. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc illegalEquipmentRespSent

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “illegal equipment” error responses sent to the HLR or SMSC. This error may occur when the International Mobile station Equipment Identity (IMEI) is

	either blacklisted or not whitelisted. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc subscriberBusyForMtSmsRespSent (subBusyMtSmsRespSent)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “subscriber busy for mobile-terminated short message service” error responses sent to the SMSC. This error may occur when mobile terminated short messages cannot be completed. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc absentSubscriberSmRespSent (absentSubSmRespSent)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “absent subscriber short message service” error responses sent to the SMSC. This error may occur when the mobile terminated short message transfer cannot be completed because the network cannot contact the subscriber. This may be caused by the mobile being turned off. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc dataMissingRespRecv

Access	Read: All Write: Illegal
Description	This attribute indicates the number of data missing errors received from the HLR or SMSC. This error may occur when optional data is missing from a MAP message sent, when required data is missing from a MAP message sent, or when an internal data structure is missing data. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc unexpectedDataValuesRespRecv (unexpDataRespRecv)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “unexpected data value” error responses received from the HLR or SMSC. This error may occur when the parameter type is correct in the MAP message sent but contains data which is not relevant for the type of MAP service being invoked. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc systemFailuresRespRecv (sysFailRespRecv)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “system failure” error responses received from the HLR or SMSC. This error may occur when a task specified in a MAP message sent cannot be

	performed because of a problem with another entity. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc unknownSubscribersRespRecv (unkSubRespRecv)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “unknown subscriber” error responses received from the HLR or SMSC. This error may occur when a message sent is processed for a subscription that does not exist. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc roamingNotAllowedRespRecv (noRoamRespRecv)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “roaming not allowed” error responses received from the HLR or SMSC. This error may occur when a location update attempt is made in an area not covered by the subscription. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc facilityNotSupportedRespRecv (facNotSuppRespRecv)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “facility not supported” error responses received from the HLR or SMSC. This error may occur when the requested facility, such as SMS, is not supported. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc smDeliveryFailuresRespRecv (smDelFailRespRecv)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “short message delivery failure” error responses received from the SMSC. This error may occur when the Short Message Service Center returns a delivery error indication in response to a message sent by the MAP Client. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc invalidMessages

Access	Read: All Write: Illegal
Description	This attribute indicates the number of invalid messages received by the MAP Client. This may occur if the MAP Client receives an unsolicited message, a message with an invalid header, or an invalid dialogue ID. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc isdMsgsUpdateLocation (isdMsgsUpdLoc)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) during a GPRS Update Location procedure. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc isdMsgsHlrSubUpdate (isdMsgsHlrSubUp)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) due to an HLR operator intervention. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc isdFailures (isdFail)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) that could not be processed due to one of the following errors:

	Data Missing Unexpected Data Value Unidentified Subscriber Decode errors The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc clMsgsHlrDetach (clMsgsHlrDetach)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) due to an HLR initiated Detach. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc clMsgsSgsnChange (clMsgsSgsnChg)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) due to a Service GPRS Support Node (SGSN) change. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc clFailures (clFail)

Access	Read: All Write: Illegal
Description	This attribute counts the MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) that could not be processed due to one of the following errors: Data Missing Unexpected Data Value Decode errors The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc dsdFailures (dsdFail)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP-DELETE SUBSCRIBER DATA messages sent to the Home Location Register (HLR) that could not be processed due to one of the following errors: Data Missing Unexpected Data Value Unidentified Subscriber Decode errors The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc uAbortMsgSent

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP USER ABORT messages sent by the MAP Client to the HLR or SMSC. This message may be sent as a result of a resource limitation caused by congestion or as a result of the unavailability of resources. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc pAbortMsgRecv

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP PROVIDER ABORT messages received by the MAP Client from the HLR or SMSC. This message indicates to the MAP service-user to abort a MAP dialogue. This message may be received due to a MAP service-provider malfunction, supporting dialogue/transaction release, resource limitation, maintenance activity, version incompatibility, or an abnormal MAP dialogue. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc uAbortMsgRecv

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP USER ABORT messages received by the MAP Client from the HLR or SMSC. This message indicates to the MAP service-provider to abort a

	MAP dialogue. This message may be received due to a resource limitation caused by congestion or by unavailability of resources. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc pmsMsgs

Access	Read: All Write: Illegal
Description	This attribute counts the number of Mobile Subscriber Purge messages sent to the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc pmsResponseMsgs (pmsRes)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Mobile Subscriber Purge MS Response messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc unexpectedErrorCodeRespRecv (unexpErrRespRecv)

Access	Read: All Write: Illegal
Description	This attribute counts the unexpected error responses received from the Home Location Register (HLR). An unexpected error response may be received when a Transaction Capabilities Application Part (TCAP) error code is received at the Service GPRS Support Node (SGSN) and that error code is inconsistent with the invoked Mobile Application Part (MAP) operation. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc pslRespMsgs

Access	Read: All Write: Illegal
Description	This attribute counts the MAP-PROVIDE SUBSCRIBER LOCATION response messages sent by the MAP Client to the Gateway Mobile Location Center (GMLC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc unauthorizedReqNetworkRespSent (unauthReqNetRespSent)

Access	Read: All Write: Illegal
Description	This attribute counts the number of “Unauthorized Requested Network” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when a Location Request

	is denied due to the GMLC not being in the home country. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc unauthorizedLcsClientRespSent (unauthLcsCliRespSent)

Access	Read: All Write: Illegal
Description	This attribute counts the number of “Unauthorized LCS Client” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when a Location Request is denied due to privacy restrictions. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc positionMethodFailureRespSent (posMethFailRespSent)

Access	Read: All Write: Illegal
Description	This attribute counts the number of “Positioning Method Failure” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when the position of the mobile cannot be retrieved. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc absentSubscriberRespSent (absentSubRespSent)

Access	Read: All Write: Illegal
Description	This attribute counts the number of “Absent Subscriber” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when the subscriber is International Mobile Subscriber Identity (IMSI) detached, in a restricted area, or does not respond to paging. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc pslMsgs

Access	Read: All Write: Illegal
Description	This attribute counts the MAP-PROVIDE SUBSCRIBER LOCATION messages received by the MAP Client from the Gateway Mobile Location Center (GMLC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Mc MapClientSccpUserInfo (McSccpUI)

Properties	Provisioned
Description	This group contains provisionable attributes of the Sccp User Information of the *MapClient* application
Mib	WirelessGsc

ATTRIBUTE Gsc Mc mapCgpaRoutingIndicator (mapRtInd)

Access	Read: All Write: All
Description	This attribute specifies routing by global title or point code. If set to ***globalTitle*** the MAP Client sets the CgPA routing indicator to route on global title and supply global title information. If set to ***pointCode*** the MAP Client sets the CgPA routing indicator to route on SSN and supply point code and subsystem number in the CgPA.
Mib	WirelessGsc
Values	globalTitle (gt) pointCode (pc)
Default	globalTitle

ATTRIBUTE Gsc Mc mapSgsnSubsystemNumber (msssn)

Access	Read: All Write: All
Description	This attribute specifies the MAP SGSN SSN. This SSN is used by SCCP for subsystem routing.
Mib	WirelessGsc
Values	Decimal (1..255)
Default	149

ATTRIBUTE Gsc Mc sccpServiceRequestTimer

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Client waits for a response after sending a Service Request primitive to the MAP Protocol Stack. The count of timeouts is available in the *sccpServiceRequestTimeouts* attribute.

	Retries of the Service request are infinite since the MAP Client can not send or receive MAP messages until it is successfully registered with the MAP Stack.
Mib	WirelessGsc
Values	Decimal (0..60)
Units	seconds
Default	10

ATTRIBUTE Gsc Mc sccpVariant

Access	Read: All Write: All
Description	This attribute specifies the SCCP variant used by the MAP Client on this SS7 network for the SCCP Called Party Address that is based on the E.212 or E.214 Mobile Subscriber number.
Mib	WirelessGsc
Values	itu ansi ituChinese
Default	itu

GROUP Gsc Mc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessGsc

ATTRIBUTE Gsc Mc adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	WirelessGsc
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Gsc Mc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	WirelessGsc

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Gsc Mc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	WirelessGsc
Values	idle active (activ) busy
Default	idle

GROUP Gsc Mc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Mc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberControl MapClient

Description	The statistics record generated by the GprsSubscriberControl MapClient component.

ATTRIBUTE Gsc Mc uglMsgs

Description This attribute indicates the MAP-UPDATE GPRS LOCATION messages sent to the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc uglResponseMsgs (uglResp)

Description This attribute indicates the successful MAP-UPDATE GPRS LOCATION RESPONSE messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc isdMsgs

Description This attribute indicates the MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc isdResponseMsgs (isdResp)

Description This attribute indicates the MAP-INSERT SUBSCRIBER DATA RESPONSE messages sent to the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc dsdMsgs

Description This attribute indicates the MAP-DELETE SUBSCRIBER DATA messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc dsdResponseMsgs (dsdResp)

Description This attribute indicates the MAP-DELETE SUBSCRIBER DATA RESPONSE messages sent to the Home Location Register (HLR) in the collection interval.

Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mc clMsgs

Description	This attribute indicates the MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mc clResponseMsgs (clResp)

Description	This attribute indicates the MAP-CANCEL LOCATION RESPONSE messages sent to the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mc rstMsgs

Description	This attribute indicates the MAP-RESET messages received from the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mc saiMsgs

Description	This attribute indicates the MAP-SEND AUTHENTICATION INFO messages sent to the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mc saiResponseMsgs (saiResp)

Description	This attribute indicates the MAP-SEND AUTHENTICATION INFO RESPONSE messages received from the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mc transLimitDiscards (trDisc)

Description	This attribute indicates the number of transactions rejected by the MAP Client when the maximum number of concurrent MAP transactions supported by the MAP Client has been exceeded.

The maximum number of MAP transactions is constrained by the MAP Client internal memory available to store the transactions. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc tmrExpiries (tmrEx)

Description This attribute indicates the times the *mcTimer* (defined in component *Sgsn GprsSubscriberControl* and *Usgsn UmtsSubscriberControl*) expires before receiving a response from the Home Location Register (HLR). This can be used to determine if the provisionable attribute *mcTimer* must be changed, or a problem exists between the Serving GPRS Support Node (SGSN) or the UMTS Serving General Support Node (USGSN) and the Home Location Register (HLR). This counter counts the value in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc ofsmMsgs

Description This attribute indicates the MAP-MO-FORWARD-SHORT-MESSAGE messages received by the Inter-working Mobile Switching Center (IWMSC) from the MAP Client in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc ofsmResMsgs

Description This attribute indicates the MAP-MO-FORWARD-SHORT-MESSAGE response messages received by the MAP Client from the Inter-working Mobile Switching Center (IWMSC) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc tfsmMsgs

Description This attribute indicates the MAP-MT-FORWARD-SHORT-MESSAGE messages received by the MAP Client from the Inter-working Mobile Switching Center (IWMSC) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc tfsmResMsgs

Description This attribute indicates the MAP-MT-FORWARD-SHORT-MESSAGE response messages received by the Inter-working Mobile Switching Center (IWMSC) from the MAP Client in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc rsmMsgs

Description This attribute indicates the MAP-READY-FOR-SM messages received by the Home Location Register (HLR) from the MAP Client in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc rsmResMsgs

Description This attribute indicates the MAP-READY-FOR-SM response messages received by the MAP Client from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc currentTransactions (curTr)

Description This attribute indicates how many MAP transactions are currently being handled by the MAP Client. *currentTransactions* is expressed as a percentage utilization of the number of MAP transactions the MAP Client is capable of handling concurrently.

A SET alarm is generated by the MAP Client when the percentage utilization reaches a high threshold. A CLEAR alarm is generated by the MAP Client when the percentage utilization reaches a low threshold and an outstanding SET alarm exists.

The value reported is the value at the end of the collection interval.

Values Decimal (0..100)

ATTRIBUTE Gsc Mc sccpServiceRequestTimeouts

Description: This attribute indicates the MAP Stack Service request timeouts in the collection interval. This could occur if the MAP Stack was not responding to Service requests from the MAP Clients, or if there was an SS7-IP Gateway (SIG) or IP network problem.

Retries of the Service request are infinite since the MAP Client can not send or receive MAP messages until it is successfully registered with the MAP Stack.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc decodeErrors

Description: This attribute indicates, over the collection interval, the number of MAP messages received from HLR and SMSC that are not decodable. The inability to decode the MAP message is caused by the MAP Client receiving a message with invalid data.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc dataMissingRespSent

Description: This attribute indicates, over the collection interval, the number of “data missing” error responses sent to the HLR or SMSC. This error may occur when optional data is missing from a MAP message received, when required data is missing from a MAP message received, or when an internal data structure is missing data.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unexpectedDataValuesRespSent (unexpDataRespSent)

Description: This attribute indicates, over the collection interval, the number of “unexpected data value” error responses sent to the HLR or SMSC. This error may occur when the parameter type is correct in a MAP message received but contains data which is not relevant for the type of MAP service being invoked.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc systemFailuresRespSent (sysFailRespSent)

Description: This attribute indicates, over the collection interval, the number of “system failure” error responses sent to the HLR or SMSC. This error may occur when a task specified by a MAP message received cannot be performed because of a problem with another entity.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unidentifiedSubscribersRespSent (unidentSubRespSent)

Description: This attribute indicates, over the collection interval, the number of “unidentified subscriber” error responses sent to the HLR or SMSC. This error may occur when the subscriber is not contained in the subscriber database resulting in the failure to establish a call.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc facilityNotSupportedRespSent (facNotSuppRespSent)

Description: This attribute indicates, over the collection interval, the number of “facility not supported” error responses sent to the HLR or SMSC. This error may occur when the requested facility, such as SMS, is not supported.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc smDeliveryFailuresRespSent (smDelFailRespSent)

Description: This attribute indicates, over the collection interval, the number of “short message delivery failure” error responses sent to the SMSC. This error may occur when the mobile runs out of memory to store short messages.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc illegalSubscribersRespSent (illegalSubRespSent)

Description: This attribute indicates, over the collection interval, the number of “illegal subscriber” error responses sent to the HLR or SMSC. This error may occur when an illegal access attempt is determined during the authentication process.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc illegalEquipmentRespSent

Description This attribute indicates, over the collection interval, the number of “illegal equipment” error responses sent to the HLR or SMSC. This error may occur when the International Mobile station Equipment Identity (IMEI) is either blacklisted or not whitelisted.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc subscriberBusyForMtSmsRespSent (SubBusyMtSmsRespSent)

Description This attribute indicates, over the collection interval, the number of “subscriber busy for mobile-terminated short message service” error responses sent to the SMSC. This error may occur when mobile terminated short messages cannot be completed.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc absentSubscriberSmRespSent (absentSubSmRespSent)

Description This attribute indicates, over the collection interval, the number of “absent subscriber short message service” error responses sent to the SMSC. This error may occur when the mobile terminated short message transfer cannot be completed because the network cannot contact the subscriber. This may be caused by the mobile being turned off.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc dataMissingRespRecv

Description This attribute indicates, over the collection interval, the number of “data missing” error responses received from the HLR or SMSC. This error may occur when optional data is missing from a MAP message sent, when required data is missing from a MAP message sent, or when an internal data structure is missing data.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unexpectedDataValuesRespRecv (unexpDataRespRecv)

Description This attribute indicates, over the collection interval, the number of “unexpected data value” error responses received from the

HLR or SMSC. This error may occur when the parameter type is correct in a MAP message sent but contains data which is not relevant for the type of MAP service being invoked.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc systemFailuresRespRecv (sysFailRespRecv)

Description This attribute indicates, over the collection interval, the number of “system failure” error responses received from the HLR or SMSC. This error may occur when a task specified by a MAP message sent cannot be performed because of a problem with another entity.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unknownSubscribersRespRecv (unkSubRespRecv)

Description This attribute indicates, over the collection interval, the number of “unknown subscriber” error responses received from the HLR or SMSC. This error may occur when a message sent is processed for a subscription that does not exist.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc roamingNotAllowedRespRecv (noRoamRespRecv)

Description This attribute indicates, over the collection interval, the number of “roaming not allowed” error responses received from the HLR or SMSC. This error may occur when a location update attempt is made in an area not covered by the subscription.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc facilityNotSupportedRespRecv (facNotSuppRespRecv)

Description This attribute indicates, over the collection interval, the number of “facility not supported” error responses received from the HLR or SMSC. This error may occur when the requested facility, such as SMS, is not supported.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc smDeliveryFailuresRespRecv (smDelFailRespRecv)

Description: This attribute indicates, over the collection interval, the number of “short message delivery failure” error responses received from the SMSC. This error may occur when the Short Message Service Center returns a delivery error indication in response to a message sent by the MAP Client.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc invalidMessages

Description: This attribute indicates, over the collection interval, the number of invalid messages received by the MAP Client. This may occur if the MAP Client receives an unsolicited message, a message with an invalid header, or an invalid dialogue ID.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc isdMsgsUpdateLocation (isdMsgsUpdLoc)

Description: This attribute indicates, over the collection interval, the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) during a GPRS Update Location procedure.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc isdMsgsHlrSubUpdate (isdMsgsHlrSubUp)

Description: This attribute indicates, over the collection interval, the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) due to an updated mobile subscription.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc isdFailures (isdFail)

Description: This attribute indicates the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) that could not be processed due to one of the following errors:

Data Missing

Unexpected Data Value
Unidentified Subscriber
Decode errors

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc clMsgsHlrDetach (clMsgsHlrDetach)

Description This attribute indicates, over the collection interval, the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) due to an HLR initiated Detach.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc clMsgsSgsnChange (clMsgsSgsnChg)

Description This attribute indicates, over the collection interval, the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) due to a Service GPRS Support Node (SGSN) change.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc clFailures (clFail)

Description This attribute indicates the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) that could not be processed due to one of the following errors:

Data Missing
Unexpected Data Value
Decode errors

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc dsdFailures (dsdFail)

Description This attribute indicates the number of MAP-DELETE SUBSCRIBER DATA messages sent to the Home Location Register (HLR) that could not be processed due to one of the

following errors:

Data Missing
Unexpected Data Value
Unidentified Subscriber
Decode errors

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc uAbortMsgSent

Description This attribute indicates, over the collection interval, the number of MAP USER ABORT messages sent by the MAP Client to the HLR or SMSC. This message may be sent as a result of a resource limitation caused by congestion or as a result of the unavailability of resources.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc pAbortMsgRecv

Description This attribute indicates, over the collection interval, the number of MAP PROVIDER ABORT messages received by the MAP Client from the HLR or SMSC. This message indicates to the MAP service-user to abort a MAP dialogue. This message may be received due to a MAP service-provider malfunction, supporting dialogue/transaction release, resource limitation, maintenance activity, version incompatibility, or an abnormal MAP dialogue.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc uAbortMsgRecv

Description This attribute indicates, over the collection interval, the number of MAP USER ABORT messages received by the MAP Client from the HLR or SMSC. This message indicates to the MAP service-provider to abort a MAP dialogue. This message may be received due to a resource limitation caused by congestion or by unavailability of resources.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc pmsMsgs

Description: This attribute indicates the number of Mobile Subscriber Purge messages sent to the Home Location Register (HLR).

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc pmsResponseMsgs (pmsRes)

Description: This attribute indicated the number of Mobile Subscriber Purge Response messages received from the Home Location Register (HLR).

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unexpectedErrorCodeRespRecv (unexpErrRespRecv)

Description: This attribute counts the unexpected error responses received from the Home Location Register (HLR). An unexpected error response may be received when a Transaction Capabilities Application Part (TCAP) error code is received at the Service GPRS Support Node (SGSN) and that error code is inconsistent with the invoked Mobile Application Part (MAP) operation.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc pslRespMsgs

Description: This attribute counts the MAP-PROVIDE SUBSCRIBER LOCATION response messages sent by the MAP Client to the Gateway Mobile Location Center (GMLC).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unauthorizedReqNetworkRespSent (unauthReqNetRespSent)

Description: This attribute counts the number of “Unauthorized Requested Network” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when a Location Request is denied due to the GMLC not being in the home country.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unauthorizedLcsClientRespSent (unauthLcsCliRespSent)

Description: This attribute counts the number of “Unauthorized LCS Client” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when a Location Request is denied due to privacy restrictions.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc positionMethodFailureRespSent (posMethFailRespSent)

Description: This attribute counts the number of “Positioning Method Failure” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when the position of the mobile cannot be retrieved.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc absentSubscriberRespSent (absentSubRespSent)

Description: This attribute counts the number of “Absent Subscriber” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when the subscriber is International Mobile Subscriber Identity (IMSI) detached, in a restricted area, or does not respond to paging.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc pslMsgs

Description	This attribute counts the MAP-PROVIDE SUBSCRIBER LOCATION messages received by the MAP Client from the Gateway Mobile Location Center (GMLC). The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Gsc GtpMgmt (GtpM)

Groups	"GROUP Gsc GtpM Provisioned (Prov)" "GROUP Gsc GtpM Operational (Oper)" "GROUP Gsc GtpM WlcCustomCounters (WlcCustomCntr)" "GROUP Gsc GtpM OsiState (State)"

"COLLECTED STATS GprsSubscriberControl GtpMgmt"

Scope	Application
Description	*Gsc/n GtpMgmt* This component represents the signaling part of the GPRS Tunneling Protocol (GTP) protocol layer which is used to send the control messages.
Mib	WirelessGsc
Dyn. Subcomp.	"COMPONENT Gsc GtpM GtpPath (Path)"
Common Verbs	Help List Display

GROUP Gsc GtpM Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attribute of the GPRS Tunneling Protocol (GTP) protocol layer.
Mib	WirelessGsc

ATTRIBUTE Gsc GtpM maxTransactions (maxTr)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of outstanding GPRS Tunneling Protocol (GTP) messages that can be simultaneously waiting for responses or acknowledgments from the peer GPRS Support Nodes (GSNs). The peak number of transactions can be obtained from the attribute *peakTransactions*.
Mib	WirelessGsc
Values	Decimal (10..65535)
Default	100

ATTRIBUTE Gsc GtpM maxIncomingRequests (maxInReq)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of outstanding incoming GPRS Tunnelling Protocol (GTP) requests that can be handled. Changing the value changes the amount of memory allocated for these requests. Requests rejected because this maximum is reached are counted by the attribute *incomingRequestsRejected*.
Mib	WirelessGsc
Values	Decimal (10..1000)
Default	100

ATTRIBUTE Gsc GtpM linkToPort (lToPort)

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the IP address and the UDP port numbers that the GPRS Tunneling Protocol (GTP) version 0 and version 1 use to communicate with the Gateway GPRS Support Node (GGSN). The IP address and UDP ports are specified by setting this attribute to link to the correct *Gips IpAddress Udp Port* components. The standards recommend the value of one member of this list (used by GTP Version 0) to be set to *Gips/n IpAddress/ <ipaddress> Udp Port/3386.* The standards recommend the value of the other member of this list (used by GTP Version 1) to be set to *Gips/n IpAddress/ <ipaddress> Udp Port/2123.*
Mib	WirelessGsc
List of	Link (Service, linkToApplication)
List Size	2
Default	No default

GROUP Gsc GtpM Operational (Oper)

Properties	Operational
Description	This group contains the operational data of the GPRS Tunneling Protocol (GTP) protocol layer.
Mib	WirelessGsc

ATTRIBUTE Gsc GtpM peakTransactions (peakTr)

Access	Read: All Write: Illegal
Description	This attribute indicates the peak number of concurrent transactions of the GPRS Tunneling Protocol (GTP). The maximum value is provisioned in the attribute *maxTransactions*.

Mib	WirelessGsc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Gsc GtpM sgsnContextReqAttempts (sgsnCntxReqAtt)

Access	Read: All Write: Illegal
Description	This attribute counts the SGSN CONTEXT REQUEST messages sent from the new Serving GPRS Support Node (SGSN) to the old SGSN. This counter is incremented in the SGSN acting as the new SGSN. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM sgsnContextReqExhaust (sgsnCntxReqE)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times *n3SgsnContextRequest* is exhausted and the SGSN CONTEXT REQUEST message is not successful. This attribute is incremented in the Serving GPRS Support Node (SGSN) acting as the new SGSN. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM updatePdpReqAttempts (uPdpReq)

Access	Read: All Write: Illegal

Description	This attribute counts the number of UPDATE PDP CONTEXT REQUEST messages that are sent from this Serving GPRS Support Node (SGSN), acting as the new SGSN, to the GGSN. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM updatePdpReqExhaust (uPdpReqRetE)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the retry attribute, *n3UpdatePdpRequest*, is exhausted and the UPDATE PDP CONTEXT REQUEST message is not successful. This attribute is incremented in the Serving GPRS Support Node (SGSN) acting as the new SGSN. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM sgsnContextRespAttempts (sgsnCnxtRespAtt)

Access	Read: All Write: Illegal
Description	This attribute counts the number of SGSN CONTEXT RESPONSE messages which are sent to the new Serving GPRS Support Node (SGSN). This counter is incremented in the SGSN which is acting as the old SGSN. This counter is incremented only the first time the message is sent out per SGSN CONTEXT REQUEST received. The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM sgsnContextRespExhaust (sgsnCntxRespExh)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times *n3SgsnContextRequest* is exhausted and the SGSN CONTEXT RESPONSE message is not successful. This attribute is incremented in the Serving GPRS Support Node (SGSN) acting as the old SGSN. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM sgsnContextAcks (sgsnCntxAcks)

Access	Read: All Write: Illegal
Description	This attribute counts the number of SGSN CONTEXT ACK messages sent from the new Serving GPRS Support Node (SGSN) to the old SGSN. This counter is incremented in the SGSN acting as the new SGSN. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM echoRequestsTransmitted (echoReqTx)

Access	Read: All Write: Illegal

Description	This attribute counts the number of Echo Request Messages sent over the Gn interface. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM echoResponsesTransmitted (echoRspTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Echo Response Messages sent over the Gn interface. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM pathFailures (pathFail)

Access	Read: All Write: Illegal
Description	This attribute counts the path failures detected by the GPRS Tunelling Protocol (GTP), based on maximum value of the attribute *n3Request* for different GTP messages provisioned under *Sgsn Gsc*. The attribute *n3Request* defines the number of times the serving GPRS support node (SGSN) will attempt to send a GTP signalling message to the GPRS support node (GSN). A path to the GSN would be declared as failed when the number of request messages on the SGSN waiting for a response from the GSN exceeds the *n3Request* value with no incoming request or response messages received from the GSN. All sessions tied (on) to that GSN would be deactivated. The counter wraps to zero when its maximum value is exceeded.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM incomingRequestsRejected (inReqReject)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the incoming GPRS Tunnelling Protocol (GTP) requests that were rejected because the maximum number of outstanding incoming requests was exceeded. This maximum is based on the attribute *maxIncomingRequests*. The counter wraps to zero when it exceeds its maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM peakGtpPaths (peakGtpP)

Access	Read: All Write: Illegal
Description	This attribute indicates the peak number of managed paths that have been set up between this Serving GPRS Support Node (SGSN) and the GPRS Support Nodes (GSNs). The maximum value is provisioned in the attribute *maxGgsnPaths* (defined in the *Sgsn GprsSubscriberControl* component).
Mib	WirelessGsc
Values	Decimal (0..65535)
Default	No default

GROUP Gsc GtpM WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc GtpM customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc GtpM OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessGsc

ATTRIBUTE Gsc GtpM adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	WirelessGsc
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Gsc GtpM operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	WirelessGsc
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Gsc GtpM usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib WirelessGsc

Values idle
active (activ)
busy

Default idle

COLLECTED STATS GprsSubscriberControl GtpMgmt

Description The statistics record generated by the GprsSubscriberControl GtpMgmt component.

ATTRIBUTE Gsc GtpM echoRequestsTransmitted (echoReqTx)

Description This attribute counts the number of Echo Request Messages sent over the collection interval.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc GtpM echoResponsesTransmitted (echoRspTx)

Description This attribute counts the number of Echo Response Messages sent on the Gn Interface over the collection interval.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc GtpM pathFailures

Description This attribute counts the path failures detected by GPRS Tunelling Protocol (GTP), based on maximum value of the attribute *n3Request* provisioned for different GTP messages under *Sgsn Gsc* over the collected interval.

The attribute *n3Request* defines the number of times the serving GPRS support node (SGSN) will attempt to send a GTP signalling message to the GPRS support node (GSN). A path to the GSN would be declared as failed when the number of request

messages on the SGSN waiting for a response from the GSN exceeds the *n3Request* value with no incoming request or response messages received from the GSN. All sessions tied (on) to that GSN would be deactivated.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc GtpM incomingRequestsRejected (inReqReject)

Description: This attribute counts the number of the incoming GPRS Tunnelling Protocol (GTP) requests that were rejected during the collection interval because the maximum number of outstanding incoming requests was exceeded. This maximum is based on the attribute *maxIncomingRequests*.

The count is taken at the end of the collection interval.

Values: Decimal (0..4294967295)

COMPONENT Gsc GtpM GtpPath (Path)

Instance: IP address

Groups: "GROUP Gsc GtpM Path OsiState (State)"
"GROUP Gsc GtpM Path WlcCustomCounters (WlcCustomCntr)"

Scope: Application

Description: *Usc/n GtpC GtpPath/<ipaddress>*
Gsc/n GtpMgmt GtpPath/<ipaddress>

This component represents paths managed by the signaling part of the GPRS Tunneling Protocol (GTP) protocol layer. Paths are set up between this (UMTS) Serving GPRS Support Node ((U) SGSN) and the GPRS Support Nodes (GSNs).

Mib: WirelessGsc

Common Verbs:
- Help
- List
- Display

GROUP Gsc GtpM Path OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessGsc

ATTRIBUTE Gsc GtpM Path adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	WirelessGsc
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Gsc GtpM Path operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	WirelessGsc
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Gsc GtpM Path usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	WirelessGsc
Values	idle active (activ) busy
Default	idle

GROUP Gsc GtpM Path WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc GtpM Path customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM Path customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc GtpM Path customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc GprsMobilityManagement (Gmm)

Groups	"GROUP Gsc Gmm Provisioned (Prov)" "GROUP Gsc Gmm GmmStatistics (GmmStats)" "GROUP Gsc Gmm StatusRxStatistics (StStats)" "GROUP Gsc Gmm GmmCircuitSwStats (CktSwStats)" "GROUP Gsc Gmm GmmAttRejStatistics (GmmAttRejStats)" "GROUP Gsc Gmm WlcCustomCounters (WlcCustomCntr)" "GROUP Gsc Gmm SnrAttOper (SnrOper)"

"COLLECTED STATS GprsSubscriberControl GprsMobilityManagement"

Scope	Application
Description	*Gsc/n GprsMobilityManagement* This component represents the GPRS Mobility Management (GMM) protocol layer of the GPRS.
Mib	WirelessGsc
Common Verbs	Help List Display

GROUP Gsc Gmm Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attribute of GPRS Mobility Management (GMM).
Mib	WirelessGsc

ATTRIBUTE Gsc Gmm radioPriorityLevel (rpLevel)

Access	Read: All Write: All
Description	This attribute specifies the priority level that the Mobile Station (MS) uses for transmission of data related to Mobile Originated Short Message Service (SMS) transmission. The Radio Priority Level ***1*** represents the highest priority and ***4*** represents the lowest priority.
Mib	WirelessGsc
Values	Decimal (1..4)
Default	4

GROUP Gsc Gmm GmmStatistics (GmmStats)

Properties	Operational
Description	This group contains statistical attributes of the *GprsMobilityManagement (Gmm)*.
Mib	WirelessGsc

ATTRIBUTE Gsc Gmm authenticationRequests (authReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the AUTHENTICATION AND CIPHERING REQUEST messages sent to the MS requiring only authentication and messages requiring both authentication and ciphering. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm cipheringRequests (ciphReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the AUTHENTICATION AND CIPHERING REQUEST messages sent to the Mobile Stations (MS) requiring only ciphering. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm identityRequests (idReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the IDENTITY REQUEST messages sent to the Mobile Stations (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm ptmsiReallocationRequests (relReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the implicit and explicit P-TMSI REALLOCATION messages sent to the Mobile Stations (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm bssgpSuspendMsgs (bssgpSus)

Access	Read: All Write: Illegal
Description	This attribute counts the SUSPEND messages received by the Serving GPRS Support Node (SGSN) from the Base Station System (BSS). The BSS sends this message when a mobile subscriber switches from the packet-switched mode to the circuit-switched mode. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm bssgpResumeMsgs (bssgpRes)

Access	Read: All Write: Illegal
Description	This attribute counts the RESUME messages received by the Serving GPRS Support Node (SGSN) from the Base Station System (BSS). The BSS sends this message when a mobile subscriber switches from the circuit-switched mode to the packet-switched mode. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm readyStateSubscribers (readySub)

Access	Read: All Write: Illegal
Description	This attribute indicates the mobile subscribers that are GPRS-attached and in Ready state.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm currentlyAttached (curAtt)

Access	Read: All Write: Illegal
Description	This attribute indicates the Mobile Stations (MS) that are currently GPRS-attached and in Ready or Standby state. The maximum subscribers that can be GPRS-attached is provisioned in the *maxAttachedSubscribers* attribute of the parent *GprsSubscriberControl (Gsc) component*. This attribute together with maxAttachedSubscribers are used to determine when subscriber count overload occurs (Refer to Gsc subCountOvldAttachesDiscarded).
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm attachesSuccessful (attSuc)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were successful. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm attachesWithKnownTlli (knownTlliAtt)

Access	Read: All Write: Illegal

Description	This attribute counts the ATTACH REQUEST messages received with a Temporary Logical Link Identifier (TLLI) previously assigned by this Serving GPRS Support Node (SGSN). This includes all successful and unsuccessful attempts. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm attachesWithUnknownTlli (unkTlliAtt)

Access	Read: All Write: Illegal
Description	This attribute counts the ATTACH REQUEST messages received with a Temporary Logical Link Identifier (TLLI) not assigned by this Serving GPRS Support Node (SGSN). This includes all successful and unsuccessful attempts. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm attachesWithImsi (attWithImsi)

Access	Read: All Write: Illegal
Description	This attribute counts the ATTACH REQUEST messages received with an International Mobile Subscriber Identity (IMSI) as an identifier. This includes all successful and unsuccessful attempts. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm attachesWithInfoAttempts (attWithInfo)

Access	Read: All Write: Illegal
Description	This attribute counts the ATTACH attempts by mobile subscribers with the GPRS Mobility Management (GMM) context held in the Serving GPRS Support Node (SGSN). This includes all successful and unsuccessful attempts. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm detachesSuccessful (detSuc)

Access	Read: All Write: Illegal
Description	This attribute counts the successful DETACHes that are either mobile or network initiated. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm msDetachRequests (msDetReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated DETACH REQUEST messages received by this Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Gsc Gmm msDetachRejected (msDetRej)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated GPRS-DETACH REQUEST messages which have been rejected by this Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm nwkDetachRequests (nwkDetReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the network initiated DETACH REQUEST messages sent to a mobile subscriber. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm authenticationsRejected (authRej)

Access	Read: All Write: Illegal
Description	This attribute counts the AUTHENTICATION AND CIPHERING REJECT messages sent to the Mobile Station (MS) due to authentication failures. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Gsc Gmm normalIntraSgsnRaUpdate (norIntraSgsnRau)

Access	Read: All Write: Illegal
Description	This attribute counts the normal intra-Serving GPRS Support Node (SGSN) ROUTING AREA UPDATE REQUEST messages received from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm periodicIntraSgsnRaUpdate (perIntraSgsnRau)

Access	Read: All Write: Illegal
Description	This attribute counts the periodic intra-Serving GPRS Support Node (SGSN) ROUTING AREA UPDATE REQUEST messages from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm normalInterSgsnRaUpdate (interSgsnRau)

Access	Read: All Write: Illegal
Description	This attribute counts the inter-Serving GPRS Support Node (SGSN) ROUTING AREA UPDATE REQUEST messages from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm intraRaCellChange (intraRaCellCh)

Access	Read: All Write: Illegal
Description	This attribute counts the intra-Serving GPRS Support Node (SGSN) intra-Routing Area Update cell changes performed by the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm initialPsPageRequests (initPgReq)

Access	Read: All Write: Illegal
Description	This attribute counts the initial PS (Packet-Switched) PAGE REQUEST messages sent to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm reattemptPsPageRequests (rePgReq)

Access	Read: All Write: Illegal
Description	This attribute counts the re-attempt PS (Packet-Switched) PAGE REQUEST messages sent to the Mobile Station (MS) after the initial page request. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm interSgsnRaUpdateAccepts (irauAccepts)

Access	Read: All Write: Illegal
Description	This attribute counts the ROUTING AREA UPDATE ACCEPT messages sent from this SGSN, while acting as the new SGSN, to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm t3Timeouts (t3To)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the *t3TunnelTimer* (defined in *Sgsn GprsSubscriberControl*) expires in this SGSN, while acting as the old SGSN, and the CANCEL LOCATION message has been received. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm msPresentAttempts (msPresentAtt)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the SGSN detects that the Mobile Station (MS) has recovered operation such as responded to a paging request via the SGSN. If the MS has alerted the SGSN and the HLR that its memory has exceeded,

	then the HLR will not notify the Service Center that the MS is ready for Short Message Services (SMS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm nwkDetachReachableTimer (nwkDetReach)

Access	Read: All Write: Illegal
Description	This attribute counts the number of network initiated detaches due to the expiration of reachable timer. The *mobileReachableTimer* attribute is provisioned in the *Sgsn Gsc* component. The counter counts the events in the collection interval.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm nwkDetachCancelLocation (nwkDetCancelLoc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of network initiated detaches in the specified cell due to the receipt of CANCEL LOCATION Messages from the Home Location Register (HLR). This counter counts the events in the collection interval.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm nwkDetachDuplicateAttach (nwkDetDupAtt)

Access	Read: All Write: Illegal
Description	This attribute counts the number of network initiated detaches due to mobile reattaches with a new random Packet Temporary (PTMSI) without first performing a detach. This is an implicit detach and no detach message is sent to the mobile. The counter counts the events in the collection interval.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm nwkDetachTempNetworkFailure (nwkDetNetFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of network initiated detaches in this cell due to temporary network problems. The counter counts the events in the collection interval.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm nwkDetachForReattach (nwkDetReatt)

Access	Read: All Write: Illegal
Description	This attribute counts the number of network initiated detaches with a detach type of "reattach required". The counter counts the events in the collection interval.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Gmm StatusRxStatistics (StStats)

Properties	Operational
Description	This group contains statistical attributes of the *GprsMobilityManagement (Gmm)*.
Mib	WirelessGsc

ATTRIBUTE Gsc Gmm retriesUponEntry (nEntry)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) received a status message from a Mobile Station (MS) to indicate a retry upon entry into a new cell. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm incorrectMsgs (incorrMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) received a status message from a Mobile Station (MS) indicating that a semantically incorrect message was received by the MS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm invalidMandatoryInfos (invMandInfos)

Access	Read: All Write: Illegal
Description	This attribute counts the number of mobile originated messages containing invalid mandatory information that are received by the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm unimplementedMsgs (uniMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) received a status message from a Mobile Station (MS) indicating an unimplemented or unrecognized message was received by the MS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm incompatibleMsgsType (incMsgsT)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) received a status message from a Mobile Station (MS) indicating a message type received by the MS was not compatible with the protocol state of the MS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm unimplementedInfos (uniInfos)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) received a status message from a Mobile Station (MS) indicating an unimplemented or unrecognized information element inside a message was received by the MS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm conditionalIeErrors (condIeErrs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) received a status message from a Mobile Station (MS) indicating that a message containing a conditional information element error was received by the MS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm incompatibleMsgs (incMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) received a status message from a Mobile Station (MS) indicating a message received by the MS was not

	compatible with the protocol state of the MS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm unspecifiedProtocolErrors (unPerrs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) received a status message from the Mobile Station (MS) indicating that the MS received a message containing an unspecified protocol error. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm miscStatusRx (mStRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) received a miscellaneous status message from a Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Gmm GmmCircuitSwStats (CktSwStats)

Properties	Operational

Description	This group contains statistical attributes of the *GprsMobilityManagement (Gmm) circuit switched services*.
Mib	WirelessGsc

ATTRIBUTE Gsc Gmm circuitAttachedCurrent (cktAttCur)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Mobile Stations (MSs) that are currently attached to the *GprsSubscriberControl* for circuit switched services.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm circuitAttachTotal (cktAttTot)

Access	Read: All Write: Illegal
Description	This attribute counts the successful mobile attaches to the *GprsSubscriberControl* for circuit switched services. Every time a mobile attaches (or re-attaches) for circuit switched services, the count is incremented. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm vlrUnreliableMobileCurrent (vlrUnMobCur)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Mobile Stations (MSs) currently attached for circuit switched services that have set

	vlrReliable (defined in *Sgsn Imsi/<imsi> Bssap* or *Gsc/n Imsi/ <imsi> Bssap*) to ***false***.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Gmm GmmAttRejStatistics (GmmAttRejStats)

Properties	Operational
Description	This group contains statistical attributes of the Attach rejects for *GprsMobilityManagement (Gmm)*.
Mib	WirelessGsc

ATTRIBUTE Gsc Gmm attachRejIllegalMs (attRejIllMs)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause Illegal Ms. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm attachRejGprsServNotAllowed (attRejGprsServ)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause Gprs Service not allowed. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Gsc Gmm attachRejGprsServNotAllowedInPlmn (attRejGprsServPlmn)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause "Gprs Service not allowed in this PLMN". The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm attachRejPlmnNotAllowed (attRejPlmn)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause PLMN not allowed. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm attachRejPacketNetworkFailure (attRejNetFail)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause Network Failure. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm attachRejSgsnCongestion (attRejCongest)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause Congestion. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm attachRejMsgError (attRejMsgErr)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of one of the following reject causes: Semantically incorrect message, Invalid mandatory information, Message type non-existence or not implemented, Message type not compatible with the protocol state, Information element non-existent or not implemented, Conditional IE error, Message not compatible with the protocol state, Protocol error, unspecified. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm attachRejRoamNotAllowedInLocArea (attRejRoam)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause "roaming not allowed in location area". This counter is incremented when a Unit Data Transfer Service message (UDTS) is received from the SS7/IP Gateway (SIG) for a Update GPRS Location (UGL) or a Send Authentication Info (SAI), or when the global title translation failure occurs in the MapClient component. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm attachRejCombNotAllowed (attRejComb)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause "Combined Gprs and Circuit Services not allowed". The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm attachRejNotPermittedInLocArea (attRejLa)

Access	Read: All Write: Illegal

Description	This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause "Mobile not Permitted in this Location Area". The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Gmm WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Gmm customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Gmm SnrAttOper (SnrOper)

Properties	Operational
Description	This group contains operational attributes of this component.
Mib	WirelessGsc

ATTRIBUTE Gsc Gmm snrCurrentlyAttached (snrCuAtt)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of roaming Mobile Stations (MSs) that are currently GPRS-attached and have been given homer Quality of Service by Seamless National Roaming (SNR). If the SNR service is updated after the MS is attached, then the value of this attribute is not updated until the next Routing Area Update, periodic or Intra Serving GPRS Support Node (SGSN).
Mib	WirelessGsc
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Gsc Gmm snrAttachesSuccessful (snrAtt)

Access	Read: All Write: Illegal
Description	This attribute counts the roaming Mobile Stations (MSs) that have been GPRS-attached and had been given homer Quality of Service by Seamless National Roaming. If the SNR service is updated after the MS is attached, then the value of this attribute is not updated until the next Routing Area Update, periodic or Intra Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm snrGprsNotAllowedRejects (snrGprsNotAllRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS Services Not Allowed” (cause code 7). The reject is also counted in the *attachesRejected* attribute (defined in the *Gsc/n Gmm* component). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm snrCombNotAllowedRejects (snrCombNotAllRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS and Non-GPRS Services Not Allowed” (cause code 8). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm snrNotAllowedInPlmnRejects (snrPlmnRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “PLMN Not Allowed” (cause code 11). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm snrNotAllowedInLaRejects (snrLaRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “Location Area Not Allowed” (cause code 12). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm snrNoRoamingInLaRejects (snrRoamLaRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “Roaming Not Allowed In This Location Area” (cause code 13). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm snrGprsNotAllowedInPlmnRejects (snrGprsPlmnRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS Not Allowed in this PLMN” (cause code 14). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Gmm snrTryAnotherCellRejects (snrCellRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Release 99 Mobile Stations (MSs) due to the cause “No Suitable Cells In Location Area” (cause code 15).

The reject for Release 97 MSs are counted in the *snrRemappedCauseRejects* attribute (defined in the *Gsc/n Gmm* component).

The counter wraps to zero when it exceeds the maximum value.

Mib: WirelessGsc

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Gsc Gmm snrOtherCauseRejects (snrOtherRej)

Access: Read: All
Write: Illegal

Description: This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) because of causes other than the following reject causes:

Cause code 7: GPRS Services Not Allowed
Cause code 8: GPRS Services and Non-GPRS Services Not Allowed
Cause code 11: PLMN Not Allowed
Cause code 12: Location Area Not Allowed
Cause code 13: Roaming Not Allowed In This Location Area
Cause code 14: GPRS Not Allowed In This PLMN
Cause code 15: No Suitable Cells In Location Area

The counter wraps to zero when it exceeds the maximum value.

Mib: WirelessGsc

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Gsc Gmm snrRemappedCauseRejects (remapRej)

Access: Read: All
Write: Illegal

Description	This attribute counts the rejects sent by Seamless National Roaming to the Release 97 Mobile Stations (MSs) due to the cause “No Suitable Cells In Location Area” (cause code 15). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberControl GprsMobilityManagement

Description	The statistics record generated by the GprsSubscriberControl GprsMobilityManagement component.

ATTRIBUTE Gsc Gmm authenticationRequests (authReqs)

Description	This attribute counts the AUTHENTICATION AND CIPHERING REQUEST messages sent to the MS requiring only authentication and messages requiring both authentication and ciphering. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm cipheringRequests (ciphReqs)

Description	This attribute counts the AUTHENTICATION AND CIPHERING REQUEST messages sent to the Mobile Stations (MS) requiring only ciphering in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm identityRequests (idReqs)

Description	This attribute counts the IDENTITY REQUEST messages sent to the Mobile Stations (MS) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm ptmsiReallocationRequests (relReqs)

Description	This attribute counts the implicit and explicit P-TMSI REALLOCATION messages sent to the Mobile Stations (MS) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm bssgpSuspendMsgs (bssgpSus)

Description	This attribute counts the SUSPEND messages received by the Serving GPRS Support Node (SGSN) from the Base Station System (BSS). The BSS sends this message when a mobile subscriber switches from packet-switched mode to circuit-switched mode. This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm bssgpResumeMsgs (bssgpRes)

Description	This attribute counts the RESUME messages received by the Serving GPRS Support Node (SGSN) from the Base Station System (BSS). The BSS sends this message when a mobile subscriber switches from circuit-switched mode to packet-switched mode. This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm readyStateSubscribers (readySub)

Description	This attribute indicates the mobile subscribers that are GPRS-attached and in Ready state. This value reported is the value at the end of the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm currentlyAttached (curAtt)

Description	This attribute indicates the Mobile Stations (MS) that are currently GPRS-attached and in Ready or Standby state. This value reported is the value at the end of the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachesSuccessful (attSuc)

Description: This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were successful in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachesWithKnownTlli (knownTlliAtt)

Description: This attribute counts the ATTACH REQUEST messages received with a Temporary Logical Link Identifier (TLLI) previously assigned by this Serving GPRS Support Node (SGSN). This includes all successful and unsuccessful attempts. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachesWithUnknownTlli (unkTlliAtt)

Description: This attribute counts the ATTACH REQUEST messages received with a Temporary Logical Link Identifier (TLLI) not assigned by this Serving GPRS Support Node (SGSN). This includes all successful and unsuccessful attempts. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachesWithImsi (attWithImsi)

Description: This attribute counts the ATTACH REQUEST messages received with an International Mobile Subscriber Identity (IMSI) as an identifier. This includes all successful and unsuccessful attempts. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachesWithInfoAttempts (attWithInfo)

Description: This attribute counts the ATTACH attempts by mobile subscribers with the GPRS Mobility Management (GMM) context held in the Serving GPRS Support Node (SGSN). This includes all successful and unsuccessful attempts. This counter counts the events in the collection interval.

Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm detachesSuccessful (detSuc)

Description	This attribute counts the successful mobile or network initiated DETACHes in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm msDetachRequests (msDetReqs)

Description	This attribute counts the Mobile Station (MS) initiated DETACH REQUEST messages received by this Serving GPRS Support Node (SGSN) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm msDetachRejected (msDetRej)

Description	This attribute counts the Mobile Station (MS) initiated GPRS-DETACH REQUEST messages which have been rejected by this Serving GPRS Support Node (SGSN) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm nwkDetachRequests (nwkDetReqs)

Description	This attribute counts the network initiated DETACH REQUEST messages sent to a mobile subscriber in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm authenticationsRejected (authRej)

Description	This attribute counts the AUTHENTICATION AND CIPHERING REJECT messages sent to the Mobile Station (MS) due to authentication failures in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm normalIntraSgsnRaUpdate (norIntraSgsnRau)

Description	This attribute counts the normal intra-Serving GPRS Support Node (SGSN) ROUTING AREA UPDATE REQUEST messages received from the Mobile Station (MS) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm periodicIntraSgsnRaUpdate (perIntraSgsnRau)

Description	This attribute counts the periodic intra-Serving GPRS Support Node (SGSN) ROUTING AREA UPDATE REQUEST messages from the Mobile Station (MS) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm normalInterSgsnRaUpdate (interSgsnRau)

Description	This attribute counts the inter-Serving GPRS Support Node (SGSN) ROUTING AREA UPDATE REQUEST messages from the Mobile Station (MS) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm intraRaCellChange (intraRaCellCh)

Description	This attribute counts the intra-Serving GPRS Support Node (SGSN) intra-Routing Area cell changes performed by the Mobile Station (MS) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm initialPsPageRequests (initPgReq)

Description	This attribute counts the initial PS (Packet-Switched) PAGE REQUEST messages sent to the Mobile Station (MS) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm reattemptPsPageRequests (rePgReq)

Description	This attribute counts the re-attempt PS (Packet-Switched) PAGE REQUEST messages sent to the Mobile Station (MS) after the initial page request in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm interSgsnRaUpdateAccepts (irauAccepts)

Description	This attribute counts the ROUTING AREA UPDATE ACCEPT messages sent from this SGSN, while acting as the new SGSN, to the Mobile Station (MS) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm t3Timeouts (t3To)

Description This attribute counts the number of times the *t3TunnelTimer* (defined in *Sgsn GprsSubscriberControl*) expires in this SGSN, while acting as the old SGSN, and the CANCEL LOCATION message has been received. The counter wraps to zero when it exceeds the maximum value.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm msPresentAttempts (msPresentAtt)

Description This attribute indicates, for the collection interval, the number of times the SGSN detects that the Mobile Station (MS) has recovered operation such as responded to a paging request via the SGSN. If the MS has alerted the SGSN and the HLR that its memory has exceeded, then the HLR will not notify the Service Center that the MS is ready for Short Message Services (SMS).

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm nwkDetachReachableTimer (nwkDetReach)

Description This attribute counts the number of network initiated detaches due to the expiration of reachable timer. The *mobileReachableTimer* attribute is provisioned in the *Sgsn Gsc* component.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm nwkDetachCancelLocation (nwkDetCancelLoc)

Description This attribute counts the number of network initiated detaches due to the receipt of CANCEL LOCATION Messages from the Home Location Register (HLR).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm nwkDetachDuplicateAttach (nwkDetDupAtt)

Description	This attribute counts the number of network initiated detaches due to mobile reattaches with a new random Packet Temporary Mobile Subscriber Identity (PTMSI) without first performing a detach. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm nwkDetachTempNetworkFailure (nwkDetNetFail)

Description	This attribute counts the number of network initiated detaches due to temporary network problems. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm nwkDetachForReattach (nwkDetReatt)

Description	This attribute counts the number of network initiated detaches with a detach type of "reattach required". The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejIllegalMs (attRejIllMs)

Description	This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected during the collection interval because of the reject cause “Illegal Ms”.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejGprsServNotAllowed (attRejGprsServ)

Description	This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected during the collection interval because of the reject cause “Gprs Service not allowed”.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejGprsServNotAllowedInPlmn (attRejGprsServPlmn)

Description: This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause "Gprs Service not allowed in this PLMN".

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejPlmnNotAllowed (attRejPlmn)

Description: This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected during the collection interval because of the reject cause “PLMN not allowed”.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejPacketNetworkFailure (attRejNetFail)

Description: This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected during the collection interval because of the reject cause “Network Failure”.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejSgsnCongestion (attRejCongest)

Description: This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected during the collection interval because of the reject cause “Congestion”.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejMsgError (attRejMsgErr)

Description: This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected during the collection interval because of one of the following reject causes:
Semantically incorrect message,
Invalid mandatory information,
Message type non-existence or not implemented,
Message type not compatible with the protocol state,
Information element non-existent or not implemented,
Conditional IE error,

Message not compatible with the protocol state,
Protocol error, unspecified.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejRoamNotAllowedInLocArea (attRejRoam)

Description This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause "roaming not allowed in location area".

This counter is incremented when a Unit Data Transfer Service message (UDTS) is received from the SS7/IP Gateway (SIG) for a Update GPRS Location (UGL) or a Send Authentication Info (SAI), or when the global title translation failure occurs in the MapClient component.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejCombNotAllowed (attRejComb)

Description This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause "Combined Gprs and Circuit Services not allowed".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejNotPermittedInLocArea (attRejLa)

Description This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause "Mobile not Permitted in this Location Area".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrPeakAttached (snrPeakAtt)

Description This attribute indicates the peak number of roaming Mobile Stations (MSs) that have become GPRS-attached and have been

given homer Quality of Service by Seamless National Roaming.

If the SNR service is updated after the MS is attached, then the value of this attribute is not updated until the next periodic Routing Area Update.

The value reported is the peak value in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrAttachesSuccessful (snrAtt)

Description This attribute counts the roaming Mobile Stations (MSs) that have been GPRS-attached and had been given homer Quality of Service by Seamless National Roaming.

If the SNR service is updated after the MS is attached, then the value of this attribute is not updated until the next periodic Routing Area Update.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrGprsNotAllowedRejects (snrGprsNotAllRej)

Description This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS Services Not Allowed” (cause code 7).

The reject is also counted in the *attachesRejected* attribute (defined in the *Gsc/n Gmm* component).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrCombNotAllowedRejects (snrCombNotAllRej)

Description This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS And Non-GPRS Services Not Allowed” (cause code 8).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrNotAllowedInPlmnRejects (snrPlmnRej)

Description This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “PLMN Not Allowed” (cause code 11).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrNotAllowedInLaRejects (snrLaRej)

Description This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “Location Area Not Allowed” (cause code 12).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrNoRoamingInLaRejects (snrRoamLaRej)

Description This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “Roaming Not Allowed In This Location Area” (cause code 13).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrGprsNotAllowedInPlmnRejects (snrGprsPlmnRej)

Description This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS Not Allowed in this PLMN” (cause code 14).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrTryAnotherCellRejects (snrCellRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Release 99 Mobile Stations (MSs) due to the cause “No Suitable Cells In Location Area” (cause code 15).

The reject for Release 97 MSs are counted in the *snrRemappedCauseRejects* attribute (defined in the *Gsc/n Gmm* component).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrOtherCauseRejects (snrOtherRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) because of causes other than the following reject causes:

Cause code 7: GPRS Services Not Allowed
Cause code 8: GPRS Services and Non-GPRS Services Not Allowed
Cause code 11: PLMN Not Allowed
Cause code 12: Location Area Not Allowed
Cause code 13: Roaming Not Allowed In This Location Area
Cause code 14: GPRS Not Allowed In This PLMN
Cause code 15: No Suitable Cells In Location Area

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrRemappedCauseRejects (remapRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Release 97 Mobile Stations (MSs) due to the cause “No Suitable Cells In Location Area” (cause code 15).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

COMPONENT Gsc SessionManagement (Sm)

Groups	"GROUP Gsc Sm Provisioned (Prov)" "GROUP Gsc Sm SmStatistics (SmStats)" "GROUP Gsc Sm MsInitPdpCfailStats (MsInitStats)" "GROUP Gsc Sm NwkInitPdpCdeactStats (NwkInitStats)" "GROUP Gsc Sm WlcCustomCounters (WlcCustomCntr)" "GROUP Gsc Sm PdpModOper" "GROUP Gsc Sm WlcSnrActOper (SnrActOper)"

"COLLECTED STATS GprsSubscriberControl SessionManagement"

Scope	Application
Description	*Gsc/n SessionManagement* This component represents the Session Management (SM) protocol layer of the GPRS.
Mib	WirelessGsc
Common Verbs	Help List Display

GROUP Gsc Sm Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attribute to specify the *DnsAgent* that this S*essionManagement (Sm)* uses.
Mib	WirelessGsc

ATTRIBUTE Gsc Sm linkToDnsAgent (lToDns)

Access	Read: All Write: All
Description	This attribute specifies the *DnsAgent* to be used by the *SessionManagement*.
Mib	WirelessGsc
Values	Link (Service, linkToDnsClient)

Default	No default

GROUP Gsc Sm SmStatistics (SmStats)

Properties	Operational
Description	This group contains statistical attributes of the *SessionManagement (Sm) protocol layer.*
Mib	WirelessGsc

ATTRIBUTE Gsc Sm currentPdpContexts (curPdpc)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active Packet Data Protocol (PDP) contexts.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm mobileInitActivations (mia)

Access	Read: All Write: Illegal
Description	This attribute counts the successful Mobile-Initiated Packet Data Protocol (PDP) context activations for this *SessionManagement (Sm)* component. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm mobileInitDeacts (mid)

Access	Read: All Write: Illegal

Description	This attribute counts the Packet Data Protocol (PDP) context deactivations initiated by the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm ggsnInitDeacts (nwkD)

Access	Read: All Write: Illegal
Description	This attribute counts the Packet Data Protocol (PDP) context deactivations initiated by the Gateway GPRS Support Node (GGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm sgsnInitDeacts (sgsnD)

Access	Read: All Write: Illegal
Description	This attribute counts the Packet Data Protocol (PDP) context deactivations initiated locally from the Serving GPRS Support Node (SGSN) (for example, an implicit session deactivation as a result of a Gateway GPRS Support Node (GGSN) restart or path failure). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm hlrInitDeacts (hlrD)

Access	Read: All Write: Illegal
Description	This attribute counts the Packet Data Protocol (PDP) context deactivations initiated by the Home Location Register (HLR), for example, Delete Subscriber Data (DSD) withdrawing subscription for an active session. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm currentRoamers (curR)

Access	Read and write
Description	This attribute indicates the current roamers that are currently being serviced by the SGSN. A roamer is a mobile that is not in its H-PLMN. This attribute is incremented whenever a PDP context is activated and is decremented whenever a PDP context is de-activated. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm nwkPdpModifyInitiated (nwkPdpMi)

Access	Read: All Write: Illegal
Description	This attribute counts the NWK PDP MODIFY CONTEXT REQUEST messages sent to the Mobile Station (MS). This counter is incremented in the SGSN acting as the new SGSN. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values — Decimal (0..4294967295)

Default — No default

ATTRIBUTE Gsc Sm nwkPdpModifyRetriesExhausted (nwkPdpMRetE)

Access — Read: All
Write: Illegal

Description — This attribute counts the number of times the *nwkPdpModifyRetires* attribute is exhausted. This counter is incremented in the SGSN acting as the new SGSN. The counter wraps to zero when it exceeds the maximum value.

Mib — WirelessGsc

Values — Decimal (0..4294967295)

Default — No default

ATTRIBUTE Gsc Sm currentQosReliability (curQosRel)

Access — Read: All
Write: Illegal

Description — This attribute indicates the currently active Packet Data Protocol (PDP) contexts for each Quality of Service (QoS) Reliability Class.

The Reliability values have the following meaning:

RelClass	GTP	LLC	RLC	Data
1	Acked	Acked	Acked	Protected
2	UnAcked	Acked	Acked	Protected
3	UnAcked	UnAcked	Acked	Protected
4	UnAcked	UnAcked	UnAcked	Protected
5	UnAcked	UnAcked	UnAcked	UnProtected

where GTP is GPRS Tunnelling Protocol, LLC is Logical Link Control, and RLC is Radio Link Control.

Mib — WirelessGsc

Vector of — Decimal (0..4294967295)

Index — Decimal (0..5)

Default — No default

ATTRIBUTE Gsc Sm totalQosReliability (totQosRel)

Access — Read: All
Write: Illegal

Description — This attribute counts the Packet Data Protocol (PDP) contexts that were activated for each Quality of Service (QoS) Reliability Class. The counter wraps to zero when it exceeds the maximum value.

The Reliability values have the following meaning:

RelClass	GTP	LLC	RLC	Data
1	Acked	Acked	Acked	Protected
2	UnAcked	Acked	Acked	Protected
3	UnAcked	UnAcked	Acked	Protected
4	UnAcked	UnAcked	UnAcked	Protected
5	UnAcked	UnAcked	UnAcked	UnProtected

where GTP is GPRS Tunnelling Protocol, LLC is Logical Link Control, and RLC is Radio Link Control.

Mib — WirelessGsc

Vector of — Decimal (0..4294967295)

Index — Decimal (0..5)

Default — No default

GROUP Gsc Sm MsInitPdpCfailStats (MsInitStats)

Properties — Operational

Description — This group contains the statistical attributes that display the Mobile
Station (MS) initiated Packet Data Protocol (PDP) Context activations rejected by the Serving GPRS Support Node (SGSN).

Mib — WirelessGsc

ATTRIBUTE Gsc Sm insufficientResources (insufRes)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated activations rejected by the Serving GPRS Support Node (SGSN) due to the cause code NO RESOURCES AVAILABLE. This counter is incremented either due to the SGSN having insufficient resources for the session, or the Gateway GPRS Support Node (GGSN) returning a cause code of NO RESOURCES AVAILABLE in the CREATE PDP CONTEXT RESPONSE message. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm missingOrUnknownApn (mOrUn)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the requested service being rejected by the external packet data network. The service is rejected because the Access Point Name (APN) was not included although required or if the APN was not resolved. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm unknownPdpAddrOrPdpType (unPdpAorT)

Access	Read: All Write: Illegal

Description	This attribute counts the number of times a CREATE PDP CONTEXT RESPONSE message was received from the Gateway GPRS Support Node (GGSN) with the cause code SERVICE NOT SUPPORTED. This can be due to the requested service being rejected by the external packet data network because the Packet Data Protocol (PDP) address or the PDP type was not recognized. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm userAuthenticationsFailed (userAuthFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times a CREATE PDP CONTEXT REQUEST message was received from the Gateway GPRS Support Node (GGSN) with the cause code USER AUTHENTICATION FAILED. This can be due to the requested service being rejected by the external packet data network due to a failed user authentication. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm activationsRejectedByGgsn (actRej)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the requested service being rejected by the Gateway GPRS Support Node (GGSN) with a cause code that is not mappable to a cause code in the ACTIVATE PDP CONTEXT

	REJECT message. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm activationsRejectedUnspecified (actRejUn)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to unspecified reasons. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm reqServiceOptionsNotSubscribed (reqOp)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the MS requesting a service for which it has no subscription. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm serviceOptionsTempOutOfOrder (serOp)

Access	Read: All Write: Illegal

Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to temporary outage of one or more functions required for supporting the service. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm semanticallyIncorrectMesages (inMsg)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the receipt of a message with semantically incorrect contents. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm invalidMandatoryInfoElements (invInfo)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the receipt of a message with errors in a mandatory Information Element (IE). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm msgTypeNotCompWithProtState (notComp)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the receipt of a message type not compatible with the current protocol state. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm protocolErrorUnspecified (proErr)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to a protocol error event which does not fit into any specific protocol error class. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Sm NwkInitPdpCdeactStats (NwkInitStats)

Properties	Operational
Description	This group contains statistical attributes that display the abnormal Network-initiated Packet Data Protocol (PDP) context deactivations sent to the Mobile Station (MS).
Mib	WirelessGsc

ATTRIBUTE Gsc Sm networkFailures (nwkFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) sent a Packet Data Protocol (PDP) CONTEXT DEACTIVATION REQUEST message to the Mobile Station (MS) with a cause code of NETWORK FAILURE. This cause code is sent due to an error situation in the network. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm reactivationsRequested (reactReq)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) sent a Packet Data Protocol (PDP) CONTEXT DEACTIVATION REQUEST message to the Mobile Station (MS) with a cause code of REACTIVATE REQUEST. This cause code is sent to MS to request session reactivation. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Sm WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Sm customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)

Default	No default

GROUP Gsc Sm PdpModOper

Properties	Operational
Description	This group contains operational attributes of the Session Management (SM) protocol layer associated with the Packet Data Protocol (PDP) context modification.
Mib	WirelessGsc

ATTRIBUTE Gsc Sm sgsnInitModifyAttempts (sgsnInitMod)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN), for example, as a result of QoS renegotiations with the Mobile Station (MS). This counter is pegged only during SGSN Initiated PDP Context Modification. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm sgsnInitFailAtMs (sgsnInitMsFail)

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Gsc Sm sgsnInitFailAtGgsn (sgsnInitGgsnFail)

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the Gateway GPRS Support Node (GGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm sgsnInitFailAtSgsn (sgsnInitSgsnFail)

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the SGSN. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm msInitModifyAttempts (msInitMod)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm msInitFailAtGgsn (msInitGgsnFail)

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the Gateway GPRS Support Node (GGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm msInitFailAtSgsn (msInitSgsnFail)

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Sm WlcSnrActOper (SnrActOper)

Properties	Operational
Description	This group contains operational attributes of this component.
Mib	WirelessGsc

ATTRIBUTE Gsc Sm snrCurrentlyActivated (snrCuAct)

Access	Read: All Write: Illegal
Description	This attribute counts the roaming Mobile Stations (MSs) that are currently GPRS-activated and have been given homer Quality of Service by Seamless National Roaming.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sm snrActivatesSuccessful (snrAct)

Access	Read: All Write: Illegal
Description	This attribute counts the roaming Mobile Stations (MSs) that have been GPRS-activated and had been given homer Quality of Service by Seamless National Roaming. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberControl SessionManagement

Description	The statistics record generated by the GprsSubscriberControl SessionManagement component.

ATTRIBUTE Gsc Sm currentPdpContexts (curPdpc)

Description	This attribute indicates the number of currently active Packet Data Protocol (PDP) contexts in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Sm mobileInitActivations (mia)

Description: This attribute counts the successful Mobile-initiated Packet Data Protocol (PDP) context activations for this *SessionManagement (Sm)* component in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm mobileInitDeacts (mid)

Description: This attribute counts the Packet Data Protocol (PDP) context deactivations initiated by the Mobile Station (MS) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm ggsnInitDeacts (nwkD)

Description: This attribute counts the Packet Data Protocol (PDP) context deactivations initiated by the Gateway GPRS Support Node (GGSN) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm sgsnInitDeacts (sgsnD)

Description: This attribute counts the Packet Data Protocol (PDP) context deactivations initiated locally from the Serving GPRS Support Node (SGSN) (for example, an implicit session deactivation as a result of a Gateway GPRS Support Node (GGSN) restart or path failure).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm hlrInitDeacts (hlrD)

Description: This attribute counts the Packet Data Protocol (PDP) context deactivations initiated by the Home location Register (HLR), for example, Delete Subscriber Data (DSD) withdrawing subscription for an active session. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm currentQosReliability (curQosRel)

Description

This attribute indicates the currently active Packet Data Protocol (PDP) contexts for each Quality of Service (QoS) Reliability Class. This value reported is the value at the end of the collection interval.

The Reliability values have the following meaning:

RelClass	GTP	LLC	RLC	Data
1	Acked	Acked	Acked	Protected
2	UnAcked	Acked	Acked	Protected
3	UnAcked	UnAcked	Acked	Protected
4	UnAcked	UnAcked	UnAcked	Protected
5	UnAcked	UnAcked	UnAcked	UnProtected

where GTP is GPRS Tunnelling Protocol, LLC is Logical Link Control, and RLC is Radio Link Control.

Vector of

Decimal (0..4294967295)

Index

Decimal (0..5)

ATTRIBUTE Gsc Sm totalQosReliability (totQosRel)

Description

This attribute counts the Packet Data Protocol (PDP) contexts that were activated for each Quality of Service (QoS) Reliability Class. This counter counts the events in the collection interval.

The Reliability values have the following meaning:

RelClass	GTP	LLC	RLC	Data
1	Acked	Acked	Acked	Protected
2	UnAcked	Acked	Acked	Protected
3	UnAcked	UnAcked	Acked	Protected
4	UnAcked	UnAcked	UnAcked	Protected
5	UnAcked	UnAcked	UnAcked	UnProtected

where GTP is GPRS Tunnelling Protocol, LLC is Logical Link

Control, and RLC is Radio Link Control.

Vector of	Decimal (0..4294967295)
Index	Decimal (0..5)

ATTRIBUTE Gsc Sm currentRoamers (curR)

Description	This attribute indicates the current number of roamer sessions that are currently being serviced by the SGSN. A roamer is a mobile that is not in its H-PLMN. This attribute is incremented whenever a PDP context is activated and is decremented whenever a PDP context is de-activated. This counter counts the events at the end of the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Sm nwkPdpModifyInitiated (nwkPdpMi)

Description	This attribute counts the NWK PDP MODIFY CONTEXT REQUEST messages sent to the Mobile Station (MS). This counter is incremented in the SGSN acting as the new SGSN. The counter wraps to zero when it exceeds the maximum value.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Sm nwkPdpModifyRetriesExhausted (nwkPdpMRetE)

Description	This attribute counts the number of times the *nwkPdpModifyRetires* attribute is exhausted. This counter is incremented in the SGSN acting as the new SGSN. The counter wraps to zero when it exceeds the maximum value.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Sm insufficientResources (insufRes)

Description	This attribute counts the Mobile Station (MS) initiated activations rejected by the Serving GPRS Support Node (SGSN) due to insufficient resources. This counter is incremented either due to the SGSN having insufficient resources for the session, or the Gateway GPRS Support Node (GGSN) returning a cause code of “No resources available” in the CREATE PDP CONTEXT

RESPONSE message. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm missingOrUnknownApn (mOrUn)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the requested service being rejected by the external packet data network because the Access Point Name (APN) was not included although required or if the APN was not resolved. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm unknownPdpAddrOrPdpType (unPdpAorT)

Description This attribute counts the number of times a CREATE PDP CONTEXT RESPONSE message was received from the Gateway GPRS Support Node (GGSN) with the cause “Service not supported”. This can be due to the requested service being rejected by the external packet data network because the Packet Data Protocol (PDP) address or the PDP type was not recognized. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm userAuthenticationsFailed (userAuthFail)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the requested service being rejected by the external packet data network due to a failed user authentication. The SGSN increments this counter when a cause code of “User Authentication Failed” is received from the Gateway GPRS Support Node (GGSN) in the CREATE PDP CONTEXT REQUEST message. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm activationRejectedByGgsn (actRej)

Description: This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the requested service being rejected by the Gateway GPRS Support Node (GGSN) with a cause code that is not mappable to a cause code in the ACTIVATE PDP CONTEXT REJECT message. The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm activationRejectedUnspecified (actRejUn)

Description: This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to unspecified reasons. The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm reqServiceOptionNotSubscribed (reqOp)

Description: This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the MS requesting a service for which it has no subscription. The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm serviceOptionTempOutOfOrder (serOp)

Description: This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to temporary outage of one or more functions required for supporting the service. The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm semanticallyIncorrectMesage (inMsg)

Description: This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated

activation due to the receipt of a message with semantically incorrect contents. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm invalidMandatoryInfoElement (invInfo)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the receipt of a of a message with errors in a mandatory Information Element (IE). The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm msgTypeNotCompWithProtState (notComp)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the receipt of a message type not compatible with the current protocol state. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm protocolErrorUnspecified (proErr)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to a protocol error event which does not fit into any specific protocol error class values. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm networkFailure (nwFail)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) sent a Packet Data Protocol (PDP) CONTEXT DEACTIVATION REQUEST message to the Mobile Station (MS) with a cause code of NETWORK FAILURE. This cause code is sent due to an error situation in the network. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm reactivationRequested (reactReq)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) sent a Packet Data Protocol (PDP) CONTEXT DEACTIVATION REQUEST message to the Mobile Station (MS) with a cause code of REACTIVATE REQUEST. This
cause code is sent to MS to request session reactivation. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm sgsnInitModifyAttempts

Description This attribute counts the number of Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN), for example, as a result of QoS renegotiations with the Mobile Station (MS). This counter is pegged only during SGSN Initiated PDP Context Modification.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm sgsnInitFailAtMs

Description This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the Mobile Station (MS).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm sgsnInitFailAtGgsn

Description This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the Gateway GPRS Support Node (GGSN).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm sgsnInitFailAtSgsn

Description This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the SGSN.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm msInitModifyAttempts

Description This attribute counts the number of Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm msInitFailAtGgsn

Description This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the Gateway GPRS Support Node (GGSN).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm msInitFailAtSgsn

Description This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the SGSN.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm snrPeakActivated (snrPeakAct)

Description This attribute indicates the peak number of roaming Mobile Stations (MSs) that have become GPRS-activated and have been

given homer Quality of Service by Seamless National Roaming.

The value reported is the peak value in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm snrActivatesSuccessful (snrAct)

Description This attribute counts the roaming Mobile Stations (MSs) that have been GPRS-activated and had been given homer Quality of Service by Seamless National Roaming.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COMPONENT Gsc HlrCache (HlrC)

Groups "GROUP Gsc HlrC Provisioned (Prov)"
"GROUP Gsc HlrC Statistics (Stats)"
"GROUP Gsc HlrC WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS GprsSubscriberControl HlrCache"

Scope Application

Description *Gsc/n HlrCache*

This component represents the Home Location Register (HLR) cache functionality.

Mib WirelessGsc

Subcomponents "COMPONENT Gsc HlrC RefreshAudit"

Common Verbs
Help
List
Display

GROUP Gsc HlrC Provisioned (Prov)

Properties Provisioned

Description This group contains provisionable attributes to provide the *HlrCache* functionality.

Mib	WirelessGsc

ATTRIBUTE Gsc HlrC avgPdpContextPerRecord (pdpPerRec)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the average number of Packet Data Protocol (PDP) context subscription data records that can be stored with an *HlrCache* record. This value can be different from the value of the *avgActivePdpCPerActiveSub* attribute *(*defined in the parent *GprsSubscriberControl* component) since the value of the *maxRecords* attribute can be greater than the value of the *maxAttachedSubscribers* attribute and is computed by the HlrcCache process after receiving the value of the *maxAttachedSubscribers* attribute. Changing the value of this attribute causes the card to be reset and all outstanding transactions will be affected.
Mib	WirelessGsc
Values	Decimal (0..50)
Default	1

GROUP Gsc HlrC Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes of the *HlrCache*.
Mib	WirelessGsc

ATTRIBUTE Gsc HlrC cacheHits

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the *HlrCache* had the subscriber information locally and did not need to retrieve information from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc HlrC cacheMisses (cacheMiss)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the *HlrCache* does not have the subscriber information locally and must retrieve information from the HLR. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc HlrC WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc HlrC customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc HlrC customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc HlrC customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberControl HlrCache

Description	The statistics record generated by the GprsSubscriberControl HlrCache component.

ATTRIBUTE Gsc HlrC cacheHits

Description	This attribute counts the number of times the *HlrCache* had the subscriber information locally and did not need to retrieve information from the Home Location Register (HLR). This counter counts the value in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc HlrC cacheMisses (cacheMiss)

Description: This attribute counts the number of times the *HlrCache* does not have the subscriber information locally and must retrieve information from the HLR. This counter counts the value in the collection interval.

Values: Decimal (0..4294967295)

COMPONENT Gsc HlrC RefreshAudit

Groups: "GROUP Gsc HlrC RefreshAudit WlcRefreshAuditProv (AuditProv)"
"GROUP Gsc HlrC RefreshAudit WlcRefreshAuditOper (AuditOper)"

Scope: Application

Description: *Gsc/n Hlrc RefreshAudit*
Usc/n Hlrc RefreshAudit

This component represents the subscriber refresh audit functionality of the *HlrCache (HlrC)* component. The purpose of the audit is to request new subscriber profile data from the Home Location Register (HLR). The audit initiates the Update GPRS Location Dialogue to the HLR for all attached subscribers.

Mib: WirelessGsc

Common Verbs:
- Help
- List
- Display

VERB START Gsc HlrC RefreshAudit

Impact: Service

Description: *start Gsc/n Hlrc RefreshAudit*
start Usc/n Hlrc RefreshAudit

This command starts the refresh audit to request subscriber information from the Home Location Register for all the attached subscribers.

VERB STOP Gsc HlrC RefreshAudit

Impact	Service
Description	*stop Gsc/n Hlrc RefreshAudit* *stop Usc/n Hlrc RefreshAudit* This command stops the refresh audit in progress. If the audit is currently running, it is immediately stopped. If the audit has not started or has already finished running, this command does nothing.

GROUP Gsc HlrC RefreshAudit WlcRefreshAuditProv (AuditProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *RefreshAudit* component.
Mib	WirelessGsc

ATTRIBUTE Gsc HlrC RefreshAudit autoStart

Access	Read: All Write: All
Description	This attribute specifies whether the refresh audit function is ***enabled*** or ***disabled.*** When enabled, the *HlrCache* component will automatically initiate a process to refresh subscriber profiles whenever certain optional supplementary services, such as Location Services and Short Message Services, are provisioned. When disabled, the *HlrCache* component will not start the audit automatically.
Mib	WirelessGsc
Values	enabled disabled
Default	enabled

GROUP Gsc HlrC RefreshAudit WlcRefreshAuditOper (AuditOper)

Properties	Operational

Description	This group contains the operational attributes for the *RefreshAudit* component.
Mib	WirelessGsc

ATTRIBUTE Gsc HlrC RefreshAudit auditPercentComplete (percentComplete)

Access	Read: All Write: Illegal
Description	This attribute indicates the current completion percentage of the refresh audit. A value of ***0%*** means the refresh audit is not currently running but may need to run due to recent activation of a feature that normally triggers the audit. The refresh audit is not running because the value of the *autoStart* attribute is ***disabled*** or the audit was manually interrupted by the *stop* command. A value of ***1-99%*** means the refresh audit is currently running. A value of ***100%*** means the refresh audit has been completed.
Mib	WirelessGsc
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Gsc InternationalMobileSubscriberId (Imsi)

Instance	BCD (5..15)
Groups	"GROUP Gsc Imsi WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Gsc/n InternationalMobileSubscriberId/<imsi>* This component represents an instance of the International Mobile Subscriber Identity (IMSI). The information includes subscription context, mobility management context and session contexts. Each instance is indexed by the IMSI of the mobile

	subscriber. A list of all current IMSI instances is not possible, but it is possible to display a specific instance of IMSI.
Mib	WirelessGsc
Dyn. Subcomp.	"COMPONENT Gsc Imsi MobilityContext (Mc)" "COMPONENT Gsc Imsi SessionContext (Sc)" "COMPONENT Gsc Imsi HlrCacheRecord (HlrcRec)" "COMPONENT Gsc Imsi Bssap"
Common Verbs	Help List Display

GROUP Gsc Imsi WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Imsi customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi customCounter2 (customCntr2)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc Imsi MobilityContext (Mc)

Groups	"GROUP Gsc Imsi Mc Operational (Oper)" "GROUP Gsc Imsi Mc WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Tlli/<tlli> MobilityContext* *Sgsn Imsi/<imsi> MobilityContext* *Gsc/n Tlli/<tlli> MobilityContext* *Gsc/n Imsi/<imsi> MobilityContext* This component represents the GPRS Mobility Management (GMM) context created for each mobile subscriber that is GPRS-Attached. The Mobility Context is an instance of the *InternationalMobileSubscriberId (Imsi)* and the

	TemporaryLogicalLinkId (Tlli) of the Serving GPRS Support Node (SGSN).
Mib	WirelessGsc
Common Verbs	Help List Display

GROUP Gsc Imsi Mc Operational (Oper)

Properties	Operational
Description	This group contains the GPRS Mobility Management (GMM) information for a subscriber.
Mib	WirelessGsc

ATTRIBUTE Gsc Imsi Mc temporaryLogicalLinkId (tlli)

Access	Read: All Write: Illegal
Description	This attribute indicates the Temporary Logical Link Identifier (TLLI) used to identify the context of the Mobile Station (MS) within the Serving GPRS Support Node (SGSN). This is one of the main reference keys that is used to identify an MS in the SGSN.
Mib	WirelessGsc
Values	String (4, Hex)
Default	No default

ATTRIBUTE Gsc Imsi Mc gmmState (gmmSt)

Access	Read: All Write: Illegal
Description	This attribute indicates the GPRS Mobility Management (GMM) state for a mobile. Upon initialization, this attribute value is in ***idle*** state. The states have the following meaning: ***idle*** - The Mobile Station (MS) is not attached to the GPRS Mobility Management (GMM). The MS and the SGSN context

	hold no valid location or routing area information for the mobile. ***standby*** - The MS is attached to the GMM. ***ready*** - MS is attached and can be sending or receiving the Point To Point Protocol Data Units (PTP PDUs).
Mib	WirelessGsc
Values	idle standby ready
Default	No default

ATTRIBUTE Gsc Imsi Mc routingAreaIdentifier (rai)

Access	Read: All Write: Illegal
Description	This attribute indicates the current routing area of the Mobile Station (MS). The routing area is transmitted to the Serving GPRS Support Node (SGSN) during a Routing Area Update procedure or Attach procedure. The routing area identifier includes the Mobile Country Code (MCC as first 3 digits), the Mobile Network Code (MNC as next 2 digits), the Location Area Code (LAC as next 4 digits), and the Routing Area Code (RAC as last 2 digits).
Mib	WirelessGsc
Values	String (5..6, Hex)
Default	No default

ATTRIBUTE Gsc Imsi Mc cellId

Access	Read: All Write: Illegal
Description	This attribute indicates the current cell location of the Mobile Station (MS).
Mib	WirelessGsc
Values	String (2, Hex)
Default	No default

ATTRIBUTE Gsc Imsi Mc cellEntryTime (cellEntry)

Access	Read: All Write: Illegal
Description	This attribute indicates when the Mobile Station (MS) entered the cell indicated by the *cellId*.
Mib	WirelessGsc
Values	Time (DHMS)
Default	No default

ATTRIBUTE Gsc Imsi Mc sgsnClassmark (sgsnCm)

Access	Read: All Write: Illegal
Description	This attribute indicates the network portion of the Mobile Station (MS) classmark. The classmark contains specific information about a Mobile Station (MS).
Mib	WirelessGsc
Values	String (1..2, Hex)
Default	No default

ATTRIBUTE Gsc Imsi Mc drxParameters (drxParms)

Access	Read: All Write: Illegal
Description	This attribute indicates if the Mobile Station (MS) supports discontinuous reception or not. The DRX parameter is transmitted by the MS during an Attach Request procedure and a Routing Area Update procedure.
Mib	WirelessGsc
Values	supported unsupported
Default	No default

ATTRIBUTE Gsc Imsi Mc readyTimer (t3314)

Access	Read: All Write: Illegal
Description	This attribute indicates the negotiated value of the Ready Timer (T3314) for the GPRS Mobility Management (GMM) state transition. The Ready Timer is restarted whenever a signaling or a data Protocol Data Unit (PDU) is received from the Mobile Station (MS). In the event of the Ready Timer expiry, the attribute *gmmState* changes to ***standby***. The negotiation of this value is based on the *readyTimer* provisioned in the *Sgsn GprsSubscriberControl* component.
Mib	WirelessGsc
Values	Decimal (1..11160) forceStandby
Units	seconds
Default	No default

ATTRIBUTE Gsc Imsi Mc pagingProceedFlag (ppf)

Access	Read: All Write: Illegal
Description	This attribute indicates the paging proceed flag. The flag indicates whether paging can be initiated.
Mib	WirelessGsc
Values	false true
Default	No default

GROUP Gsc Imsi Mc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Imsi Mc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi Mc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi Mc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)

Default	No default

COMPONENT Gsc Imsi SessionContext (Sc)

Instance	Decimal (0..15)
Groups	"GROUP Gsc Imsi Sc SessionContextOp (ScOp)" "GROUP Gsc Imsi Sc WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Gsc/n Tlli/<tlli> SessionContext/<nsapi>* *Gsc/n Imsi/<imsi> SessionContext/<nsapi>* This component represents the Session Context information for a subscriber. The Session Contexts are created for each activated Packet Data Protocol (PDP) context of a subscriber. The instance value identifies a session for a mobile subscriber.
Mib	WirelessGsc
Dyn. Subcomp.	"COMPONENT Gsc Imsi Sc RequestedQos (ReqQos)" "COMPONENT Gsc Imsi Sc NegotiatedQos (NegQos)"
Common Verbs	Help List Display

GROUP Gsc Imsi Sc SessionContextOp (ScOp)

Properties	Operational
Description	This group contains the Session Context information for a subscriber. The Session Contexts are created for each activated Packet Data Protocol (PDP) context of a subscriber.
Mib	WirelessGsc

ATTRIBUTE Gsc Imsi Sc selectedApnNetworkId (selApnNwkId)

Access	Read: All Write: Illegal
Description	This attribute indicates the selected Access Point Name (APN) Network Identifier.

	The APN Network Identifier can be the one received from the mobile as part of the ACTIVATE PDP CONTEXT REQUEST message or it can be selected from the subscription record against which this session has been activated or it can be the *defaultApnNetworkId* (defined in *Sgsn Gsc*) for the requested PDP type provisioned on the Serving GPRS Support Node (SGSN).
Mib	WirelessGsc
Values	String (1..63, ASCII)
Default	No default

ATTRIBUTE Gsc Imsi Sc selectedApnOperatorId (selApnOpId)

Access	Read: All Write: Illegal
Description	This attribute indicates the selected Access Point Name (APN) Operator Identifier. The APN Operator Identifier can be the one received from the Mobile Station (MS) as part of the ACTIVATE PDP CONTEXT REQUEST message or it can be the one constructed from the subscriber's IMSI as mnc<3 MNC digits>.mcc<3 MCC digits>.gprs.
Mib	WirelessGsc
Values	String (1..37, ASCII)
Default	No default

ATTRIBUTE Gsc Imsi Sc dataPathGgsnAddress (dGgsnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the Gateway GPRS Support Node (GGSN) for the data path that is currently used by the activated Packet Data Protocol (PDP) context.
Mib	WirelessGsc

Values	IP address
Default	No default

ATTRIBUTE Gsc Imsi Sc signalingGgsnAddress (sGgsnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the Gateway GPRS Support Node (GGSN) for the signaling path that is currently used by the activated Packet Data Protocol (PDP) context.
Mib	WirelessGsc
Values	IP address
Default	No default

ATTRIBUTE Gsc Imsi Sc pdpContextIdentifier (pdpCid)

Access	Read: All Write: Illegal
Description	This attribute indicates the subscription record against which this session has been activated.
Mib	WirelessGsc
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Gsc Imsi Sc pdpType (pdpT)

Access	Read: All Write: Illegal
Description	This attribute defines the end user protocol to be used between the external packet data network and the Mobile Station (MS) such as, X.25, IP, PPP. For X.25 currently defined address format is X.121, for IP protocol currently defined address formats are IPV4, IPV6, and PPP protocol has no address format.
Mib	WirelessGsc

Values	x25 ip ppp
Default	No default

ATTRIBUTE Gsc Imsi Sc ipv4PdpAddress (ipv4Addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is IPv4. The address conforms to the standard addressing scheme of the IP version 4 address.
Mib	WirelessGsc
Values	IP address
Default	No default

ATTRIBUTE Gsc Imsi Sc x121PdpAddress (x121Addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is X.121.
Mib	WirelessGsc
Values	BCD (1..14)
Default	No default

ATTRIBUTE Gsc Imsi Sc otherPdpAddress (otherAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. The Packet Data Protocol (PDP) protocol type for the *otherPdpAddress* can be obtained from the attribute *pdpType* and the addressing type from *pdpAddressFormat*.

Mib	WirelessGsc
Values	String (1..16, Hex)
Default	No default

ATTRIBUTE Gsc Imsi Sc pdpAddressFormat (pdpTnum)

Access	Read: All Write: Illegal
Description	This attribute indicates the addressing type, such as, X.121, IPv4, IPv6.
Mib	WirelessGsc
Values	x121 ipv4 ipv6
Default	No default

ATTRIBUTE Gsc Imsi Sc ggsnRemoteTeid (ggsnRemTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg that originates at the GPRS Serving GPRS Support Node (SGSN) and terminates at the Gateway GPRS Support Node (GGSN).
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi Sc ggsnLocalTeid (ggsnLocTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg that originates at the Gateway GPRS

	Support Node (GGSN) and terminates at the GPRS Serving GPRS Support Node (SGSN).
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi Sc signallingGgsnTeid (sGgsnTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg endpoint of the control tunnel that runs between the GPRS Serving GPRS Support Node (SGSN) and the Gateway GPRS Support Node (GGSN).
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi Sc packetFlowIdentifier (pfi)

Access	Read: All Write: Illegal
Description	This attribute indicates the Packet Flow Identifier (PFI) associated with this Packet Data Protocol (PDP) context. The PFI identifies the Aggregate BSS Quality of Service Profile (ABQP) used for a Packet Flow Context (PFC). The ABQP parameters associated with this PFI can be obtained from the *Tlli/<tlli> Mc Pfc/<pfi>* component or the *Imsi/<imsi> Mc Pfc/<pfi>* component.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Imsi Sc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Imsi Sc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi Sc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi Sc customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc Imsi Sc RequestedQos (ReqQos)

Groups	"GROUP Gsc Imsi Sc ReqQos QosProfile (Qos)"
Scope	Application
Description	*Sgsn Imsi/<imsi> SessionContext/<nsapi> RequestedQos* *Gsc/n Imsi/<imsi> SessionContext/<nsapi> RequestedQos* This component represents the Quality of Service (QoS) profile requested by a mobile subscriber for this session.
Mib	WirelessGsc
Common Verbs	Help List Display

GROUP Gsc Imsi Sc ReqQos QosProfile (Qos)

Properties	Operational
Description	This group contains the Quality of Service (QoS) profile. It contains either the requested QoS, the negotiated QoS, or the subscribed QoS based on which component contains this group.
Mib	WirelessGsc

ATTRIBUTE Gsc Imsi Sc ReqQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal

Description	This attribute indicates whether the Signalling Data Units' (SDUs) order of delivery is guaranteed.
Mib	WirelessGsc
Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Gsc Imsi Sc ReqQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal
Description	This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network. The erroneous SDUs can be handled in one of the following ways: ***noDetect:*** The Signalling Data Units (SDUs) are delivered without considering error detection. ***errSdusDelivered:*** The erroneous Signalling Data Units (SDUs) are delivered together with an error indication. ***errSdusNotDelivered:*** The erroneous Signalling Data Units (SDUs) are discarded.
Mib	WirelessGsc
Values	noDetect errSdusDelivered errSdusNotDelivered
Default	No default

ATTRIBUTE Gsc Imsi Sc ReqQos trafficClass (traffClass)

Access	Read: All Write: Illegal
Description	This attribute indicates the type of application for which the bearer service is optimized. By including the traffic class itself as

an attribute, GPRS can make assumptions about the traffic source and optimize the transport for that traffic type.

The different traffic classes are:
conversational - This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing.

streaming - This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay.

interactive - This class includes applications where a human or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content.

background - This class includes applications where the end-user, typically a computer, sends and receives data files in the background (for example: emails, SMS and database downloads). This is characterized by the destination not expecting the data within a certain time.

Mib	WirelessGsc
Values	conversational (conv) streaming (strm) interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Gsc Imsi Sc ReqQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDU). It is used for admission control and policing.

Mib	WirelessGsc
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Gsc Imsi Sc ReqQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to GPRS in the uplink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessGsc
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Gsc Imsi Sc ReqQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered by GPRS in the downlink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessGsc
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Gsc Imsi Sc ReqQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal

Description

This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered SDUs.

This attribute can take up values ranging from 1 through 9, representing:

1 -> 5*10 -2
2 -> 1*10 -2
3 -> 5*10 -3
4 -> 4*10 -3
5 -> 1*10 -3
6 -> 1*10 -4
7 -> 1*10 -5
8 -> 1*10 -6
9 -> 6*10 -8

Mib

WirelessGsc

Values

Decimal (1..9)

Default

No default

ATTRIBUTE Gsc Imsi Sc ReqQos sduErrorRatio (sduErrRatio)

Access

Read: All
Write: Illegal

Description

This attribute indicates the fraction of Signalling Data Units (SDUs) lost or detected as erroneous. It is defined only for conforming traffic.

This attribute can take up values between the numbers 1 - 7 representing the following:
1 -> 1*10 -2
2 -> 7*10 -3
3 -> 1*10 -3
4 -> 1*10 -4
5 -> 1*10 -5
6 -> 1*10 -6

7 -> 1*10 -1

Mib	WirelessGsc
Values	Decimal (1..7)
Default	No default

ATTRIBUTE Gsc Imsi Sc ReqQos trafficHandlingPriority (traffHndlPr)

Access	Read: All Write: Illegal
Description	This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the value ***interactive.*** A value of ***0*** is reserved when this attribute is displayed for the negotiated Quality of Service (QoS) and the subscribed QoS. When displayed for the requested QoS, it indicates that the value in the subscribed QoS is to be used. Values of ***1***, ***2***, or ***3*** indicate the traffic priority, with ***1*** indicating the highest priority and ***3*** the lowest.
Mib	WirelessGsc
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Gsc Imsi Sc ReqQos transferDelay (transfDelay)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.
Mib	WirelessGsc
Values	Decimal (10..4100)

Units	msec
Default	No default

ATTRIBUTE Gsc Imsi Sc ReqQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessGsc
Values	Decimal (0..8640)
Default	No default

ATTRIBUTE Gsc Imsi Sc ReqQos guaranteedDownlinkBitRate (guarDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessGsc
Values	Decimal (0..8640)
Default	No default

COMPONENT Gsc Imsi Sc NegotiatedQos (NegQos)

Groups	"GROUP Gsc Imsi Sc NegQos QosProfile (Qos)"
Scope	Application
Description	*Sgsn Imsi/<imsi> SessionContext/<nsapi> NegotiatedQos* *Gsc/n Imsi/<imsi> SessionContext/<nsapi> NegotiatedQos* This component represents the negotiated Quality of Service (QoS) profile received by a mobile subscriber for this session.
Mib	WirelessGsc
Common Verbs	Help List Display

GROUP Gsc Imsi Sc NegQos QosProfile (Qos)

Properties	Operational
Description	This group contains the Quality of Service (QoS) profile. It contains either the requested QoS, the negotiated QoS, or the subscribed QoS based on which component contains this group.
Mib	WirelessGsc

ATTRIBUTE Gsc Imsi Sc NegQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Signalling Data Units' (SDUs) order of delivery is guaranteed.
Mib	WirelessGsc
Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Gsc Imsi Sc NegQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal
Description	This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network. The erroneous SDUs can be handled in one of the following ways: ***noDetect:*** The Signalling Data Units (SDUs) are delivered without considering error detection. ***errSdusDelivered:*** The erroneous Signalling Data Units (SDUs) are delivered together with an error indication. ***errSdusNotDelivered:*** The erroneous Signalling Data Units (SDUs) are discarded.
Mib	WirelessGsc
Values	noDetect errSdusDelivered errSdusNotDelivered
Default	No default

ATTRIBUTE Gsc Imsi Sc NegQos trafficClass (traffClass)

Access	Read: All Write: Illegal
Description	This attribute indicates the type of application for which the bearer service is optimized. By including the traffic class itself as an attribute, GPRS can make assumptions about the traffic source and optimize the transport for that traffic type. The different traffic classes are: ***conversational -*** This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing.

streaming - This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay.

interactive - This class includes applications where a human or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content.

background - This class includes applications where the end-user, typically a computer, sends and receives data files in the background (for example: emails, SMS and database downloads). This is characterized by the destination not expecting the data within a certain time.

Mib	WirelessGsc
Values	conversational (conv) streaming (strm) interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Gsc Imsi Sc NegQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDU). It is used for admission control and policing.
Mib	WirelessGsc
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Gsc Imsi Sc NegQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to GPRS in the uplink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessGsc
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Gsc Imsi Sc NegQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered by GPRS in the downlink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessGsc
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Gsc Imsi Sc NegQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal
Description	This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered SDUs. This attribute can take up values ranging from 1 through 9, representing:

1 -> 5*10 -2
2 -> 1*10 -2
3 -> 5*10 -3
4 -> 4*10 -3
5 -> 1*10 -3
6 -> 1*10 -4
7 -> 1*10 -5
8 -> 1*10 -6
9 -> 6*10 -8

Mib	WirelessGsc
Values	Decimal (1..9)
Default	No default

ATTRIBUTE Gsc Imsi Sc NegQos sduErrorRatio (sduErrRatio)

Access	Read: All Write: Illegal
Description	This attribute indicates the fraction of Signalling Data Units (SDUs) lost or detected as erroneous. It is defined only for conforming traffic. This attribute can take up values between the numbers 1 - 7 representing the following: 1 -> 1*10 -2 2 -> 7*10 -3 3 -> 1*10 -3 4 -> 1*10 -4 5 -> 1*10 -5 6 -> 1*10 -6 7 -> 1*10 -1
Mib	WirelessGsc
Values	Decimal (1..7)
Default	No default

ATTRIBUTE Gsc Imsi Sc NegQos trafficHandlingPriority (traffHndlPr)

Access	Read: All Write: Illegal
Description	This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the value ***interactive.*** A value of ***0*** is reserved when this attribute is displayed for the negotiated Quality of Service (QoS) and the subscribed QoS. When displayed for the requested QoS, it indicates that the value in the subscribed QoS is to be used. Values of ***1***, ***2***, or ***3*** indicate the traffic priority, with ***1*** indicating the highest priority and ***3*** the lowest.
Mib	WirelessGsc
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Gsc Imsi Sc NegQos transferDelay (transfDelay)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.
Mib	WirelessGsc
Values	Decimal (10..4100)
Units	msec
Default	No default

ATTRIBUTE Gsc Imsi Sc NegQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal

Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessGsc
Values	Decimal (0..8640)
Default	No default

ATTRIBUTE Gsc Imsi Sc NegQos guaranteedDownlinkBitRate (guarDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessGsc
Values	Decimal (0..8640)
Default	No default

COMPONENT Gsc Imsi HlrCacheRecord (HlrcRec)

Groups	"GROUP Gsc Imsi HlrcRec Operational (Oper)" "GROUP Gsc Imsi HlrcRec WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Tlli/<tlli> HlrCacheRecord* *Sgsn Imsi/<imsi> HlrCacheRecord*

Gsc/n Tlli/<tlli> HlrCacheRecord
Gsc/n Imsi/<imsi> HlrCacheRecord

This component represents a subscription record downloaded from the Home Location Register (HLR). The *HlrCache* on the *GprsSubscriberControl (Gsc)* contains the active subscriber data.

Mib	WirelessGsc
Dyn. Subcomp.	"COMPONENT Gsc Imsi HlrcRec PdpContext (PdpC)"
Common Verbs	Help List Display

GROUP Gsc Imsi HlrcRec Operational (Oper)

Properties	Operational
Description	This group contains subscription information downloaded from the Home Location Register (HLR).
Mib	WirelessGsc

ATTRIBUTE Gsc Imsi HlrcRec internationalMobileSubscriberId (imsi)

Access	Read: All Write: Illegal
Description	This attribute indicates the International Mobile Subscriber Identity (IMSI) of the Mobile Station (MS).
Mib	WirelessGsc
Values	BCD (5..15)
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec hlrNumber (hlrNo)

Access	Read: All Write: Illegal
Description	This attribute indicates the HLR Number of the Home Location Register (HLR) to which the *HlrCache* record is currently

	associated. It is used to retrieve the *HlrCache* records to be restored after receipt of the RESET message from the HLR.
Mib	WirelessGsc
Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec msIsdnNumber (msIsdn)

Access	Read: All Write: Illegal
Description	This attribute indicates the Integrated Service Digital Network (ISDN) number of the mobile subscriber. This is represented as an E.164 number in international format.
Mib	WirelessGsc
Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec subscriptionConfirmedByHlr (subsCByHlr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the subscription information in the Serving GPRS Support Node (SGSN) is known to be in agreement with the Home Location Register (HLR) when the SGSN successfully performs an UPDATE GPRS LOCATION to the HLR.
Mib	WirelessGsc
Values	no yes
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec locationInfoConfirmedInHlr (locCInHlr)

Access	Read: All Write: Illegal

Description	This attribute indicates whether the Home Location Register (HLR) record of the Serving GPRS Support Node (SGSN) address for the Mobile Station (MS) has been confirmed by radio contact. It is initially set to, ***no***, when the SGSN receives a ROUTING AREA UPDATE REQUEST, or an IMSI and a GPRS ATTACH-REQUEST, or if a RESET message is received from the HLR with which the MS is registered. The indicator is set to, ***yes***, when a successful UPDATE GPRS LOCATION is performed for the MS.
Mib	WirelessGsc
Values	no yes
Default	No default

GROUP Gsc Imsi HlrcRec WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Imsi HlrcRec customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc Imsi HlrcRec PdpContext (PdpC)

Instance	Decimal (1..50)
Groups	"GROUP Gsc Imsi HlrcRec PdpC Operational (Oper)" "GROUP Gsc Imsi HlrcRec PdpC WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Tlli/<tlli> HlrcRec PdpContext/n* *Sgsn Imsi/<imsi> HlrcRec PdpContext/n* *Gsc/n Tlli/<tlli> HlrcRec PdpContext/n* *Gsc/n Imsi/<imsi> HlrcRec PdpContext/n* This component represents the Packet Data Protocol (PDP)

	context data downloaded from the Home Location Register (HLR). It indicates the different PDP profiles (that is, Quality of Service) the subscriber has.
Mib	WirelessGsc
Dyn. Subcomp.	"COMPONENT Gsc Imsi HlrcRec PdpC SubscribedQos (SubsQos)"
Common Verbs	Help List Display

GROUP Gsc Imsi HlrcRec PdpC Operational (Oper)

Properties	Operational
Description	This group contains the Packet Data Protocol (PDP) subscription data downloaded from the Home Location Register (HLR).
Mib	WirelessGsc

ATTRIBUTE Gsc Imsi HlrcRec PdpC pdpContextIdentifier (pdpCid)

Access	Read: All Write: Illegal
Description	This attribute indicates a Packet Data Protocol (PDP) Context in a subscription record.
Mib	WirelessGsc
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC pdpType (pdpT)

Access	Read: All Write: Illegal
Description	This attribute defines the end user protocol to be used between the external packet data network and the Mobile Station (MS) such as, X.25, IP, PPP. For X.25 currently defined address format is X.121, for IP

protocol currently defined address formats are IPV4, IPV6, and PPP protocol has no address format.

Mib: WirelessGsc

Values:
x25
ip
ppp

Default: No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC ipv4PdpAddress (ipv4Addr)

Access: Read: All
Write: Illegal

Description: This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is IPv4. The address conforms to the standard addressing scheme of the IP version 4 address.

Mib: WirelessGsc

Values: IP address

Default: No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC x121PdpAddress (x121Addr)

Access: Read: All
Write: Illegal

Description: This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is X.121.

Mib: WirelessGsc

Values: BCD (1..14)

Default: No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC otherPdpAddress (otherAddr)

Access: Read: All
Write: Illegal

Description	This attribute indicates the network layer address of the packet data network. The Packet Data Protocol (PDP) protocol type for the *otherPdpAddress* can be obtained from the attribute *pdpType* and the addressing type from *pdpAddressFormat*.
Mib	WirelessGsc
Values	String (1..16, Hex)
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC pdpAddressFormat (pdpTnum)

Access	Read: All Write: Illegal
Description	This attribute indicates the addressing type, such as, X.121, IPv4, IPv6.
Mib	WirelessGsc
Values	x121 ipv4 ipv6
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC apnNetworkIdentifier (apnNwkId)

Access	Read: All Write: Illegal
Description	This attribute indicates an Access Point Name (APN) Network Identifier which is the Logical Name of the access point to the external packet data network. A Logical Name is a label or a fully qualified domain name according to the Domain Name System (DNS) naming conventions.
Mib	WirelessGsc
Values	String (1..63, ASCII)
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC vplmnAddressAllowed (vplmnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Mobile Station (MS) is allowed to use the Access Point Name (APN) in the Visiting Public Land Mobile Network (VPLMN).
Mib	WirelessGsc
Values	no yes
Default	No default

GROUP Gsc Imsi HlrcRec PdpC WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Imsi HlrcRec PdpC customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc Imsi HlrcRec PdpC SubscribedQos (SubsQos)

Groups	"GROUP Gsc Imsi HlrcRec PdpC SubsQos QosProfile (Qos)"
Scope	Application
Description	*Sgsn Imsi/<imsi> HlrcRec PdpContext/n SubscribedQos* *Gsc/n Imsi/<imsi> HlrcRec PdpContext/n SubscribedQos* This component represents the Quality of Service (QoS) profile of the subscriber downloaded from the Home Location Register (HLR).
Mib	WirelessGsc
Common Verbs	Help List Display

GROUP Gsc Imsi HlrcRec PdpC SubsQos QosProfile (Qos)

Properties	Operational
Description	This group contains the Quality of Service (QoS) profile. It contains either the requested QoS, the negotiated QoS, or the subscribed QoS based on which component contains this group.
Mib	WirelessGsc

ATTRIBUTE Gsc Imsi HlrcRec PdpC SubsQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Signalling Data Units' (SDUs) order of delivery is guaranteed.
Mib	WirelessGsc
Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC SubsQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal
Description	This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network. The erroneous SDUs can be handled in one of the following ways: ***noDetect:*** The Signalling Data Units (SDUs) are delivered without considering error detection. ***errSdusDelivered:*** The erroneous Signalling Data Units (SDUs) are delivered together with an error indication. ***errSdusNotDelivered:*** The erroneous Signalling Data Units (SDUs) are discarded.
Mib	WirelessGsc

Values	noDetect errSdusDelivered errSdusNotDelivered
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC SubsQos trafficClass (traffClass)

Access	Read: All Write: Illegal
Description	This attribute indicates the type of application for which the bearer service is optimized. By including the traffic class itself as an attribute, GPRS can make assumptions about the traffic source and optimize the transport for that traffic type. The different traffic classes are: ***conversational -*** This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing. ***streaming -*** This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay. ***interactive -*** This class includes applications where a human or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content. ***background -*** This class includes applications where the end-user, typically a computer, sends and receives data files in the background (for example: emails, SMS and database downloads). This is characterized by the destination not expecting the data within a certain time.
Mib	WirelessGsc
Values	conversational (conv) streaming (strm)

	interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC SubsQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDU). It is used for admission control and policing.
Mib	WirelessGsc
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC SubsQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to GPRS in the uplink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessGsc
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC SubsQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered by GPRS in the downlink direction within a period of time, divided

by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.

Mib: WirelessGsc

Values: Decimal (0..8640)

Units: kbit/s

Default: No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC SubsQos residualBitErrorRate (resBer)

Access: Read: All
Write: Illegal

Description: This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered SDUs.

This attribute can take up values ranging from 1 through 9, representing:

1 -> 5*10 -2
2 -> 1*10 -2
3 -> 5*10 -3
4 -> 4*10 -3
5 -> 1*10 -3
6 -> 1*10 -4
7 -> 1*10 -5
8 -> 1*10 -6
9 -> 6*10 -8

Mib: WirelessGsc

Values: Decimal (1..9)

Default: No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC SubsQos sduErrorRatio (sduErrRatio)

Access: Read: All
Write: Illegal

Description

This attribute indicates the fraction of Signalling Data Units (SDUs) lost or detected as erroneous. It is defined only for conforming traffic.

This attribute can take up values between the numbers 1 - 7 representing the following:
1 -> 1*10 -2
2 -> 7*10 -3
3 -> 1*10 -3
4 -> 1*10 -4
5 -> 1*10 -5
6 -> 1*10 -6
7 -> 1*10 -1

Mib

WirelessGsc

Values

Decimal (1..7)

Default

No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC SubsQos trafficHandlingPriority (traffHndlPr)

Access

Read: All
Write: Illegal

Description

This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the value ***interactive.***

A value of ***0*** is reserved when this attribute is displayed for the negotiated Quality of Service (QoS) and the subscribed QoS. When displayed for the requested QoS, it indicates that the value in the subscribed QoS is to be used. Values of ***1***, ***2***, or ***3*** indicate the traffic priority, with ***1*** indicating the highest priority and ***3*** the lowest.

Mib

WirelessGsc

Values

Decimal (0..3)

Default

No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC SubsQos transferDelay (transfDelay)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.
Mib	WirelessGsc
Values	Decimal (10..4100)
Units	msec
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC SubsQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessGsc
Values	Decimal (0..8640)
Default	No default

ATTRIBUTE Gsc Imsi HlrcRec PdpC SubsQos guaranteedDownlinkBitRate (guarDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period.

The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.

Mib WirelessGsc

Values Decimal (0..8640)

Default No default

COMPONENT Gsc Imsi Bssap

Groups "GROUP Gsc Imsi Bssap Operational (Oper)"
"GROUP Gsc Imsi Bssap WlcCustomCounters (WlcCustomCntr)"

Scope Application

Description *Sgsn Imsi/<imsi> Bssap*
Gsc/n Imsi/<imsi> Bssap

This component represents the Base Station System Application Part + (BSSAP+) context information for each mobile subscriber that is IMSI attached to both GPRS and non-GPRS services.

The BSSAP+ layer is responsible for co-ordinating the location information for a mobile subscriber and conveying some Circuit Switched related procedures via the SGSN.

Mib WirelessGsc

Common Verbs
Help
List
Display

GROUP Gsc Imsi Bssap Operational (Oper)

Properties Operational

Description This group contains the GPRS Base Station System Application Part+ (BSSAP+) context information.

Mib WirelessGsc

ATTRIBUTE Gsc Imsi Bssap vlrNumber (vlrNo)

Access	Read: All Write: Illegal
Description	This attribute indicates the E.164 number of the VLR that the Mobile Station (MS) uses for non-GPRS services. If there is no associated VLR, the value is empty.
Mib	WirelessGsc
Values	BCD (0..15)
Default	No default

ATTRIBUTE Gsc Imsi Bssap gsState

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the Gs interface in the SGSN. The states have the following meaning: ***null*** - There is no associated VLR for the Mobile station (MS). ***laUpdate*** - The SGSN has sent a BSSAP+_LOCATION_UPDATE_REQUEST to the VLR. ***associated*** - The MS is attached to both GPRS and non-GPRS services.
Mib	WirelessGsc
Values	null laUpdate associated
Default	No default

ATTRIBUTE Gsc Imsi Bssap vlrReliable (vlrRel)

Access	Read: All Write: Illegal
Description	This attribute indicates the reset status of the VLR that provides non-GPRS services to the MS.

If the value is ***false***, upon reception of any Routing Area Update or Combined Routing and Location Update, the SGSN requests the mobile to re-attach to non-GPRS services. If the value is ***true***, the SGSN proceeds with the Routing Area Update or Combined Routing and Location Update.

This value is set to ***true*** when the SGSN receives a BSSAP+_LOCATION_UPDATE_ACCEPT from the VLR. It is set to ***false***, when the SGSN has received a reset indication from the VLR.

Mib: WirelessGsc

Values: false
true

Default: No default

ATTRIBUTE Gsc Imsi Bssap nonGprsAlertFlag (ngaf)

Access: Read: All
Write: Illegal

Description: This attribute indicates the non-GPRS alert flag. If the value is ***true***, the VLR is notified of any activity on the mobile and if the value is ***false***, the VLR is not notified.

This value is set to ***true*** when the SGSN replies to a BSSAP+-ALERT-REQUEST with an ACK. It is set to ***false***, when the SGSN sends an BSSAP+-MS_ACTIVITY_INDICATION message to the VLR.

Mib: WirelessGsc

Values: false
true

Default: No default

GROUP Gsc Imsi Bssap WlcCustomCounters (WlcCustomCntr)

Properties: Operational

Description: This group contains the spare counters that can be dynamically patched.

Mib	WirelessGsc

ATTRIBUTE Gsc Imsi Bssap customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi Bssap customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Imsi Bssap customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc TemporaryLogicalLinkId (Tlli)

Instance	String (4, Hex)
Groups	"GROUP Gsc Tlli WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Gsc/n TemporaryLogicalLinkId/<tlli>* This component represents an instance of the Temporary Logical Link Identity (TLLI). The information includes subscription context, mobility management context and session contexts. Each instance is indexed by the TLLI of the mobile subscriber. A list of all current TLLI instances is not possible, but it is possible to display a specific instance of TLLI.
Mib	WirelessGsc
Dyn. Subcomp.	"COMPONENT Gsc Tlli MobilityContext (Mc)" "COMPONENT Gsc Tlli SessionContext (Sc)" "COMPONENT Gsc Tlli HlrCacheRecord (HlrcRec)"
Common Verbs	Help List Display

GROUP Gsc Tlli WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Tlli customCounter1 (customCntr1)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc TIIi customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc TIIi customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc Tlli MobilityContext (Mc)

Groups	"GROUP Gsc Tlli Mc Operational (Oper)" "GROUP Gsc Tlli Mc WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Tlli/<tlli> MobilityContext* *Sgsn Imsi/<imsi> MobilityContext* *Gsc/n Tlli/<tlli> MobilityContext* *Gsc/n Imsi/<imsi> MobilityContext* This component represents the GPRS Mobility Management (GMM) context created for each mobile subscriber that is GPRS-Attached. The Mobility Context is an instance of the *InternationalMobileSubscriberId (Imsi)* and the *TemporaryLogicalLinkId (Tlli)* of the Serving GPRS Support Node (SGSN).
Mib	WirelessGsc
Common Verbs	Help List Display

GROUP Gsc Tlli Mc Operational (Oper)

Properties	Operational
Description	This group contains the GPRS Mobility Management (GMM) information for a subscriber.
Mib	WirelessGsc

ATTRIBUTE Gsc Tlli Mc temporaryLogicalLinkId (tlli)

Access	Read: All Write: Illegal
Description	This attribute indicates the Temporary Logical Link Identifier (TLLI) used to identify the context of the Mobile Station (MS) within the Serving GPRS Support Node (SGSN). This is one of the main reference keys that is used to identify an MS in the SGSN.

Mib	WirelessGsc
Values	String (4, Hex)
Default	No default

ATTRIBUTE Gsc Tlli Mc gmmState (gmmSt)

Access	Read: All Write: Illegal
Description	This attribute indicates the GPRS Mobility Management (GMM) state for a mobile. Upon initialization, this attribute value is in ***idle*** state. The states have the following meaning: ***idle*** - The Mobile Station (MS) is not attached to the GPRS Mobility Management (GMM). The MS and the SGSN context hold no valid location or routing area information for the mobile. ***standby*** - The MS is attached to the GMM. ***ready*** - MS is attached and can be sending or receiving the Point To Point Protocol Data Units (PTP PDUs).
Mib	WirelessGsc
Values	idle standby ready
Default	No default

ATTRIBUTE Gsc Tlli Mc routingAreaIdentifier (rai)

Access	Read: All Write: Illegal
Description	This attribute indicates the current routing area of the Mobile Station (MS). The routing area is transmitted to the Serving GPRS Support Node (SGSN) during a Routing Area Update procedure or Attach procedure. The routing area identifier includes the Mobile Country Code (MCC as first 3 digits), the Mobile Network Code (MNC as next 2 digits), the Location Area Code (LAC as next 4 digits), and the Routing Area Code (RAC as last 2 digits).
Mib	WirelessGsc

Values	String (5..6, Hex)
Default	No default

ATTRIBUTE Gsc Tlli Mc cellId

Access	Read: All Write: Illegal
Description	This attribute indicates the current cell location of the Mobile Station (MS).
Mib	WirelessGsc
Values	String (2, Hex)
Default	No default

ATTRIBUTE Gsc Tlli Mc cellEntryTime (cellEntry)

Access	Read: All Write: Illegal
Description	This attribute indicates when the Mobile Station (MS) entered the cell indicated by the *cellId*.
Mib	WirelessGsc
Values	Time (DHMS)
Default	No default

ATTRIBUTE Gsc Tlli Mc sgsnClassmark (sgsnCm)

Access	Read: All Write: Illegal
Description	This attribute indicates the network portion of the Mobile Station (MS) classmark. The classmark contains specific information about a Mobile Station (MS).
Mib	WirelessGsc
Values	String (1..2, Hex)
Default	No default

ATTRIBUTE Gsc Tlli Mc drxParameters (drxParms)

Access	Read: All Write: Illegal
Description	This attribute indicates if the Mobile Station (MS) supports discontinuous reception or not. The DRX parameter is transmitted by the MS during an Attach Request procedure and a Routing Area Update procedure.
Mib	WirelessGsc
Values	supported unsupported
Default	No default

ATTRIBUTE Gsc Tlli Mc readyTimer (t3314)

Access	Read: All Write: Illegal
Description	This attribute indicates the negotiated value of the Ready Timer (T3314) for the GPRS Mobility Management (GMM) state transition. The Ready Timer is restarted whenever a signaling or a data Protocol Data Unit (PDU) is received from the Mobile Station (MS). In the event of the Ready Timer expiry, the attribute *gmmState* changes to ***standby***. The negotiation of this value is based on the *readyTimer* provisioned in the *Sgsn GprsSubscriberControl* component.
Mib	WirelessGsc
Values	Decimal (1..11160) forceStandby
Units	seconds
Default	No default

ATTRIBUTE Gsc Tlli Mc pagingProceedFlag (ppf)

Access	Read: All Write: Illegal

Description	This attribute indicates the paging proceed flag. The flag indicates whether paging can be initiated.
Mib	WirelessGsc
Values	false true
Default	No default

GROUP Gsc Tlli Mc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Tlli Mc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Tlli Mc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Tlli Mc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc Tlli SessionContext (Sc)

Instance	Decimal (0..15)
Groups	"GROUP Gsc Tlli Sc SessionContextOp (ScOp)" "GROUP Gsc Tlli Sc WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Gsc/n Tlli/<tlli> SessionContext/<nsapi>* *Gsc/n Imsi/<imsi> SessionContext/<nsapi>* This component represents the Session Context information for a subscriber. The Session Contexts are created for each activated Packet Data Protocol (PDP) context of a subscriber. The instance value identifies a session for a mobile subscriber.
Mib	WirelessGsc
Dyn. Subcomp.	"COMPONENT Gsc Tlli Sc RequestedQos (ReqQos)" "COMPONENT Gsc Tlli Sc NegotiatedQos (NegQos)"
Common Verbs	Help List Display

GROUP Gsc TIli Sc SessionContextOp (ScOp)

Properties	Operational
Description	This group contains the Session Context information for a subscriber. The Session Contexts are created for each activated Packet Data Protocol (PDP) context of a subscriber.
Mib	WirelessGsc

ATTRIBUTE Gsc TIli Sc selectedApnNetworkId (selApnNwkId)

Access	Read: All Write: Illegal
Description	This attribute indicates the selected Access Point Name (APN) Network Identifier. The APN Network Identifier can be the one received from the mobile as part of the ACTIVATE PDP CONTEXT REQUEST message or it can be selected from the subscription record against which this session has been activated or it can be the *defaultApnNetworkId* (defined in *Sgsn Gsc*) for the requested PDP type provisioned on the Serving GPRS Support Node (SGSN).
Mib	WirelessGsc
Values	String (1..63, ASCII)
Default	No default

ATTRIBUTE Gsc TIli Sc selectedApnOperatorId (selApnOpId)

Access	Read: All Write: Illegal
Description	This attribute indicates the selected Access Point Name (APN) Operator Identifier. The APN Operator Identifier can be the one received from the Mobile Station (MS) as part of the ACTIVATE PDP CONTEXT REQUEST message or it can be the one constructed from the subscriber's IMSI as mnc<3 MNC digits>.mcc<3 MCC digits>.gprs.

Mib	WirelessGsc
Values	String (1..37, ASCII)
Default	No default

ATTRIBUTE Gsc Tlli Sc dataPathGgsnAddress (dGgsnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the Gateway GPRS Support Node (GGSN) for the data path that is currently used by the activated Packet Data Protocol (PDP) context.
Mib	WirelessGsc
Values	IP address
Default	No default

ATTRIBUTE Gsc Tlli Sc signalingGgsnAddress (sGgsnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the Gateway GPRS Support Node (GGSN) for the signaling path that is currently used by the activated Packet Data Protocol (PDP) context.
Mib	WirelessGsc
Values	IP address
Default	No default

ATTRIBUTE Gsc Tlli Sc pdpContextIdentifier (pdpCid)

Access	Read: All Write: Illegal
Description	This attribute indicates the subscription record against which this session has been activated.
Mib	WirelessGsc
Values	Decimal (1..255)

Default	No default

ATTRIBUTE Gsc Tlli Sc pdpType (pdpT)

Access	Read: All Write: Illegal
Description	This attribute defines the end user protocol to be used between the external packet data network and the Mobile Station (MS) such as, X.25, IP, PPP. For X.25 currently defined address format is X.121, for IP protocol currently defined address formats are IPV4, IPV6, and PPP protocol has no address format.
Mib	WirelessGsc
Values	x25 ip ppp
Default	No default

ATTRIBUTE Gsc Tlli Sc ipv4PdpAddress (ipv4Addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is IPv4. The address conforms to the standard addressing scheme of the IP version 4 address.
Mib	WirelessGsc
Values	IP address
Default	No default

ATTRIBUTE Gsc Tlli Sc x121PdpAddress (x121Addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is X.121.

Mib	WirelessGsc
Values	BCD (1..14)
Default	No default

ATTRIBUTE Gsc Tlli Sc otherPdpAddress (otherAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. The Packet Data Protocol (PDP) protocol type for the *otherPdpAddress* can be obtained from the attribute *pdpType* and the addressing type from *pdpAddressFormat*.
Mib	WirelessGsc
Values	String (1..16, Hex)
Default	No default

ATTRIBUTE Gsc Tlli Sc pdpAddressFormat (pdpTnum)

Access	Read: All Write: Illegal
Description	This attribute indicates the addressing type, such as, X.121, IPv4, IPv6.
Mib	WirelessGsc
Values	x121 ipv4 ipv6
Default	No default

ATTRIBUTE Gsc Tlli Sc ggsnRemoteTeid (ggsnRemTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg that originates at the GPRS Serving

	GPRS Support Node (SGSN) and terminates at the Gateway GPRS Support Node (GGSN).
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Tlli Sc ggsnLocalTeid (ggsnLocTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg that originates at the Gateway GPRS Support Node (GGSN) and terminates at the GPRS Serving GPRS Support Node (SGSN).
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Tlli Sc signallingGgsnTeid (sGgsnTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg endpoint of the control tunnel that runs between the GPRS Serving GPRS Support Node (SGSN) and the Gateway GPRS Support Node (GGSN).
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Tlli Sc packetFlowIdentifier (pfi)

Access	Read: All Write: Illegal

Description	This attribute indicates the Packet Flow Identifier (PFI) associated with this Packet Data Protocol (PDP) context. The PFI identifies the Aggregate BSS Quality of Service Profile (ABQP) used for a Packet Flow Context (PFC). The ABQP parameters associated with this PFI can be obtained from the *Tlli/<tlli> Mc Pfc/<pfi>* component or the *Imsi/<imsi> Mc Pfc/<pfi>* component.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Tlli Sc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Tlli Sc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Tlli Sc customCounter2 (customCntr2)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Tlli Sc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc Tlli Sc RequestedQos (ReqQos)

Groups	"GROUP Gsc Tlli Sc ReqQos QosProfile (Qos)"
Scope	Application
Description	*Sgsn Imsi/<imsi> SessionContext/<nsapi> RequestedQos* *Gsc/n Imsi/<imsi> SessionContext/<nsapi> RequestedQos* This component represents the Quality of Service (QoS) profile requested by a mobile subscriber for this session.
Mib	WirelessGsc
Common Verbs	Help List Display

GROUP Gsc Tlli Sc ReqQos QosProfile (Qos)

Properties	Operational
Description	This group contains the Quality of Service (QoS) profile. It contains either the requested QoS, the negotiated QoS, or the subscribed QoS based on which component contains this group.
Mib	WirelessGsc

ATTRIBUTE Gsc Tlli Sc ReqQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Signalling Data Units' (SDUs) order of delivery is guaranteed.
Mib	WirelessGsc
Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Gsc Tlli Sc ReqQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal
Description	This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network. The erroneous SDUs can be handled in one of the following ways: ***noDetect:*** The Signalling Data Units (SDUs) are delivered without considering error detection. ***errSdusDelivered:*** The erroneous Signalling Data Units (SDUs) are delivered together with an error indication. ***errSdusNotDelivered:*** The erroneous Signalling Data Units (SDUs) are discarded.

Mib	WirelessGsc
Values	noDetect errSdusDelivered errSdusNotDelivered
Default	No default

ATTRIBUTE Gsc TIli Sc ReqQos trafficClass (traffClass)

Access	Read: All Write: Illegal
Description	This attribute indicates the type of application for which the bearer service is optimized. By including the traffic class itself as an attribute, GPRS can make assumptions about the traffic source and optimize the transport for that traffic type. The different traffic classes are: ***conversational* -** This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing. ***streaming* -** This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay. ***interactive* -** This class includes applications where a human or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content. ***background* -** This class includes applications where the end-user, typically a computer, sends and receives data files in the background (for example: emails, SMS and database downloads). This is characterized by the destination not expecting the data within a certain time.
Mib	WirelessGsc

Values	conversational (conv) streaming (strm) interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Gsc Tlli Sc ReqQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDU). It is used for admission control and policing.
Mib	WirelessGsc
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Gsc Tlli Sc ReqQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to GPRS in the uplink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessGsc
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Gsc Tlli Sc ReqQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal

Description	This attribute indicates the maximum number of bits delivered by GPRS in the downlink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessGsc
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Gsc Tlli Sc ReqQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal
Description	This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered SDUs. This attribute can take up values ranging from 1 through 9, representing: ***1*** -> 5*10 -2 ***2*** -> 1*10 -2 ***3*** -> 5*10 -3 ***4*** -> 4*10 -3 ***5*** -> 1*10 -3 ***6*** -> 1*10 -4 ***7*** -> 1*10 -5 ***8*** -> 1*10 -6 ***9*** -> 6*10 -8
Mib	WirelessGsc
Values	Decimal (1..9)
Default	No default

ATTRIBUTE Gsc Tlli Sc ReqQos sduErrorRatio (sduErrRatio)

Access	Read: All Write: Illegal
Description	This attribute indicates the fraction of Signalling Data Units (SDUs) lost or detected as erroneous. It is defined only for conforming traffic. This attribute can take up values between the numbers 1 - 7 representing the following: 1 -> 1*10 -2 2 -> 7*10 -3 3 -> 1*10 -3 4 -> 1*10 -4 5 -> 1*10 -5 6 -> 1*10 -6 7 -> 1*10 -1
Mib	WirelessGsc
Values	Decimal (1..7)
Default	No default

ATTRIBUTE Gsc TIli Sc ReqQos trafficHandlingPriority (traffHndlPr)

Access	Read: All Write: Illegal
Description	This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the value ***interactive.*** A value of ***0*** is reserved when this attribute is displayed for the negotiated Quality of Service (QoS) and the subscribed QoS. When displayed for the requested QoS, it indicates that the value in the subscribed QoS is to be used. Values of ***1***, ***2***, or ***3*** indicate the traffic priority, with ***1*** indicating the highest priority and ***3*** the lowest.
Mib	WirelessGsc
Values	Decimal (0..3)

Default	No default

ATTRIBUTE Gsc Tlli Sc ReqQos transferDelay (transfDelay)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.
Mib	WirelessGsc
Values	Decimal (10..4100)
Units	msec
Default	No default

ATTRIBUTE Gsc Tlli Sc ReqQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessGsc
Values	Decimal (0..8640)
Default	No default

ATTRIBUTE Gsc Tlli Sc ReqQos guaranteedDownlinkBitRate (guarDnBr)

Access	Read: All Write: Illegal

Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessGsc
Values	Decimal (0..8640)
Default	No default

COMPONENT Gsc Tlli Sc NegotiatedQos (NegQos)

Groups	"GROUP Gsc Tlli Sc NegQos QosProfile (Qos)"
Scope	Application
Description	*Sgsn Imsi/<imsi> SessionContext/<nsapi> NegotiatedQos* *Gsc/n Imsi/<imsi> SessionContext/<nsapi> NegotiatedQos* This component represents the negotiated Quality of Service (QoS) profile received by a mobile subscriber for this session.
Mib	WirelessGsc
Common Verbs	Help List Display

GROUP Gsc Tlli Sc NegQos QosProfile (Qos)

Properties	Operational
Description	This group contains the Quality of Service (QoS) profile. It contains either the requested QoS, the negotiated QoS, or the subscribed QoS based on which component contains this group.
Mib	WirelessGsc

ATTRIBUTE Gsc Tlli Sc NegQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Signalling Data Units' (SDUs) order of delivery is guaranteed.
Mib	WirelessGsc
Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Gsc TIli Sc NegQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal
Description	This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network. The erroneous SDUs can be handled in one of the following ways: ***noDetect:*** The Signalling Data Units (SDUs) are delivered without considering error detection. ***errSdusDelivered:*** The erroneous Signalling Data Units (SDUs) are delivered together with an error indication. ***errSdusNotDelivered:*** The erroneous Signalling Data Units (SDUs) are discarded.
Mib	WirelessGsc
Values	noDetect errSdusDelivered errSdusNotDelivered
Default	No default

ATTRIBUTE Gsc TIli Sc NegQos trafficClass (traffClass)

Access	Read: All Write: Illegal

Description	This attribute indicates the type of application for which the bearer service is optimized. By including the traffic class itself as an attribute, GPRS can make assumptions about the traffic source and optimize the transport for that traffic type. The different traffic classes are: ***conversational -*** This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing. ***streaming -*** This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay. ***interactive -*** This class includes applications where a human or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content. ***background -*** This class includes applications where the end-user, typically a computer, sends and receives data files in the background (for example: emails, SMS and database downloads). This is characterized by the destination not expecting the data within a certain time.
Mib	WirelessGsc
Values	conversational (conv) streaming (strm) interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Gsc Tlli Sc NegQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal

Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDU). It is used for admission control and policing.
Mib	WirelessGsc
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Gsc Tlli Sc NegQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to GPRS in the uplink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessGsc
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Gsc Tlli Sc NegQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered by GPRS in the downlink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessGsc
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Gsc Tlli Sc NegQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal
Description	This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered SDUs. This attribute can take up values ranging from 1 through 9, representing: ***1*** -> 5*10 -2 ***2*** -> 1*10 -2 ***3*** -> 5*10 -3 ***4*** -> 4*10 -3 ***5*** -> 1*10 -3 ***6*** -> 1*10 -4 ***7*** -> 1*10 -5 ***8*** -> 1*10 -6 ***9*** -> 6*10 -8
Mib	WirelessGsc
Values	Decimal (1..9)
Default	No default

ATTRIBUTE Gsc Tlli Sc NegQos sduErrorRatio (sduErrRatio)

Access	Read: All Write: Illegal
Description	This attribute indicates the fraction of Signalling Data Units (SDUs) lost or detected as erroneous. It is defined only for conforming traffic. This attribute can take up values between the numbers 1 - 7 representing the following: 1 -> 1*10 -2 2 -> 7*10 -3 3 -> 1*10 -3

4 -> 1*10 -4
5 -> 1*10 -5
6 -> 1*10 -6
7 -> 1*10 -1

Mib WirelessGsc

Values Decimal (1..7)

Default No default

ATTRIBUTE Gsc Tlli Sc NegQos trafficHandlingPriority (traffHndlPr)

Access Read: All
Write: Illegal

Description This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the value ***interactive.***

A value of ***0*** is reserved when this attribute is displayed for the negotiated Quality of Service (QoS) and the subscribed QoS. When displayed for the requested QoS, it indicates that the value in the subscribed QoS is to be used. Values of ***1***, ***2***, or ***3*** indicate the traffic priority, with ***1*** indicating the highest priority and ***3*** the lowest.

Mib WirelessGsc

Values Decimal (0..3)

Default No default

ATTRIBUTE Gsc Tlli Sc NegQos transferDelay (transfDelay)

Access Read: All
Write: Illegal

Description This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.

Mib	WirelessGsc
Values	Decimal (10..4100)
Units	msec
Default	No default

ATTRIBUTE Gsc Tlli Sc NegQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessGsc
Values	Decimal (0..8640)
Default	No default

ATTRIBUTE Gsc Tlli Sc NegQos guaranteedDownlinkBitRate (guarDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessGsc
Values	Decimal (0..8640)

Default	No default

COMPONENT Gsc Tlli HlrCacheRecord (HlrcRec)

Groups	"GROUP Gsc Tlli HlrcRec Operational (Oper)" "GROUP Gsc Tlli HlrcRec WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Tlli/<tlli> HlrCacheRecord* *Sgsn Imsi/<imsi> HlrCacheRecord* *Gsc/n Tlli/<tlli> HlrCacheRecord* *Gsc/n Imsi/<imsi> HlrCacheRecord* This component represents a subscription record downloaded from the Home Location Register (HLR). The *HlrCache* on the *GprsSubscriberControl (Gsc)* contains the active subscriber data.
Mib	WirelessGsc
Dyn. Subcomp.	"COMPONENT Gsc Tlli HlrcRec PdpContext (PdpC)"
Common Verbs	Help List Display

GROUP Gsc Tlli HlrcRec Operational (Oper)

Properties	Operational
Description	This group contains subscription information downloaded from the Home Location Register (HLR).
Mib	WirelessGsc

ATTRIBUTE Gsc Tlli HlrcRec internationalMobileSubscriberId (imsi)

Access	Read: All Write: Illegal
Description	This attribute indicates the International Mobile Subscriber Identity (IMSI) of the Mobile Station (MS).
Mib	WirelessGsc

Values	BCD (5..15)
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec hlrNumber (hlrNo)

Access	Read: All Write: Illegal
Description	This attribute indicates the HLR Number of the Home Location Register (HLR) to which the *HlrCache* record is currently associated. It is used to retrieve the *HlrCache* records to be restored after receipt of the RESET message from the HLR.
Mib	WirelessGsc
Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec msIsdnNumber (msIsdn)

Access	Read: All Write: Illegal
Description	This attribute indicates the Integrated Service Digital Network (ISDN) number of the mobile subscriber. This is represented as an E.164 number in international format.
Mib	WirelessGsc
Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec subscriptionConfirmedByHlr (subsCByHlr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the subscription information in the Serving GPRS Support Node (SGSN) is known to be in agreement with the Home Location Register (HLR) when the SGSN successfully performs an UPDATE GPRS LOCATION to the HLR.

Mib	WirelessGsc
Values	no yes
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec locationInfoConfirmedInHlr (locCInHlr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Home Location Register (HLR) record of the Serving GPRS Support Node (SGSN) address for the Mobile Station (MS) has been confirmed by radio contact. It is initially set to, ***no***, when the SGSN receives a ROUTING AREA UPDATE REQUEST, or an IMSI and a GPRS ATTACH-REQUEST, or if a RESET message is received from the HLR with which the MS is registered. The indicator is set to, ***yes***, when a successful UPDATE GPRS LOCATION is performed for the MS.
Mib	WirelessGsc
Values	no yes
Default	No default

GROUP Gsc Tlli HlrcRec WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Tlli HlrcRec customCounter1 (customCntr1)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc Tlli HlrcRec PdpContext (PdpC)

Instance	Decimal (1..50)

Groups	"GROUP Gsc Tlli HlrcRec PdpC Operational (Oper)" "GROUP Gsc Tlli HlrcRec PdpC WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Tlli/<tlli> HlrcRec PdpContext/n* *Sgsn Imsi/<imsi> HlrcRec PdpContext/n* *Gsc/n Tlli/<tlli> HlrcRec PdpContext/n* *Gsc/n Imsi/<imsi> HlrcRec PdpContext/n* This component represents the Packet Data Protocol (PDP) context data downloaded from the Home Location Register (HLR). It indicates the different PDP profiles (that is, Quality of Service) the subscriber has.
Mib	WirelessGsc
Dyn. Subcomp.	"COMPONENT Gsc Tlli HlrcRec PdpC SubscribedQos (SubsQos)"
Common Verbs	Help List Display

GROUP Gsc Tlli HlrcRec PdpC Operational (Oper)

Properties	Operational
Description	This group contains the Packet Data Protocol (PDP) subscription data downloaded from the Home Location Register (HLR).
Mib	WirelessGsc

ATTRIBUTE Gsc Tlli HlrcRec PdpC pdpContextIdentifier (pdpCid)

Access	Read: All Write: Illegal
Description	This attribute indicates a Packet Data Protocol (PDP) Context in a subscription record.
Mib	WirelessGsc
Values	Decimal (1..255)

Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC pdpType (pdpT)

Access	Read: All Write: Illegal
Description	This attribute defines the end user protocol to be used between the external packet data network and the Mobile Station (MS) such as, X.25, IP, PPP. For X.25 currently defined address format is X.121, for IP protocol currently defined address formats are IPV4, IPV6, and PPP protocol has no address format.
Mib	WirelessGsc
Values	x25 ip ppp
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC ipv4PdpAddress (ipv4Addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is IPv4. The address conforms to the standard addressing scheme of the IP version 4 address.
Mib	WirelessGsc
Values	IP address
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC x121PdpAddress (x121Addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is X.121.

Mib	WirelessGsc
Values	BCD (1..14)
Default	No default

ATTRIBUTE Gsc Tlli HIrcRec PdpC otherPdpAddress (otherAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. The Packet Data Protocol (PDP) protocol type for the *otherPdpAddress* can be obtained from the attribute *pdpType* and the addressing type from *pdpAddressFormat*.
Mib	WirelessGsc
Values	String (1..16, Hex)
Default	No default

ATTRIBUTE Gsc Tlli HIrcRec PdpC pdpAddressFormat (pdpTnum)

Access	Read: All Write: Illegal
Description	This attribute indicates the addressing type, such as, X.121, IPv4, IPv6.
Mib	WirelessGsc
Values	x121 ipv4 ipv6
Default	No default

ATTRIBUTE Gsc Tlli HIrcRec PdpC apnNetworkIdentifier (apnNwkId)

Access	Read: All Write: Illegal
Description	This attribute indicates an Access Point Name (APN) Network Identifier which is the Logical Name of the access point to the external packet data network. A Logical Name is a label or a fully

	qualified domain name according to the Domain Name System (DNS) naming conventions.
Mib	WirelessGsc
Values	String (1..63, ASCII)
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC vplmnAddressAllowed (vplmnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Mobile Station (MS) is allowed to use the Access Point Name (APN) in the Visiting Public Land Mobile Network (VPLMN).
Mib	WirelessGsc
Values	no yes
Default	No default

GROUP Gsc Tlli HlrcRec PdpC WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Tlli HlrcRec PdpC customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc Tlli HlrcRec PdpC SubscribedQos (SubsQos)

Groups	"GROUP Gsc Tlli HlrcRec PdpC SubsQos QosProfile (Qos)"
Scope	Application
Description	*Sgsn Imsi/<imsi> HlrcRec PdpContext/n SubscribedQos* *Gsc/n Imsi/<imsi> HlrcRec PdpContext/n SubscribedQos* This component represents the Quality of Service (QoS) profile

of the subscriber downloaded from the Home Location Register (HLR).

Mib WirelessGsc

Common Verbs
Help
List
Display

GROUP Gsc Tlli HlrcRec PdpC SubsQos QosProfile (Qos)

Properties Operational

Description This group contains the Quality of Service (QoS) profile. It contains either the requested QoS, the negotiated QoS, or the subscribed QoS based on which component contains this group.

Mib WirelessGsc

ATTRIBUTE Gsc Tlli HlrcRec PdpC SubsQos deliveryOrder (delOrd)

Access Read: All
Write: Illegal

Description This attribute indicates whether the Signalling Data Units' (SDUs) order of delivery is guaranteed.

Mib WirelessGsc

Values withDeliveryOrder
withoutDeliveryOrder

Default No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC SubsQos deliveryOfErroneousSdus (delErrSdus)

Access Read: All
Write: Illegal

Description This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network.

The erroneous SDUs can be handled in one of the following ways:

noDetect: The Signalling Data Units (SDUs) are delivered

without considering error detection.

errSdusDelivered: The erroneous Signalling Data Units (SDUs) are delivered together with an error indication.

errSdusNotDelivered: The erroneous Signalling Data Units (SDUs) are discarded.

Mib: WirelessGsc

Values:
noDetect
errSdusDelivered
errSdusNotDelivered

Default: No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC SubsQos trafficClass (traffClass)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the type of application for which the bearer service is optimized. By including the traffic class itself as an attribute, GPRS can make assumptions about the traffic source and optimize the transport for that traffic type.

The different traffic classes are:
conversational - This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing.

streaming - This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay.

interactive - This class includes applications where a human or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content.

	background **-** This class includes applications where the end-user, typically a computer, sends and receives data files in the background (for example: emails, SMS and database downloads). This is characterized by the destination not expecting the data within a certain time.
Mib	WirelessGsc
Values	conversational (conv) streaming (strm) interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC SubsQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDU). It is used for admission control and policing.
Mib	WirelessGsc
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC SubsQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to GPRS in the uplink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessGsc
Values	Decimal (0..8640)
Units	kbit/s

Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC SubsQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered by GPRS in the downlink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessGsc
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC SubsQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal
Description	This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered SDUs. This attribute can take up values ranging from 1 through 9, representing: ***1*** -> 5*10 -2 ***2*** -> 1*10 -2 ***3*** -> 5*10 -3 ***4*** -> 4*10 -3 ***5*** -> 1*10 -3 ***6*** -> 1*10 -4 ***7*** -> 1*10 -5 ***8*** -> 1*10 -6 ***9*** -> 6*10 -8
Mib	WirelessGsc

Values	Decimal (1..9)
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC SubsQos sduErrorRatio (sduErrRatio)

Access	Read: All Write: Illegal
Description	This attribute indicates the fraction of Signalling Data Units (SDUs) lost or detected as erroneous. It is defined only for conforming traffic. This attribute can take up values between the numbers 1 - 7 representing the following: 1 -> 1*10 -2 2 -> 7*10 -3 3 -> 1*10 -3 4 -> 1*10 -4 5 -> 1*10 -5 6 -> 1*10 -6 7 -> 1*10 -1
Mib	WirelessGsc
Values	Decimal (1..7)
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC SubsQos trafficHandlingPriority (traffHndlPr)

Access	Read: All Write: Illegal
Description	This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the value ***interactive.*** A value of ***0*** is reserved when this attribute is displayed for the negotiated Quality of Service (QoS) and the subscribed QoS. When displayed for the requested QoS, it indicates that the value in the subscribed QoS is to be used. Values of ***1***, ***2***, or ***3*** indicate the traffic priority, with ***1*** indicating the highest priority and ***3*** the lowest.

Mib	WirelessGsc
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC SubsQos transferDelay (transfDelay)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.
Mib	WirelessGsc
Values	Decimal (10..4100)
Units	msec
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC SubsQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessGsc
Values	Decimal (0..8640)
Default	No default

ATTRIBUTE Gsc Tlli HlrcRec PdpC SubsQos guaranteedDownlinkBitRate (guarDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessGsc
Values	Decimal (0..8640)
Default	No default

COMPONENT Gsc BaseStationSystemApplPart (Bssap)

Groups	"GROUP Gsc Bssap Provisioned (Prov)" "GROUP Gsc Bssap OsiState (State)" "GROUP Gsc Bssap SigRegistrationOp" "GROUP Gsc Bssap Statistics (Stats)" "GROUP Gsc Bssap WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS GprsSubscriberControl BaseStationSystemApplPart"

Scope	Application
Description	*Gsc/n BaseStationSystemApplPart* This component represents the Base Station System Application Part+ (BSSAP+) protocol layer of the SGSN. The BSSAP+ layer is responsible for encoding and decoding the BSSAP messages to the VLR.
Mib	WirelessGsc
Subcomponents	"COMPONENT Gsc Bssap Ss7IpInterface (Ss7IpIf)"
Common Verbs	Help List Display

GROUP Gsc Bssap Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes to provide the Base Station System Application Part+ (BSSAP+) functionality.
Mib	WirelessGsc

ATTRIBUTE Gsc Bssap globalTitle (gt)

Access	Read: All Write: All
Description	This attribute supplies the E.164 number associated with the local Signaling Connection Control Part (SCCP) subsystem on the Serving GPRS Support Node (SGSN). This E.164 number will be used in the global title address field of the Calling Party Address (CgPA) when the value of the *bssapCgpaRoutingIndicator* attribute of the *Sgsn Gsc* component is ***gt***. A distinct E.164 number for Base Station System Application Part (BSSAP) is mandatory. If this attribute is empty, the value of the *sgsnNumber* attribute of the *Gsc* component will be used as the global title for BSSAP messages.
Mib	WirelessGsc
Values	String (0..17, NativeAddress)
Default	No default

ATTRIBUTE Gsc Bssap vlrSubsystemNumber (vlrSsn)

Access	Read: All Write: All
Description	This attribute specifies the subsystem number used by BSSAP to address the Visitor Location Register (VLR). By default BSSAP uses the standard subsystem number of 7 to address the VLR. The operator may desire to change this value if the VLR in his network is configured with a subsystem number other than the standard subsystem number of 7. The value set here must match the subsystem number specified by the VLR.

Mib	WirelessGsc
Values	Decimal (7; 151..254)
Default	7

GROUP Gsc Bssap OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessGsc

ATTRIBUTE Gsc Bssap adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	WirelessGsc

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Gsc Bssap operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	WirelessGsc
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Gsc Bssap usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	WirelessGsc
Values	idle active (activ) busy
Default	idle

GROUP Gsc Bssap SigRegistrationOp

Properties	Operational
Description	This group contains operational attributes for any component that monitors SS7 IP Gateway (SIG) registration statistics.
Mib	WirelessGsc

ATTRIBUTE Gsc Bssap sigRegisterAttempts (regAttempts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of SCIP registrations attempted with the SIG. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap sigRegisterSuccessAcks (regAcks)

Access	Read: All Write: Illegal
Description	This attribute counts the number of successful registration responses received from the SIG. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap sigRegisterFailures (regFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of unsuccessful registration responses received from the SIG. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap sigDeregisterAttempts (deregAttempts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of SCIP deregistrations attempted with the SIG. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap sigDeregisterSuccessAcks (deregAcks)

Access	Read: All Write: Illegal
Description	This attribute counts the number of successful deregistration responses received from the SIG. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap sigDeregisterFailures (deregFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of unsuccessful deregistration responses received from the SIG. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap sigSccpNoticeIndications (sccpNotice)

Access	Read: All Write: Illegal
Description	This attribute counts the number of SCCP Notice Indications that have been received from the SIG. SCCP Notice Indications are received from the SIG when there are errors in the messages being sent to it. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Bssap Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes of the *BaseStationSystemApplPart*.
Mib	WirelessGsc

ATTRIBUTE Gsc Bssap gsAssociatedCurrent (gsAss)

Access	Read: All Write: Illegal

Description	This attribute indicates how many Mobile Stations (MSs) are currently in the Gs Associated state.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap gsAssociatedTotal (gsassTot)

Access	Read: All Write: Illegal
Description	This attribute counts successful Gs association attempts from all the Mobile Stations (MSs). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap csPage

Access	Read: All Write: Illegal
Description	This attribute counts the BSSAP+_PAGING_REQUEST messages received by the BSSAP+ entity from all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap csPageRejects (csPgRejs)

Access	Read: All Write: Illegal

Description	This attribute counts the BSSAP+_PAGING_REJECT messages sent by the BSSAP+ entity to all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap csPageMsUnreachable (csPgMsUnr)

Access	Read: All Write: Illegal
Description	This attribute counts the BSSAP+_MS_UNREACHABLE messages sent by the BSSAP+ entity to all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap locationUpdateRequests (luReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the BSSAP+_LOCATION_UPDATE_REQUEST messages sent by the BSSAP+ entity to all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap locationUpdateRejects (luRejs)

Access	Read: All Write: Illegal

Description	This attribute counts the BSSAP+_LOCATION_UPDATE_REJECT messages received by the BSSAP+ entity from all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap alertRequests (alertReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the BSSAP+_ALERT_REQUEST messages received by the BSSAP+ entity from all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap alertRejects (alertRejs)

Access	Read: All Write: Illegal
Description	This attribute counts the BSSAP+ALERT_REJECT messages sent by the BSSAP+ entity to all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap gprsDetachIndications (gprsDetInds)

Access	Read: All Write: Illegal

Description	This attribute counts the BSSAP+_GPRS_DETACH_INDICATION messages sent by the BSSAP+ entity to all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap t8Timeouts (t8Touts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the *explicitGprsDetachTimer* (defined in *Sgsn GprsSubscriberControl*) expires before receiving a response from the VLR. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap gprsDetachMaxAttempts (n8MaxAtts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the BSSAP+ entity stopped retransmitting the explicit BSSAP+_GPRS_DETACH_INDICATIONs because the maximum number of retries *n8* (defined in S*gsn GprsSubscriberControl*) was reached. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap imsiDetachIndications (imsiDetInds)

Access	Read: All Write: Illegal
Description	This attribute counts the number of BSSAP+_IMSI_DETACH_INDICATION messages sent by the BSSAP+ entity to all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap t9Timeouts (t9Touts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the *explicitImsiDetachTimer* (defined in *Sgsn GprsSubscriberControl*) expires before receiving a response from the VLR. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap explicitImsiDetachMaxAttempts (n9MaxAtts)

Access	Read: All Write: Illegal
Description	This attribute counts the number times the BSSAP+ entity stopped retransmitting the explicit the BSSAP+_IMSI_DETACH_INDICATIONs because the maximum number of retries *n9* (defined in S*gsn GprsSubscriberControl*) was reached. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap t10Timeouts (t10Touts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the *implicitImsiDetachTimer* (defined in *Sgsn GprsSubscriberControl*) expires before receiving a response from the VLR. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap implicitImsiDetachMaxAttempts (n10MaxAtts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the BSSAP+ entity stopped retransmitting the implicit BSSAP+_IMSI_DETACH_INDICATIONs because the maximum number of retries *n10* (defined in S*gsn GprsSubscriberControl*) was reached. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap vlrFailures (vlrF)

Access	Read: All Write: Illegal

Description	This attribute counts the number of BSSAP+_RESET_INDICATION messages received by the BSSAP+ entity from all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap sgsnResetsSent (sgsnRsts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of BSSAP+_RESET_INDICATION messages (including retransmissions) sent by the BSSAP+ entity to the VLRs. This type of message is sent to each associated VLR when a *Gsc* recovers following a card failure. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap t12Timeouts (t12Touts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the *sgsnResetTimer* (defined in *Sgsn GprsSubscriberControl*) expires before receiving a response from the VLR. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap sgsnResetMaxAttempts (n12MaxAtts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the BSSAP+ entity stopped retransmitting the BSSAP+_RESET_INDICATIONs because the maximum number of retries *n12* (defined in Sgsn GprsSubscriberControl) was reached. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap msInfoRequests (msInfoReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of BSSAP+_MS_INFORMATION_REQUEST messages received by the BSSAP+ entity from all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap mmInfoRequests (mmInfoReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of BSSAP+_MM_INFORMATION_REQUEST messages received by the BSSAP+ entity from all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap statusFromVlr (stFrVlr)

Access	Read: All Write: Illegal
Description	This attribute counts the number of BSSAP+_MOBILE_STATUS messages received by the BSSAP+ entity from all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap statusToVlr (stToVlr)

Access	Read: All Write: Illegal
Description	This attribute counts the number of BSSAP+_MOBILE_STATUS messages sent by the BSSAP+ entity to all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap msActivityIndications (msActInds)

Access	Read: All Write: Illegal
Description	This attribute counts the BSSAP+_MS-ACTIVITY-INDICATION messages sent by the BSSAP+ entity to all the VLRs. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Gsc Bssap sccpRegistrationRequestTimeouts (regTimeouts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of timeouts that have occurred while waiting for a REGISTRATION_ACK message from the SCCP layer. The *serviceRequestTimer* attribute of the *Sgsn Gsc* component specifies the length of time to wait for a REGISTRATION_ACK after sending a REGISTRATION_REQUEST to the SCCP layer. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	0

GROUP Gsc Bssap WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Bssap customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberControl BaseStationSystemApplPart

Description	The statistics record generated by the GprsSubscriberControl BaseStationSystemApplPart component.

ATTRIBUTE Gsc Bssap registerAttempts (regAttempts)

Description	This attribute indicates the number of SCIP registrations attempted with the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Bssap registerSuccessAcks (regAcks)

Description	This attribute indicates the number of successful registration responses received from the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Bssap registerFailures (regFail)

Description	This attribute indicates the number of unsuccessful registration responses received from the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Bssap deregisterAttempts (deregAttempts)

Description	This attribute indicates the number of SCIP deregistrations attempted with the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Bssap deregisterSuccessAcks (deregAcks)

Description	This attribute indicates the number of successful deregistration responses received from the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Bssap deregisterFailures (deregFail)

Description	This attribute indicates the number of unsuccessful deregistration responses received from the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Bssap sigSccpNoticeIndications (sccpNotice)

Description	This attribute indicates the number of SCCP Notice Indications that have been received from the SIG during the collection interval. SCCP Notice Indications are received from the SIG when there are errors in the messages being sent to it.
Values	Decimal (0..4294967295)

COMPONENT Gsc Bssap Ss7IpInterface (Ss7IpIf)

Instance	Decimal (1..1)

Groups	"GROUP Gsc Bssap Ss7IpIf Provisioned (Prov)" "GROUP Gsc Bssap Ss7IpIf OsiState (State)" "GROUP Gsc Bssap Ss7IpIf WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Tcap/n Ss7IpIf/n* *Gsc/n Bssap Ss7IpIf/n* This component represents an interface to the HP or USP SS7-IP Gateway (SIG). The HP SIG and Universal Signalling Point (USP) SIG are referred to generically as the SIG. The SIG is a “stateless” message routing gateway used by many wireless components to communicate with other SS7 nodes in the wireless network such as the Home Location Register (HLR) and Visitor Location Register (VLR). A single instance of the *Ss7IpIf* provides connectivity to the SIG, but an additional instance can be added for redundancy.
Mib	WirelessGsc
Common Verbs	Help List Display Add DELete

GROUP Gsc Bssap Ss7IpIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *Ss7IpIf* component.
Mib	WirelessGsc

ATTRIBUTE Gsc Bssap Ss7IpIf linkToPort (lToPort)

Access	Read: All Write: All

Description	This attribute specifies a link to a *Gips/n Ip/address Tcp Port/n* component. This determines the IP Address and port used by this component for communication with the SIG.
Mib	WirelessGsc
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Gsc Bssap Ss7Ipif ss7IpGatewayAddress (sigIpAddr)

Access	Read: All Write: All
Description	This attribute specifies the SS7-IP Gateway (SIG) IP address. The value must match the IP address specified on the SIG and must not be set to 0.0.0.0. Changing this value causes the *Ss7IpIf* to redirect data using the new IP address. Current transactions being processed using this interface may be affected.
Mib	WirelessGsc
Values	IP address
Default	No default

ATTRIBUTE Gsc Bssap Ss7Ipif ss7IpGatewayTcpPort (sigTcpPort)

Access	Read: All Write: All
Description	This attribute specifies the SS7-IP Gateway (SIG) TCP port number. The value must match the TCP port number specified on the SIG. Changing this value causes the *Ss7IpIf* to redirect data using the new TCP Port number. Current transactions being processed using this interface may be affected.
Mib	WirelessGsc

Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Gsc Bssap Ss7Ipif heartbeatTimer (heartBTmr)

Access	Read: All Write: All
Description	This attribute specifies the amount of time between heartbeat messages sent to the SIG by the *Ss7IpIf*. Specifying ***disabled*** indicates that the heartbeat timer is disabled, that is, heartbeat messages are not sent to the SIG. The value specified by this attribute should be less than the keep-alive timer specified on the SIG. It is recommended that this attribute specify a value that is one-third the value of that specified by the keep-alive timer on the SIG.
Mib	WirelessGsc
Values	Decimal (1..100) disabled
Units	seconds
Default	20

ATTRIBUTE Gsc Bssap Ss7Ipif keepAliveTimer (keepAliveTmr)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the *Ss7IpIf* waits to receive heartbeat messages from the USP SIG before timing out. If the *Ss7IpIf* does not receive a heartbeat message from the SIG within the amount of time specified, it transitions into the OSI ***disabled*** operational state until connectivity with the SIG can be reestablished. If the *Ss7IpIf* is provisioned to connect to an HP SIG, this attribute should be set to ***disabled***. Setting this attribute to ***disabled*** indicates that the *Ss7IpIf* will not monitor heartbeat messages from the SIG.

	This attribute should specify a value greater than that specified by the heartbeat timer on the SIG. It is recommended that this attribute specify a value that is three times the value specified by the heartbeat timer on the SIG.
Mib	WirelessGsc
Values	Decimal (1..300) disabled
Units	seconds
Default	60

GROUP Gsc Bssap Ss7Iplf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessGsc

ATTRIBUTE Gsc Bssap Ss7Iplf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: WirelessGsc

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Gsc Bssap Ss7Iplf operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: WirelessGsc

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Gsc Bssap Ss7Iplf usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: WirelessGsc

Values:
idle
active (activ)
busy

Default: idle

GROUP Gsc Bssap Ss7Iplf WlcCustomCounters (WlcCustomCntr)

Properties: Operational

Description: This group contains the spare counters that can be dynamically patched.

Mib: WirelessGsc

ATTRIBUTE Gsc Bssap Ss7Iplf customCounter1 (customCntr1)

Access:
Read: All
Write: Illegal

Description: This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib: WirelessGsc

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Gsc Bssap Ss7Iplf customCounter2 (customCntr2)

Access:
Read: All
Write: Illegal

Description: This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Bssap Ss7Iplf customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc RemoteApplicationConnection (RaConn)

Instance	appType [String (1..8, ASCII)] shelfId [Decimal (0..50)] instance (n) [Decimal (1..15)]
Groups	"GROUP Gsc RaConn OsiState (State)" "GROUP Gsc RaConn WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	... *RemoteApplicationConnection/<appType, shelfId, n>* This component represents the Remote Application Connection information of an application that talks to applications on other shelves. For each application that it can communicate with, one of these connection components is created and is instantiated with the name of the remote application, the Id of the shelf on

which the application runs, and the instance number of the application. ShelfId ***0*** represents the Master shelf.

Mib WirelessGsc

Dyn. Subcomp. "COMPONENT Gsc RaConn AtmConnection (AtmCon)"

Common Verbs
Help
List
Display

GROUP Gsc RaConn OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib WirelessGsc

ATTRIBUTE Gsc RaConn adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: WirelessGsc

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Gsc RaConn operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: WirelessGsc

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Gsc RaConn usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	WirelessGsc
Values	idle active (activ) busy
Default	idle

GROUP Gsc RaConn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc RaConn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc RaConn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc RaConn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc RaConn AtmConnection (AtmCon)

Groups	"GROUP Gsc RaConn AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	WirelessGsc
Common Verbs	Help List Display

GROUP Gsc RaConn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	WirelessGsc

ATTRIBUTE Gsc RaConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	WirelessGsc
Values	The name of the component
Default	No default

COMPONENT Gsc ShortMessageService (Sms)

Groups	"GROUP Gsc Sms Statistics (Stats)" "GROUP Gsc Sms WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS GprsSubscriberControl ShortMessageService"

Scope	Application
Description	*Gsc/n ShortMessageService* This component represents the Short Message Service (SMS) functionality of the Serving GPRS Support Node (SGSN).
Mib	WirelessGsc
Common Verbs	Help List Display

GROUP Gsc Sms Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes of the *ShortMessageService (Sms).*
Mib	WirelessGsc

ATTRIBUTE Gsc Sms cpResponseExhaust (cpRespExh)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the *cpResponseTimer* expires and the *cpResponseRetries* has been reached before receiving a CP-ACK or CP-ERROR message from the Mobile Station (MS). This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms rpResponseTimeouts (rpRespTouts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the *rpResponseTimer* expires before receiving a RP-ACK or RP-ERROR message from the Mobile Station (MS). This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms iwmscResponseTimeouts (iwmscRespTouts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the *iwmscResponseTimer* expires before receiving a MOBILE ORIGINATED FORWARD SHORT MESSAGE ACK message from the Service Center.

	This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms moAttempts (moAtt)

Access	Read: All Write: Illegal
Description	This attribute counts the MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* component from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms mtAttempts (mtAtt)

Access	Read: All Write: Illegal
Description	This attribute counts the MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent to the *ShortMessageService (Sms) component* from the Service Center. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms mmaAttempts (mmaAtt)

Access	Read: All Write: Illegal
Description	This attribute counts the MORE MEMORY AVAILABLE messages sent to the *ShortMessageService (Sms)* from the Mobile Station (MS). The value includes the failures counted by *mmaFailures*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms mmaFailures (mmaFail)

Access	Read: All Write: Illegal
Description	This attribute counts the MORE MEMORY AVAILABLE messages sent to the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed due to one of the following conditions: Network Out of Order Protocol Error Congestion Unidentified Subscriber Unknown Subscriber Invalid Transaction Identifier Value Message Type non-existence Invalid mandatory information Invalid short message transfer reference value Message not compatible with short message protocol state Requested Facility not implemented The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Gsc Sms moFailUnidentifiedSubscriber (moFailUnidSub)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed because the MS is not registered in the Public Land Mobile Network (PLMN), the MS is not subscribed in a Service Center (SC) or the MS Prepaid Mobile Originated SMS account is depleted. This counter is incremented when the SGSN sends a CP-Data(RP-Error) message to the MS with error cause "unidentifiedSubscriber" selected. The value of this attribute is included in the count of *moFailures*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms moFailNetworkFailures (moFailNetFailures)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed because the network is not functioning correctly, a task cannot be performed because of a problem with the network, Prepaid Service Control Point (SCP) does not respond to the *Sms*, *iwmscResponseTimer* expired or an equipment protocol error occurs. The value of this attribute is included in the count of *moFailures.* The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms moFailFacilityNotSupp (moFailFaciNoSupp)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Service Center (SC) that failed because the network is unable to provide the requested short message services. This counter is incremented when the SGSN receives a MOForwardMessageAckRsp message with “facilityNotSupported” error cause selected. The value of this attribute is included in the count of *moFailures*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms moFailCongestion (moFailCong)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed because the short message service cannot be serviced because of high traffic. This counter is incremented when the SGSN receives a Mobile Originated message with “SC-congestion” error cause selected from the SMS-IWMSC (Short Message Service-InterWorking

MSC). The value of this attribute is included in the count of the *moFailures*.

The counter wraps to zero when it exceeds the maximum value.

Mib: WirelessGsc

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Gsc Sms moFailUnknownServiceCenter (moFailUnkServC)

Access: Read: All
Write: Illegal

Description: This attribute counts the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Mobile Station (MS) that failed because the destination requested by the MS is not currently assigned or allocated.

This counters is incremented when the SGSN receives a MOForwardShortMessageAckRsp message with “unknownServiceCenter” error cause selected. The value of this attribute is included in the count of the *moFailures*.

The counter wraps to zero when it exceeds the maximum value.

Mib: WirelessGsc

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Gsc Sms moFailInvalidSmeAddress (moFailInvSmeAdd)

Access: Read: All
Write: Illegal

Description: This attribute counts the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed because the Service Center (SC) received an invalid Short Message Entity address.

	This counter is incremented when the SGSN receives a MOForwardShortMessageAckRsp message with "invalidSMEAddress” error cause selected. The value of this attribute is included in the count of the *moFailures*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms moFailMissingSmsSubscription (moFailMissSmsSub)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Mobile Station (MS) that failed because the Mobile Subscriber subscription information does not include Mobile Originated Short Message Services. This counter is incremented when the SGSN sends a CP-Data (RP-Error) message to the MS with error cause “RequestedFacilityNotSubscribed” selected. The value of this attribute is included in the count of the *moFailures*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms moFailOdbSubscriber (moFailOdbSub)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages sent from the

ShortMessageService (Sms) to the Mobile Station (MS) that failed because the MS is forbidden from originating Short Message Services (SMS) messages.

This counter is incremented when the SGSN sends a CP-Data (RP-Error) message to the MS with error cause “Operator Determined Barring” selected. The value of this attribute is included in the count of the *moFailures*.

The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms mtFailUnidentifiedSubscriber (mtFailUnidSub)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because the Mobile Station (MS) is not known within the SGSN or the MS location is not confirmed in the HLR. This counter is incremented when the SGSN sends a negative MTForwardShortMessageAckRsp message to the SIG (SS7 Ip Gateway) with “unidentified Subscriber” error cause selected. The value of this attribute is included in the count of *mtFailures*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms mtFailSubscriberAbsent (mtFailSubAbs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because a Mobile Station (MS) did not respond to a Packet Paging Request or a MS is detached from the network. This counter is incremented when the SGSN sends a negative MTForwardShortMessageAckRsp message to the SIG (SS7 IP Gateway) with “Absent Subscriber_SM” error cause and “Gprs Detached” or “No Paging Response from GPRS” diagnostic information selected. The value of this attribute is included in the count of the *mtFailures*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms mtFailSubscriberBusy (mtFailSubBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because an another mobile terminated short message transfer is going on and the Mobile Terminated SMS Message Buffer Queue has reached its capacity limit, the message was buffered but it is not possible to deliver the message before the expiry of the buffering time or the Mobile Station (MS) is performing an inter SGSN routing area update. The value of this attribute is included in the *mtFailures*. The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms mtFailSubscriberNotSmEquipped (mtFailSubNotSmEquip)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because the Mobile Station did not support Short Message Services (SMS) messages. This counter is incremented when the SGSN sends a negative MTForwardShortMessageAckRsp message to the SIG (SS7 Ip Gateway) with “equipmentNotSM-Equipped” user error selected. The value of this attribute is included in the count of *mtfailures*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms mtFailNetworkFailures (mtFailNetFailures)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because the network is not functioning correctly, a task cannot be performed because of a problem with the network or an equipment protocol error occurs. The value of this attribute is included in the count of *mtFailures.* The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms mtFailMemCapExceed (mtFailMemCapExc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Mobile Subscriber (MS) that failed because the MS cannot store the incoming short message due to lack of storage capacity. This counter is incremented when the SGSN sends a negative MTForwardShortMessageAckRsp message to the SIG (SS7 Ip Gateway) with “SM-DeliveryFailure cause: MemoryCapacityExceeded” user error selected. The value of this attribute is included in the count of *mtFailures*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms moFailOthers

Access	Read: All Write: Illegal
Description	This attribute counts the MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* component from the Mobile Station (MS) that failed due to one of the following conditions: Unknown Subscriber Invalid Transaction Identifier Value Message Type non-existence

Invalid mandatory information
Invalid short message transfer reference value
Message not compatible with short message protocol state
Unassigned number
Short Message transfer reject

The counter wraps to zero when it exceeds the maximum value.

Mib: WirelessGsc

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Gsc Sms mtFailOthers

Access: Read: All
Write: Illegal

Description: This attribute counts the MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* component to the Service Center that failed due to one of the following conditions:

Unexpected Data Value
Data Missing
Message Type non-existence
Invalid mandatory information
Invalid short message transfer reference value
Message not compatible with short message protocol state
Semantically incorrect message
System Failures

The counter wraps to zero when it exceeds the maximum value.

Mib: WirelessGsc

Values: Decimal (0..4294967295)

Default: No default

GROUP Gsc Sms WlcCustomCounters (WlcCustomCntr)

Properties: Operational

Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc Sms customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Sms customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberControl ShortMessageService

Description	The statistics record generated by the GprsSubscriberControl ShortMessageService component.

ATTRIBUTE Gsc Sms cpResponseExhaust (cpRespExh)

Description	This attribute indicates the number of times the *cpResponseTimer* expires and the *cpResponseRetries* has been reached before receiving a CP-ACK or CP-ERROR message from the Mobile Station (MS) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Sms rpResponseTimeouts (rpRespTouts)

Description	This attribute indicates the number of times the *rpResponseTimer* expires before receiving a RP-ACK or RP-ERROR message from the Mobile Station (MS) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Sms iwmscResponseTimeouts (iwmscRespTouts)

Description	This attribute indicates the number of times the *iwmscResponseTimer* expires before receiving a MOBILE ORIGINATED FORWARD SHORT MESSAGE message from the Service Center in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moAttempts (moAtt)

Description	This attribute indicates the MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* component from the Mobile Station (MS) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtAttempts (mtAtt)

Description: This attribute indicates the MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent to the *ShortMessageService (Sms) component* from the Service Center in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mmaAttempts (mmaAtt)

Description: This attribute indicates the MORE MEMORY AVAILABLE messages sent to the *ShortMessageService (Sms)* from the Mobile Station (MS) in the collection interval. The value includes the failures counted by *mmaFailures*.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mmaFailures (mmaFail)

Description: This attribute indicates the MORE MEMORY AVAILABLE messages sent to the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed due to one of the following conditions:

Network Out of Order
Protocol Error
Congestion
Unidentified Subscriber
Unknown Subscriber
Invalid Transaction Identifier Value
Message Type non-existence
Invalid mandatory information
Invalid short message transfer reference value
Message not compatible with short message protocol state
Requested Facility not implemented

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailUnidentifiedSubscriber (moFailUnidSub)

Description: This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE

messages received by the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed because the MS is not registered in the Public Land Mobile Network (PLMN), the MS is not subscribed in a Service Center (SC) or the MS Prepaid Mobile Originated SMS account is depleted. The value of this attribute is included in the count of *moFailures*.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailNetworkFailures (moFailNetFailures)

Description: This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed because the network is not functioning correctly, a task cannot be performed because of a problem with the network, Prepaid Service Control Point (SCP) does not respond to the *Sms*, *iwmscResponseTimer* expires or an equipment protocol error occurs. The value of this attribute is included in the count of *moFailures.*

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailFacilityNotSupp (moFailFaciNoSupp)

Description: This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Service Center (SC) that failed because the network is unable to provide the requested short message services. The value of this attribute is included in the count of *moFailures*.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailCongestion (moFailCong)

Description: This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed because the short message service cannot be serviced because of high traffic. The value of this attribute is included in the count of *moFailures*.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailUnknownServiceCenter (moFailUnkServC)

Description: This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Mobile Station (MS) that failed because the destination requested by the MS is not currently assigned or allocated. The value of this attribute is included in the count of *moFailures*.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailInvalidSmeAddress (moFailInvSmeAdd)

Description: This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed because the Service Center (SC) received an invalid Short Message Entity address. The value of this attribute is included in the count of *moFailures*.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailMissingSmsSubscription (moFailMissSmsSub)

Description: This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Mobile Station (MS) that failed because the Mobile Subscriber subscription information did not include Mobile Originated Short Message Services. The value of this attribute is included in the count of *moFailures*.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailOdbSubscriber (moFailOdbSub)

Description: This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages sent from the ShortMessageService (Sms) to the Mobile Station (MS) that failed because the MS is forbidden from originating short message services (SMS) messages. The value of this attribute is included in the count of *moFailures*.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailUnidentifiedSubscriber (mtFailUnidSub)

Description: This attribute indicates, for the collection interval, the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because the Mobile Station (MS) is not known within the SGSN or the MS location is not confirmed in the HLR. The value of this attribute is included in the count of *mtFailures*.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailSubscriberAbsent (mtFailSubAbs)

Description: This attribute indicates, for the collection interval, the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because a Mobile Station (MS) did not respond to a Packet Paging Request or a MS is detached from the network. The value of this attribute is included in the count of *mtFailures*.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailSubscriberBusy (mtFailSubBusy)

Description: This attribute indicates, for the collection interval, the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because another mobile terminated short message transfer is going on and the Mobile Terminated SMS Message Buffer Queue has reached its capacity limit, the message was buffered but it is not possible to deliver the message before the expiry of the buffering time or the Mobile Station (MS) is performing an inter SGSN routing area update. The value of this attribute is included in the count of *mtFailures*.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailSubscriberNotSmEquipped (mtFailSubNotSmEquip)

Description: This attribute indicates, for the collection interval, the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the

Service Center that failed because the Mobile Station does not support Short Message Service messages. The value of this attribute is included in the count of *mtFailures.*

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailNetworkFailures (mtFailNetFailures)

Description This attribute indicates, for the collection interval, the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because the network is not functioning correctly, a task cannot be performed because of a problem with the network or an equipment protocol error occurs. The value of this attribute is included in the count of *mtFailures.*

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailMemCapExceed (mtFailMemCapExc)

Description This attribute indicates, for the collection interval, the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Mobile Subscriber (MS) that failed because the MA cannot store the incoming short message due to lack of storage capacity. The value of this attribute is not included in the count of *mtFailures.*

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailOthers

Description This attribute indicates the MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* component from the Mobile Station (MS) that failed due to one of the following conditions:

Unknown Subscriber
Invalid Transaction Identifier Value
Message Type non-existence
Invalid mandatory information
Invalid short message transfer reference value
Message not compatible with short message protocol state
Unassigned number
Short Message transfer reject

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailOthers

Description This attribute indicates the MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* component to the Service Center that failed due to one of the following conditions:

Unexpected Data Value
Data Missing
Message Type non-existence
Invalid mandatory information
Invalid short message transfer reference value
Message not compatible with short message protocol state
Semantically incorrect message
System Failures

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COMPONENT Gsc PrepaidShortMessageService (PSms)

Groups "GROUP Gsc PSms Statistics (Stats)"
"GROUP Gsc PSms WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS GprsSubscriberControl PrepaidShortMessageService"

Scope Application

Description *Gsc/n PrepaidShortMessageService*

This component represents the Prepaid Short Message Service (PSMS) functionality of the Serving GPRS Support Node

	(SGSN). This component is to be added if PSMS feature is required.
Mib	WirelessGsc
Opt. Subcomp.	"COMPONENT Gsc PSms ServiceControlPoint (Scp)"
Common Verbs	Help List Display Add DELete

GROUP Gsc PSms Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes of the *PrepaidShortMessageService (PSms).*
Mib	WirelessGsc

ATTRIBUTE Gsc PSms peakConcurrentTransactions (peakCTran)

Access	Read: All Write: Illegal
Description	This attribute indicates the peak number of concurrent Prepaid Short Message Service (PSMS) transactions that have occurred on this *GprsSubscriberControl (Gsc)*.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms activeConnections (actCon)

Access	Read: All Write: Illegal
Description	This attribute indicates the connections that are currently active between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs). This reflects only those

	connections that are currently in the Network Connection Control Protocol (NCCP) data exchange state.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms totalSuccessfulConnections (sucCon)

Access	Read: All Write: Illegal
Description	This attribute counts the total connections between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs) that have successfully reached the Network Connection Control Protocol (NCCP) data exchange state. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms totalFailedConnections (failCon)

Access	Read: All Write: Illegal
Description	This attribute counts the total connection attempts between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs) that have failed to reach the Network Connection Control Protocol (NCCP) data exchange state. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms totalTransactionSuccesses (succTran)

Access	Read: All Write: Illegal
Description	This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have successfully completed between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs). Specifically, this indicates the Prepaid-CTP INCREMENT DECREMENT RESPONE messages that have been successfully received before *transactionTimer* has expired. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms totalTransactionFailures (failTran)

Access	Read: All Write: Illegal
Description	This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have failed between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs). This includes failures due to failed connections, late responses, resource limitations and protocol errors. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms totNwkRelatedTransactionFailures (netTranFail)

Access	Read: All Write: Illegal

Description	This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have failed due to network related events. This includes transactions rejected due to connection failures, network congestion, and local network resource limitations. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc PSms WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc PSms customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberControl PrepaidShortMessageService

Description	The statistics record generated by the GprsSubscriberControl PrepaidShortMessageService component.

ATTRIBUTE Gsc PSms peakConcurrentTransactions (peakCTran)

Description	This attributes indicates the peak number of concurrent Prepaid Short Message Service (PSMS) transactions that have occurred on this *GprsSubscriberControl (Gsc)*.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc PSms activeConnections (actCon)

Description	This attribute indicates the connections that are currently active between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs). This reflects only those connections that are currently in the Network Connection Control Protocol (NCCP) data exchange state.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms totalSuccessfulConnections (totCon)

Description This attribute counts the total connections between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs) that have successfully reached the Network Connection Control Protocol (NCCP) data exchange state. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms totalFailedConnections (failCon)

Description This attribute counts the total connection attempts between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs) that have failed to reach the Network Connection Control Protocol (NCCP) data exchange state. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms totalTransactionSuccesses (succTran)

Description This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have successfully completed between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs). Specifically, this indicates the Prepaid-CTP INCREMENT DECREMENT RESPONSE messages that have been successfully received before *transactionTimer* has expired.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms totalTransactionFailures (failTran)

Description This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have failed between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs). This includes failures due to failed connections, late responses, resource limitations and protocol errors.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms totNwkRelatedTransactionFailures (netTranFail)

Description This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have failed between the GprsSubscriberControl (Gsc) and this external Service Control Point (SCP) due to network related events. This includes transactions rejected due to connection failures, network congestion, and local network resource limitations. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COMPONENT Gsc PSms ServiceControlPoint (Scp)

Instance Decimal (1..32)

Groups "GROUP Gsc PSms Scp Provisioned (Prov)"
"GROUP Gsc PSms Scp Operational (Oper)"
"GROUP Gsc PSms Scp WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS GprsSubscriberControl PrepaidShortMessageService ServiceControlPoint"

Scope Application

Description *Gsc/n PSms ServiceControlPoint*

This component represents the Service Control Point (SCP) to which the *GprsSubscriberControl (Gsc)* of the Serving GPRS Support Node (SGSN) connects.

Mib WirelessGsc

Common Verbs
Help
List
Display
Add
DELete

GROUP Gsc PSms Scp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes of the external Service Control Point (SCP) to which the *GprsSubscriberControl (Gsc)* connects.
Mib	WirelessGsc

ATTRIBUTE Gsc PSms Scp clusterId (cId)

Access	Read: All Write: All
Description	This attribute specifies the Cluster Identifier which is used by the *GprsSubscriberControl (Gsc)* when it connects to the external Service Control Point (SCP). This value must be unique within the domain of the SCP.
Mib	WirelessGsc
Values	Decimal (0..255) undefined
Default	No default

ATTRIBUTE Gsc PSms Scp linkToPort (lToPort)

Access	Read: All Write: All
Description	This attribute specifies a link to the *GprsIpServer IpAddress TcpPort* component. The IP address specified becomes the source IP address and the TCP port specified becomes the source port used for communication with this external Service Control Point (SCP). Changing this value causes the SGSN to reset its communication links with the *GprsIpServer*. Transactions being processed may be affected.
Mib	WirelessGsc
Values	Link (Service, linkToApplication)

Default	No default

GROUP Gsc PSms Scp Operational (Oper)

Properties	Operational
Description	This group contains statistical attributes of the *ServiceControlPoint (Scp).*
Mib	WirelessGsc

ATTRIBUTE Gsc PSms Scp transactionSuccesses (succTran)

Access	Read: All Write: Illegal
Description	This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have successfully completed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). Specifically, this indicates the number of Prepaid-CTP INCREMENT DECREMENT TRANSACTION RESPONSE messages that have been successfully received before *transactionTimer* has expired. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp transactionFailures (failTran)

Access	Read: All Write: Illegal
Description	This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have failed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). This includes failures due to failed connections, late responses, resource limitations and protocol errors. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp networkRelatedTransactionFailures (netTranFail)

Access	Read: All Write: Illegal
Description	This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have failed between the GprsSubscriberControl (Gsc) and this external Service Control Point (SCP) due to network related events. This includes transactions rejected due to connection failures, network congestion, and local network resource limitations. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp prepaidCtpLocalProtocolErrors (locPErr)

Access	Read: All Write: Illegal
Description	This attribute counts the total Prepaid-CTP protocol errors that have been committed locally that the external Service Control Point (SCP) has detected and has reported back to the *GprsSubscriberControl (Gsc)*. The count consists of the transaction portion, component portion, and parameter error categories. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp prepaidCtpRemoteGeneralErrors (remGErr)

Access	Read: All Write: Illegal
Description	This attribute counts the total Prepaid-CTP general errors that have occurred on the external Service Control Point (SCP) and that have been reported back to the *GprsSubscriberControl (Gsc)*. The count consists of the general error category as described in the Prepaid-CTP specification. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp prepaidCtpRemoteProtocolErrors (remPErr)

Access	Read: All Write: Illegal
Description	This attribute counts the total Prepaid-CTP protocol errors that have been committed remotely by the external Service Control Point (SCP) that have been detected by the *GprsSubscriberControl (Gsc)*. The count consists of the transaction portion, component portion, and parameter error categories as described in the Prepaid-CTP specification. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp nccpState

Access	Read: All Write: Illegal
Description	This attribute contains the current Network Connection Control Protocol (NCCP) state of the connection as described in the NCCP protocol specification.
Mib	WirelessGsc

Values	null idle connecting dataExchange releasing
Default	No default

ATTRIBUTE Gsc PSms Scp nccpLoginSuccesses (nccpLiSucc)

Access	Read: All Write: Illegal
Description	This attribute counts the total Network Connection Control Protocol (NCCP) logins that have successfully completed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). Specifically, this indicates the NCCP LOGIN RESPONSE messages received from this SCP before the *nccpLoginResponseTimer* has expired. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp nccpLoginFailures (nccpLiFail)

Access	Read: All Write: Illegal
Description	This attribute counts the total Network Connection Control Protocol (NCCP) logins that have failed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). This count includes failures due to rejected logins as well as late or lost responses. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp nccpLoginResponseTimeouts (nccpRTo)

Access	Read: All Write: Illegal
Description	This attribute counts the *nccpLoginResponseTimer* expiries before receiving a response from the external Service Control Point (SCP) for the Network Connection Control Protocol (NCCP) LOGIN REQUEST message sent. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp nccpLogoutSuccesses (nccpLoSucc)

Access	Read: All Write: Illegal
Description	This attribute counts the total Network Connection Control Protocol (NCCP) logouts that have successfully completed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). Specifically, this indicates the NCCP LOGOUT RESPONSE messages received from this SCP before the *nccpLogoutResponseTimer* has expired. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp nccpLogoutFailures (nccpLoFail)

Access	Read: All Write: Illegal
Description	This attribute counts the total Network Connection Control Protocol (NCCP) logouts that have failed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). Specifically, this counts the

	nccpLogoutResponseTimer expirations that have occurred. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp nccpRemoteAborts (nccpRemAbt)

Access	Read: All Write: Illegal
Description	This attribute counts the total Network Connection Control Protocol (NCCP) ABORT messages that have been received from this external Service Control Point (SCP). This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp nccpLocalAborts (nccpLocAbt)

Access	Read: All Write: Illegal
Description	This attribute counts the total Network Connection Control Protocol (NCCP) ABORT messages that have been sent to this external Service Control Point (SCP). This counter also includes the NCCP ABORT messages sent due to the aborts caused by the expiration of the NCCP KeepAlive timer. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp nccpKeepAliveTimeouts (nccpKpAlTo)

Access	Read: All Write: Illegal
Description	This attribute counts the total Network Connection Control Protocol (NCCP) KeepAlive timer expirations that have occurred while communicating with this external Service Control Point (SCP). This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp nccpKeepAliveAborts (nccpKpAlAbt)

Access	Read: All Write: Illegal
Description	This attribute counts the total aborts caused by the Network Connection Control Protocol (NCCP) KeepAlive timer expiry. Specifically, this counts the number of NCCP Abort messages that have been sent to this external Service Control Point (SCP) due to aborts caused by KeepAlive timer expirations. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp nccpRoundRobinTimeouts (nccpRrTo)

Access	Read: All Write: Illegal
Description	This attribute counts number of times the *nccpRoundRobinTimer* expires before the SGSN could establish a connection with any of the Service Processors (SPs) of this external Service Control Point (SCP). This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp nccpReconnectTimeouts (nccpRecTo)

Access	Read: All Write: Illegal
Description	This attribute counts the total *nccpReconnectTimer* expirations that have occurred while communicating with this external Service Control Point (SCP). This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp nccpLocalProtocolErrors (nccpLocPErr)

Access	Read: All Write: Illegal
Description	This attribute counts the Network Connection Control Protocol (NCCP) protocol errors that have been committed locally that this external Service Control Point (SCP) has detected and has reported back to the *GprsSubscriberControl (Gsc)*. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp nccpRemoteProtocolErrors (nccpRemPErr)

Access	Read: All Write: Illegal
Description	This attribute counts the total Network Connection Control Protocol (NCCP) protocol errors that have been committed remotely by this external Service Control Point (SCP) that have

	been detected by the *GprsSubscriberControl (Gsc)*. This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp tcpRemoteIpAddress (tcpRemIpAddr)

Access	Read: All Write: Illegal
Description	This attribute reflects the IP address on this external Service Control Point (SCP) that the *GprsSubscriberControl (Gsc)* has established or is currently attempting to establish a connection. This address will be one of the two provisioned addresses of the Service Processors (*spAddress1* and *spAddress2*).
Mib	WirelessGsc
Values	IP address
Default	No default

ATTRIBUTE Gsc PSms Scp tcpConnectSuccesses (tcpConnSucc)

Access	Read: All Write: Illegal
Description	This attribute counts the total TCP connections that have been successfully established between the *GprsSubscriberControl (Gsc)* and this Service Control Point (SCP). This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp tcpConnectFailures (tcpConnFail)

Access	Read: All Write: Illegal

Description	This attribute counts the total TCP connections that have failed to successfully establish between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). This counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc PSms Scp WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsc

ATTRIBUTE Gsc PSms Scp customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc PSms Scp customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberControl PrepaidShortMessageService ServiceControlPoint

Description	The statistics record generated by the GprsSubscriberControl PrepaidShortMessageService ServiceControlPoint component.

ATTRIBUTE Gsc PSms Scp transactionSuccesses (succTran)

Description	This attribute counts the total prepaid Prepaid Short Message Service (PSMS) transactions that have successfully completed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). Specifically, this indicates the number of Prepaid-CTP INCREMENT DECREMENT TRANSACTION RESPONSE messages that have been successfully received before *transactionTimer* has expired. This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp transactionFailures (failTran)

Description	This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have failed between the

GprsSubscriberControl (Gsc) and this external Service Control Point (SCP). This includes failures due to failed connections, late responses, resource limitations and protocol errors. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp networkRelatedTransactionFailures (netTranFail)

Description: This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have failed between the GprsSubscriberControl (Gsc) and this external Service Control Point (SCP) due to network related events. This includes transactions rejected due to connection failures, network congestion, and local network resource limitations. This counter wraps to zero when it exceeds the maximum value.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp prepaidCtpLocalProtocolErrors (locPErr)

Description: This attribute counts the total Prepaid-CTP protocol errors that have been committed locally that the external Service Control Point (SCP) has detected and has reported back to the *GprsSubscriberControl (Gsc)*.

This count consists of the transaction portion, component portion, and parameter error categories. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp prepaidCtpRemoteGeneralErrors (remGErr)

Description: This attribute counts the total Prepaid-CTP general errors that have occurred on the external Service Control Point (SCP) and that have been reported back to the *GprsSubscriberControl (Gsc)*. This count consists of the general error category as described in the Prepaid-CTP specification. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp prepaidCtpRemoteProtocolErrors (remPErr)

Description This attribute counts the total Prepaid-CTP protocol errors that have been committed remotely by the external Service Control Point (SCP) that have been detected by the *GprsSubscriberControl (Gsc)*. This count consists of the transaction portion, component portion, and parameter error categories as described in the Prepaid-CTP specification. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLoginSuccesses (nccpLiSucc)

Description This attribute counts the total Network Connection Control Protocol (NCCP) logins that have successfully completed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). Specifically, this indicates the NCCP LOGIN RESPONSE messages received from this SCP before the *nccpLoginResponseTimer* has expired. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLoginFailures (nccpLiFail)

Description This attribute counts the total Network Connection Control Protocol (NCCP) logins that have failed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). This count includes failures due to rejected logins as well as late or lost responses. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLoginResponseTimeouts (nccpRTo)

Description This attribute counts the *nccpLoginResponseTimer* expiries before receiving a response from the external Service Control Point (SCP) for the Network Connection Control Protocol (NCCP) LOGIN REQUEST message sent. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLogoutSuccesses (nccpLoSucc)

Description This attribute counts the total Network Connection Control Protocol (NCCP) logouts that have successfully completed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). Specifically, this indicates the NCCP LOGOUT RESPONSE messages received from this SCP before the *nccpLogoutResponseTimer* has expired. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLogoutFailures (nccpLoFail)

Description This attribute counts the total Network Connection Control Protocol (NCCP) logouts that have failed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). Specifically, this counts the *nccpLogoutResponseTimer* expirations that have occurred. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpRemoteAborts (nccpRemAbt)

Description This attribute counts the total Network Connection Control Protocol (NCCP) ABORT messages that have been received from this external Service Control Point (SCP). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLocalAborts (nccpLocAbt)

Description This attribute counts the total Network Connection Control Protocol (NCCP) NCCP ABORT messages that have been sent to this external Service Control Point (SCP). This counter also includes the NCCP ABORT messages sent due to the aborts caused by the expiration of the NCCP KeepAlive timer. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpKeepAliveTimeouts (nccpKpAlTo)

Description This attribute counts the total Network Connection Control Protocol (NCCP) KeepAlive timer expirations that have occurred

while communicating with this external Service Control Point (SCP). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpKeepAliveAborts (nccpKpAlAbt)

Description This attribute counts the total aborts caused by the Network Connection Control Protocol (NCCP) KeepAlive timer expiry. Specifically, this counts the number of NCCP Abort messages that have been sent to this external Service Control Point (SCP) due to aborts caused by KeepAlive timer expirations. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpRoundRobinTimeouts (nccpRrTo)

Description This attribute counts number of times the *nccpRoundRobinTimer* expires before the SGSN could establish a connection with any of the Service Processors (SPs) of this external Service Control Point (SCP). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpReconnectTimeouts (nccpRecTo)

Description This attribute counts the total *nccpReconnectTimer* expirations that have occurred while communicating with this external Service Control Point (SCP). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLocalProtocolErrors (nccpLocPErr)

Description This attribute counts the Network Connection Control Protocol (NCCP) protocol errors that have been committed locally that the external Service Control Point (SCP) has detected and has reported back to the *GprsSubscriberControl (Gsc)*. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpRemoteProtocolErrors (nccpRemPErr)

Description: This attribute counts the total Network Connection Control Protocol (NCCP) protocol errors that have been committed remotely by the external Service Control Point (SCP) that have been detected by the *GprsSubscriberControl (Gsc)*. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp tcpConnectSuccesses (tcpConnSucc)

Description: This attribute counts the total TCP connections that have been successfully established between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp tcpConnectFailures (tcpConnFail)

Description: This attribute counts the total TCP connections that have failed to successfully establish between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

COMPONENT Gsc ServiceSwitchingFunction (Ssf)

Groups:
"GROUP Gsc Ssf Provisioned (SsfProv)"
"GROUP Gsc Ssf OsiState (State)"
"GROUP Gsc Ssf Operational (SsfOp)"
"GROUP Gsc Ssf WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS GprsSubscriberControl ServiceSwitchingFunction"

Scope: Application

Description: *Gsc/n ServiceSwitchingFunction*
Usc/n ServiceSwitchingFunction

This component represents the Service Switching Function (SSF) functionality of the SGSN (2G) and USGSN (3G). The Service Switching Function is responsible for handling communication

between the SGSN (2G and 3G) and one or more Service Control Points (SCP). An SCP is an external entity present in a wireless network supporting CAMEL (Customized Application for Mobile Network Enhanced Logic). It provides prepaid services.

The SSF maintains the state of the CAMEL dialogues between the SGSN and the external SCPs with which it communicates.

Mib	WirelessGsc
Common Verbs	Help List Display

GROUP Gsc Ssf Provisioned (SsfProv)

Properties	Provisioned
Description	This group contains provisioning data for the *Ssf* component.
Mib	WirelessGsc

ATTRIBUTE Gsc Ssf maxCamelDialogues (maxDialogues)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of CAMEL dialogs that can be active at any time. Changing the value of this attribute causes the card to be reset and all outstanding transactions will be affected. The current number of active CAMEL dialogs is indicated by the *currentCamelDialogues* attribute, and the total number of dialogues created since the creation of this component is counted by *totalCamelDialogues*.
Mib	WirelessGsc
Values	Decimal (1..150000)

Default	35000

ATTRIBUTE Gsc Ssf linkToTcapStack (tcapLink)

Access	Read: All Write: All
Description	This attribute specifies the TCAP (Transaction Capabilities Application Part) Stack used by this *Ssf*. The TCAP Stack provides services to the CAMEL Application Part (CAP) and facilitates network communication required by CAMEL.
Mib	WirelessGsc
Values	Link (Service, linkToTcapStackUsers)
Default	No default

GROUP Gsc Ssf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessGsc

ATTRIBUTE Gsc Ssf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users

only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: WirelessGsc

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Gsc Ssf operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: WirelessGsc

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Gsc Ssf usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in

use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	WirelessGsc
Values	idle active (activ) busy
Default	idle

GROUP Gsc Ssf Operational (SsfOp)

Properties	Operational
Description	This group contains the operational data of the *Ssf* component.
Mib	WirelessGsc

ATTRIBUTE Gsc Ssf currentCamelDialogues (currDialogues)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of CAMEL dialogues that are currently active.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Ssf pdpContextsRedirected (pdpRedir)

Access	Read: All Write: Illegal
Description	This attribute counts the number of PDP (Packet Data Protocol) Contexts redirected to a different APN (Access Point Name) by the SCP (Service Control Point).

If the counter is increasing rapidly, the operator may want to examine the network configuration to determine why so many PDP contexts are being redirected. It is possible that the current network configuration is not optimal and that the SCP is redirecting PDP contexts to avoid undesirable or expensive network access paths.

The counter wraps to zero when its maximum value is exceeded.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Ssf attemptedCamelDialogues (attDialogues)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of CAMEL dialogue establishments attempted by this *Ssf* component. The counter wraps to zero when it exceeds its maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Ssf unsuccessfulCamelDialogues (unsuccDialogues)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful CAMEL dialogue establishment attempts caused by errors or reject messages received from an SCP. The counter wraps to zero when it exceeds it maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Ssf totalTssfTimeouts (totTssfTimeouts)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of Tssf timeouts for this *Ssf* component. The timeout period is specified by the *ssfTimer* attribute of the *Sgsn Gsc* component. The counter wraps to zero when it exceeds its maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Ssf totalDefaultGprsHandlings (totDefHand)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the SSF (Service Switching Function) detected an error and had to refer to the Default Gprs Handing field of the related mobile's CAMEL Subscriber Information (CSI) to determine whether to continue or fail the PDP (Packet Data Protocol) Context. If this counter is rapidly increasing, the *totalProtocolErrors* and *totalNoCopFailures* attributes can be examined for information about why the Default Gprs Handling field is so often referenced. The counter wraps to zero when it exceeds its maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Ssf totalProtocolErrors (totProtoErr)

Access	Read: All Write: Illegal

Description	This attribute counts the total number of protocol errors detected in CAP (CAMEL Application Part) messages from the SCP (Service Control Point). If this counter is rapidly increasing, there may be a mismatch in the protocol version being used by the SCP and the version being used by the SGSN. The counter wraps to zero when it exceeds its maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Ssf totalNoCopFailures (totNoCopFail)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of PDP (Packet Data Protocol) Contexts that have failed because an IRAU (Inter Routing Area Updates) occurred when the Change Of Position (COP) trigger was not in the TDP (Trigger Detection Point) list of the subscriber for which the PDP Context was requested. If this value is rapidly increasing, it may indicate that roaming should be disabled for CAMEL users or that Camel Subscriber Information (CSI) is not properly specified in the HLR for some users. The counter wraps to zero when it exceeds its maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Ssf WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.

Mib	WirelessGsc

ATTRIBUTE Gsc Ssf customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Ssf customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Ssf customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsc

Values Decimal (0..4294967295)

Default No default

COLLECTED STATS GprsSubscriberControl ServiceSwitchingFunction

Description The statistics record generated by the GprsSubscriberControl ServiceSwitchingFunction component.

ATTRIBUTE Gsc Ssf pdpContextsRedirected (pdpRedir)

Description This attribute indicates the number of PDP (Packet Data Protocol) Contexts that have been redirected to a different APN (Access Point Name) by an SCP (Service Control Point) during the collection interval.

If this attribute is continuously reporting a high value during each collection interval, the operator may want to examine the network configuration to determine why so many PDP contexts are being redirected. It is possible that the current network configuration is not optimal and that the SCP is redirecting PDP contexts to avoid undesirable or expensive network access paths.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf attemptedCamelDialogues (attDialogues)

Description This attribute indicates the total number of CAMEL dialogues that this *Ssf* component has attempted to establish during the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf unsuccessfulCamelDialogues (unsuccDialogues)

Description This attribute indicates the total number of unsuccessful CAMEL dialogues establishment attempts caused by errors or reject messages received from an SCP during the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf totalTssfTimeouts (totTssfTimeouts)

Description: This attribute indicates the total number of Tssf timeouts during the collection interval. The timeout period is specified by the *ssfTimer* attribute of the *Sgsn Gsc* component.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf totalDefaultGprsHandlings (totDefHand)

Description: This attribute indicates the number of times during the collection interval the SSF (Service Switching Function) detected an error and had to refer to the Default Gprs Handing field of the related mobile's CAMEL Subscriber Information (CSI) to determine whether to continue or fail the PDP (Packet Data Protocol) Context.

If this attribute is continuously reporting a high value during each collection interval, the *totalProtocolErrors* and *totalNoCopFailures* attributes can be examined for information about why the Default Gprs Handling field is so often referenced.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf totalProtocolErrors (totProtoErr)

Description: This attribute indicates the total number of protocol errors detected in CAP (CAMEL Application Part) messages from an SCP (Service Control Point) during the collection interval.

If this attribute is continuously reporting a high number of errors during each collection interval, there may be a mismatch in the protocol version being used by the SCP and the version being used by the SGSN.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf totalNoCopFailures (totNoCopFail)

Description: This attribute indicates the total number of PDP (Packet Data Protocol) Contexts that have failed during the collection interval because an IRAU (Inter Routing Area Updates) occurred when the Change Of Position (COP) trigger was not in the TDP (Trigger Detection Point) list of the subscriber for which the PDP

Context was requested.

If this attribute is continuously reporting a high number of errors during each collection interval, it may indicate that roaming should be disabled for CAMEL users or that Camel Subscriber Information (CSI) is not properly specified in the HLR for some users.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf currentCamelDialogues (currDialogues)

Description: This attribute indicates the number of CAMEL dialogues active at the end of the collection interval.

Values: Decimal (0..4294967295)

COMPONENT Gsc MobileCountryCode (Mcc)

Instance: BCD (3)

Scope: Application

Description: *Gsc/n MobileCountryCode/<Mcc>*

This component represents a Mobile Country Code (MCC) where mobile station is present. The instance value is the 3 digit MCC.

Mib: WirelessGsc

Dyn. Subcomp.: "COMPONENT Gsc Mcc MobileNetworkCode (Mnc)"

Common Verbs:
- Help
- List
- Display

COMPONENT Gsc Mcc MobileNetworkCode (Mnc)

Instance: BCD (2..3)

Scope: Application

Description: *GSC/n Mcc/<Mcc> MobileNetworkCode/<Mnc>*

This component represents a Mobile Network Code (MNC)

where mobile station is present. The instance value is the 2 or 3 digit MNC.

Mib: WirelessGsc

Dyn. Subcomp.: "COMPONENT Gsc Mcc Mnc LocationAreaCode (Lac)"

Common Verbs:
Help
List
Display

COMPONENT Gsc Mcc Mnc LocationAreaCode (Lac)

Instance: String (4, ASCII)

Scope: Application

Description: *GSC/n Mcc/<Mcc> Mnc/<Mnc> LocationAreaCode/<Lac>*

This component represents a Location Area Code (LAC) where mobile station is present. The instance value is the 4 digit LAC.

Mib: WirelessGsc

Dyn. Subcomp.: "COMPONENT Gsc Mcc Mnc Lac RoutingAreaCode (Rac)"

Common Verbs:
Help
List
Display

COMPONENT Gsc Mcc Mnc Lac RoutingAreaCode (Rac)

Instance: String (2, ASCII)

Scope: Application

Description: *GSC/n Mcc/<Mcc> Mnc/<Mnc> Lac/<Lac> RoutingAreaCode/ <Rac>*

This component represents a Routing Area Code (RAC) where mobile station is present. The instance value is the 2 digit RAC.

Mib: WirelessGsc

Dyn. Subcomp.: "COMPONENT Gsc Mcc Mnc Lac Rac CellId (Cid)"

Common Verbs:
- Help
- List
- Display

COMPONENT Gsc Mcc Mnc Lac Rac CellId (Cid)

Instance: Decimal (0..65535)

Groups: "GROUP Gsc Mcc Mnc Lac Rac Cid GmmCellOper (GmmCellOper)"
"GROUP Gsc Mcc Mnc Lac Rac Cid SmCellOper (SmCellStats)"

"COLLECTED STATS GprsSubscriberControl MobileCountryCode MobileNetworkCode LocationAreaCode RoutingAreaCode CellId"

Scope: Application

Description: *Gsc/n Mcc/<Mcc> Mnc/<Mnc> Lac/<Lac> Rac/<Rac> CellId/<cid>*

This component represents a cell in this routing area where a mobile station is present. It is indexed by Cell Id number. The information includes statistic values per cell.

Mib: WirelessGsc

Common Verbs:
- Help
- List
- Display

GROUP Gsc Mcc Mnc Lac Rac Cid GmmCellOper (GmmCellOper)

Properties: Operational

Description: This group contains statistical attributes of attaches and activations Packet Data Protocol (PDP) contexts per cell.

Mib	WirelessGsc

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid msAttachAttemptsPerCell (attAtt)

Access	Read: All Write: Illegal
Description	This attribute counts the number of attach requests received from the mobile subscribers in this cell. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejIllegalMsPerCell (attRejIllMs)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause "Illegal Ms". The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejGprsSvcNotAllowedPerCell (attRejGprsSvc)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “Gprs Service not allowed”. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejPlmnNotAllowedPerCell (attRejPlmn)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “PLMN not allowed”. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejPacketNetFailurePerCell (attRejNetFail)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “Network Failure”. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejSgsnCongestionPerCell (attRejCongest)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “Congestion”. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejMsgErrorPerCell (attRejMsgErr)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this cell that were rejected during the collection interval because of one of the following reject causes: Semantically incorrect message, Invalid mandatory information, Message type non-existence or not implemented, Message type not compatible with the protocol state, Information element non-existent or not implemented, Conditional IE error, Message not compatible with the protocol state, Protocol error, unspecified. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachReachableTimerPerCell (nwkDetTmr)

Access	Read: All Write: Illegal
Description	This attribute counts the number of network initiated detaches in this cell due to the expiration of reachable timer. The *mobileReachableTimer* attribute is provisioned in the *Sgsn Gsc* component. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachCancelLocationPerCell (nwkDetCanLoc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of network initiated detaches in the specified cell due to the receipt of CANCEL LOCATION Messages from the HLR. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachDuplicateAttachPerCell (nwkDetDupAtt)

Access	Read: All Write: Illegal
Description	This attribute counts the number of network initiated detaches in this cell due to mobile reattaches with a new random Packet Temporary (PTMSI) without first performing a detach. This is an implicit detach and no detach message is sent to the mobile. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachTempNwkFailurePerCell (nwkDetTNwkFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of network initiated detaches or termination of mobility contexts in this cell due to temporary network problems.

	The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachForReattachPerCell (nwkDetReatt)

Access	Read: All Write: Illegal
Description	This attribute counts the number of network initiated detaches in this cell with a detach cause of "reattach required". The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejSvcNotAllowInPlmnPerCell (attRejGprsSvcPlmn)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause "Gprs Service not allowed in this PLMN". The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejRoamNotAllowedInLocAreaPerCell (attRejRoam)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “roaming not allowed in location area”. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Mcc Mnc Lac Rac Cid SmCellOper (SmCellStats)

Properties	Operational
Description	This group contains statistical attributes for activation of Packet Data Protocol (PDP) contexts per cell.
Mib	WirelessGsc

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid msActivationAttemptsPerCell (msAttAct)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Activate PDP context request message received by this SGSN from Mobile Station (MS) in this cell. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid insufficientResourcesPerCell (insufRes)

Access	Read: All Write: Illegal

Description	This attribute counts the number of PDP activations rejected by this SGSN in this cell due to reject cause “insufficient resources”. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid missingOrUnknownApnPerCell (mOrUn)

Access	Read: All Write: Illegal
Description	This attribute counts the number of PDP activations rejected by this SGSN in this cell due to reject cause “missing or unknown APN”. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid unkPdpAddrOrPdpTypePerCell (unPdpAorT)

Access	Read: All Write: Illegal
Description	This attribute counts the number of PDP activations rejected by this SGSN in this cell due to reject cause “unknown PDP address or PDP type". The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid activationsRejByGgsnPerCell (actRejGgsn)

Access	Read: All Write: Illegal

Description	This attribute counts the number of Packet Data Protocol (PDP) activations rejected by this SGSN in this cell due to reject cause "activation rejected by GGSN". The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid activationRejUnspecifiedPerCell (actRejUnsp)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Packet Data Protocol (PDP) activations rejected by this SGSN in this cell due to reject cause "unspecified reason". The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid serviceOptionNotSupportedPerCell (servOp)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Packet Data Protocol (PDP) activations rejected by this SGSN in this cell due to reject cause "service option not supported". The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid reqSvcOptionNotSubscribedPerCell (reqOpt)

Access	Read: All Write: Illegal

Description	This attribute counts the number of Packet Data Protocol (PDP) activations rejected by this SGSN in this cell due to reject cause "requested service option not subscribed". The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid svcOptionTempOutOfOrderPerCell (serOp)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Packet Data Protocol (PDP) activations rejected by this SGSN in this cell due to reject cause "service option temporarily out of order". The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid protocolErrorPerCell (protErr)

Access	Read: All Write: Illegal
Description	This attributes counts the number of Packet Data Protocol (PDP) activations rejected by this SGSN in this cell currently because of one of the following reject causes: Semantically incorrect message, Invalid mandatory information, Message not compatible with the protocol state, Protocol error, unspecified. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid currentPdpContextPerCell (curPdpCtx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of currently active Packet Data Protocol (PDP) contexts in this cell. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS GprsSubscriberControl MobileCountryCode MobileNetworkCode LocationAreaCode RoutingAreaCode CellId
Description	The statistics record generated by the GprsSubscriberControl MobileCountryCode MobileNetworkCode LocationAreaCode RoutingAreaCode CellId component.

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid msAttachAttemptsPerCell (attAtt)

Description	This attribute counts the number of attach requests received from the mobile subscribers in this cell. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejIllegalMsPerCell (attRejIllMs)

Description	This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause "Illegal Ms". The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejGprsSvcNotAllowedPerCell (attRejGprsSvc)

Description	This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “Gprs Service not allowed”.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejPlmnNotAllowedPerCell (attRejPlmn)

Description This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “PLMN not allowed”.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejPacketNetFailurePerCell (attRejNetFail)

Description This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “Network Failure”.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejSgsnCongestionPerCell (attRejCongest)

Description This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “Congestion”.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejMsgErrorPerCell (attRejMsgErr)

Description This attribute counts the GPRS-attaches to this cell that were rejected during the collection interval because of one of the following reject causes:
Semantically incorrect message,
Invalid mandatory information,
Message type non-existence or not implemented,
Message type not compatible with the protocol state,
Information element non-existent or not implemented,
Conditional IE error,
Message not compatible with the protocol state,
Protocol error, unspecified.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachReachableTimerPerCell (nwkDetTmr)

Description This attribute counts the number of network initiated detaches in this cell due to the expiration of reachable timer. The *mobileReachableTimer* attribute is provisioned in the *Sgsn Gsc* component.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachCancelLocationPerCell (nwkDetCanLoc)

Description This attribute counts the number of network initiated detaches in the specified cell due to the receipt of CANCEL LOCATION Messages from the HLR.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachDuplicateAttachPerCell (nwkDetDupAtt)

Description This attribute counts the number of network initiated detaches in this cell due to mobile reattaches with a new random Packet Temporary (PTMSI) without first performing a detach. This is an implicit detach and no detach message is sent to the mobile.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachTempNwkFailurePerCell (nwkDetTNwkFail)

Description This attribute counts the number of network initiated detaches or termination of mobility contexts in this cell due to temporary network problems.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachForReattachPerCell (nwkDetReatt)

Description This attribute counts the number of network initiated detaches in this cell with a detach cause of "reattach required".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejSvcNotAllowInPlmnPerCell (attRejGprsSvcPlmn)

Description This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause "Gprs Service not allowed in this PLMN".

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejRoamNotAllowedInLocAreaPerCell (attRejRoam)

Description This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “roaming not allowed in location area”.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid msActivationAttemptsPerCell (msAttAct)

Description This attribute counts the number of Activate PDP context request message received by this SGSN from Mobile Station (MS) in this cell.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid insufficientResourcesPerCell (insufRes)

Description This attribute counts the number of PDP activations rejected by this SGSN in this cell due to reject cause “insufficient resources”.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid missingOrUnknownApnPerCell (mOrUn)

Description This attribute counts the number of PDP activations rejected by this SGSN in this cell due to reject cause “missing or unknown APN”.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid unkPdpAddrOrPdpTypePerCell (unPdpAorT)

Description This attribute counts the number of PDP activations rejected by this SGSN in this cell due to reject cause "unknown PDP address or PDP type".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid activationsRejByGgsnPerCell (actRejGgsn)

Description This attribute counts the number of Packet Data Protocol (PDP) activations rejected by this SGSN in this cell due to reject cause "activation rejected by GGSN".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid activationRejUnspecifiedPerCell (actRejUnsp)

Description This attribute counts the number of Packet Data Protocol (PDP) activations rejected by this SGSN in this cell due to reject cause "unspecified reason".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid serviceOptionNotSupportedPerCell (servOp)

Description

This attribute counts the number of Packet Data Protocol (PDP) activations rejected by this SGSN in this cell due to reject cause "service option not supported".

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid reqSvcOptionNotSubscribedPerCell (reqOpt)

Description

This attribute counts the number of Packet Data Protocol (PDP) activation rejected by this SGSN in this cell due to reject cause "requested service option not subscribed".

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid svcOptionTempOutOfOrderPerCell (serOp)

Description

This attribute counts the number of Packet Data Protocol (PDP) activation reject by this SGSN in this cell due to reject cause "service option temporarily out of order".

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid protocolErrorPerCell (protErr)

Description

This attributes counts the number of Packet Data Protocol (PDP) activation reject by this SGSN in this cell currently because of one of the following reject causes:
Semantically incorrect message,
Invalid mandatory information,
Message not compatible with the protocol state,
Protocol error, unspecified.

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid currentPdpContextPerCell (curPdpCtx)

Description	This attribute counts the number of currently active Packet Data Protocol (PDP) contexts in this cell. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Gsc PacketFlowManagement (Pfm)

Groups	"GROUP Gsc Pfm Provisioned (Prov)" "GROUP Gsc Pfm Operational (Oper)"
Scope	Application
Description	*Gsc/n PacketFlowManagement* This component represents the functionality associated with the management of the Base Station System (BSS) Packet Flow Contexts (PFCs). A PFC represents the Aggregate BSS Quality of Service Profile (ABQP) and the associated Packet Flow Identifier used by the BSS for the sessions associated with a mobile.
Mib	WirelessGsc
Common Verbs	Help List Display Add DELete

GROUP Gsc Pfm Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for this component.
Mib	WirelessGsc

ATTRIBUTE Gsc Pfm t7Timer (t7)

Access	Read: All Write: All

Description	This attribute specifies the timer value to guard the CREATE-BSS-PFC procedures. The Serving GPRS Support Node (SGSN) sends a CREATE-BSS-PFC Protocol Data Unit (PDU) to the Base Station System (BSS) and starts the T7 timer. The SGSN stops the timer upon reception of a CREATE-BSS-PFC-ACK PDU from the BSS. If the timer expires, the SGSN retries this procedure. It is recommended that the total wait time (that is, the product of the *t7Timer* and *t7Retries* attributes) must be less than the Mobile Station (MS) wait time between retries of ACTIVATE and RA-UPDATE messages. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a PDU.
Mib	WirelessGsc
Values	Decimal (0.1..10.0)
Units	seconds
Default	5.0

ATTRIBUTE Gsc Pfm t7Retries (n7)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Serving GPRS Support Node (SGSN) can send the CREATE-BSS-PFC Protocol Data Unit (PDU) to the Base Station System (BSS) in case a CREATE-BSS-PFC-ACK is not received before the expiry of the *t7Timer* attribute. The number of expiries associated with the *t7Retries* attribute is indicated by the *t7RetryExpiries* attribute. It is recommended that the total wait time (that is, the product of *t7Timer* and *t7Retries)* must be less than the Mobile Station (MS) wait time between retries of ACTIVATE and RA-UPDATE messages.

Mib	WirelessGsc
Values	Decimal (0..6)
Default	3

ATTRIBUTE Gsc Pfm packetFlowTimer (pft)

Access	Read: All Write: All
Description	This attribute specifies the maximum time the BSS can hold the Packet Flow Context (PFC) during periods of inactivity for a PFC. The *packetFlowTimer* attribute is provided to the Base Station System (BSS) by the Serving GPRS Support Node (SGSN). The timer is started on receipt of a CREATE-BSS-PFC Protocol Data Unit (PDU) and restarted after the transmission of an uplink PDU. The timer is also started upon the transfer of the corresponding PFC from an old to a new cell. The standards recommend the range of the *packetFlowTimer* attribute to be the same as the range of the *readyTimer* attribute (defined in *Sgsn Gmm* component). The value of the *packetFlowTimer* attribute must not exceed the value of the *readyTimer* attribute unless the value of the *readyTimer* attribute is less than 6 seconds. The value of the *packetFlowTimer* attribute is rounded off to the next encodable value as described in the GSM 8.18 specification. The following are the timer value ranges and the corresponding roundoff encoded values: Timer range 0 - 62 is rounded to 2 seconds, Timer range 63 - 1860 is rounded to 1 minute, Timer range 1861 - 5760 is rounded to 6 minutes, Timer range 5761 - 11160 is rounded to 1 minute.
Mib	WirelessGsc
Values	Decimal (6..11160) disabled

Units	seconds
Default	6

GROUP Gsc Pfm Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for this component
Mib	WirelessGsc

ATTRIBUTE Gsc Pfm t7RetryExpiries (t7Ex)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) stopped retransmitting the CREATE-BSS-PFC to the Base Station System (BSS) because the maximum number of retries as defined by the *t7Retries* attribute was reached. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Pfm downloadBssPfcsRx (downloadsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the DOWNLOAD-BSS-PFC messages received from the Base Station System (BSS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Pfm createBssPfcsTx (createsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the CREATE-BSS-PFC messages transmitted to the Base Station System (BSS). This includes the retry messages because of the *t7Timer* expiry. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Pfm createBssPfcAcksRx (createAcksRx)

Access	Read: All Write: Illegal
Description	This attribute counts the CREATE-BSS-PFC-ACK messages received from the Base Station System (BSS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Pfm createBssPfcNacksRx (createNacksRx)

Access	Read: All Write: Illegal
Description	This attribute counts the CREATE-BSS-PFC-NACK messages received from the Base Station System (BSS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Gsc Pfm modifyBssPfcsRx (modifiesRx)

Access	Read: All Write: Illegal
Description	This attribute counts the MODIFY-BSS-PFC messages received from the Base Station System (BSS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Pfm modifyBssPfcAcksTx (modifyAcksTx)

Access	Read: All Write: Illegal
Description	This attribute counts the MODIFY-BSS-PFC-ACK messages transmitted to the Base Station System (BSS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Pfm deleteBssPfcsTx (deletesTx)

Access	Read: All Write: Illegal
Description	This attribute counts the DELETE-BSS-PFC messages transmitted to the Base Station System (BSS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsc LocationServices (Lcs)

Groups	"GROUP Gsc Lcs WlcLcsProv (Prov)" "GROUP Gsc Lcs OsiState (State)" "GROUP Gsc Lcs WlcLcsOper (Oper)" "GROUP Gsc Lcs GprsLcsOper (GprsOper)"

"COLLECTED STATS GprsSubscriberControl LocationServices"

Scope	Application
Description	*Gsc/n LocationServices* This component represents the *LocationServices* functionality of the *GprsSubscriberControl (Gsc)* component. The LCS functions include LCS coordination, managing the location request, and authorization and operation of the LCS services. LCS furnishes its clients with information about the physical location of a mobile terminal. This positioning information is typically used for value-added services, charging, law enforcement, or emergency services. The LCS function is not available for all LCS-enabled subscribers until the audit represented by the *Gsc/n Hlrc RefreshAudit* component has completed.
Mib	WirelessGsc
Common Verbs	Help List Display Add DELete

GROUP Gsc Lcs WlcLcsProv (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes for the *LocationServices* component.
Mib	WirelessGsc

ATTRIBUTE Gsc Lcs maxLcsSubscribers (maxLcsSubs)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of subscribers that can have Location Services capabilities. When this attribute is set to a lower value, the new value will not take effect until the card is reset. This attribute value must be less than or equal to the value specified by the *maxAttachedSubscribers* attribute.
Mib	WirelessGsc
Values	Decimal (1..1000000)
Default	No default

ATTRIBUTE Gsc Lcs privacyProfileAlarmsThreshold (priProfileThreshold)

Access	Read: All Write: All
Description	This attribute specifies the percentage threshold at which the warning PrivacyProfileUsage alarm is set. The memory for storing the privacy profile information is allocated based on the value of the *maxLcsSubscribers* attribute. A SET major PrivacyProfileUsage alarm is set when the memory usage for privacy profile information reaches 100%. This alarm is cleared when the usage drops by 5%. A SET warning PrivacyProfileUsage alarm is set when the memory usage for privacy profile information reaches the value of the *privacyProfileAlarmsThreshold* attribute. This alarm is cleared when the usage drops by 5% below the value of the *privacyProfileAlarmsThreshold* attribute.

Mib	WirelessGsc
Values	Decimal (50..95)
Units	%
Default	90

ATTRIBUTE Gsc Lcs maxCurrentTransactions (maxIcsTrans)

Access	Read: All Write: All
Description	This attribute specifies the number of maximum Location Services (LCS) subscribers that can concurrently use the LCS functionality on the SGSN/USGSN. When this attribute is set to a lower value, the new value will not take effect until the card is reset. This attribute value must be less than or equal to the value specified by *maxLcsSubscribers* attribute.
Mib	WirelessGsc
Values	Decimal (1..1000000)
Default	No default

ATTRIBUTE Gsc Lcs lcsContextAlarmsThreshold (lcsContextThreshold)

Access	Read: All Write: All
Description	This attribute specifies the percentage threshold at which the warning LcsContextUsage alarm is set. The memory for storing the location services context information is allocated based on the value of the *maxCurrentTransactions* attribute. A SET major LcsContextUsage alarm is set when the memory usage for location services context information reaches 100%. This alarm is cleared when the usage drops by 5%. A SET warning LcsContextUsage alarm is set when the memory usage for location services context information reaches the value

of the *lcsContextAlarmsThreshold* attribute. This alarm is cleared when the usage drops by 5% below the value of the *lcsContextAlarmsThreshold* attribute.

Mib: WirelessGsc

Values: Decimal (50..95)

Units: %

Default: 90

ATTRIBUTE Gsc Lcs maxLcsExternalClientBlocks (maxlcsExtClientBk)

Access: Read: All
Write: All

Description: This attribute specifies the maximum number of memory blocks used for storing lists of external clients in the Subscriber Location Privacy Profiles. Each block holds data for up to five external clients. A minimum of one block is needed per list (session related or session unrelated) per Location Services (LCS) subscriber.

When this attribute is set to a lower value, the new value will not take effect until the card is reset.

This attribute value must be less than or equal to 14 times the value specified by the *maxLcsSubscribers* attribute.

Mib: WirelessGsc

Values: Decimal (1..14000000)

Default: No default

ATTRIBUTE Gsc Lcs externalClientAlarmsThreshold (extClientThreshold)

Access: Read: All
Write: All

Description: This attribute specifies the percentage threshold at which the warning ExternalClientUsage alarm is set. The memory for storing the external client index information is allocated based on the value of the *maxLcsExternalClientBlocks* attribute.

A SET major ExternalClientUsage alarm is set when the memory usage for external client index information reaches 100%. This alarm is cleared when the usage drops by 5%.

A SET warning ExternalClientUsage alarm is set when the memory usage for external client index information reaches the value of the *externalClientAlarmsThreshold* attribute. This alarm is cleared when the usage drops by 5% below the value of the *externalClientAlarmsThreshold* attribute.

Mib	WirelessGsc
Values	Decimal (50..95)
Units	%
Default	90

GROUP Gsc Lcs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessGsc

ATTRIBUTE Gsc Lcs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: WirelessGsc

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Gsc Lcs operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: WirelessGsc

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Gsc Lcs usageState (osiUsage)

Access: Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	WirelessGsc
Values	idle active (activ) busy
Default	idle

GROUP Gsc Lcs WlcLcsOper (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *LocationServices* component.
Mib	WirelessGsc

ATTRIBUTE Gsc Lcs lcsCurrentEnabledSubscribers (enabledSubs)

Access	Read: All Write: Illegal
Description	This attribute indicates the current number of location services enabled subscribers.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsCurrentTransactions (currentTrans)

Access	Read: All Write: Illegal

Description	This attribute indicates the current number of location transactions that are being processed.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsCurrentExternalClientBlocks (currentExtClientBks)

Access	Read: All Write: Illegal
Description	This attribute indicates the current number of external client blocks that are being utilized for storing the external client index information.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsMtRequests (mtReq)

Access	Read: All Write: Illegal
Description	This attribute counts the total mobile terminated location requests. The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsMtFailures (mtFail)

Access	Read: All Write: Illegal
Description	This attribute counts the total unsuccessful mobile terminated location requests.

	The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsPagingRequests (pagingReq)

Access	Read: All Write: Illegal
Description	This attribute counts the total paging requests sent by the *LocationServices* component. The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsPagingFailures (pagingFail)

Access	Read: All Write: Illegal
Description	This attribute counts the total unsuccessful paging requests sent by the *LocationServices* component. The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsRequestTypeNotSupported (reqTypeNotSupp)

Access	Read: All Write: Illegal

Description	This attribute counts the total failed location requests due to a requested location that is not supported. The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsDataMissing (dataMiss)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to missing information. For example, Imsi or Msisdn is missing in the location request message. The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsSubscriberNotAttached (subNotAttach)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to the subscriber not currently attached. The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsUnauthorizedGmlc (unauthGmlc)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to location requests messages received from an unauthorized Gateway Mobile Location Center. The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsUnauthorizedClient (unauthClient)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to location requests messages received from an unauthorized client. The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsServiceBusy (servBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to another location request already in progress for the same subscriber. The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsNotificationNotPossible (notifyNotPossible)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to the reason that it is impossible to send a notification message to the mobile. The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsGadShapeNotSupported (gadShapeNotSupp)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to the obtained location estimates using a Geographical Area Description (GAD) shape, that is not supported in the Location Request message. The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsInterrupted (interrupted)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to information received from the Radio Network Controller (RNC)

showing that the Location Services (LCS) entity has been interrupted. For example, LCS can be interrupted by an Inter-SGSN Routing Area Update (IRAU).

The counter wraps to 0 when it exceeds the maximum value.

Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsc Lcs lcsQosNotAttained (qosNotAttained)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to the quality of service information not matching the requested quality of service in the Provide Subscriber Location (PSL) message from the Gateway Mobile Location Center (GMLC). The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsc Lcs GprsLcsOper (GprsOper)

Properties	Operational
Description	This group contains the operational attributes for the *LocationServices* component of the *GprsSubscriberControl* component.
Mib	WirelessGsc

ATTRIBUTE Gsc Lcs lcsCellInfoMissing (cellInfoMissing)

Access	Read: All Write: Illegal

Description	This attribute counts the total unsuccessful location requests due to the cell information missing in the local cell database. The counter wraps to 0 when it exceeds the maximum value.
Mib	WirelessGsc
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberControl LocationServices

Description	The statistics record generated by the GprsSubscriberControl LocationServices component.

ATTRIBUTE Gsc Lcs lcsMaxCurrentEnabledSubscribers (maxEnabledSubs)

Description	This attribute indicates the current number of location services enabled subscribers. The value reported is the peak value for the duration of the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsMtRequests (mtReq)

Description	This attribute counts the total mobile terminated location requests. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsMtFailures (mtFail)

Description	This attribute counts the total unsuccessful mobile terminated location requests. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsPagingRequests (pagingReq)

Description: This attribute counts the total paging requests sent by the *LocationServices* component.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsPagingFailures (pagingFail)

Description: This attribute counts the total unsuccessful paging requests sent by the *LocationServices* component.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsRequestTypeNotSupported (reqTypeNotSupp)

Description: This attribute counts the total failed location requests due to a requested location that is not supported.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsDataMissing (dataMiss)

Description: This attribute counts the total failed location requests due to missing information. For example, Imsi or Msisdn is missing in the location request message.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsSubscriberNotAttached (subNotAttach)

Description: This attribute counts the total failed location requests due to the subscriber not currently attached.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsUnauthorizedGmlc (unauthGmlc)

Description: This attribute counts the total failed location requests due to location requests messages received from an unauthorized Gateway Mobile Location Center.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsUnauthorizedClient (unauthClient)

Description: This attribute counts the total failed location requests due to location requests messages received from an unauthorized client.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsServiceBusy (servBusy)

Description: This attribute counts the total failed location requests due to another location request already in progress for the same subscriber.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsNotificationNotPossible (notifyNotPossible)

Description: This attribute counts the total failed location requests due to the reason that it is impossible to send a notification message to the mobile.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsGadShapeNotSupported (gadShapeNotSupp)

Description: This attribute counts the total failed location requests due to the obtained location estimates using a Geographical Area Description (GAD) shape that are not supported in the Location Request message.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsInterrupted (interrupted)

Description This attribute counts the total failed location requests due to information received from the Radio Network Controller (RNC) showing that the Location Services (LCS) entity has been interrupted. For example, LCS can be interrupted by an Inter-SGSN Routing Area Update (IRAU).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsQosNotAttained (qosNotAttained)

Description This attribute counts the total failed location requests due to the quality of service information not matching the requested quality of service in the Provide Subscriber Location (PSL) message from the Gateway Mobile Location Center (GMLC).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsCellInfoMissing (cellInfoMissing)

Description This attribute counts the total unsuccessful location requests due to the cell information missing in the local cell database.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

Nortel Networks Multiservice Switch 7400/15000/20000

Component Gsc

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Gsd

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Gsd

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COMPONENT GprsSubscriberDataPath (Gsd)

Instance	Decimal (1..15)
Groups	"GROUP Gsd Provisioned (Prov)" "GROUP Gsd Operational (Oper)" "GROUP Gsd OsiState (State)" "GROUP Gsd WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*GprsSubscriberDataPath/n* This component represents the related data path layers such as the Logical Link Control (LLC), the SubNetwork Data Convergence Protocol (SNDCP), and the GPRS Tunneling Protocol (GTP).

	Only one *Gsd* root component can be provisioned on a Logical Processor.
Mib	WirelessGsd
Subcomponents	"COMPONENT Gsd LogicalLinkControl (Llc)" "COMPONENT Gsd SubNetworkDataConvergenceProtocol (Sndcp)" "COMPONENT Gsd GprsTunnelingProtocol (Gtp)"
Opt. Subcomp.	"COMPONENT Gsd DownlinkBuffer (DBuff)"
Dyn. Subcomp.	"COMPONENT Gsd TemporaryLogicalLinkId (Tlli)" "COMPONENT Gsd RemoteApplicationConnection (RaConn)" "COMPONENT Gsd TieredSubscription (Ts)"
Common Verbs	Help List Display Add DELete

GROUP Gsd Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes of the *GprsSubscriberDataPath (Gsd)*.
Mib	WirelessGsd

ATTRIBUTE Gsd linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the IP Address and the UDP port number that the *GprsSubscriberDataPath (Gsd)* associates with. Changing this value causes the outstanding transactions to be affected.
Mib	WirelessGsd
Values	Link (Hardware, linkToApplications)

Default	No default

ATTRIBUTE Gsd maxLlcActiveSubscribers (maxLlcActSubs)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of Mobile Stations (MS) that can be attached for this instance of *GprsSubscriberDataPath (Gsd)*. This gives the number of mobile subscribers that the *LogicalLinkControl (Llc)* and the *SubNetworkDataConvergenceProtocol (Sndcp)* is to support per *Gsd*. The current attached subscribers can be obtained from the attribute *currentLlcActiveSubscribers*. Currently attached subscribers are unaffected by changes to this value. Changing the value of this parameter requires a reset of the card that has a Gsd.
Mib	WirelessGsd
Values	Decimal (1..50000)
Default	100

GROUP Gsd Operational (Oper)

Properties	Operational
Description	This group contains the operational data of *GprsSubscriberDataPath (Gsd)*.
Mib	WirelessGsd

ATTRIBUTE Gsd currentLlcActiveSubscribers (curLlcActSubs)

Access	Read: All Write: Illegal
Description	This attribute indicates the Mobile Stations (MS) with an active Logical Link Control layer that are currently attached on the

GprsSubscriberDataPath (Gsd).

The maximum value is provisioned in the attribute *maxLlcActiveSubscribers*.

Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsd OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessGsd

ATTRIBUTE Gsd adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To

enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: WirelessGsd

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Gsd operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: WirelessGsd

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Gsd usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	WirelessGsd
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Gsd availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	WirelessGsd
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Gsd proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: WirelessGsd

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Gsd controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

	The value ***suspended*** indicates that the service has been administratively suspended.
Mib	WirelessGsd
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Gsd alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

	The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	WirelessGsd
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Gsd standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	WirelessGsd

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Gsd unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	WirelessGsd
Values	false true
Default	false

GROUP Gsd WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsd

ATTRIBUTE Gsd customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsd LogicalLinkControl (Llc)

Groups	"GROUP Gsd Llc LleStatistics (LleStats)" "GROUP Gsd Llc LlcStatistics (LlcStats)" "GROUP Gsd Llc WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS GprsSubscriberDataPath LogicalLinkControl"

Scope	Application

Description	*Gsd/n LogicalLinkControl* This component represents the Logical Link Control (LLC) protocol layer.
Mib	WirelessGsd
Common Verbs	Help List Display

GROUP Gsd Llc LlcStatistics (LlcStats)

Properties	Operational
Description	This group contains the operational attributes of the Logical Link Entity (LLE) of *LogicalLinkControl (Llc)*.
Mib	WirelessGsd

ATTRIBUTE Gsd Llc uiFramesToMs (uiFrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the Unconfirmed Information (UI) frames sent to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Llc uiFramesFromMs (uiFrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the Unconfirmed Information (UI) frames received from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Llc iFramesToMs (iFrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the confirmed Information (I) frames sent to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Llc iFramesFromMs (iFrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the confirmed Information (I) frames received from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Llc iFramesRetransmittedToMs (iFrRetx)

Access	Read: All Write: Illegal
Description	This attribute counts the confirmed Information (I) frames retransmitted to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Gsd Llc framesProtectedToMs (frProtTx)

Access	Read: All Write: Illegal
Description	This attribute counts the protected frames sent to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Llc framesProtectedFromMs (frProtRx)

Access	Read: All Write: Illegal
Description	This attribute counts the protected frames received from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Llc framesCipheredToMs (frCiphTx)

Access	Read: All Write: Illegal
Description	This attribute counts the ciphered frames sent to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Llc framesCipheredFromMs (frCiphRx)

Access	Read: All Write: Illegal
Description	This attribute counts the ciphered frames received from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Llc crcErrorsFromMs (crcErrsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from Mobile Station (MS) that contained Cyclic Redundancy Check (CRC) errors. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsd Llc LlcStatistics (LlcStats)

Properties	Operational
Description	This group contains the statistical attributes of the Logical Link Control (LLC) protocol layer.
Mib	WirelessGsd

ATTRIBUTE Gsd Llc unknownTllis (unTllis)

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from the Mobile Station (MS) for an unmapped Temporary Logical Link Identity (TLLI). An unmapped TLLI is one for which no Logical Link Context

	(LLC) mobile context exists on the TLLI specified in the Protocol Data Unit (PDU).The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsd Llc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsd

ATTRIBUTE Gsd Llc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Llc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Llc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberDataPath LogicalLinkControl

Description	The statistics record generated by the GprsSubscriberDataPath LogicalLinkControl component.

ATTRIBUTE Gsd Llc currentLlesForUserData (curLles)

Description	This attribute indicates the current number of Logical Link Entities (LLEs) used to handle the user data SAPs (Service Access Points) for the *GprsSubscriberDataPath (Gsd)*. This value reported is the peak value in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsd Llc unknownTllis (unTllis)

Description	This attribute counts the frames received from the Mobile Station (MS) for an unmapped Temporary Logical Link Identity (TLLI). An unmapped TLLI is one for which no Logical Link Context (LLC) mobile context exists. This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsd Llc currentLlesForSms

Description	This attribute indicates the current number of Logical Link Entities (LLEs) used to handle the Short Message Service (SMS) Service Access Points (SAPs) for the *GprsSubscriberDatapath (Gsd)*. This value reported is the peak value in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsd Llc framesRetransmitted (frRetx)

Description	This attribute counts the number of total frames retransmitted by the LLC layer. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsd Llc crcErrorsFromMs (crcErrsRx)

Description	This attribute counts the frames received from the Mobile Station (MS) that contained Cyclic Redundancy Check (CRC) errors. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Gsd SubNetworkDataConvergenceProtocol (Sndcp)

Groups	"GROUP Gsd Sndcp Provisioned (Prov)" "GROUP Gsd Sndcp Statistics (Stats)" "GROUP Gsd Sndcp WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS GprsSubscriberDataPath SubNetworkDataConvergenceProtocol"

Scope	Application
Description	*Gsd/n SubNetworkDataConvergenceProtocol*

	This component represents the Sub Network Data Convergence Protocol (SNDCP) protocol layer.
Mib	WirelessGsd
Common Verbs	Help List Display

GROUP Gsd Sndcp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the SubNetwork Data Convergence Protocol (SNDCP) protocol layer.
Mib	WirelessGsd

ATTRIBUTE Gsd Sndcp maxRfc1144Entities (maxRfc1144)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of RFC 1144 header compression entities for this instance of GprsSubscriberDataPath (Gsd).If the value is 0, RFC 1144 compression is not performed. The current RFC 1144 entities can be obtained from the attribute currentRfc1144Entities.
Mib	WirelessGsd
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Gsd Sndcp maxV42bisEntities (maxV42bis)

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the maximum number of V.42bis compression entities for this instance of GprsSubscriberDataPath (Gsd).If the value is 0, V.42bis compression is not performed. The current V.42bis entities can be obtained from the attribute currentV42bisEntities.
Mib	WirelessGsd
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Gsd Sndcp v42bisCompressionDirection (p0)

Access	Read: All Write: All
Description	This attribute specifies the V.42bis data compression direction to be supported. The value for compression direction is negotiated at link setup by the data link protocol by way of the Exchange Identification (XID) negotiation of parameter P0 (compression direction). During XID negotiation of parameter P0, both sides (the SGSN to the Mobile Station (MS) or the Mobile Station (MS) to the SGSN) agree on the compression direction. Valid values are: ***none***, No compression is present. ***fromMs***, The data received from the other entity is compressed. ***toMs***, The data sent to the other entity is compressed. ***both***, The data sent and received by the SGSN is compressed. The negotiated value can be viewed in the component *SessionContext* attribute *v42bisCompressionDirection.*
Mib	WirelessGsd
Values	none fromMs toMs both
Default	both

GROUP Gsd Sndcp Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the SubNetwork Data Convergence Protocol (SNDCP) layer.
Mib	WirelessGsd

ATTRIBUTE Gsd Sndcp snPdusToMs (snPdusTx)

Access	Read: All Write: Illegal
Description	This attribute counts the SNDCP-Protocol Data Units (SN-PDUs) sent to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Sndcp snPdusFromMs (snPdusRx)

Access	Read: All Write: Illegal
Description	This attribute counts the SNDCP-Protocol Data Units (SN-PDUs) received from the Mobile Station (MS), that is, the total number of LL-UNITDATA-PDU and LL-DATA-PDU received from the Logical Link Context (LLC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Sndcp discardedNpdusFromMs (discNpdusRx)

Access	Read: All Write: Illegal

Description	This attribute counts the Network-Protocol Data Units (N-PDUs) that originated from the Mobile Station (MS) which could not be re-assembled. This could result from N-PDUs lost or re-ordered. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsd Sndcp WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsd

ATTRIBUTE Gsd Sndcp customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Sndcp customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Sndcp customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberDataPath SubNetworkDataConvergenceProtocol

Description	The statistics record generated by the GprsSubscriberDataPath SubNetworkDataConvergenceProtocol component.

ATTRIBUTE Gsd Sndcp currentNsapis (curNsapis)

Description	This attribute indicates the current number of Network-Service Access Point Identifiers (N-SAPIs) for this instance of *GprsSubscriberDataPath (Gsd)*. This value reported is the peak value in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsd Sndcp currentV42bisEntities (curV42bis)

Description	This attribute indicates the current number of RFC 1144 header compression entities in the last collection interval for this instance of *GprsSubscriberDataPath (Gsd)*. This value reported is the peak value in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsd Sndcp currentRfc1144Entities (curRfc1144)

Description: This attribute indicates the current number of V.42bis compression entities in the last collection interval for this instance of *GprsSubscriberDataPath (Gsd)*. This value reported is the peak
value in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsd Sndcp snPdusToMs (snPdusTx)

Description: This attribute counts the SNDCP-Protocol Data Units (SN-PDUs) sent to the Mobile Station (MS) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsd Sndcp snPdusFromMs (snPdusRx)

Description: This attribute counts the SNDCP-Protocol Data Units (SN-PDUs) received from the Mobile Station (MS), that is, the total number of LL- UNITDATA-PDU and LL-DATA-PDU received from the Logical Link Context (LLC) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsd Sndcp discardedNpdusFromMs (discNpdusRx)

Description: This attribute counts the Network-Protocol Data Units (N-PDUs) that originated from the Mobile Station (MS) which could not be re-assembled. This could result from N-PDUs lost or re-ordered. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

COMPONENT Gsd GprsTunnelingProtocol (Gtp)

Groups: "GROUP Gsd Gtp Provisioned (Prov)"
"GROUP Gsd Gtp Statistics (Stats)"
"GROUP Gsd Gtp WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS GprsSubscriberDataPath GprsTunnelingProtocol"

Scope: Application

Description	*Gsd/n GprsTunnelingProtocol* This component represents the data traffic part of the GPRS Tunneling Protocol (GTP) protocol layer.
Mib	WirelessGsd
Common Verbs	Help List Display

GROUP Gsd Gtp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable data of the GPRS Tunneling Protocol (GTP) layer.
Mib	WirelessGsd

ATTRIBUTE Gsd Gtp linkToPort (lToPort)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the IP address and the UDP port numbers that the GPRS Tunneling Protocol User Plane (GTP-U) version 0 and version 1 use to communicate with the Gateway GPRS Support Node (GGSN). The IP address and UDP Ports are specified by setting this attribute to link to the correct *Gips IpAddress Udp Port* components. The standards recommend the value of one member of this list (used by GTP Version 0) to be set to *Gips/n Ip/<ipaddress> Udp Port/3386.* The standards recommend the value of the other member of this list (used by GTP Version 1) to be set to *Gips/n Ip/<ipaddress> Udp Port/2152.*.

Mib	WirelessGsd
List of	Link (Service, linkToApplication)
List Size	2
Default	No default

GROUP Gsd Gtp Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of a Packet Data Protocol (PDP) context in the Serving GPRS Support Node (SGSN).
Mib	WirelessGsd

ATTRIBUTE Gsd Gtp pdusToNetwork (pdusTxNwk)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS Tunneling Protocol (GTP) Protocol Data Units (PDU) transmitted to the Gateway GPRS Support Node (GGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Gtp pdusFromNetwork (pdusRxNwk)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS Tunneling Protocol (GTP) Protocol Data Units (PDU) received from the Gateway GPRS Support Node (GGSN). This includes PDUs counted in *discPdusFromNetwork*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Gtp discPdusFromNetwork (discPdus)

Access	Read: All Write: Illegal
Description	This attribute counts the incoming GPRS Tunneling Protocol (GTP) Protocol Data Units (PDUs) discarded because of traffic congestion or because no Packet Data Protocol (PDP) Context has been established. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Gtp octetsToNetwork (octToNet)

Access	Read: All Write: Illegal
Description	This attribute counts the total octets of the GPRS Tunneling Protocol (GTP) transmitted in Packet Data Unit (PDU) to Gateway GPRS Support Node (GGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Gtp octetsFromNetwork (octFrNet)

Access	Read: All Write: Illegal
Description	This attribute counts the total octets of the GPRS Tunneling Protocol (GTP) received in Packet Data Unit (PDU) from the Gateway GPRS Support Node (GGSN). The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsd Gtp WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsd

ATTRIBUTE Gsd Gtp customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Gtp customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Gtp customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberDataPath GprsTunnelingProtocol

Description	The statistics record generated by the GprsSubscriberDataPath GprsTunnelingProtocol component.

ATTRIBUTE Gsd Gtp octetsToNetwork (octToNet)

Description	This attribute counts the total octets of the GPRS Tunneling Protocol (GTP) transmitted in Packet Data Unit (PDU) to Gateway GPRS Support Node (GGSN). The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsd Gtp octetsFromNetwork (octFrNet)

Description	This attribute counts the total octets of the GPRS Tunneling Protocol (GTP) received in Packet Data Unit (PDU) from the Gateway GPRS Support Node (GGSN). The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsd Gtp pdusToNetwork (pduToNet)

Description	This attribute counts the GPRS Tunneling Protocol (GTP) Data Units (PDU) transmitted to the Gateway GPRS Support Node (GGSN). The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsd Gtp pdusFromNetwork (pduFrNet)

Description	This attribute counts the GPRS Tunneling Protocol (GTP) Data Units (PDU) received from the Gateway GPRS Support Node (GGSN). The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsd Gtp discPdusFromNetwork (discPdus)

Description	This attribute counts the incoming GPRS Tunneling Protocol (GTP) Protocol Data Units (PDUs) discarded because of traffic congestion or because no Packet Data Protocol (PDP) Context has been established. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Gsd TemporaryLogicalLinkId (Tlli)

Instance	String (4, Hex)
Groups	"GROUP Gsd Tlli WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Gsd/n TemporaryLogicalLinkId/<tlli>* This component represents an instance of Temporary Logical Link Identity (TLLI). The information includes session contexts and logical link context. Each instance is indexed by the TLLI of

	the mobile subscriber. A list of all current *Tlli* instances is not possible, but it is possible to display a specific instance of *Tlli*.
Mib	WirelessGsd
Dyn. Subcomp.	"COMPONENT Gsd Tlli SessionContext (Sc)" "COMPONENT Gsd Tlli LogicalLinkContext (Llc)"
Common Verbs	Help List Display

GROUP Gsd Tlli WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsd

ATTRIBUTE Gsd Tlli customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsd Tlli SessionContext (Sc)

Instance	Decimal (0..15)
Groups	"GROUP Gsd Tlli Sc V42bisOp (V42bis)" "GROUP Gsd Tlli Sc SndcpRfc1144Op (SndcpRfc1144)" "GROUP Gsd Tlli Sc GprsSndcpRfc1144Stats (SndcpRfc1144Stats)" "GROUP Gsd Tlli Sc SndcpStatistics (SndcpStats)" "GROUP Gsd Tlli Sc WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Gsd/n Tlli/<tlli> SessionContext/<nsapi>* This component represents the Session Context information for a subscriber. Session Contexts are created for each activated Packet

Data Protocol (PDP) context of a subscriber. The instance value identifies a session for a mobile subscriber.

Mib: WirelessGsd

Common Verbs:
Help
List
Display

GROUP Gsd Tlli Sc V42bisOp (V42bis)

Properties: Operational

Description: This group contains operational attributes that measure the performance of V.42bis.

Mib: WirelessGsd

ATTRIBUTE Gsd Tlli Sc protocolModeEncoder (modeEncoder)

Access: Read: All
Write: Illegal

Description: This attribute indicates the current mode of the V.42bis encoder. This mode can be either:
transparent - A mode of operation in which compression has been selected but data is being transmitted in uncompressed form. Transparent mode command sequences can be inserted into the data stream.
compressed - A mode of operation in which data is transmitted in codewords.
The encoder switches between the two modes depending on whether the data coming from the Mobile Station (MS) is suitable for compression. The data compression function periodically determines the compressibility of the data based on a comparison of the number of bits required to represent a segment of the data stream before and after compression.

Mib: WirelessGsd

Values: transparent
compressed

Default: No default

ATTRIBUTE Gsd Tlli Sc protocolModeDecoder (modeDecoder)

Access	Read: All Write: Illegal
Description	This attribute indicates the current mode of the V.42bis decoder. This mode can be either: ***transparent*** - A mode of operation in which compression has been selected but data is being transmitted in uncompressed form. Transparent mode command sequences can be inserted into the data stream. ***compressed*** - A mode of operation in which data is transmitted in codewords. The encoder (at the Mobile Station (MS) or at the Public Switched Telephone Network) switches between the two modes depending on whether the data coming from the SGSN is suitable for compression. The data compression function periodically determines the compressibility of the data based on a comparison of the number of bits required to represent a segment of the data stream before and after compression.
Mib	WirelessGsd
Values	transparent compressed
Default	No default

ATTRIBUTE Gsd Tlli Sc v42bisCompressionDirection (p0)

Access	Read: All Write: Illegal
Description	This attribute indicates the direction in which V.42bis is active, negotiated at link setup by the data link protocol through Exchange Identification (XID) negotiation of parameter P0 (compression direction). The value used for XID negotiations can be provisioned in component *SubNetworkDataConvergenceProtocol* attribute *v42bisCompressionDirection*. Valid values are: ***none***, No compression is present. ***fromMs***, The data received from the other entity is compressed.

toMs, The data sent to the other entity is compressed.
both, The data sent and received by the SGSN is compressed.

Mib: WirelessGsd

Values:
none
fromMs
toMs
both

Default: No default

ATTRIBUTE Gsd Tlli Sc v42bisDictionary (p1)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the maximum number of V.42bis codewords in the dictionary, as determined by the Exchange Identification (XID) negotiation of parameter P1 (number of codewords). The value used for XID negotiation can be provisioned in component *Sgsn GprsSubscriberDatapath* attribute *v42bisDictionary.*

Mib: WirelessGsd

Values: Decimal (512..4096)

Default: No default

ATTRIBUTE Gsd Tlli Sc v42bisMaxStringSize (p2)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the maximum number of characters allowed in a string represented by a codeword, as determined by the Exchange Identification (XID) negotiation of parameter P2 (maximum string size). The value used for XID negotiation can be provisioned by component Sgsn *GprsSubscriberDatapath* attribute *v42bisMaxStringSize.*

Mib: WirelessGsd

Values: Decimal (6..250)

Default No default

ATTRIBUTE Gsd Tlli Sc lastDecodeError (lastDecodeErr)

Access
Read: All
Write: Illegal

Description
This attribute indicates last error found by the decoder. Error values are:
none, No errors found.
badStepup, Receipt of STEPUP (step up codeword size) codeword when it can cause C2 (current code word size) to exceed N1 (maximum code word size).
codewordEqC1, Receipt of a codeword, at any time, equal to C1 (next empty dictionary entry).
emptyCodeword, Receipt of a codeword representing an empty dictionary entry.
reservedCommand, Receipt of a reserved command code.
generalError, Receipt of any other error.

Mib WirelessGsd

Values
none
badStepup
codewordEqC1
emptyCodeword
reservedCommand
generalError

Default none

ATTRIBUTE Gsd Tlli Sc compRatioEncoder (cre)

Access
Read: All
Write: Illegal

Description
This attribute indicates the number of uncompressed bytes divided by the number of compressed bytes. A value greater than one means that the data is being compressed. This is the compression ratio achieved by the V.42bis encoder running on the Passport. This attribute is relevant for both protocol modes transparent and compressed as the encoder switches between the two modes.

Mib	WirelessGsd
Values	Decimal (0.00..300.00)
Default	No default

ATTRIBUTE Gsd Tlli Sc compRatioDecoder (crd)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of uncompressed bytes divided by the number of compressed bytes. A value greater than one means that the data is being compressed. This is the compression ratio achieved by the V.42bis encoder at the Mobile Station (MS) or at the Public Switched Telephone Network (PSTN). This attribute is relevant for both protocol modes transparent and compressed as the encoder switches between the two modes.
Mib	WirelessGsd
Values	Decimal (0.00..300.00)
Default	No default

GROUP Gsd Tlli Sc SndcpRfc1144Op (SndcpRfc1144)

Properties	Operational
Description	This group contains operational attributes for the RFC1144 header compression algorithm.
Mib	WirelessGsd

ATTRIBUTE Gsd Tlli Sc compPcomp (cPcomp)

Access	Read: All Write: Illegal
Description	This attribute indicates the negotiated PCOMP value for the COMPRESSED_TCP packets. PCOMP is the identifier of the protocol control information compression algorithm used for the Network Protocol Data Unit (N-PDU). The value is dynamically assigned as part of the XID negotiation with the mobile.

Mib	WirelessGsd
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Gsd Tlli Sc unCompPcomp (uncPcomp)

Access	Read: All Write: Illegal
Description	This attribute indicates the negotiated PCOMP value for the UNCOMPRESSED_TCP packets. PCOMP is the identifier of the protocol control information compression algorithm used for the Network Protocol Data Unit (N-PDU). The value is dynamically assigned as part of the XID negotiation with the mobile.
Mib	WirelessGsd
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Gsd Tlli Sc slots (s0)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of TCP state slots being used by the RFC1144 compression entity for the Mobile Station (MS). The value is negotiated as part of the XID negotiation with the mobile. The value proposed by the SNDCP in the negotiation is ***16*** and may be reduced during negotiation.
Mib	WirelessGsd
Values	Decimal (1..256)
Default	No default

ATTRIBUTE Gsd Tlli Sc applicableNsapis (appNsapis)

Access	Read: All Write: Illegal

Description	This attribute indicates the Network Service Access Point Identifiers (NSAPIs) that use the RFC1144 compression entity. The set of NSAPIs using compression may be determined by XID negotiation with the mobile; if no such negotiation occurs, no NSAPIs use compression. If there is no negotiation, the value is empty. If a number is present then the corresponding NSAPI uses the compression entity otherwise it does not.
Mib	WirelessGsd
Set of	Decimal (0..15)
Default	No default

GROUP Gsd Tlli Sc GprsSndcpRfc1144Stats (SndcpRfc1144Stats)

Properties	Operational
Description	This group contains the statistical attributes of the RFC1144 header compression algorithm.
Mib	WirelessGsd

ATTRIBUTE Gsd Tlli Sc uncompressedTcpSent (uncTcpSent)

Access	Read: All Write: Illegal
Description	This attribute counts the number of UNCOMPRESSED_TCP packets sent to the Mobile Station (MS) by the compressor. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Sc compressedTcpSent (cTcpSent)

Access	Read: All Write: Illegal

Description	This attribute counts the number of COMPRESSED_TCP packets sent to the Mobile Station (MS) by the compressor. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Sc outboundSearches (outbSearches)

Access	Read: All Write: Illegal
Description	This attribute counts the number of outbound searches of a compression state for a Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Sc outboundMisses (outbMisses)

Access	Read: All Write: Illegal
Description	This attribute counts the number of misses while searching for a compression state for the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Sc uncompressedTcpReceived (uncTcpRecd)

Access	Read: All Write: Illegal
Description	This attribute counts the number of UNCOMPRESSED_TCP packets received from the Mobile Station (MS) by the

	decompressor. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Sc compressedTcpReceived (cTcpRecd)

Access	Read: All Write: Illegal
Description	This attribute counts the number of COMPRESSED_TCP packets received from the Mobile Station (MS) by the decompressor. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Sc errorsReceived (errsRecd)

Access	Read: All Write: Illegal
Description	This attribute counts the number of errored packets received from the Mobile Station (MS) by the decompressor. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Sc tossedPktsReceived (tossPkts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of packets discarded by the decompressor because of an error that occurred before this

	packet. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsd Tlli Sc SndcpStatistics (SndcpStats)

Properties	Operational
Description	This group contains the per Session Context statistical attributes.
Mib	WirelessGsd

ATTRIBUTE Gsd Tlli Sc discardedNpdusFromMs (discNpdusRxMs)

Access	Read: All Write: Illegal
Description	This attribute counts the Network-Protocol Data Units (N-PDUs) that originated from the Mobile Station (MS) which could not be re-assembled. This could result from N-PDUs lost or re-ordered. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Gsd Tlli Sc snPdusToMs (snPdusTxMs)

Access	Read: All Write: Illegal
Description	This attribute counts the SNDCP-Protocol Data Units (SN-PDU) sent to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Gsd Tlli Sc snPdusFromMs (snPdusRxMs)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of SNDCP-Protocol Data Unit (SN-PDU) received from the Mobile Station (MS), that is, the total number of LL-UNITDATA PDU and LL-DATA PDU received from the Logical Link Context (LLC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Gsd Tlli Sc octetsToMs (octsTxMs)

Access	Read: All Write: Illegal
Description	This attribute counts the payload octets sent to the Mobile Station (after compression is applied). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Long Integer
Default	No default

ATTRIBUTE Gsd Tlli Sc octetsFromMs

Access	Read: All Write: Illegal
Description	This attribute counts the payload octets received from the Mobile Station (before decompression is applied). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Long Integer
Default	No default

ATTRIBUTE Gsd Tlli Sc octetsToNetwork (octsTxNwk)

Access	Read: All Write: Illegal
Description	This attribute counts the payload octets sent to the network. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Long Integer
Default	No default

ATTRIBUTE Gsd Tlli Sc octetsFromNetwork (octsRxNwk)

Access	Read: All Write: Illegal
Description	This attribute counts the payload octets received from the network. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Long Integer
Default	No default

GROUP Gsd Tlli Sc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsd

ATTRIBUTE Gsd Tlli Sc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Sc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Sc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsd Tlli LogicalLinkContext (Llc)

Groups	"GROUP Gsd Tlli Llc Operational (Oper)" "GROUP Gsd Tlli Llc Statistics (Stats)" "GROUP Gsd Tlli Llc WlcCustomCounters (WlcCustomCntr)"
Scope	Application

Description	*Sgsn Tlli/<tlli> LogicalLinkContext* *Gsd/n Tlli/<tlli> LogicalLinkContext* This component represents the logical link context information of Logical Link Control (LLC) protocol layer of GPRS.
Mib	WirelessGsd
Common Verbs	Help List Display

GROUP Gsd Tlli Llc Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the Logical Link Management Entity (LLME).
Mib	WirelessGsd

ATTRIBUTE Gsd Tlli Llc tlli

Access	Read: All Write: Illegal
Description	When *newTlli* is empty, this attribute indicates the Temporary Logical Link Identity (TLLI) currently in use. When *newTlli* is not empty a new TLLI is being assigned. This attribute indicates the old value of the TLLI.
Mib	WirelessGsd
Values	String (4, Hex)
Default	No default

ATTRIBUTE Gsd Tlli Llc newTlli (newTlli)

Access	Read: All Write: Illegal
Description	This attribute indicates the new value of the Temporary Logical Link Identity (TLLI). The value is empty when no assignment is taking place.

Mib	WirelessGsd
Values	String (4, Hex)
Default	No default

ATTRIBUTE Gsd Tlli Llc bucketLeakRate (buckLeRate)

Access	Read: All Write: Illegal
Description	This attribute indicates the Flow Control bucket leak rate. This indicates the rate at which data is sent to the Packet Control Unit (PCU) for this mobile. The unit is 100 bits/s.
Mib	WirelessGsd
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Gsd Tlli Llc bucketSize (buckSz)

Access	Read: All Write: Illegal
Description	This attribute indicates the Flow Control bucket size. The value indicates how much data is queued for a mobile to the Packet Control Unit (PCU). The unit is 100 bytes.
Mib	WirelessGsd
Values	Decimal (0..65535)
Units	octets
Default	No default

ATTRIBUTE Gsd Tlli Llc bucketFullRatio (buckflRt)

Access	Read: All Write: Illegal
Description	This attribute indicates the percentage of the bucket that is filled with data for a mobile. This attribute is used by the bucket flow control algorithm for the

mobile, if the Current Bucket Level feature is negotiated between the Packet Control Unit (PCU) and the Serving GPRS Support Node (SGSN). The result of this negotiation is reflected in the *currentBucketLevelFeature* attribute, defined in *SgGtl Nse PtpBvc*.

A value of ***0*** means that the bucket is empty, while a value of ***100*** means that the bucket is exactly full. A value greater than ***100*** means that the bucket is full and overflowing by that percentage. For example, a value of ***150*** means the bucket is full and overflowing by 50%. A value of ***disabled*** means that this attribute is not used by the flow control algorithm because the Current Bucket Level feature is not negotiated.

Mib	WirelessGsd
Values	Decimal (0..255) disabled
Units	%
Default	No default

ATTRIBUTE Gsd Tlli Llc dataSapsUtilized (dSaps)

Access	Read: All Write: Illegal
Description	This attribute indicates which Service Access Points (SAPs) have been used by this Mobile Station (MS) since being attached.
Mib	WirelessGsd
Set of	Decimal (0..15)
Default	No default

GROUP Gsd Tlli Llc Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the Logical Link Management Entity (LLME).
Mib	WirelessGsd

ATTRIBUTE Gsd Tlli Llc uiFramesToMs (uiFrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the Unconfirmed Information (UI) frames sent to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Llc uiFramesFromMs (uiFrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the Unconfirmed Information (UI) frames received from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Llc iFramesToMs (iFrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the confirmed Information (I) frames sent to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Llc iFramesFromMs (iFrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the confirmed Information (I) frames received from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Llc iFramesRetransmittedToMs (iFrRetx)

Access	Read: All Write: Illegal
Description	This attribute counts the confirmed Information (I) frames retransmitted to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Llc framesProtectedToMs (frProtTx)

Access	Read: All Write: Illegal
Description	This attribute counts the protected frames sent to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Llc framesProtectedFromMs (frProtRx)

Access	Read: All Write: Illegal

Description	This attribute counts the protected frames received from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Llc framesCipheredToMs (frCiphTx)

Access	Read: All Write: Illegal
Description	This attribute counts the ciphered frames sent to the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Llc framesCipheredFromMs (frCiphRx)

Access	Read: All Write: Illegal
Description	This attribute counts the ciphered frames received from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Llc crcErrorsFromMs (crcErrsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from Mobile Station (MS)

	that contained Cyclic Redundancy Check (CRC) errors. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Llc congestionDiscardsToMs (congDiscsTxMs)

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDU) that have been discarded at the *GprsSubscriberDatapath* due to Mobile Station (MS) Flow Control, BSS GPRS Virtual Connection (BVC) blockage, or there not being any available room in the sliding window of the Logical Link Entity (LLE) to service the PDU. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

GROUP Gsd Tlli Llc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsd

ATTRIBUTE Gsd Tlli Llc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Llc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Tlli Llc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsd RemoteApplicationConnection (RaConn)

Instance	appType [String (1..8, ASCII)] shelfId [Decimal (0..50)] instance (n) [Decimal (1..15)]
Groups	"GROUP Gsd RaConn OsiState (State)" "GROUP Gsd RaConn WlcCustomCounters (WlcCustomCntr)"

Scope	Application
Description	... *RemoteApplicationConnection/<appType, shelfId, n>* This component represents the Remote Application Connection information of an application that talks to applications on other shelves. For each application that it can communicate with, one of these connection components is created and is instantiated with the name of the remote application, the Id of the shelf on which the application runs, and the instance number of the application. ShelfId ***0*** represents the Master shelf.
Mib	WirelessGsd
Dyn. Subcomp.	"COMPONENT Gsd RaConn AtmConnection (AtmCon)"
Common Verbs	Help List Display

GROUP Gsd RaConn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessGsd

ATTRIBUTE Gsd RaConn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component.

When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: WirelessGsd

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Gsd RaConn operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: WirelessGsd

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Gsd RaConn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	WirelessGsd
Values	idle active (activ) busy
Default	idle

GROUP Gsd RaConn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGsd

ATTRIBUTE Gsd RaConn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Gsd RaConn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd RaConn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Gsd RaConn AtmConnection (AtmCon)

Groups	"GROUP Gsd RaConn AtmCon Operational (Oper)"
Scope	Device

Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	WirelessGsd
Common Verbs	Help List Display

GROUP Gsd RaConn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	WirelessGsd

ATTRIBUTE Gsd RaConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	WirelessGsd
Values	The name of the component
Default	No default

COMPONENT Gsd TieredSubscription (Ts)

Groups	"GROUP Gsd Ts Statistics (Stats)" "GROUP Gsd Ts WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS GprsSubscriberDataPath TieredSubscription"

Scope	Application
Description	*Gsd/n TieredSubscription* *Usd/n TieredSubscription*

	This component represents the differentiated tiers of service on the (UMTS) Serving GPRS Support Node (SGSN or USGSN) per Packet Data Protocol (PDP) context basis for downlink traffic. The maximum average bandwidth associated with each tier is not guaranteed at all times but indicates the upper bound on the average data rate for the service.
Mib	WirelessGsd
Common Verbs	Help List Display

GROUP Gsd Ts Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of this component.
Mib	WirelessGsd

ATTRIBUTE Gsd Ts activePdpCServiced (actPdpCSer)

Access	Read: All Write: Illegal
Description	This attribute indicates the active PDP contexts for each tier. The value is incremented on a PDP context activation for a tier and decremented when a PDP context is deactivated for the tier.
Mib	WirelessGsd
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)
Default	No default

GROUP Gsd Ts WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.

Mib	WirelessGsd

ATTRIBUTE Gsd Ts customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Ts customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd Ts customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGsd

Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberDataPath TieredSubscription

Description	The statistics record generated by the GprsSubscriberDataPath TieredSubscription component.

ATTRIBUTE Gsd Ts pktsPerTierToMobile (pktsToM)

Description	This attribute counts the number of packets successfully sent by the SGSN or USGSN for each tier in the down link direction in the collection interval.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Gsd Ts octetsPerTierToMobile (octToM)

Description	This attribute counts the number of octets successfully sent by the SGSN or USGSN for each tier in the down link direction in the collection interval.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Gsd Ts pktsDropped (pktsDr)

Description	This attribute counts the packets dropped by the Tiered Subscription of the SGSN or USGSN for each tier in the collection interval. For example, if the peak throughput for a context is 56kbit/s and there is a burst of downlink data packets exceeding 56kbit/s, then the excess packets will be dropped, and the *pktsDropped* attribute is incremented every time a packet is dropped.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Gsd Ts activePdpCServiced (actPdpCSer)

Description	This attribute indicates the current number of PDP contexts that are active for each tier. The value is incremented on a PDP context activation for a tier and decremented when a PDP context is deactivated for the tier. This value reported is the value at the end of the collection interval.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Gsd Ts peakPdpCServiced (peakPdpCSer)

Description	This attribute indicates the maximum number of PDP contexts serviced for the tier during the collection interval. The value is incremented every time *currentPdpCServiced* for that tier exceeds the current value of *peakPdpCServiced* for that tier. It is reset to *currentPdpCServiced* after every data collection.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

COMPONENT Gsd DownlinkBuffer (DBuff)

Groups	"GROUP Gsd DBuff Provisioned (Prov)" "GROUP Gsd DBuff Operational (Oper)"

"COLLECTED STATS GprsSubscriberDataPath DownlinkBuffer"

Scope	Application
Description	*Gsd/n DownlinkBuffer* This component represents the optional Downlink Buffer that can be enabled on the *Gsd* component. If the operator desires to enable Downlink Buffering on a given *Gsd* component, the *DBuff* component is added.

Adding or deleting this component will cause a loss of service for the parent *Gsd* component.

Mib WirelessGsd

Common Verbs
- Help
- List
- Display
- Add
- DELete

GROUP Gsd DBuff Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attributes of the *Gsd/n DownlinkBuffer* component.

Mib WirelessGsd

ATTRIBUTE Gsd DBuff maxMsWithBuff (maxBuffMs)

Access Read: All
Write: All

Description This attribute specifies the maximum number of mobiles for which a single GPRS Subscriber Data (GSD) application may concurrently buffer downlink data.

The value for this parameter should be carefully considered based on the number of mobiles predicted to be served by a single GSD at any given time, and on the predicted data arrival rate for those mobiles. It is safe to say that not all mobiles will require buffering concurrently, but rather some small percentage.

Depending on the value of the *buffCheckInterval* attribute, some capacity degradation may be incurred.

Mib WirelessGsd

Values Decimal (0..10000)

Default 1000

ATTRIBUTE Gsd DBuff maxPacketsBuffPerMs (maxBuffPkts)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of downlink packets that may be buffered for a single mobile at any given time, regardless of packet size. Packets received beyond this limit are discarded by the Serving GPRS Support Node (SGSN). This parameter does not guarantee that each mobile will be able to buffer a particular number of packets; rather, it is intended to serve as a maximum for any one mobile at any given point in time.
Mib	WirelessGsd
Values	Decimal (0..100)
Default	12

ATTRIBUTE Gsd DBuff maxBytesBuffPerMs (maxBuffBytes)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of bytes that may be buffered for a single mobile at any given time, regardless of the number of packets buffered. Packets received beyond this limit are discarded by the Serving GPRS Support Node (SGSN). This parameter does not guarantee that each mobile will be able to buffer a particular number of bytes; rather, it is intended to serve as a maximum for any one mobile at any given point in time.
Mib	WirelessGsd
Values	Decimal (0..102400)
Units	bytes
Default	10486

ATTRIBUTE Gsd DBuff pduLifetimeInBuff (pduBuffLife)

Access	Read: All Write: All
Description	This attribute specifies the maximum amount of time that a single packet may be buffered. After expiry of this time period, if the buffered packet has not been sent to the mobile, the packet is discarded by the Serving GPRS Support Node (SGSN).
Mib	WirelessGsd
Values	Decimal (0..120)
Units	seconds
Default	20

ATTRIBUTE Gsd DBuff buffCheckInterval (buffInt)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the time interval that the Serving GPRS Support Node (SGSN) waits before examining the buffer contents to determine if the reason for buffering still exists. The value for this parameter must be selected very carefully. It should be selected based on buffer space provided by the Packet Control Unit (PCU) and the expected data rate for the mobiles attached to the PCU. However, if this value is set too low, depending on the number of mobiles allowed to do buffering concurrently (determined by *maxMsWithBuff*), a non-negligible impact to system capacity may result. Changing this value results in a loss of service for this *Gsd* component.
Mib	WirelessGsd
Values	Decimal (0.1..120.0)
Units	seconds

Default	2.0

ATTRIBUTE Gsd DBuff numSmallBlocks (numSmBlk)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the number of small memory blocks that are allocated for buffering of downlink Packet Data Units (PDUs). A small memory block is approximately 256 octets. The maximum amount of memory that may be allocated for buffering in a given GPRS Subscriber Data (GSD) is 10MB. The total memory computed from values specified for *numSmallBlocks*, *numMediumBlocks*, *numLargeBlocks* and *numXlargeBlocks* must not exceed 10MB. The sum of the following must be less than 10MB: (*numSmallBlocks* * 256) + (*numMediumBlocks* * 512) + (*numLargeBlocks* * 1024) + (*numXLargeBlocks* * 1792). Changing this value results in a loss of service for this *Gsd* component.
Mib	WirelessGsd
Values	Decimal (0..40000)
Default	5500

ATTRIBUTE Gsd DBuff numMediumBlocks (numMeBlk)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the number of medium memory blocks that are allocated for buffering of downlink Packet Data Units (PDUs). A medium memory block is approximately 512 octets. The maximum amount of memory that may be allocated for

buffering in a given GPRS Subscriber Data (GSD) is 10MB. The total memory computed from values specified for *numSmallBlocks*, *numMediumBlocks*, *numLargeBlocks* and *numXlargeBlocks* must not exceed 10MB.

The sum of the following must be less than 10MB: (*numSmallBlocks* * 256) + (*numMediumBlocks* * 512) + (*numLargeBlocks* * 1024) + (*numXLargeBlocks* * 1792).

Changing this value results in a loss of service for this *Gsd* component.

Mib	WirelessGsd
Values	Decimal (0..20000)
Default	1000

ATTRIBUTE Gsd DBuff numLargeBlocks (numLaBlk)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the number of large memory blocks that are allocated for buffering of downlink Packet Data Units (PDUs). A large memory block is approximately 1024 octets. The maximum amount of memory that may be allocated for buffering in a given GPRS Subscriber Data (GSD) is 10MB. The total memory computed from values specified for *numSmallBlocks*, *numMediumBlocks*, *numLargeBlocks* and *numXlargeBlocks* must not exceed 10MB. The sum of the following must be less than 10MB: (*numSmallBlocks* * 256) + (*numMediumBlocks* * 512) + (*numLargeBlocks* * 1024) + (*numXLargeBlocks* * 1792). Changing this value results in a loss of service for this *Gsd* component.
Mib	WirelessGsd

Values	Decimal (0..10000)
Default	2590

ATTRIBUTE Gsd DBuff numXlargeBlocks (numXlBlk)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the number of extra-large memory blocks that are allocated for buffering of downlink Packet Data Units (PDUs). An extra-large memory block is approximately 1792 octets. The maximum amount of memory that may be allocated for buffering in a given GPRS Subscriber Data (GSD) is 10MB.The total memory computed from values specified for *numSmallBlocks*, *numMediumBlocks*, *numLargeBlocks* and *numXlargeBlocks* must not exceed 10MB. The sum of the following must be less than 10MB: (*numSmallBlocks* * 256) + (*numMediumBlocks* * 512) + (*numLargeBlocks* * 1024) + (*numXLargeBlocks* * 1792). Changing this value results in a loss of service for this *Gsd* component.
Mib	WirelessGsd
Values	Decimal (0..5714)
Default	3300

ATTRIBUTE Gsd DBuff buffOnFcBucketFull (buffFcBFull)

Access	Read: All Write: All
Description	This attribute specifies whether downlink data should be buffered if the downlink flow control bucket is full. Refer to “GSM TS 08.18” for a detailed description of the downlink flow control mechanisms.

If the attribute value specifies ***enabled***, downlink data is buffered when the flow control bucket is full.

Mib: WirelessGsd

Values: enabled
disabled

Default: enabled

ATTRIBUTE Gsd DBuff buffOnLlcSuspended (buffLlcSuspd)

Access: Read: All
Write: All

Description: This attribute specifies whether downlink data should be buffered if the Logical Link Control (LLC) layer is suspended. Refer to "GSM TS 04.08" and "GSM TS 04.64" for a description of the LLC layer and its behavior.

If the attribute value specifies ***enabled***, downlink data is buffered when the LLC layer is suspended.

Mib: WirelessGsd

Values: enabled
disabled

Default: enabled

GROUP Gsd DBuff Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *Gsd/n DownlinkBuffer* component.

Mib: WirelessGsd

ATTRIBUTE Gsd DBuff currentPdusBuffered (curPduBuf)

Access: Read: All
Write: Illegal

Description	This attribute indicates the current number of Protocol Data Units (PDUs) being buffered on this GPRS Subscriber Data (GSD).
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd DBuff totalPdusBuffered (totPduBuf)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of Protocol Data Units (PDUs) that have been buffered on this GPRS Subscriber Data (GSD) since its creation. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd DBuff peakPdusBuffered (peakPduBuf)

Access	Read: All Write: Illegal
Description	This attribute indicates the peak for the number of Protocol Data Units (PDUs) that have been buffered on this GPRS Subscriber Data (GSD). It represents the highest value achieved by the *currentPdusBuffered* attribute.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd DBuff currentBytesBuffered (curByteBuf)

Access	Read: All Write: Illegal

Description	This attribute indicates the current number of bytes being buffered on this GPRS Subscriber Data (GSD).
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Units	bytes
Default	No default

ATTRIBUTE Gsd DBuff totalBytesBuffered (totByteBuf)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bytes that have been buffered on this GPRS Subscriber Data (GSD) since its creation. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Units	bytes
Default	No default

ATTRIBUTE Gsd DBuff peakBytesBuffered (peakByteBuf)

Access	Read: All Write: Illegal
Description	This attribute indicates the peak for the number of bytes that have been buffered on this GPRS Subscriber Data (GSD). It represents the highest value achieved by the *currentBytesBuffered* attribute.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Units	bytes
Default	No default

ATTRIBUTE Gsd DBuff totalBytesReservedForBuffering (totByteResBuff)

Access	Read: All Write: Illegal
Description	This attribute reflects the total number of bytes reserved for buffering on this GPRS Subscriber Data (GSD). It is equal to (the value of the *numSmallBlocks* attribute * 256) + (the value of the *numMediumBlocks* attribute * 512) + (the value of the *numLargeBlocks* attribute * 1024) + (the value of the *numXLargeBlocks* attribute * 1792).
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Units	bytes
Default	No default

ATTRIBUTE Gsd DBuff currentMobilesBufferedFc (curMobBufFc)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of mobiles for which this GPRS Subscriber Data (GSD) is currently buffering data due to flow control.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd DBuff totalMobilesBufferedFc (totMobBufFc)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of mobiles that have been buffered on this GPRS Subscriber Data (GSD) due to flow control. The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd DBuff peakMobilesBufferedFc (peakMobBufFc)

Access	Read: All Write: Illegal
Description	This attribute indicates the peak for the number of mobiles that have been buffered on this GPRS Subscriber Data (GSD) due to flow control. It represents the highest value achieved by the *currentMobilesBufferedFc* attribute.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd DBuff currentMobilesBufferedLlc (curMobBufLlc)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of mobiles for which this GPRS Subscriber Data (GSD) is currently buffering data due to suspension of the Logical Link Control (LLC) layer.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd DBuff totalMobilesBufferedLlc (totMobBufLlc)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of mobiles that have been buffered on this GPRS Subscriber Data (GSD) due to suspension of the Logical Link Control (LLC) layer.

	The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd DBuff peakMobilesBufferedLlc (peakMobBufLlc)

Access	Read: All Write: Illegal
Description	This attribute indicates the peak for the number of mobiles that have been buffered on this GPRS Subscriber Data (GSD) due to suspension of the Logical Link Control (LLC) layer. It represents the highest value achieved by the *currentMobilesBufferedLlc* attribute.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd DBuff totalDiscardsDueToLifetimeExpiry (totDiscLifeEx)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of packets discarded because the maximum amount of time the packet can be buffered has exceeded the value specified by the *pduLifetimeInBuff* attribute. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd DBuff totalDiscardsDueToMaxPackets (totDiscMaxPkt)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of packets discarded because the maximum number of bufferable packets specified by the *maxPacketsBuffPerMs* attribute was exceeded. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Gsd DBuff totalDiscardsDueToMaxBytes (totDiscMaxByte)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of packets discarded because the maximum number of bufferable bytes specified by the *maxBytesBuffPerMs* attribute was exceeded. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGsd
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS GprsSubscriberDataPath DownlinkBuffer

Description	The statistics record generated by the GprsSubscriberDataPath DownlinkBuffer component.

ATTRIBUTE Gsd DBuff totalPdusBuffered (totPduBuf)

Description	This attribute counts the total number of Protocol Data Units (PDUs) that have been buffered on this GPRS Subscriber Data (GSD).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsd DBuff totalBytesBuffered (totByteBuf)

Description This attribute counts the total number of bytes that have been buffered on this GPRS Subscriber Data (GSD).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsd DBuff totalMobilesBufferedFc (totMobBufFc)

Description This attribute counts the total number of mobiles that have been buffered on this GPRS Subscriber Data (GSD) due to flow control.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsd DBuff totalMobilesBufferedLlc (totMobBufLlc)

Description This attribute counts the total number of mobiles that have been buffered on this GPRS Subscriber Data (GSD) due to suspension of the Logical Link Control (LLC) layer.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsd DBuff totalDiscardsDueToLifetimeExpiry (totDiscLifeEx)

Description This attribute counts the total number of packets discarded because the maximum amount of time the packet can be buffered has exceeded the value specified by the *pduLifetimeInBuff* attribute.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsd DBuff totalDiscardsDueToMaxPackets (totDiscMaxPkt)

Description	This attribute counts the total number of packets discarded because the maximum number of bufferable packets specified by the *maxPacketsBuffPerMs* attribute was exceeded. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsd DBuff totalDiscardsDueToMaxBytes (totDiscMaxByte)

Description	This attribute counts the total number of packets discarded because the maximum number of bufferable bytes specified by the *maxBytesBuffPerMs* attribute was exceeded. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

Nortel Networks Multiservice Switch 7400/15000/20000

Component Gsd

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component GsmBc

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component GsmBc

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COMPONENT GsmIwfBearerChannel (GsmBc)

Instance	trunkGrp [Decimal (1..8191)] cic [Decimal (1..2047)]
Groups	"GROUP GsmBc Operational (Oper)" "GROUP GsmBc CustomerIdentifierData (CidData)" "GROUP GsmBc OsiState (State)"
Scope	Application
Description	*GsmBc/<trunkGrp>,<cic>* This component represents an individual bearer channel resource for a given *GsmIwfCallServer*. Depending on the call type requested, the *GsmIwfCallServer* links one or more *GsmIwfBearerChannel*s in a single GSM InterWorking Function (IWF) call. Each *GsmIwfBearerChannel* is linked to a channel on a DS1 or E1 port on a logical processor (one *GsmIwfBearerChannel* per channel). The instance value *trunkGrp* is the external identifier for the trunk group configured at the Mobile Services-switching Center (MSC) connected to this node and associated with this *GsmIwfBearerChannel* instance. The instance value *cic* is the external identifier for the trunk group member. It is referred to as the circuit identifier code (cic) and is the same index used when configuring the channel at the Mobile Services-switching Center (MSC). This component is specific to the ***gsmIwfBearerChannel*** feature

of the ***wirelessIwf*** application. Refer to NTP 411-5221-520 “GPP Interworking Function Data Guide” for details on its usage.

Mib	GsmIwf
Subcomponents	"COMPONENT GsmBc Framer"
Dyn. Subcomp.	"COMPONENT GsmBc Layer1" "COMPONENT GsmBc Modem" "COMPONENT GsmBc V110" "COMPONENT GsmBc Fax" "COMPONENT GsmBc RadioLinkProtocol (Rlp)" "COMPONENT GsmBc V42" "COMPONENT GsmBc V42bis" "COMPONENT GsmBc Layer2RelayCop (L2RCop)" "COMPONENT GsmBc UpperRelay"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP GsmBc Operational (Oper)

Properties	Operational
Description	This group contains operational attributes concerning the operation of this particular *GsmIwfBearerChannel* for the current or most recent call.
Mib	GsmIwf

ATTRIBUTE GsmBc mipState

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the MSC/IWF Interface Protocol (MIP) for an IWF element. Valid values are: ***idle***, Startup state of IWF element.

pendingSetup, Pending initial state of IWF element.
setup, Initial state of IWF element.
pendingActivation, Synchronization has been requested, but the IWF element is not yet in the Synchronization state.
activated, Synchronization state.
holdDisconnect, Flush buffer state, during call clearing the MSC is responsible for holding the network connection towards the disconnected party while the IWF completes the data transmission (flushing any buffered data towards the disconnected party; any buffered data towards the disconnecting party is discarded.)
currentlySuspended, The call is temporarily switched to speech phase during a dual services call.

Mib: GsmIwf

Values:
idle
pendingSetup (pendSet)
setup
pendingActivation (pendAct)
activated (act)
holdDisconnect (holdDisc)
suspended (susp)

Default: idle

ATTRIBUTE GsmBc maxUserDataRate (maxUserRate)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the user rate which is in affect between the IWF and the fixed network. A user rate of ***1200_75*** is 75 bit/s in the receive direction 1200 bit/s in the transmit direction.

Mib: GsmIwf

Values:
300
600
1200
1200_75
2400
4800

	7200 9600 12000 14400 16800 19200 21600 24000 26400 28800 31200 32000 33600 38400 43200 48000 56000 57600 64000 none
Units	bit/s
Default	none

ATTRIBUTE GsmBc connectionType (connType)

Access	Read: All Write: Illegal
Description	This attribute indicates the connection types between the terminal equipment or terminal adaptor and mobile and between the IWF and the network. Valid connection types are: ***asynchronous***, Transmission of data which does not require clocking of the data signal. ***synchronous***, Transmission of data which requires clocking of the data signal.
Mib	GsmIwf
Values	synchronous (sync) asynchronous (async)

Default	No default

ATTRIBUTE GsmBc dataBits

Access	Read: All Write: Illegal
Description	This attribute indicates the number of data bits encoded between start and stop bits in an asynchronous data call connection data stream. This attribute is set to ***notApplicable*** for a synchronous data call.
Mib	GsmIwf
Values	7 8 notApplicable (na)
Default	notApplicable

ATTRIBUTE GsmBc stopBits

Access	Read: All Write: Illegal
Description	This attribute indicates the number of stop bits (a mark (binary 1) placed at the end of each data byte) inserted between the data bits in an asynchronous data call connection data stream, this marks the end of the character. This attribute is set to ***notApplicable*** for a synchronous data call.
Mib	GsmIwf
Values	1 2 notApplicable (na)
Default	notApplicable

ATTRIBUTE GsmBc parity

Access	Read: All Write: Illegal
Description	This attribute indicates the type of parity for the data bits in an asynchronous data call connection data stream. Parity is a

redundant bit that is added to each data byte to aid in error detection. If odd parity is used, all data bytes have an odd number of 1s, and if even parity is used, all data bytes have an even number of 1s. Also parity may be forced to 0, forced to 1, or may not be used at all (required for sending 8-bit data). This attribute will be set to ***notApplicable*** for a synchronouse data call. Valid values are:
none, No parity.
odd, Odd parity.
even, Even parity.
forced0, Parity forced to 0.
forced1, Parity forced to 1.
notApplicable, Parity not applicable.

Mib: GsmIwf

Values:
none
odd
even
forced0
forced1
notApplicable (na)

Default: none

ATTRIBUTE GsmBc flowControl

Access:
Read: All
Write: Illegal

Description: This attribute indicates the current flow control status of this *GsmIwfBearerChannel* for an asynchronous call. For a synchronous data call this attribute will be set to ***noFlowControlActive***. Valid values are:
noFlowControlActive, There is no flow control active over the air interface and network interfaces. The applications at the end points handle flow control.
inband, Embedded characters in the data stream indicate flow control.
v110FlowCtnrl, Utilization of V.110 flow control.
errorCntrl, Flow control is handle by datalink protocols.

Mib	GsmIwf
Values	noFlowControlActive (noFlow) inband v110FlowCntrl (v110Flow) errorCntrl (errCntrl)
Default	noFlowControlActive

ATTRIBUTE GsmBc callType

Access	Read: All Write: Illegal
Description	This attribute indicates the current call type. Valid values are: ***faxG3***, group 3 fax calls ***cda31khz***, asynchronous 3.1kHz modem ***cdaUdi***, asynchronous unrestricted digital data call ***cdsUdi***, synchronous unrestricted digital data call ***cds31khz***, synchronous 3.1kHz modem
Mib	GsmIwf
Values	faxG3 cda31khz cdaUdi cdsUdi cds31khz
Default	No default

ATTRIBUTE GsmBc lastResponseCode (respCode)

Access	Read: All Write: Illegal
Description	This attribute indicates the MSC/IWF Interface Protocol (MIP) response code returned for the last call which was active on this particular *GsmIwfBearerChannel*. Valid values are: ***requestDone***, the call was terminated normally. ***systemError***, the call was terminated due to a base system problem. ***applicationError***, the call was terminated due to an application level problem.

noResources, the call was terminated due to a lack of available resources.
msgSizeMismatch, Message length does not match length defined by the MSC/IWF Interface Protocol for the particular message type.
protocolViolation, Failed to perform the request because the coding of the request message was invalid; message was not understood.
requestNotSupported, Message was understood but not supported by the IWF or MSC.
requestDenied, Message was understood and supported by the IWF or MSC but the request is denied.
invalidMessage, Message received is invalid for the current state of the IWF's state machine or the MSC data call state machine. The message is ignored.
bufferNotFlushed, Message from the Iwf to the MSC indicating that the buffers are not flushed as requested by the MSC.
notApplicable, this attribute is not applicable for this call. This is the default value for this attribute.

Mib	GsmIwf
Values	requestDone (reqDone) systemError (sysErr) applicationError (applErr) noResources msgSizeMismatch (msgSzMismatch) protocolViolation requestNotSupported (reqNotSupp) requestDenied (reqDenied) invalidMessage (invldMsg) bufferNotFlushed (bufsUnflushed) notApplicable (na)
Default	notApplicable

ATTRIBUTE GsmBc mateBearerChannel (mateBc)

Access	Read: All Write: Illegal

Description	This attribute contains the name of the mate *GsmIwfBearerChannel* that this *GsmIwfBearerChannel* is involved with in the currently active call.
Mib	GsmIwf
Values	The name of the component
Default	No default

GROUP GsmBc CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	GsmIwf

ATTRIBUTE GsmBc customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	GsmIwf
Values	Decimal (0; 1..8191)

Default	0

GROUP GsmBc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	GsmIwf

ATTRIBUTE GsmBc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	GsmIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE GsmBc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	GsmIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE GsmBc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	GsmIwf
Values	idle active (activ) busy

Default	idle

COMPONENT GsmBc Framer

Groups	"GROUP GsmBc Framer Provisioned (Prov)" "GROUP GsmBc Framer Statistics (Stats)" "GROUP GsmBc Framer LinkOptions (Link)" "GROUP GsmBc Framer OsiState (State)"
Scope	Device
Description	*GsmBc/<trunkGrp>,<cic> Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. The *Framer* component also associates an application component with a specific hardware link interface. The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface rather than interface specific attributes which are associated with hardware components. The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	GsmIwf

ATTRIBUTE GsmBc Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	GsmIwf
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP GsmBc Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *Framer* component.
Mib	GsmIwf

ATTRIBUTE GsmBc Framer frmToIf

Access	Read only
Description	This attribute counts the number of frames transmitted to the link interface by *Framer*. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE GsmBc Framer frmFromIf

Access	Read only

Description	This attribute counts the number of frames received from the link interface by *Framer*. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE GsmBc Framer octetFromIf

Access	Read only
Description	This attribute counts the number of bytes received from the link interface by *Framer*. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE GsmBc Framer crcErrors

Access	Read only
Description	This attribute coutns the the total number of frames with CRC errors, occurring in the receive direction from the link. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE GsmBc Framer lrcErrors

Access	Read only
Description	This attribute counts the total number of frames with LRC errors,

occurring in the Tx link prior to transmission onto the link. The counter wraps when it exceeds the maximum value.

Mib GsmIwf

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE GsmBc Framer nonOctetErrors

Access Read only

Description

This attribute counts the total number of frames that were non octet aligned. The counter wraps when it exceeds the maximum value.

Mib GsmIwf

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE GsmBc Framer overruns

Access Read only

Description

This attribute counts the total number of frames received from the link for which overruns occurred. The counter wraps when it exceeds the maximum value.

Mib GsmIwf

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE GsmBc Framer underruns

Access Read only

Description

This attributecounts the total number of frames transmitted to the link for which underruns occurred. The counter wraps when it exceeds the maximum value.

Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

GROUP GsmBc Framer LinkOptions (Link)

Properties	Provisioned
Description	This group contains provisionable attributes for the GsmIwfFramer which controls link layer framing for application components sending and receiving data on a link interface for this particular GsmIwfBearerChannel.
Mib	GsmIwf

ATTRIBUTE GsmBc Framer framingType

Access	Read: All Write: Service
Criticality	Process
Description	This attribute indicates the type of framing for the link layer data received and transmitted on this channel. Valid values are: ***BtdsFraming***, bit transparent framing required for the *GsmIwfBearerChannel* components on MVP cards. ***GsmFraming***, GSM framing for the *GsmIwfBearerChannel* components on DS1C/E1C cards.
Mib	GsmIwf
Values	btdsFraming gsmFraming
Default	gsmFraming

GROUP GsmBc Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state

combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib GsmIwf

ATTRIBUTE GsmBc Framer adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib GsmIwf

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE GsmBc Framer operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be

providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: GsmIwf

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE GsmBc Framer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: GsmIwf

Values: idle
active (activ)
busy

Default: idle

COMPONENT GsmBc Layer1

Groups: "GROUP GsmBc Layer1 Operational (Oper)"
"GROUP GsmBc Layer1 Statistics (Stats)"

Scope: Application

Description	*GsmBc/<trunkGrp>,<cic> Layer1* This component represents the group of measurements for the GSM Layer 1 protocol established for a GSM IWF call (on the mobile station to IWF link) on this particular *GsmIwfBearerChannel.* Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc Layer1 Operational (Oper)

Properties	Operational
Description	This group contains physical layer operational attributes concerning the operation of this particular *GsmIwfBearerChannel*.
Mib	GsmIwf

ATTRIBUTE GsmBc Layer1 activeMode (mode)

Access	Read: All Write: Illegal
Description	This attribute indicates the active physical layer protocol between the mobile and the IWF. Valid values are: ***v110***, GSM V.110 rate adaptation scheme for interworking V-series connections to an Integrated Services Digital Network (ISDN). ***aTrau***, GSM A-Transcoder/Rate Adaptor (A-TRAU).
Mib	GsmIwf
Values	v110 aTrau
Default	No default

ATTRIBUTE GsmBc Layer1 connection (conn)

Access	Read: All Write: Illegal
Description	This attribute indicates the connection between the mobile and the IWF. Valid values are: ***transparent***, Constant throughput, constant transit delay, and variable error rate (does not use Radio Link Protocol). ***nonTransparent***, Improved error rate with variable transit delay and variable throughput (uses Radio Link Protocol).
Mib	GsmIwf
Values	transparent (trans) nonTransparent (nonTrans)
Default	No default

ATTRIBUTE GsmBc Layer1 dataRate

Access	Read: All Write: Illegal
Description	This attribute indicates the layer 1 user data rate for the currently active call for this *GsmIwfBearerChannel*. This is the data rate between the mobile and IWF.
Mib	GsmIwf
Values	Decimal (0..64000)
Units	bit/s
Default	No default

ATTRIBUTE GsmBc Layer1 intermediateRate (iRate)

Access	Read: All Write: Illegal
Description	This attribute indicates the intermediate rate used in the physical layer rate adaptation process. This field is valid between the mobile and the IWF. For user data rates of 300 bit/s - 4800 bit/s the intermediate rate is 8 kbit/s. For user data rates 9600 bit/s and above the intermediate rate is 16 kbit/s.

Mib	GsmIwf
Values	Decimal (8; 16)
Units	kbit/s
Default	No default

GROUP GsmBc Layer1 Statistics (Stats)

Properties	Operational
Description	This group contains physical layer statistics concerning the operation of this particular *GsmIwfBearerChannel*.
Mib	GsmIwf

ATTRIBUTE GsmBc Layer1 framesTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames transmitted on the link. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 framesRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames received on the link. Discarded frames are not included in this count. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 bytesTx

Access	Read: All Write: Illegal
Description	This attribute counts number of bytes transmitted on the link. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 bytesRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of bytes received on the link. Bytes from discarded frames are not included in this count. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 underRunsTx

Access	Read: All Write: Illegal
Description	This attribute counts number of underruns, on a per-call basis, in the transmit direction reported by the hardware on the mobile-side.. These frames are not counted towards the number of frames transmitted (*framesTx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 overRunsRx

Access	Read: All Write: Illegal
Description	This attribute counts number of overruns, on a per-call basis, in the receive direction reported by the hardware on the mobile-side. These frames are discarded. These frames are not counted towards the number of frames received (*framesRx)*. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 nonOctetErrorsRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of non-octet synchronous frame errors, on a per-call basis, received on the link reported by the hardware. This is when a frame whose bit content was not divisible by eight was detected. These frames are discarded. These frames are not counted towards the number of frames received (*framesRx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 largeFrameErrorsRx (lrgFrmErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames, on a per-call basis, received on the link that exceeded internal buffer limits reported by the hardware. A large number of these errors could indicate a bad physical medium. These frames are discarded. These frames

	are not counted towards the number of frames received (*framesRx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 framesDiscarded (frmDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames discarded, on a per-call basis, in the receive direction by software due to frame errors. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Layer1 lrcErrorsTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of corrupted frames, on a per-call basis, due to memory inconsistencies found by Longitude Redundancy Check (LRC) checks at the IWF. These frames are not counted towards the number of frames transmitted (*framesTx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc Modem

Groups	"GROUP GsmBc Modem Operational (Oper)" "GROUP GsmBc Modem Statistics (Stats)"
Scope	Application
Description	*GsmBc/<trunkGrp>,<cic> Modem* This component represents the group of measurements for the modem protocol established for a GSM IWF call (on the IWF to Public Switched Telephone Network (PSTN) modem link) on this particular *GsmIwfBearerChannel.* Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc Modem Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure performance of the *modem* component for this particular *GsmIwfBearerChannel*.
Mib	GsmIwf

ATTRIBUTE GsmBc Modem rate

Access	Read: All Write: Illegal
Description	This attribute indicates the transmission rate of the current modem in use. A rate of ***1200_75*** is 75 bit/s in the transmit direction and 1200 bit/s in the receive direction. All other rates are the same in both the transmit and receive directions.
Mib	GsmIwf

Values	300 600 1200 1200_75 2400 4800 7200 9600 12000 14400 16800 19200 21600 24000 26400 28800 31200 32000 33600 38400 43200 48000 56000 57600 64000
Units	bit/s
Default	No default

ATTRIBUTE GsmBc Modem algorithmInUse (algorithm)

Access	Read: All Write: Illegal
Description	This attribute indicates the current modem algorithm(s) active for the channel. Valid values are: ***v17,*** V.17 is active.V.17 is an ITU-T 14400bit/s modem standard. ***v27ter***, V.27ter is active. V.27ter is an ITU-T 7200bit/s modem standard. ***v29***, V.29 is active. V.29 an ITU-T 9600bit/s modem standard. ***v21***, V.21 active. V.21 is an ITU-4 300bit/s modem standard.

v22bis, V.22 or V.22bis active. V.22 ia an ITU-T modem standard that operates at 1200bit/s and 600 baud. V.22bis is an ITU-T modem standard that operates at 2400bit/s and 600 baud.
v23, V.23 active. V.23 is an ITU-T modem standard that operates at a speed of 1200bit/s.
v26ter, V.26ter active. V.26ter is an ITU-T modem standard that operates at a speed of 2400bit/s.
v32bis, V.32 or V.32bis active. V.32 is an ITU-T modem standard that operates at 9600bit/s and 2400 baud. V.32bis is an ITU-T modem standard that operates at a speed of 14.4kbit/s.
v34, V.34 active. V.34 is an ITU-T modem standard that operates at a speed of up to 28.8kbit/s.

Mib: GsmIwf

Set of:
v17
v29
v27ter
v21
v22bis
v23
v26ter
v32bis
v34

Default: No default

ATTRIBUTE GsmBc Modem protocolState (state)

Access: Read: All
Write: Illegal

Description: This attribute indicates the active protocol state of the modem in use.Valid values are:
idle, Modem is in an inactive state and has no current connection established.
training, Modem is attempting to establish a connection with the far end modem via handshaking.
connected, Modem has establish a connection with the far end modem.

Mib: GsmIwf

Values	idle training connected
Default	No default

ATTRIBUTE GsmBc Modem receiverTransmitter (rxTx)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the fax data modem is in receive or transmit mode. If this is not a fax data modem call, then the value is set to ***notApplicable***. Valid values are: ***notApplicable***, Not an applicable field. ***rxOnTxOff***, Receiver is on, transmitter is off. ***rxOffTxOn***, Receiver is off, transmitter is on. ***rxTxOn***, Reciever is on, transmitter is on.
Mib	GsmIwf
Values	notApplicable (na) rxOnTxOff rxOffTxOn rxTxOn
Default	notApplicable

ATTRIBUTE GsmBc Modem training

Access	Read: All Write: Illegal
Description	This attribute indicates the training procedure used by the V.17 modems. ITU-T defines two training procedures. A longer training procedure used at call setup, and a short training procedure is used during the fax call when switching from the V.21 modem to the V.17 modem. A value of ***notApplicable*** indicates that the attribute is not applicable for the modem.
Mib	GsmIwf
Values	short long notApplicable (na)

Default	notApplicable

ATTRIBUTE GsmBc Modem toUpperFlowControlActive (upperFlow)

Access	Read: All Write: Illegal
Description	This attribute indicates whether flow control was requested and an indication was sent to an upper layer protocol.
Mib	GsmIwf
Values	on off
Default	No default

ATTRIBUTE GsmBc Modem toDspFlowControlActive (lowerFlow)

Access	Read: All Write: Illegal
Description	This attribute indicates whether an upper layer protocol requested flow control and an indication was sent to the Digital Signal Processor.
Mib	GsmIwf
Values	on off
Default	No default

ATTRIBUTE GsmBc Modem asyncMode (async)

Access	Read: All Write: Illegal
Description	This attribute indicates whether conversion between synchronous and asynchronous data format (specifacally, the stripping or insertion of start and stop bits) is being performed. The value will be ***on*** unless the V.42 layer is active or it is a fax call.
Mib	GsmIwf

Values	on off
Default	No default

ATTRIBUTE GsmBc Modem autoHdlcMode (autoHdlc)

Access	Read: All Write: Illegal
Description	This attribute indicates whether High-Level Data Link Control (HDLC) functions are being performed by the modem to support HDLC applications (V.42 for example).
Mib	GsmIwf
Values	on off
Default	No default

ATTRIBUTE GsmBc Modem outbandFlowControl (outbandFlow)

Access	Read: All Write: Illegal
Description	This attribute indicates whether inband or outband flow control conversions are being performed. The modem performs either inband or outband flow control unless V.42 layer is active, it is a fax call, or no flow control was specified by the MSC.
Mib	GsmIwf
Values	on off
Default	No default

ATTRIBUTE GsmBc Modem outbandBreak (outbandBrk)

Access	Read: All Write: Illegal
Description	This attribute indicates whether inband or outband break control conversions are being performed. This is when the modem detects a break condition as defined by ITU-T X.28 and reports it.

When a break condition is discovered all subsequent incoming data is discarded until a start bit is received.

Mib GsmIwf

Values on
off

Default No default

ATTRIBUTE GsmBc Modem autobaud

Access Read: All
Write: Illegal

Description This attribute indicates whether autobaud is active.
The modem is instructed at call setup time by the MSC on:
What is the initial modem data rate value and
Whether a modem is allowed to perform autobauding (***on***) or not (***off***). With Autobauding ***on***, the modem is allowed to connect using a valid modem data rate less than or equal to the initial rate specified to the modem by the MSC. If a modem can not perform autobauding and the carrier can not be established at the initial data rate, the modem is disabled.

Mib GsmIwf

Values on
off

Default No default

GROUP GsmBc Modem Statistics (Stats)

Properties Operational

Description This group contains operational attributes that measure performance of the modem component for this particular *GsmIwfBearerChannel*.

Mib GsmIwf

ATTRIBUTE GsmBc Modem bytesTx

Access Read: All
Write: Illegal

Description	This attribute counts the number of payload bytes transmitted. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Modem bytesRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload bytes received. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Modem framingErrors (frmErr)

Access	Read: All Write: Illegal
Description	This attribute counts the number of framing errors detected by the hardware. This is the absence of a stop bit after a start bit and eight bits of data. All incoming data is discarded until the next start bit is received. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc V110

Groups	"GROUP GsmBc V110 Operational (Oper)" "GROUP GsmBc V110 Statistics (Stats)"
Scope	Application

Description	*GsmBc/<trunkGrp>,<cic> V110* This component represents the group of measurements for the ITU-T V.110 rate adaptation protocol established for a GSM IWF call (on the IWF to Integrated Services Digital Network (ISDN) terminal adapter link) on this particular *GsmIwfBearerChannel*. Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc V110 Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure the performance of *V110*.
Mib	GsmIwf

ATTRIBUTE GsmBc V110 dataRate

Access	Read: All Write: Illegal
Description	This attribute contains the layer 1 user data rate for the currently active call for this *GsmIwfBearerChannel*. This is the data rate between the IWF and the fixed network.
Mib	GsmIwf
Values	Decimal (0..65000)
Units	bit/s
Default	No default

ATTRIBUTE GsmBc V110 intermediateRate (iRate)

Access	Read: All Write: Illegal

Description	This attribute indicates the intermediate rate used in the physical layer rate adaptation process. This field is valid between the network and the IWF. For user data rates of 300 bit/s to 4800 bit/s the intermediate rate is 8 kbit/s. For a user data rate of 9600 bit/s the intermediate rate is 16 kbit/s. For user data rates of 1200 bit/s to 19200 bit/s the intermediate rate is 32 kbit/s. Data rates above this have no intermediate rate.
Mib	GsmIwf
Values	8 kbit/s 16 kbit/s 32 kbit/s notApplicable (na)
Default	No default

GROUP GsmBc V110 Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes which measure the performance of V110.
Mib	GsmIwf

ATTRIBUTE GsmBc V110 framesTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames transmitted on the link. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 framesRx

Access	Read: All Write: Illegal

Description	This attribute counts the number of frames received on the link. Discarded frames are not included in this count. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 bytesTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of bytes transmitted on the link. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 bytesRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of bytes received on the link. Bytes from discarded frames are not included in this count. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 underRunsTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of underruns, on a per-call basis, in the transmit direction reported by the hardware on the network side. These frames are not counted towards the number of frames

	transmitted (*framesTx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE GsmBc V110 overRunsRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of overruns, on a per-call basis, in the receive direction reported by the hardware on the network side. These frames are discarded. These frames are not counted towards the number of frames received (*framesRx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 nonOctetErrorsRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of non-octet synchronous frame errors, on a per-call basis, received on the link reported by the hardware. These frames are discarded. These frames are not counted towards the number of frames received (*framesRx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 largeFrameErrorsRx (lrgFrmErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames received on the link that exceeded internal buffer limits reported by the hardware, on a per-call basis. These frames are discarded. These frames are not counted towards the number of frames received (*framesRx*). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 framesDiscarded (frmDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames discarded, on a per-call basis, in the receive direction by software due to frame errors. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V110 lrcErrorsTx (lrcErrTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of corrupted frames, on a per-call basis, due to memory inconsistencies found by Longitude Redundancy Check (LRC) checks at the IWF. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)

Default	No default

COMPONENT GsmBc Fax

Groups	"GROUP GsmBc Fax Operational (Oper)" "GROUP GsmBc Fax Statistics (Stats)"
Scope	Application
Description	*GsmBc/<trunkGrp>,<cic> Fax* This component represents the group of measurements for the fax protocol established for a GSM IWF call (on the mobile station to IWF link or the IWF to Public Switched Telephone Network (PSTN) fax modem/machine link) on this particular *GsmIwfBearerChannel.* Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc Fax Operational (Oper)

Properties	Operational
Description	This group contains operational attributes which measure the performance of the fax protocol.
Mib	GsmIwf

ATTRIBUTE GsmBc Fax activeMode (mode)

Access	Read: All Write: Illegal
Description	This attribute indicates the mode of the fax T.30 protocol, determined during Exchange Identification (XID) negotiations. The following modes are supported: ***normal***, normal T.30 protocol, Error Correction Mode (ECM) not used

ecm, Error Correction Mode used. Fax error correction is done using a half-duplex page selective repeat technique.

Mib GsmIwf

Values normal
ecm

Default normal

ATTRIBUTE GsmBc Fax protocolState (state)

Access Read: All
Write: Illegal

Description This attribute indicates the protocol state of the fax adaptor. The values are:
setup, call setup state
idle, idle state only transmitting Synchronize (SYNC) frames
bcsRx, receiving Binary Coded Signal (BCS) packet from modem
bcsTx, transmitting BCS packet to modem
msgRx, receiving fax message from modem
msgTx, transmitting fax message to modem

Mib GsmIwf

Values setup
idle
bcsRx
bcsTx
msgRx
msgTx

Default idle

ATTRIBUTE GsmBc Fax messageRate (msgRate)

Access Read: All
Write: Illegal

Description This attribute indicates the fax message rate used for sending fax documents.

Mib	GsmIwf
Values	Decimal (0..65000)
Units	bit/s
Default	No default

GROUP GsmBc Fax Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes which measure the performance of the fax protocol.
Mib	GsmIwf

ATTRIBUTE GsmBc Fax messageFramesRx (msgFrmRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of fax message frames received from the mobile. One fax message frame is an eight byte DATA frame defined in GSM 3.45. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Fax messageFramesTx (msgFrmTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of fax message frames transmitted to the mobile. One fax message frame is an eight byte DATA frame defined in GSM 3.45. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE GsmBc Fax bcsFramesRx (bcsFrmRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of fax Binary Coded Signal (BCS) frames received from the mobile. A fax BCS frame is an 8-byte STATUS frame, which carries T.30 BCS data as defined in GSM 3.45. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Fax bcsFramesTx (bcsFrmTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of fax Binary Coded Signal (BCS) frames transmitted to the mobile. A fax BCS frame is an 8-byte STATUS frame, which carries T.30 BCS data as defined in GSM 3.45. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Fax pagesRxFromMobile (pagesRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of fax pages received from the mobile. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Fax pagesTxToMobile (pagesTx)

Access	Read: All Write: Illegal
Description	The attribute counts the number of fax pages transmitted to the mobile. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Fax channelModeModify (cmm)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Channel Mode Modify (CMM) requests initiated by the IWF. For transparent fax calls, the transmission speed is determined by the two fax machines at call setup. The speed may change during the transmission to satisfy the T.30 protocol. The CMM request is used by the GSM IWF to request that the T.30 requested speed change can be propagated throughout the network. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Fax bcsFrameErrors (bcsFrmErr)

Access	Read: All Write: Illegal
Description	This attribute counts the number of fax Binary Coded Signal (BCS) frames in error. This attribute indicates the count of

	corrupted fax BCS frames over the GSM radio channel. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc RadioLinkProtocol (Rlp)

Groups	"GROUP GsmBc Rlp Operational (Oper)" "GROUP GsmBc Rlp Statistics (Stats)"
Scope	Application
Description	*GsmBc<trunkGrp>,<cic> RadioLinkProtocol/<rlp-type>* This component represents the group of measurements for the Radio Link Protocol (RLP) established for a GSM IWF call (on the mobile station to IWF link) on this particular *GsmIwfBearerChannel.* Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc Rlp Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure performance of the *GsmIwfBearerChannel*.
Mib	GsmIwf

ATTRIBUTE GsmBc Rlp protocolState (state)

Access	Read: All Write: Illegal

Description	This attribute indicates the last Radio Link Protocol (RLP) state before call take down. The following are the states: ***detached,*** Initial State. The call has not even started. ***disconnected***, Asynchronous Disconnected Mode (ADM). ***connPending***, In ADM, but sent Set Asynchronous Balanced Mode (SABM) and waiting for a response. ***discPending***, Sent Disconnect (DISC), waiting for a response. ***connectEstablished***, In Asynchronous Balanced Mode (ABM), Information frames can be exchanged. ***synchronized***, Synchronization state entered after a change of channel coding. Handles REMAP procedure.
Mib	GsmIwf
Values	detached (detach) disconnected (disc) connPending (connPend) discPending (discPend) connectEstablished (connEst) synchronized (sync)
Default	detached

ATTRIBUTE GsmBc Rlp frameSize

Access	Read: All Write: Illegal
Description	This attribute indicates the current Radio Link Protocol (RLP) frame size transmitted. The size of the frame depends on the radio channel type. The frames can be 240 bits long for 12 kbit/s and 6 kbit/s or 576 bits long for 14.5 kbit/s.
Mib	GsmIwf
Values	Decimal (0..65000)
Default	No default

ATTRIBUTE GsmBc Rlp highestVersion (highVer)

Access	Read: All Write: Illegal

Description	This attribute indicates the current highest version of the Radio Link Protocol (RLP) protocol negotiated by the Radio Link Protocol (RLP), during Exchange Information (XID). Valid values are: ***0***, Single-link basic version. ***1***, Single-link extended version (for example, extended by data compression). The value used for XID negotiations can be provisioned by component *GsmIwfRadioLinkProtocol* attribute *highestVersion*.
Mib	GsmIwf
Values	Decimal (0..1)
Default	No default

ATTRIBUTE GsmBc Rlp iwfToMsWindowSize (iwfMsWs)

Access	Read: All Write: Illegal
Description	This attribute indicates the current IWF to mobile window size negotiated by the Radio Link Protocol (RLP) during Exchange Information (XID). The window size is the maximum number of sequentially numbered Information (I) frames that may be unacknowledged at any given time. GSM specification 4.22 defines the range as 0 to 61. The value used for XID negotiations can be provisioned by component *GsmIwfRadioLinkProtocol* attribute *iwftoMsWindowSize*.
Mib	GsmIwf
Values	Decimal (0..61)
Default	No default

ATTRIBUTE GsmBc Rlp msToIwfWindowSize (msIwfWs)

Access	Read: All Write: Illegal
Description	This attribute indicates the current mobile to IWF window size negotiated by the Radio Link Protocol (RLP), during Exchange Information (XID). The window size is the maximum number of sequentially numbered Information (I) frames that may be

	unacknowledged at any given time. GSM specification 4.22 defines the range as 0 to 61. The value used for XID negotiations can be provisioned by component *GsmIwfRadioLinkProtocol* attribute *msToIwfWindowSize*.
Mib	GsmIwf
Values	Decimal (0..61)
Default	No default

ATTRIBUTE GsmBc Rlp t1AckTimer (t1)

Access	Read: All Write: Illegal
Description	This attribute indicates the current T1 timer negotiated by the Radio Link Protocol (RLP), during Exchange Information (XID). This is the period in milliseconds within which an acknowledgment of a sent frame must be received. Once this timer expires, the transmitting RLP entity shall assume that the frame was lost. The value used for XID negotiations can be provisioned by component *GsmIwfRadioLinkProtocol* attribute *t1AckTimer.*
Mib	GsmIwf
Values	Decimal (380..1020)
Units	msec
Default	No default

ATTRIBUTE GsmBc Rlp t2AckDelayTimer (t2)

Access	Read: All Write: Illegal
Description	This attribute indicates the current T2 timer negotiated by the Radio Link Protocol (RLP), during Exchange Information (XID). This is the maximum period in milliseconds the receiving RLP entity shall wait before sending an acknowledgment for a received in sequenced frame. The value used for XID negotiations can be provisioned by component *GsmIwfRadioLinkProtocol* attribute *t2AckDelayTimer.*

Mib	GsmIwf
Values	Decimal (10..70)
Units	msec
Default	No default

ATTRIBUTE GsmBc Rlp n2RetransmitCount (n2)

Access	Read: All Write: Service
Description	This attribute indicates the current value of N2 negotiated by the Radio Link Protocol (RLP), during Exchange Information (XID). This is the maximum number of times a RLP entity shall retransmit an individual frame following the expiry of timer T1. The value used for XID negotiations can be provisioned by component *GsmIwfRadioLinkProtocol* attribute *n2RetransmitCount*.
Mib	GsmIwf
Values	Decimal (0..255)
Default	No default

GROUP GsmBc Rlp Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure performance of the *GsmIwfBearerChannel.*
Mib	GsmIwf

ATTRIBUTE GsmBc Rlp iFramesTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of valid Information frames transmitted. This count does not include the Information frames discarded. The counter wraps when it exceeds the maximum value.

Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp iFramesRx

Access	Read: All Write: Illegal
Description	This attributes counts the number of valid Information (I) frames received. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp framesRetransmitted (frmRetrans)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of frames retransmitted. Frames that are not acknowledged within the T1 timer are retransmitted. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp t1AckTimeouts (t1Timeout)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of T1 timer time-outs. Retransmission of all unacknowledged frames is started after T1 timer expiry. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp invalidFrames (invldFrm)

Access	Read: All Write: Illegal
Description	This attribute counts the number of invalid frames received. These invalid frames are frames received from the mobile which contain errors in the header information. This count does not include the number of frames with Cyclic Redundancy Check (CRC) errors or out-of-sequence Frame Errors. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp crcErrorsRx (crcErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames with Cyclic Redundancy Check (CRC) errors received by the IWF Radio Link Protocol (RLP) entity. CRC is a type of block check character that is very effective in detecting communications errors. CRCs are commonly 16 or 32 bits long (though, in GSM non-transparent services, a 24-bit CRC is used). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp outOfSequenceFrames (outOfSeqFrm)

Access	Read: All Write: Illegal

Description	This attribute counts the number of out-of-sequence Information frames received by the IWF Radio Link Protocol (RLP) entity. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp remoteBusyIndications (remoteBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the mobile Radio Link Protocol (RLP) entity is busy (that is, it is in Asynchronous Balanced Mode (ABM) and is not ready to receive Information frames). The RLP entity is considered to be not ready to receive information frames if the mobile sends a flow control indication RNR (Receive Not Ready). A Receive Ready is sent to the RLP entity when the mobile is ready to receive data. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp localBusyIndications (localBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the IWF RLP entity is busy (that is it is in Asynchronous Balanced Mode (ABM) and is not ready to receive Information frames). When the network side introduces flow control towards the mobile and a Receive Not Ready (RNR) is sent to the mobile to stop the mobile from sending any more data frames. A Receive Ready (RR) is sent to the mobile when the RLP entity is ready to receive data. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp iFramesTxDiscarded (iFrmTxDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames discarded by the IWF. Untransmitted and unacknowledged frames are discarded when a Set Asynchronous Balanced Mode (SABM) or Disconnect (DISC) is received or sent in Asynchronous Balanced Mode (ABM) mode. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc Rlp resetsRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of resets sent by the mobile. Loss of information may occur when a reset is issued. A reset is issued by the mobile on failure of checkpoint recovery. That is if the mobile does not receive acknowledgment for its information frame, it does checkpoint recovery (it sends a supervisory frame requesting the status of the other entity. If the responding entity fails to respond to N2 of this checkpoint frame a reset is initiated by the originating entity. A reset can also be issued by the mobile during handover where a loss of connection or synchronization occurs. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc V42

Groups	"GROUP GsmBc V42 Operational (Oper)" "GROUP GsmBc V42 Statistics (Stats)"
Scope	Application
Description	*GsmBc/<trunkGrp>,<cic> V42* This component represents the group of measurements for the ITU-T V.42 error correcting protocol established for a GSM IWF call (on the IWF to Public Switched Telephone Network (PSTN) modem link) on this particular *GsmIwfBearerChannel*. Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc V42 Operational (Oper)

Properties	Operational
Description	This group contains operational attributes which measure V.42 error detection and correction performance.
Mib	GsmIwf

ATTRIBUTE GsmBc V42 protocolState (state)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of V.42. Valid states are: ***notActive***, The V.42 link connection with the Public Switched Telephoned Network) PSTN modem is not established. None of the V.42 functions including the error detection, error correction, and flow control is provided to the data call. This is the initial state of V.42. ***disconnected***, This means that the V42 link is disconnected. ***linksetup***, The V.42 operation enters this state from the

disconnected state after the V.42 sends to the PSTN modem a Set Asynchronous Balanced Mode Extended (SABME) frame in an attempt to establish the error control connection with the PSTN modem.
frameReject, The V.42 operation enters into this state after it identifies an invalid frame sent by the peer and it sends back a frame reject (FRMR) frame to the peer.
disconnectRequest, The V.42 operation enters into this state after it sends to the peer a disconnect (DISC) frame with the attempt to disconnect the V.42 error control link.
informationTransfer, The V.42 enters into this state after it receives a UA (unnumbered acknowledgment) frame which the peer sent upon receipt of the SAMBE frame from IWF V.42. Once in this state, the V.42 can exchange data and supervisory information with its peer.
waitingAck, The V.42 enters this state after it sends polling enquiry to its peer. The V.42 sends the polling enquiry when it receives a reject frame (REJ) from its peer or either its acknowledgment timer or inactivity timer timed out on the information frames sent out.

Mib: GsmIwf

Values:
notActive
disconnected (disc)
linksetup
frameReject (frmRej)
disconnectRequest (discReq)
informationTransfer (infoXfer)
waitingAck (waitAck)

Default: notActive

ATTRIBUTE GsmBc V42 txN401FrameSize (txN401)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the current value of parameter N401 for V.42 which is negotiated during Exchange Information (XID). This is the maximum number of octets that can be carried in the information field of an information frame that the IWF V.42 transmits to the Public Switched Telephone Network (PSTN)

modem. The IWF V.42 puts this or even smaller size of data into the outgoing information frame. The value used for XID negotiations can be provisioned by component *GsmIwfV42* attribute *txN401FrameSize.*

Mib: GsmIwf

Values: Decimal (0..65355)

Default: No default

ATTRIBUTE GsmBc V42 rxN401FrameSize (rxN401)

Access: Read: All
Write: Illegal

Description: This attribute indicates the current value of N401, that is negotiated during Exchange Identification (XID). This is the maximum number of octets that can be carried in the information field of an information frame received from the Public Switched Telephone Network (PSTN) modem. An incoming information frame carrying data octets more than this size shall be rejected by the IWF V.42. The value used for XID negotiations can be provisioned by component *GsmIwfV42* attribute *rxN401FrameSize.*

Mib: GsmIwf

Values: Decimal (1..255)

Default: No default

ATTRIBUTE GsmBc V42 txKwindowSize (txK)

Access: Read: All
Write: Illegal

Description: This attribute indicates the current value of k, that is negotiated during Exchange Identification (XID). This is the size of flow control sliding window used for the information frames that the V.42 transmits to the Public Switched Telephone Network (PSTN) modem. This size governs the maximum number of information frames that the IWF V.42 error-correcting entity can have outstanding (that is, unacknowledged). The value used for

	XID negotiations can be provisioned by component *GsmIwfV42* attribute *txKwindowSize.*
Mib	GsmIwf
Values	Decimal (0..127)
Default	No default

ATTRIBUTE GsmBc V42 rxKwindowSize (rxK)

Access	Read: All Write: Illegal
Description	This attribute indicates the current value of k that is negotiated during Exchange Identification (XID). This is the size of flow control sliding window used for information frames transmitted from the Public Switched Telephone Network (PSTN) modem. This size governs the maximum number of information frames that the peer of the IWF V.42 error-correcting entity can have outstanding (that is, unacknowledged). The value used for XID negotiations can be provisioned by component *GsmIwfV42* attribute *rxKwindowSize*.
Mib	GsmIwf
Values	Decimal (1..127)
Default	No default

GROUP GsmBc V42 Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes that measure the V.42 error detection and correction performance.
Mib	GsmIwf

ATTRIBUTE GsmBc V42 iBytesRx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bytes that the V.42 actually received from the Public Switched Telephone Network

	(PSTN) modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 iBytesTx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bytes that the V.42 transmitted to the Public Switched Telephone Network (PSTN) modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 iFramesRx

Access	Read: All Write: Illegal
Description	This attribute counts the total number of Information (I) frames that the V.42 received from the Public Switched Telephone Network (PSTN) modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 iFramesTx

Access	Read: All Write: Illegal

Description	This attribute counts the total number of information frames that the V.42 transmitted to the Public Switched Telephone Network (PSTN) modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 framesRetransmitted (frmRetrans)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of frames retransmitted by the IWF V.42 entity in a data call. The V.42 retransmits the same frame when the associated T401 acknowledgment timer time-outs or when a Reject (REJ) supervisory frame has been received from the Public Switched Telephone Network (PSTN) modem. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 t1AckTimeouts (t1Timeout)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times that the T401 timer has timed out within a data call. If this timer times-out frequently, the operator may need to adjust the provisional parameter T401 acknowledgment timer to a larger time amount, since every time that V.42 sends out a frame it sets the T401 timer to wait for the peer's acknowledgment of the frame. When the timer times-out and no acknowledgment has been received, the V.42 sends the same frame to its peer. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 remoteBusyIndications (remoteBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the Public Switched Telephone Network (PSTN) modem enters a busy state (the IWF has received a Receive Not Ready message) and asks the IWF V.42 not to send Information (I) frames to it until it is ready to receive information frames again (indicated by receipt of a Receive Ready message or a data message). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 localBusyIndications (localBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the IWF V.42 enters in a busy condition and asks the peer to stop sending information frames until it has cleared up from the busy condition. The V.42 enters busy condition when its data buffer is about to be overflowed by the incoming Information (I) frames. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 badFramesRx (badFrmRx)

Access	Read: All Write: Illegal

Description	This attribute counts the total number of bad frames the IWF V.42 has received from the Public Switched Telephone Network (PSTN) remote modem within the data call. In this instance, “bad frames” refer to the V.42 protocol error frames other than the check sequence error frames. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42 crcErrorsRx (crcErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of frames received from the remote Public Switched Telephone Network (PSTN) modem that contain incorrect frame check sequence. A high value signifies the condition of the physical medium is poor. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc V42bis

Groups	"GROUP GsmBc V42bis Operational (Oper)" "GROUP GsmBc V42bis Statistics (Stats)"
Scope	Application
Description	*GsmBc<trunkGrp>,<cic> V42bis* This component represents the group of measurements for the ITU-T V.42bis data compression protocol established for a GSM IWF call (on the mobile station to the IWF link or the IWF to Public Switched Telephone Network (PSTN) fax modem link) on this particular *GsmIwfBearerChannel.*

Note that this component is present only if the current (or most recent call) involved this protocol.

Mib GsmIwf

Common Verbs
Help
List
Display

GROUP GsmBc V42bis Operational (Oper)

Properties Operational

Description This group contains operational attributes that measure the performance of *V.42bis*.

Mib GsmIwf

ATTRIBUTE GsmBc V42bis protocolModeEncoder (modeEncoder)

Access
Read: All
Write: Illegal

Description This attribute indicates the current mode of the V.42bis encoder. This mode can be either:
transparent - A mode of operation in which compression has been selected but data is being transmitted in uncompressed form. Transparent mode command sequences may be inserted into the data stream.
compressed - A mode of operation in which data is transmitted in codewords.
The encoder switches between the two modes depending on whether the data coming from the Date Terminal Equipment (DTE) is suitable for compression. The data comression function periodically determines the compressibility of the data based on a comparison of the number of bits required to represent a segment of the data stream before and after compression.

Mib GsmIwf

Values
transparent
compressed

Default No default

ATTRIBUTE GsmBc V42bis protocolModeDecoder (modeDecoder)

Access	Read: All Write: Illegal
Description	This attribute indicates the current mode of the V.42bis decoder. This mode can be either: ***transparent*** - A mode of operation in which compression has been selected but data is being transmitted in uncompressed form. Transparent mode command sequences may be inserted into the data stream. ***compressed*** - A mode of operation in which data is transmitted in codewords. The encoder (at the mobile or Public Switched Telephone Network) switches between the two modes depending on whether the data coming from the Date Terminal Equipment (DTE) is suitable for compression. The data comression function periodically determines the compressibility of the data based on a comparison of the number of bits required to represent a segment of the data stream before and after compression.
Mib	GsmIwf
Values	transparent compressed
Default	No default

ATTRIBUTE GsmBc V42bis compressionDirection (p0)

Access	Read: All Write: Illegal
Description	This attribute indicates the direction in which V.42bis is active, negotiated at link setup by the data link protocol through Exchange Identification (XID) negotiation of parameter P0 (compression direction). The value used for XID negotiations can be provisioned by component *GsmIwfV42bisProv* attribute *compressionDirection*. Valid values are: ***none***, No compression is present. ***encode***, The data sent by the IWF to the other entity is compressed. ***decode***, The data received by the IWF from the other entity is

compressed.
both, The data sent and received by the IWF is compressed.

Mib GsmIwf

Values none
encode
decode
both

Default No default

ATTRIBUTE GsmBc V42bis maximumCodewords (p1)

Access Read: All
Write: Illegal

Description This attribute indicates the maximum number of codewords in the dictionary negotiated at link setup by the data link protocol by way of the Exchange Identification (XID) negotiation of parameter P1 (number of codewords). The value used for XID negotiations can be provisioned by component *GsmIwfV42bisProv* attribute *maximumCodewords*.

Mib GsmIwf

Values Decimal (0..4096)

Default No default

ATTRIBUTE GsmBc V42bis maximumStringSize (p2)

Access Read: All
Write: Illegal

Description This attribute indicates the maximum number of characters allowed in a string represented by a codeword negotiated at link setup by the data link protocol by way of the Exchange Identification (XID) negotiation of parameter P2 (maximum string size). The value used for XID negotiations can be provisioned by component *GsmIwfV42bisProv* attribute *maximumStringSize*.

Mib GsmIwf

Values	Decimal (6..250)
Default	No default

ATTRIBUTE GsmBc V42bis lastDecodeError (lastDecodeErr)

Access	Read: All Write: Illegal
Description	This attribute indicates last error found by the decoder. Error values are: ***none***, No errors found. ***badStepup***, Receipt of STEPUP (step up codeword size) codeword when it would cause C2 (current code word size) to exceed N1 (maximum code word size). ***codewordEqC1***, Receipt of a codeword, at any time, equal to C1 (next empty dictionary entry). ***emptyCodeword***, Receipt of a codeword representing an empty dictionary entry. ***reservedCommand***, Receipt of a reserved command code. ***generalError***, Receipt of any other error. The action taken by V.42bis on detecting an error is provisioned by component *GsmIwfV42bis* attribute *actionOnError*.
Mib	GsmIwf
Values	none badStepup codewordEqC1 emptyCodeword reservedCommand generalError
Default	none

ATTRIBUTE GsmBc V42bis compRatioEncoder

Access	Read: All Write: Illegal
Description	This attribute indicates the number of uncompressed bytes divided by the number of compressed bytes. A value greater than one means that the data is being compressed. This is the compression ratio achieved by the V.42bis encoder running on the

	Passport. This attribute is relevant for both protocol modes transparent and compressed as the encoder switches between the two modes.
Mib	GsmIwf
Values	Decimal (0.00..300.00)
Default	No default

ATTRIBUTE GsmBc V42bis compRatioDecoder

Access	Read: All Write: Illegal
Description	This attribute indicates the number of uncompressed bytes divided by the number of compressed bytes. A value greater than one means that the data is being compressed. This is the compression ratio achieved by the V.42bis encoder at the mobile or Public Switched Telephone Network (PSTN). This attribute is relevant for both protocol modes transparent and compressed as the encoder switches between the two modes.
Mib	GsmIwf
Values	Decimal (0.00..300.00)
Default	No default

GROUP GsmBc V42bis Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure the performance of *V.42bis*.
Mib	GsmIwf

ATTRIBUTE GsmBc V42bis modeChangesEncode (modeChgEncode)

Access	Read: All Write: Illegal
Description	This attribute counts the number of mode changes (from transparent to compressed or from compressed to transparent) by

	the encoder. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42bis modeChangesDecode (modeChgDecode)

Access	Read: All Write: Illegal
Description	This attribute counts the number of mode changes (from transparent to compressed or from compressed to transparent) by the decoder. The mode changes are determined by the encoder at the mobile or the Public Switched Telephone Network (PSTN). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42bis resetsEncode

Access	Read: All Write: Illegal
Description	This attribute counts the number of resets sent by the encoder. A reset is a command code sent by the encoder to force dictionary reinitialization. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42bis resetsDecode

Access	Read: All Write: Illegal

Description	This attribute counts the number of resets received by the decoder. A reset is a command code sent by the encoder to force dictionary reinitialization. The resets of the decoder are determined by the encoder at the mobile or Public Switched Telephone Network (PSTN). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42bis reInitializations (reInit)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times V.42bis is reinitialized because of a destructive break (a destructive break is a break that causes data to be discarded) occurring on the error-corrected connection initiatated by either the mobile or Public Switched Telephone Network (PSTN). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc V42bis errorsInDecode (errDecode)

Access	Read: All Write: Illegal
Description	This attribute counts the number of errors found by the decoder. The errors could be any of the following: 1.Receipt of STEPUP (step up codeword size) codeword when it would cause C2 (current code word size) to exceed N1 (maximum code word size). 2. Receipt of a codeword, at any time, equal to C1 (next empty dictionary entry). 3. Receipt of a codeword representing an empty dictionary entry. 4. Receipt of a reserved command code.

	5. Receipt of any other error. The counter wraps when it exceeds the maximum value. The action taken by V.42bis on detecting any of these errors is provisioned by component *GsmIwfV42bis* attribute *actionOnError*.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc Layer2RelayCop (L2RCop)

Groups	"GROUP GsmBc L2RCop Operational (Oper)" "GROUP GsmBc L2RCop Statistics (Stats)"
Scope	Application
Description	*GsmBc/<trunkGrp>,<cic> Layer2RelayCop* This component represents the group of measurements for the GSM Layer 2 Relay Character Oriented Protocol (L2RCOP) established for a GSM IWF call (on the mobile station to the IWF link) on this particular *GsmIwfBearerChannel*. Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc L2RCop Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure the performance of *L2RCop*.
Mib	GsmIwf

ATTRIBUTE GsmBc L2RCop flowControlStateTx (flowControlTx)

Access	Read: All Write: Illegal
Description	This attribute indicates whether flow control is active in the transmit direction (towards the network side) for Layer2 Relay.
Mib	GsmIwf
Values	active inactive
Default	inactive

ATTRIBUTE GsmBc L2RCop flowControlStateRx (flowControlRx)

Access	Read: All Write: Illegal
Description	This attribute indicates whether flow control is active in the receive direction (towards the mobile) for Layer2 Relay.
Mib	GsmIwf
Values	active inactive
Default	inactive

GROUP GsmBc L2RCop Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure the performance of *L2RCop*.
Mib	GsmIwf

ATTRIBUTE GsmBc L2RCop bytesTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of data bytes relayed by Layer2 Relay in the transmit direction (towards the network). The counter wraps when it exceeds the maximum value.

Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc L2RCop bytesRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of data bytes relayed by Layer2 Relay in the receive direction (towards the mobile). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc L2RCop breakCountRx (breakRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of breaks received from the mobile. A break received from the mobile results in the V.42bis function being reset and the break condition forwarded to the network. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc L2RCop breakCountTx (breakTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of breaks transmitted to the mobile (a break was received from the network). A break received from the network results in the V.42bis function being

reset and the break condition forwarded to the mobile. The counter wraps when it exceeds the maximum value.

Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT GsmBc UpperRelay

Groups	"GROUP GsmBc UpperRelay Operational (Oper)" "GROUP GsmBc UpperRelay Statistics (Stats)"
Scope	Application
Description	*GsmBc/<trunkGrp>,<cic> UpperRelay* This component represents the group of measurements for the Upper Relay function established for a GSM IWF call (internally between the two *GsmIwfBearerChannel*s involved in a call) from this particular *GsmIwfBearerChannel* perspective. Note that this component is present only if the current (or most recent call) involved this protocol.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmBc UpperRelay Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure the performance of the *UpperRelay.*
Mib	GsmIwf

ATTRIBUTE GsmBc UpperRelay bufferSize

Access	Read: All Write: Illegal

Description	This attribute indicates the size of the transmit and receive flow control buffers.
Mib	GsmIwf
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE GsmBc UpperRelay flowControlStateTx (flowControlTx)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the transmit flow control is active or not.
Mib	GsmIwf
Values	active inactive
Default	inactive

ATTRIBUTE GsmBc UpperRelay flowControlStateRx (flowControlRx)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the receive flow control is active or not.
Mib	GsmIwf
Values	active inactive
Default	inactive

GROUP GsmBc UpperRelay Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure the performance of the *UpperRelay*.
Mib	GsmIwf

ATTRIBUTE GsmBc UpperRelay framesTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames that are sent in the transmit direction. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc UpperRelay framesRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames that are sent in the receive direction. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmBc UpperRelay unacknowledgedFrames (unackFrm)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of current frames sent that have not been acknowledged.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component GsmBc

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component GsmCs

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Nortel Networks Multiservice Switch 7400/15000/20000

Component GsmCs

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COMPONENT GsmIwfCallServer (GsmCs)

Instance	Decimal (1..8191)
Groups	"GROUP GsmCs Provisioned (Prov)" "GROUP GsmCs CustomerIdentifierData (CidData)" "GROUP GsmCs OsiState (State)" "GROUP GsmCs Statistics (Stats)"
Scope	Application
Description	*GsmCs/<trunkGrp>* The *GsmIwfCallServer* component represents an instance of a call manager for Global System for Mobile communications (GSM) InterWorking Function (IWF) calls on this node. The *GsmIwfCallServer* provides a mechanism to segregate call resources (*GsmIwfBearerChannels)* and maintenance activities for the *GsmIwfBearerChannels* associated with that *GsmIwfCallServer.* The instance value *trunkGrp* is an external identifier for the trunk group configured at the Mobile Services-switching Center (MSC) connected to this node and associated with this *GsmIwfCallServer* instance. This component is specific to the ***gsmIwfCallServer*** feature of

	the ***wirelessIwf*** application. Refer to NTP 411-5221-520 “GPP Interworking Function Data Guide” for details on its usage.
Mib	GsmIwf
Subcomponents	"COMPONENT GsmCs RadioLinkProtocol (Rlp)" "COMPONENT GsmCs Fax" "COMPONENT GsmCs V42" "COMPONENT GsmCs V42bis"
Opt. Subcomp.	"COMPONENT GsmCs LogicalProcessor (Lp)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP GsmCs Provisioned (Prov)

Properties	Provisioned
Description	This group contains general provisioning data for the *GsmIwfCallServer* that does not fit within other provisioning groups.
Mib	GsmIwf

ATTRIBUTE GsmCs commentText

Access	Read: All Write: All
Description	Use of this attribute is at the discretion of the system administrator. Typically, this attribute specifies the name of the trunk group at the Mobile Services-switching Center (MSC) configured for this *GsmIwfCallServer* plus any other commentary information.
Mib	GsmIwf
Values	String (0..40, ASCII)

Default	""

ATTRIBUTE GsmCs mscIpAddress (ipAddr)

Access	Read: All Write: Configuration
Description	This attribute specifies the Internetwork Protocol (IP) Address of the Mobile Services-switching Center (MSC) Control Module (CM) that is permitted to set up GSM InterWorking Function (IWF) calls using this *GsmIwfCallServer*. This address must be specified in order for this *GsmIwfCallServer* to provide service. If call setups are attempted from an MSC which does not have this address, those calls are rejected. The *callsRequested* statistic of this *GsmIwfCallServer* is incremented, but the *callsSetup* statistic of this *GsmIwfCallServer* is not, when call setup attempts are rejected. Also, at the MSC, appropriate call failure logs are generated.
Mib	GsmIwf
Values	IP address
Default	0.0.0.0

ATTRIBUTE GsmCs virtualRouterName (vr)

Access	Read: All Write: Configuration
Criticality	Component
Description	This attribute specifies the *VirtualRouter* that this *GsmIwfCallServer* uses to transmit signaling messages to and receive signaling messages from the Mobile Services-switching Center (MSC) that utilizes this *GsmIwfCallServer*.
Mib	GsmIwf
Values	The name of the component
Default	No default

ATTRIBUTE GsmCs voiceLaw (encoding)

Access	Read: All Write: Configuration
Description	This attribute specifies the voice law to be established for the IWF to Public Switched Telephone Network (PSTN) modem link for calls established by this *GsmIwfCallServer*. Valid values are: ***aLaw***, a protocol for encoding voice-band audio, Pulse Code Modulation (PCM). ***muLaw***, a protocol for encoding voice-band audio, PCM. Note that this value must match the voice law used at the Mobile Services-switching Center (MSC) connected to this *GsmIwfCallServer*.
Mib	GsmIwf
Values	aLaw muLaw
Default	aLaw

GROUP GsmCs CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	GsmIwf

ATTRIBUTE GsmCs customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID

provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	GsmIwf
Values	Decimal (0; 1..8191)
Default	0

GROUP GsmCs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	GsmIwf

ATTRIBUTE GsmCs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

	is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	GsmIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE GsmCs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	GsmIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE GsmCs usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	GsmIwf
Values	idle active (activ) busy
Default	idle

GROUP GsmCs Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure the performance of this particular *GsmIwfCallServer.*
Mib	GsmIwf

ATTRIBUTE GsmCs currentCalls (currCall)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of active calls currently serviced by this particular *GsmIwfCallServer.*
Mib	GsmIwf
Values	Decimal (0..2047)
Default	0

ATTRIBUTE GsmCs callsRequested (callsReq)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF call setup requests received at this particular *GsmIwfCallServer* from the Mobile

	Services-switching Center (MSC). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs callsSetup (callsSet)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls successfully setup by this particular *GsmIwfCallServer.* A call is considered setup when the IWF-Setup-Request message is received, indicating a request for a data communications service, and the IWF has successfully allocated the necessary resources to fulfill the request. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs callsActivated (callsAct)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls successfully activated by this particular *GsmIwfCallServer.* A call is considered activated when the IWF receives an IWF-Activate-Request, indicating that the call parties are connected and that data communications must begin. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs callsReleasedNormal (callsRlsdNor)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls that have completed successfully on this particular *GsmIwfCallServer*. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs callsReleasedAbnormal (callsRlsdAbnor)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls that have been released due to error conditions at this particular *GsmIwfCallServer* or one if its *GsmIwfBearerChannel*s. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs channelConfigChanges (chanConfig)

Access	Read: All Write: Illegal
Description	This attribute counts the number of channel configuration requests from the Mobile-services Switching Center (MSC) that have been received at this *GsmIwfCallServer* and have resulted in successful responses. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE GsmCs channelModeModifyRequests (cmm)

Access	Read: All Write: Illegal
Description	This attribute counts the number of channel mode modify requests that have been generated by fax calls serviced by this particular *GsmIwfCallServer*. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs statusMessagesRx (statusMsgRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of status messages received from the Mobile Services-switching Center (MSC). The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE GsmCs erroredMipFrames (errMipFrm)

Access	Read: All Write: Illegal
Description	This attribute counts the number of MSC/IWF Interface Protocol (MIP) messages received from the Mobile Services-switching Center (MSC) that were in error. The counter wraps when it exceeds the maximum value.
Mib	GsmIwf
Values	Decimal (0..4294967295)

Default	No default

COMPONENT GsmCs RadioLinkProtocol (Rlp)

Instance	half6kRate (half6k) full6kRate (full6k) full12kRate (full12k) full14k5Rate (full14k5)
Groups	"GROUP GsmCs Rlp Provisioned (Prov)"
Scope	Application
Description	*GsmCs/<trunkGrp> RadioLinkProtocol/<radio-channel-type>* This component represents a group of Radio Link Protocol (RLP) instances, indexed by radio channel type. Valid radio channel types are: ***half6kRate***, Half rate channel at 6 kbit/s. ***full6kRate***, Full rate channel at 6 kbit/s. ***full12kRate***, Full rate channel at 12 kbit/s. ***full14k5Rate***, Full rate channel at 14.5 kbit/s. Many RLP attributes are dependent on the frame rate and frame size, that is dictated by the radio channel type. When a *GsmIwfCallServer* is added, a *RadioLinkProtocol* instance is added automatically for each possible instance value. The attributes are set to default values, dependent on the radio channel type of the component instance.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmCs Rlp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the Radio Link Protocol (RLP) parameters used for the call set up by this

	particular *GsmIwfCallServer*. Changes to these attributes do not effect existing calls.
Mib	GsmIwf

ATTRIBUTE GsmCs Rlp highestVersion (highVer)

Access	Read: All Write: Service
Description	This attribute specifies the highest version of the Radio Link Protocol (RLP) protocol supported on this *GsmIwfCallServer*. Valid values are: ***0***, Single-link basic version. ***1***, Single-link extended version (for example, extended by data compression). During the Exchange Information (XID) negotiation at the start of the call, both RLP entities (mobile station and IWF) can agree to use a particular RLP version. The IWF attempts to negotiate the value specified by this attribute. Note that if V.42bis data compression is be established between the mobile station and IWF, both entities must agree to use version 1 (or higher). The default value for *highestVersion* is 1 to enable support for V.42bis data compression. The negotiated value can be viewed in the component *GsmIwfRlpOp* attribute *highestVersion*. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (0..1)
Default	1

ATTRIBUTE GsmCs Rlp iwfToMsWindowSize (iwfMsWs)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of sequentially numbered Information (I) frames that may be outstanding (that is, unacknowledged) at any given time from the IWF to the mobile station. GSM specification 4.22 defines the range as 0 to 61. During the Exchange Information (XID) negotiation, both Radio

	Link Protocol (RLP) entities (mobile station and IWF) can agree to use a specific window size. The IWF attempts to negotiate to the value specified by this attribute. The negotiated value can be viewed in the component *GsmIwfRlpOp* attribute *iwfToMsWindowSize.* Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (0..61)
Default	61

ATTRIBUTE GsmCs Rlp msToIwfWindowSize (msIwfWs)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of sequentially numbered Information (I) frames that may be outstanding (that is, unacknowledged) at any given time from the mobile station to IWF. GSM specification 4.22 defines the range as 0-61. During the Exchange Information (XID) negotiation, both Radio Link Protocol (RLP) entities (mobile station and IWF) can agree to use a specific window size. The IWF attempts to negotiate to the value specified by this attribute. The negotiated value can be viewed in the component GsmIwf*RlpOp* attribute *msToIwfWindowSize*. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (0..61)
Default	61

ATTRIBUTE GsmCs Rlp t1AckTimer (t1)

Access	Read: All Write: Service
Description	This attribute specifies the time in milliseconds within which an acknowledgment of a sent frame must be received. Once this timer expires, the transmitting Radio Link Protocol (RLP) entity

	shall assume that the frame was lost. During the Exchange Information (XID) negotiation, both RLP entities (mobile station and IWF) can agree to use specific value for this timer (T1). The IWF attempts to negotiate to the value specified by this attribute. The default value for *t1AckTimer* is 520 msec for the ***full14k5Rate*** instance of this component, 480 msec for ***full12kRate,*** 540 msec for ***full6kRate***, and 780 msec for ***half6kRate***. The negotiated value can be viewed in the component *GsmIwfRlpOp* attribute *t1AckTimer*. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (380..1020)
Units	msec
Default	No default

ATTRIBUTE GsmCs Rlp t2AckDelayTimer (t2)

Access	Read: All Write: Service
Description	This attribute specifies the maximum time in milliseconds the receiving Radio Link Protocol (RLP) entity shall wait before sending an acknowledgment for a received information frame. During the Exchange Information (XID) negotiation, both RLP entities (mobile station and IWF) can agree to use specific value for this timer (T2). The IWF attempts to negotiate to the value specified by this attribute. The negotiated value can be viewed in the component *GsmIwfRlpOp* attribute *t2AckDelayTimer*. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (10..79)
Units	msec
Default	50

ATTRIBUTE GsmCs Rlp n2RetransmitCount (n2)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of times a Radio Link Protocol (RLP) entity shall retransmit an individual frame following the expiry of timer T1. During the Exchange Information (XID) negotiation, both RLP entities (mobile station and InterWorking Function (IWF)) can agree to use specific value for N2 (Retransmit Count). The IWF attempts to negotiate to the value specified by this attribute. The negotiated value can be viewed in the component *GsmIwfRlpOp* attribute *n2RetransmitCount*. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (1..255)
Default	6

COMPONENT GsmCs Fax

Groups	"GROUP GsmCs Fax Provisioned (Prov)"
Scope	Application
Description	*GsmCs/<trunkGrp> Fax* This component represents a group of fax provisioning attributes. These attributes specify various default settings for aspects of the fax protocol, which may be used for a GSM IWF call.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmCs Fax Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes for the fascimile protocol (T.30 and GSM 03.45) for this particular *GsmIwfCallServer*. Changes to these attributes do not effect existing calls.
Mib	GsmIwf

ATTRIBUTE GsmCs Fax t1CalledToneTimer (t1)

Access	Read: All Write: Configuration
Description	This attribute specifies the delay to generate a Called (CED) tone at the IWF after the called station is connected to the line for mobile terminated calls. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (1.50..3.00)
Units	seconds
Default	1.80

COMPONENT GsmCs V42

Groups	"GROUP GsmCs V42 Provisioned (Prov)"
Scope	Application
Description	*GsmCs/<trunkGrp> V42* This component represents a group of ITU-T V.42 error correcting data link protocol provisioning attributes. These attributes specify various default settings for aspects of the V.42 protocol, that may be used for a GSM IWF call for the IWF to Public Switched Telephone Network (PSTN) modem link.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmCs V42 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the V.42 protocol for this particular *GsmIwfCallServer*. Changes to these attributes do not effect existing calls.
Mib	GsmIwf

ATTRIBUTE GsmCs V42 t400DetectTimer (t400)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF waits for an Originator Detection Pattern (ODP) or Answerer Detection Pattern (ADP). ODP/ADP is a series of special bit patterns used during the call setup procedures. If the IWF is the Originator of the call, it starts sending ODP patterns and waits for an ADP for the duration of T400 milliseconds from the answerer at call setup time. If the IWF is the Answerer of the call, it waits for an ODP for T400 seconds from the originator and if it receives during that time it sends an ADP pattern to the originator at the call setup time. Since both sides operate with different values of T400 timer, a higher value increases the chance of a successful call setup. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (0.75..2.54)
Units	seconds
Default	2.00

ATTRIBUTE GsmCs V42 t401AckTimer (t401)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF waits for an acknowledgment before retransmitting a frame.

	Since information about the T401 timer is not carried in the Exchange Identification (XID) negotiations at call setup time, both sides operate with different timer values. The value for T401 depends on many factors, such as propagation delay or frame processing time. A frame is retransmitted up to N400 times if the timer T401 expires before an acknowledgment for a frame is actually received. The performance of the data link layer can be impacted by the value of this timer as retransmissions of frames occur on expiry of timer T401. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (0.50..9.00)
Units	seconds
Default	4.00

ATTRIBUTE GsmCs V42 t402AckDelayTimer (t402)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF may wait following the receipt of any frame requiring a reply before it initiates transmission of an appropriate reply in order to ensure that the reply frame is received by the remote error-correcting entity prior to expiration of the T401 timer of the remote error-correcting entity. Since information about the T402 timer is not carried in the Exchange Identification (XID) negotiations at call setup, both sides operate with different timer values. If this timer expires, then the reply that would have been returned prior to its expiration is not sent. The performance of the data link layer can be impacted by the value of this timer as retransmissions of frames occur on expiry of timer T401. For better performance, a value of *t402AckDelayTimer* (T402) equal to half the value of *t401AckTimer* (T401) is recommended. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (0.25..4.50)

Units	seconds
Default	2.00

ATTRIBUTE GsmCs V42 t403IdleProbeTimer (t403)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF allows to elapse without frames being exchanged. The link is permitted to remain idle with no frames being exchanged on the data link. Upon expiry of this timer, the IWF polls its peer for status. Since information about the T403 timer is not carried in the Exchange Identification (XID) negotiations at call setup time, both sides operate with different timer values. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (30..90)
Units	seconds
Default	60

ATTRIBUTE GsmCs V42 txN401FrameSize (txN401)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of octets that can be carried in the information field of an Information (I) frame, Exchange Identification (XID) frame, and a Unnumbered Information (UI) frame from the IWF to the remote entity. The default value is 128 octets, and no XID negotiations required for *txN401FrameSize*. If the value for *txN401FrameSize* value is set to other than 128 octets, then XID frames are exchanged to negotiate a value. The value provided for *txN401FrameSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 128 is specified, then the IWF negotiates or attempts to negotiate a value between the 128 (as a minimum) and the given value (as a maximum). If a value less than 128 is

specified, then the IWF attempts to negotiate a value between the given value (as a minimum) and 128 (as a maximum). Any value can be specified as long as it is within the provisionable limits. However, a value equal to or close to 128 is recommended.
The negotiated value can be viewed in the component *GsmIwfV42Op* attribute *txN401FrameSize*. Changes to this attribute do not effect existing calls.

Mib: GsmIwf

Values: Decimal (1..255)

Units: octets

Default: 128

ATTRIBUTE GsmCs V42 rxN401FrameSize (rxN401)

Access: Read: All
Write: Service

Description: This attribute specifies the maximum number of octets that can be carried in the information field of an Information (I) frame, Exchange Identification (XID) frame, and a Unnumbered Information (UI) frame from the remote entity to the IWF. The default value is 128 octets, and no XID negotiations are required for *rxN401FrameSize*. If the value set for *rxN401FrameSize* is other than 128, XID frames are exchanged to negotiate a value. The value provided for *rxN401FrameSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 128 is specified, then the IWF attempts to negotiate for a value between 128 (as a minimum) and the given value (as a maximum). If a value less than 128 value is specified, then the IWF attempts to negotiate for a value between the given value (as a minimum) and 128 (as a maximum). Any value can be specified as long as it is within the provisionable limits. However, a value equal to or close to the default is recommended.
The negotiated value can be viewed in the component *GsmIwfV42Op* attribute *rxN401FrameSize*. Changes to this attribute do not effect existing calls.

Mib: GsmIwf

Values	Decimal (1..255)
Units	octets
Default	128

ATTRIBUTE GsmCs V42 txKwindowSize (txK)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of outstanding unacknowledged sequenced Information (I) frames from the IWF to the remote entity. The default value is 15 frames, and if this value is used then no Exchange Identification (XID) negotiations are required for *txKwindowSize*. If the value set for *txKwindowSize* is other than 15, then XID frames are exchanged to negotiate a value. The value provided for *txKwindowSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 15 is specified, then the IWF attempts to negotiate a value between 15 (as a minimum) and the given value (as a maximum). If a value less than 15 is specified, then the IWF attempts to negotiate for a value between the given value (as a minimum) and 15 (as a maximum). Any value can be specified as long at it is within the provisionable limits. However, a value equal to or close to the default is recommended. The negotiated value can be viewed in the component *GsmIwfV42Op* attribute *txKwindowSize*. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (1..255)
Default	15

ATTRIBUTE GsmCs V42 rxKwindowSize (rxK)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of outstanding unacknowledged sequenced Information (I) frames from the

remote entity to the IWF. The default value is 15 frames, and if this value is used then no Exchange Identification (XID) negotiations are required for *rxKwindowSize*. If the value set for rxKwindowSize is other than 15, then XID frames are exchanged to negotiate a value. The value provided for *rxKwindowSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 15 is specified, then the IWF attempts to negotiate a value between 15 (as a minimum) and the given value (as a maximum). If a value less than 15 is specified, then the IWF attempts to negotiate for a value between the given value (as a minimum) and 15 (as a maximum). Any value can be specified as long as it is within the provisionable limits. However, a value equal to or close to the default is recommended.
The negotiated value can be viewed in the component *GsmIwfV42Op* attribute *rxKwindowSize*. Changes to this attribute do not effect existing calls.

Mib	GsmIwf
Values	Decimal (1..255)
Default	15

ATTRIBUTE GsmCs V42 n400RetransLimit (n400)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of times the IWF retransmits a frame upon expiry of *t401AckTimer* before appropriate recovery action is taken. Information about N400 (Retransmission Limit) is not carried in the Exchange Identification (XID) negotiation at call setup time so both sides operate with different N400 values. Changes to this attribute do not effect existing calls.
Mib	GsmIwf
Values	Decimal (0..255)
Default	10

COMPONENT GsmCs V42bis

Groups	"GROUP GsmCs V42bis Provisioned (Prov)"
Scope	Application
Description	*GsmCs/<trunkGrp> V42bis* This component represents a group of ITU-T V.42bis data compression protocol provisioning attributes. These attributes specify various default settings for aspects of the V.42bis protocol, which may be used in a GSM IWF call on the mobile station to IWF link and/or the IWF to Public Switched Telephone Network (PSTN) modem link.
Mib	GsmIwf
Common Verbs	Help List Display

GROUP GsmCs V42bis Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the V.42bis data compression protocol parameters used for the calls set up by this particular *GsmIwfCallServer*. Changes to these attributes do not effect existing calls.
Mib	GsmIwf

ATTRIBUTE GsmCs V42bis compressionDirection (p0)

Access	Read: All Write: Service
Description	This attribute specifies the V.42bis data compression direction to be supported. The value for compression direction is negotiated at link setup by the data link protocol by way of the Exchange Identification (XID) negotiation of parameter P0 (compression direction). During XID negotiation of parameter P0, both sides (IWF and mobile or IWF and Public Switched Telephone Network (PSTN)) agree on the compression direction.

Valid values are:
none, No compression is present.
encode, The data sent by the IWF to the other entity is compressed.
decode, The data received by the IWF from the other entity is compressed.
both, The data sent and received by the IWF is compressed.
The negotiated value can be viewed in the component GsmIwf*V42bisOp* attribute *compressionDirection*. Changes to this attribute do not effect existing calls.

Mib: GsmIwf

Values:
none
encode
decode
both

Default: both

ATTRIBUTE GsmCs V42bis maximumCodewords (p1)

Access:
Read: All
Write: Service

Description: This attribute specifies the maximum number of V.42bis codewords the IWF supports. A codeword is a binary number that represents a string of characters in compressed form. V.42bis keeps a dictionary of codewords for each compression direction. During Exchange Identification (XID) negotiation of parameter P1 (number of codewords), both sides (IWF and mobile or IWF and Public Switched Telephone Network (PSTN)) agree on the total number of codewords in the dictionaries. Changes to this attribute impact the compression ratio for the encoder (component *GsmV42BisOp* attribute *compRatioEncoder*). Changes also impact the amount of memory used (more memory is used when increasing the attribute). The gain in performance obtained from the selection of a larger dictionary may be offset by the larger codeword size needed, and for certain types of data, better performance may be obtained by using a smaller dictionary.
The negotiated value can be viewed in the component

GsmIwf*V42bisOp* attribute *maximumCodewords* . Changes to this attribute do not effect existing calls.

Mib GsmIwf

Values Decimal (512; 1024; 2048; 4096)

Default 2048

ATTRIBUTE GsmCs V42bis maximumStringSize (p2)

Access Read: All
Write: Service

Description This attribute specifies the maximum number of characters allowed in a string represented by a codeword that the IWF supports. Each codeword in a V.42bis dictionary represents a string of characters. During Exchange Identification (XID) negotiation of parameter P2 (maximum string size), both sides (IWF and mobile or IWF and Public Switched Telephone Network (PSTN)) agree on the maximum string length to be used in the dictionaries. Changes to this attribute impact the compression ratio for the encoder (component *GsmIwfV42bisOp* attribute *compRatioEncoder*).
The negotiated value can be viewed in the component GsmIwf*V42bisOp* attribute *maximumStringSize*. Changes to this attribute do not effect existing calls.

Mib GsmIwf

Values Decimal (6..250)

Default 20

ATTRIBUTE GsmCs V42bis actionOnError (actOnErr)

Access Read: All
Write: Service

Description This attribute specifies whether or not V.42bis takes down the call or resets the link when any of the following errors occur:
1.Receipt of STEPUP (step up codeword size) codeword when it would cause C2 (current code word size) to exceed N1 (maximum code word size).
2. Receipt of a codeword, at any time, equal to C1 (next empty

dictionary entry).
3. Receipt of a codeword representing an empty dictionary entry.
4. Receipt of a reserved command code.
5. Receipt of any other error.
If the value is ***resetLink***, the error corrected connection and V.42bis dictionaries are reset. Some data is lost but the call continues. If the value is ***takeDownCall***, the call is taken down. Changes to this attribute do not effect existing calls.

Mib: GsmIwf

Values: resetLink
takeDownCall

Default: resetLink

COMPONENT GsmCs LogicalProcessor (Lp)

Instance: Decimal (0..15)

Groups: "GROUP GsmCs Lp Operational (Oper)"

Scope: Application

Description: *GsmCs/<trunkGrp> LogicalProcessor/n*
The *LogicalProcessor* component represents a logical processor that may be linked to this *GsmIwfCallServer.* A *GsmIwfBearerChannel* is indirectly linked to this *LogicalProcessor* by way of the *Framer component.* This component must be added to the *GsmIwfCallServer* (and the change activated) prior to adding the *GsmIwfBearerChannel*s.

Mib: GsmIwf

Common Verbs:
Help
List
Display
Add
DELete

GROUP GsmCs Lp Operational (Oper)

Properties: Operational

Description	This group contains operational attributes pertaining to information about *GsmIwfBearerChannels* and logical processors associated with a *GsmIwfCallServer* from a high-level view.
Mib	GsmIwf

ATTRIBUTE GsmCs Lp configuredBearerChannels (configBc)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of *GsmIwfBearerChannel* components provisioned for the Logical Processor represented by this component.
Mib	GsmIwf
Values	Decimal (0..124)
Default	No default

ATTRIBUTE GsmCs Lp activeCalls (actCalls)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of *GsmIwfBearerChannel* components currently active on this *LogicalProcessor*.
Mib	GsmIwf
Values	Decimal (0..124)
Default	No default

ATTRIBUTE GsmCs Lp assignedCapacity (assgnCap)

Access	Read: All Write: Illegal
Description	This attribute indicates what percentage (0 to 100%) of a given *LogicalProcessor* has been reserved for the data calls which are currently active. When the *assignedCapacity* reaches 100%, no new calls are established on the given *LogicalProcessor*. During the life of a call, the compute requirements will vary. The compute capacity required for a given call type depends on the

	type of call established including such factors as connection type, data compression, user rate, error correction, flow control; therefore, at call establishment the compute capacity is added to the *assignedCapacity* for a *LogicalProcessor.* When the call is released, it's compute capacity is subtracted from the assigned capacity for the Lp.The *GsmIwfCallServer* uses this information to balance the distribution of data calls across the logical processors.
Mib	GsmIwf
Values	Decimal (0..100)
Default	No default

ATTRIBUTE GsmCs Lp modemsSupported (modemSup)

Access	Read: All Write: Illegal
Description	This attribute indicates if modems are supported with this *LogicalProcessor.*
Mib	GsmIwf
Values	yes no
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component GsmCs

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Hg

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Nortel Networks Multiservice Switch 7400/15000/20000

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COMPONENT HuntGroup (Hg)

Instance	Decimal (1..65535)
Groups	"GROUP Hg CustomerIdentifierData (CidData)" "GROUP Hg NsapAddress" "GROUP Hg Provisioned (Prov)" "GROUP Hg OsiState (State)" "GROUP Hg Operational"
Scope	Application
Description	*HuntGroup/n* The *HuntGroup* component provides a hunt group capability for switched calls (SVCs). A hunt group is a single DNA used to represent a group of service DNAs. A customer calling the DNA of the hunt group receives the benefits of higher capacity and availability as calls are spread across several lines.
Mib	HuntGroup
Subcomponents	"COMPONENT Hg HuntGroupMember (HgM)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Hg CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	HuntGroup

ATTRIBUTE Hg customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	HuntGroup
Values	Decimal (0; 1..8191)
Default	0

GROUP Hg NsapAddress

Properties	Provisioned
Description	This group contains attributes common to all NSAP format addresses.

Mib	HuntGroup

ATTRIBUTE Hg address

Access	Read and write
Description	The *address* attribute specifies the numbering plan and digits which form a unique DNA identifier of the hunt group. The format of the *address* attribute is <numberingPlan>.<digits> where numbering plan is x for X.121 and e for E.164. An example X.121 address is x.12345678.
Mib	HuntGroup
Values	String (1..17, NativeAddressWith15DigitX121)
Default	No default

GROUP Hg Provisioned (Prov)

Properties	Provisioned
Description	The *Provisioned* group contains the provisioned attributes of the hunt group.
Mib	HuntGroup

ATTRIBUTE Hg logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the logical processor on which the hunt group process will execute. The *Lp/n Eng Hgs* component contains statistics for all hunt groups on the LP.
Mib	HuntGroup
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Hg selectionPolicy

Access	Read and write

Description	The *selectionPolicy* attribute specifies the algorithm used to select a hunt group member. A value of ***startFromZero*** means that on a new call, the first available member starting from the member with the lowest instance value is selected. Subsequent hunts for the same call select the first available member starting from the previously chosen member. This algorithm is used when it is desirable to have the first member receive the majority of the calls and subsequent members only receive calls in overflow situations. A value of ***rotary*** means that on a new call, the first available member is selected starting from the member which received the last new call. Subsequent hunts for the same call select the first available member starting from the previously chosen member. This algorithm is used when it is desirable to loadspread the calls equally across the members. A value of ***mostAvailable*** means that on a new call, the most available member is selected based on the availability information received from the member. Subsequent hunts for the same call select the most available member starting from the previously chosen member. This algorithm is used when it is desirable to send each call to the member which has the highest probability of connecting it.
Mib	HuntGroup
Values	startFromZero rotary mostAvailable
Default	mostAvailable

ATTRIBUTE Hg maxHuntAttempts

Access	Read and write
Description	The *maxHuntAttempts* attribute specifies the maximum attempts allowed to hunt the call. Hunting ceases if either this maximum is exceeded or the member list is exhausted.
Mib	HuntGroup

Values	Decimal (1..63)
Default	63

ATTRIBUTE Hg appendSuffixDigits

Access	Read and write
Description	The *appendSuffixDigits* attribute specifies how suffix called address digits are handled. Suffix called address digits are any trailing digits, signalled in a call, beyond the provisioned hunt group *address*. If this attribute is set to ***yes***, suffix digits are appended to the member *address* before the call is forwarded to the member. If it is set to ***no***, suffix digits are not appended to the member *address*.
Mib	HuntGroup
Values	no yes
Default	yes

GROUP Hg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	HuntGroup

ATTRIBUTE Hg adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or

Lock command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	HuntGroup
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Hg operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	HuntGroup
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Hg usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	HuntGroup
Values	idle active (activ) busy
Default	idle

GROUP Hg Operational

Properties	Operational
Description	The *Operational* group contains the operational attributes of the hunt group.
Mib	HuntGroup

ATTRIBUTE Hg huntAttempts

Access	Read only
Description	This attribute counts the total number of hunt attempts made by the hunt group. The count includes both initial and subsequent hunt attempts. This count is contained within the *huntAttempts* attribute of the *Lp/n Eng Hgs* component. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Hg failedCalls

Access	Read only
Description	This attribute counts the number of calls which could not be connected by any of the hunt group members. This could occur if the hunt group is locked or has exhausted its member list. If a call cannot be connected by the hunt group it is sent to call redirection. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Hg initialHuntAttempts

Access	Read only
Description	This attribute counts the number of new (non-hunted) calls received by the hunt group which are forwarded to a member. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Hg availabilityUpdates

Access	Read only
Description	This attribute counts the number of availability update packets received by the hunt group from its members. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Hg maxAddrLenExceeded

Access	Read only
Description	This attribute counts the number of times a member could not be selected to receive a call with suffix address digits because its DNA length would exceed the maximum of 14 digits with the suffix digits appended. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Hg badPackets

Access	Read only
Description	This attribute counts the number of unrecognizable packets received by the hunt group and discarded. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

COMPONENT Hg HuntGroupMember (HgM)

Instance	Decimal (1..63)
Groups	"GROUP Hg HgM Provisioned (Prov)" "GROUP Hg HgM OsiState (State)" "GROUP Hg HgM Operational"
Scope	Application

Description	*Hg/n HuntGroupMember/n* The *HuntGroupMember* component defines an instance of a hunt group member.
Mib	HuntGroup
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Hg HgM Provisioned (Prov)

Properties	Provisioned
Description	The *Provisioned* group contains the provisioned attributes of the hunt group member.
Mib	HuntGroup

ATTRIBUTE Hg HgM address

Access	Read and write
Description	The *address* attribute specifies the numbering plan and digits which form a unique DNA identifier of the hunt group member. The format of the *address* attribute is <numberingPlan>.<digits> where numbering plan is x for X.121 and e for E.164. An example X.121 address is x.12345678.
Mib	HuntGroup
Values	String (1..17, NativeAddressWith15DigitX121)
Default	No default

GROUP Hg HgM OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies

about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib HuntGroup

ATTRIBUTE Hg HgM adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib HuntGroup

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Hg HgM operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for

operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	HuntGroup
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Hg HgM usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	HuntGroup
Values	idle active (activ) busy
Default	idle

GROUP Hg HgM Operational

Properties	Operational
Description	The *Operational* group defines operational attributes associated with the *HuntGroupMember* component.

Mib	HuntGroup

ATTRIBUTE Hg HgM availability

Access	Read and write
Description	This attribute indicates the current availability of the member. The higher the value, the more available the member is perceived to be. A value of ***0*** indicates the member is unavailable. A member must be considered ‘available’ by the hunt group in order to receive a call, regardless of the selection policy in use. The hunt group members report whether or not they are available to receive calls to the hunt group. Some services base their availability on unused logical channels, others on bandwidth or memory capacity. During initialization, the hunt group assumes all of its members are equally available and sets their *availability* value to the maximum of ***4095***. Similarly, a new hunt group member added to an existing hunt group has its *availability* value initialized to ***4095***. This ensures that members which have not reported their availability to the hunt group are tried in order to trigger the member to report its true availability. The *availability* of a member can change in the following ways: - Hunt group members can report their availability to the hunt group using a DPRS availability packet. - A network operator can temporarily change the value by the *Set* command. This change remains in effect until changed again by any of these ways. - The hunt group resets a member’s *availability* to the maximum of ***4095*** if it has been ***0*** for at least 2.5 hours. This ensures that ‘lost’ availability information does not prevent a member from returning to service.
Mib	HuntGroup
Values	Decimal (0..4095)
Default	4095

ATTRIBUTE Hg HgM availabilityUpdates

Access	Read only
Description	This attribute counts the number of availability update packets received by the hunt group member. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Hg HgM callsRefused

Access	Read only
Description	This attribute counts the number of call packets which were returned to the hunt group by the member because it could not connect the call. If this counter increments frequently, it could indicate a problem with the member's reporting of its availability to the hunt group or an incompatibility in the call options. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroup
Values	Decimal (0..4294967295)
Default	0

Nortel Networks Multiservice Switch 7400/15000/20000

Component Hg

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component HlrSim

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component HlrSim

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COMPONENT HlrSimulator (HlrSim)

Groups	"GROUP HlrSim Operational (Oper)"
Scope	Application
Description	*HlrSimulator* This component represents a sub-set of the Home Location Register (HLR) functionality. *HlrSim* is used to simulate the HLR to communicate the provisioned subscriber data to the *MapClient* processes (defined in *GprsSubscriberControl*). The *HlrSim* and all its subcomponents are to be used by Nortel Networks personnel. This is not a supported customer HLR tool.
Mib	WirelessHlrsimulator
Opt. Subcomp.	"COMPONENT HlrSim Subscriber (Subs)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP HlrSim Operational (Oper)

Properties	Operational

Description	This group contains operational attributes of the *HlrSim* component.
Mib	WirelessHlrsimulator

ATTRIBUTE HlrSim currentActiveSubscribers (curActSubs)

Access	Read: All Write: Illegal
Description	This attribute indicates the active subscribers that are currently supported by the HlrSim.
Mib	WirelessHlrsimulator
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE HlrSim totalSubscribers (totSubs)

Access	Read: All Write: Illegal
Description	This attribute indicates the total subscribers that are currently supported by the HlrSim.
Mib	WirelessHlrsimulator
Values	Decimal (0..1000)
Default	No default

COMPONENT HlrSim Subscriber (Subs)

Instance	BCD (5..15)
Scope	Application
Description	*HlrSim Subscriber/<imsi>* This component represents the GPRS subscription and authentication information of a single subscriber. The instance

value is the International Mobile Subscriber Identity (IMSI) for a Mobile Station (MS).

Mib	WirelessHlrsimulator
Opt. Subcomp.	"COMPONENT HlrSim Subs AuthenticationTriplet (AuthTrip)" "COMPONENT HlrSim Subs PdpContext (PdpC)" "COMPONENT HlrSim Subs AuthenticationQuintet (AuthQuint)" "COMPONENT HlrSim Subs CamelSubscriberInformation (Csi)" "COMPONENT HlrSim Subs LcsTermination (LcsTerm)"
Common Verbs	Help List Display Add DELete

COMPONENT HlrSim Subs AuthenticationTriplet (AuthTrip)

Instance	Decimal (1..3)
Scope	Application
Description	*HlrSim Subs/<imsi> AuthenticationTriplet/n*

This component represents an authentication triplet to be used by the Serving GPRS Support Node (SGSN) for subscriber authentication. The authentication triplet is sent by the *HlrSim* in response to the MAP-SEND AUTHENTICATION INFORMATION (SAI) request from the SGSN.

The *mobileStationType* attribute in the *HlrSim Subscriber*

component must be set to ***r97*** when this component is provisioned.

Mib WirelessHlrsimulator

Common Verbs
- Help
- List
- Display
- Add
- DELete

COMPONENT HlrSim Subs PdpContext (PdpC)

Instance Decimal (1..3)

Scope Application

Description *HlrSim Subs/<imsi> PdpContext/n*

This component represents the Packet Data Protocol (PDP) context information of the subscriber.

Mib WirelessHlrsimulator

Common Verbs
- Help
- List
- Display
- Add
- DELete

COMPONENT HlrSim Subs AuthenticationQuintet (AuthQuint)

Instance Decimal (1..3)

Scope Application

Description *HlrSim Subs/<imsi> AuthenticationQuintet/n*
This component represents the authentication quintets to be used by the UMTS Serving GPRS Support Node (USGSN) for subscriber authentication.

The *mobileStationType* attribute in the *HlrSim Subscriber*

component must be set to ***r99*** when this component is provisioned.

Mib WirelessHlrsimulator

Common Verbs
- Help
- List
- Display
- Add
- DELete

COMPONENT HlrSim Subs CamelSubscriberInformation (Csi)

Scope Application

Description *HlrSim Subs/<imsi> CamelSubscriberInformation*

This component represents the CAMEL (Customized Application for Mobile network Enhanced Logic) Subscriber Information (CSI) used by the SGSN or USGSN for a subscriber requiring CAMEL support.

When the SGSN receives Subscriber Information from the HLR, the CSI is included.

Mib WirelessHlrsimulator

Subcomponents "COMPONENT HlrSim Subs Csi TriggerDetectionPoint (Tdp)"

Common Verbs
- Help
- List
- Display
- Add
- DELete

COMPONENT HlrSim Subs Csi TriggerDetectionPoint (Tdp)

Instance Decimal (1..5)

Scope Application

Description *HlrSim Subs/<imsi> Csi TriggerDetectionPoint/n*

This component represents a CAMEL Trigger Detection Point (TDP). A TDP represents an SGSN event that is detected and acted upon. If a given TDP is set for a subscriber, the occurrence of that event causes a change in state of the CAMEL dialogues being maintained by the SGSN for that subscriber.

Mib WirelessHlrsimulator

Common Verbs
- Help
- List
- Display
- Add
- DELete

COMPONENT HlrSim Subs LcsTermination (LcsTerm)

Scope Application

Description *HlrSim Subs/<imsi> LcsTermination*

This component represents the information associated with a Mobile Terminated Location Request (MT_LR).

Mib WirelessHlrsimulator

Opt. Subcomp. "COMPONENT HlrSim Subs LcsTerm PrivacyClass (PrivCl)"

Common Verbs
- Help
- List
- Display
- Add
- DELete

COMPONENT HlrSim Subs LcsTerm PrivacyClass (PrivCl)

Instance Decimal (1..4)

Scope Application

Description *HlrSim Subs/<imsi> LcsTerm PrivCl/n*

	This component represents the privacy requirements for the Location Services subscriber.
Mib	WirelessHlrsimulator
Opt. Subcomp.	"COMPONENT HlrSim Subs LcsTerm PrivCl ExternalClient (ExtClient)"
Common Verbs	Help List Display Add DELete

COMPONENT HlrSim Subs LcsTerm PrivCl ExternalClient (ExtClient)

Instance	Decimal (1..35)
Scope	Application
Description	*HlrSim Subs/<imsi> LcsTerm PrivCl/n ExtClient/n* This component represents the external client information that is associated with the Location Services subscriber's privacy class.
Mib	WirelessHlrsimulator
Common Verbs	Help List Display Add DELete

Nortel Networks Multiservice Switch 7400/15000/20000

Component HlrSim

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Htds

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Nortel Networks Multiservice Switch 7400/15000/20000

Component Htds

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COMPONENT HdlcTransparentDataService (Htds)

Instance	Decimal (1..65535)
Groups	"GROUP Htds CustomerIdentifierData (CidData)" "GROUP Htds IfEntryProv (IfEntry)" "GROUP Htds OperationalStatus (OperStatus)" "GROUP Htds OsiState (State)"
Scope	Application
Description	*HTDS/<n>* The HDLC Transparent Data Service (HTDS) component defines the characteristics of an instance of the HDLC transparent data service. One instance of this component is required by each DS1, E1, V.35 or V.11 channel that is offering HDLC transparent traffic.

	The instance number is arbitrary.
Mib	HdlcTransparent
Subcomponents	"COMPONENT Htds Framer (Framer)" "COMPONENT Htds PermanentLogicalConnection (Plc)"
Dyn. Subcomp.	"COMPONENT Htds LogicalConnection (LCo)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Htds CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	HdlcTransparent

ATTRIBUTE Htds customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those

	components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	HdlcTransparent
Values	Decimal (0; 1..8191)
Default	0

GROUP Htds IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	HdlcTransparent

ATTRIBUTE Htds ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	HdlcTransparent
Values	up down testing
Default	up

ATTRIBUTE Htds ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component

Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	HdlcTransparent
Values	Decimal (1..65535)
Default	No default

GROUP Htds OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	HdlcTransparent

ATTRIBUTE Htds snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	HdlcTransparent
Values	up down testing
Default	up

GROUP Htds OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific

information and the valid state combinations, refer to the appropriate NTP.

Mib HdlcTransparent

ATTRIBUTE Htds adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib HdlcTransparent

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Htds operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	HdlcTransparent
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Htds usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	HdlcTransparent
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Htds availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: HdlcTransparent

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Htds proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	HdlcTransparent
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Htds controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	HdlcTransparent
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Htds alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently

being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: HdlcTransparent

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Htds standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	HdlcTransparent
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Htds unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	HdlcTransparent
Values	false true
Default	false

COMPONENT Htds Framer (Framer)

Groups
"GROUP Htds Framer Provisioned (Prov)"
"GROUP Htds Framer LinkOptions (Link)"
"GROUP Htds Framer OsiState (State)"
"GROUP Htds Framer Statistics (Stats)"
"GROUP Htds Framer LinkUtilization (Util)"

"COLLECTED STATS HdlcTransparentDataService Framer"

Scope
Application

Description
Htds/n Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib
HdlcTransparent

Common Verbs
Help
List
Display

GROUP Htds Framer Provisioned (Prov)

Properties
Provisioned

Description
This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific

provisioning data is contained in other provisionable *Framer* groups.

Mib HdlcTransparent

ATTRIBUTE Htds Framer interfaceName

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib HdlcTransparent

Values Link (Hardware, applicationFramerName)

Default No default

GROUP Htds Framer LinkOptions (Link)

Properties Provisioned

Description This group contains attributes defining the framing of data on the link interface.

Mib HdlcTransparent

ATTRIBUTE Htds Framer dataInversion

Access Read and write

Criticality Process

Description This attribute specifies whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is ***on***, the incoming data bits are also inverted when frames are received from the link before being processed.

This option is typically used in ***hdlc*** framing mode when

inversion is used to guarantee 1's density.

Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted.

Mib: HdlcTransparent

Values: off
on

Default: off

ATTRIBUTE Htds Framer nonOctetData

Access: Read and write

Criticality: Process

Description: This attribute specifies whether the data being received has the potential to be non-octet aligned. If it is set to ***yes***, then neither CRC checking and generation or abort detection will be functional.

Mib: HdlcTransparent

Values: no
yes

Default: no

ATTRIBUTE Htds Framer frameCrcType

Access: Read and write

Criticality: Process

Description: This attribute specifies the type of CRC used.

The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness.

noCrc means that CRC is not used.

Mib: HdlcTransparent

Values	crc16 crc32 noCrc
Default	crc16

ATTRIBUTE Htds Framer flagsBetweenFrames

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of flags that are inserted between frames sent to the link interface.
Mib	HdlcTransparent
Values	Decimal (1..16)
Default	1

ATTRIBUTE Htds Framer lineSignalTransport (lst)

Access	Read and write
Criticality	Process
Description	This attribute specifies how modem status lead information on a V.35 or V.11 port is handled. When the value of the attribute is set to ***on***, line signal changes are passed transparently through the network to the remote end of the connection, where they are passed out on that end's outgoing leads. When the value of the attribute is set to ***off***, line signal changes are not transparently passed through the network. Both ends must be provisioned to support this function for line signal transport to work. It is highly recommended that line signal interpretation is set to "don't care" on the associated *vport* component (that is, *vport* attributes *readyLineState* and *dataTransferLineState)*.
Mib	HdlcTransparent

Values	off on
Default	off

GROUP Htds Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	HdlcTransparent

ATTRIBUTE Htds Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	HdlcTransparent
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE Htds Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	HdlcTransparent
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Htds Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	HdlcTransparent

Values	idle active (activ) busy
Default	idle

GROUP Htds Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	HdlcTransparent

ATTRIBUTE Htds Framer aborts

Access	Read only
Description	This attribute counts the aborts received. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Htds Framer crcErrors

Access	Read only
Description	This attribute counts the frames with CRC errors. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Htds Framer lrcErrors

Access	Read only

Description	This attribute counts the frames with LRC errors. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Htds Framer nonOctetErrors

Access	Read only
Description	This attribute counts the frames that were non octet aligned. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Htds Framer overruns

Access	Read only
Description	This attribute counts the frames received from the link for which overruns occurred. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Htds Framer underruns

Access	Read only
Description	This attribute counts the frames transmitted to the link for which underruns occurred. The counter wraps to zero when it exceeds its maximum value.

Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Htds Framer largeFrmErrors

Access	Read only
Description	This attribute counts the frames received that were too large. The frame was longer than 8 kbytes or it contained more than the 255 block hardware limit. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Htds Framer frmToIf

Access	Read only
Description	This attribute counts the frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Long Integer
Default	No default

ATTRIBUTE Htds Framer frmFromIf

Access	Read only

Description	This attribute counts the frames received from the link interface by Framer. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Long Integer
Default	No default

ATTRIBUTE Htds Framer octetFromIf

Access	Read only
Description	This attribute counts the bytes received from the link interface by Framer. The counter wraps to zero when it exceeds its maximum value.
Mib	HdlcTransparent
Values	Long Integer
Default	No default

GROUP Htds Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	HdlcTransparent

ATTRIBUTE Htds Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute indicates the utilization of the normal priority data sent to the link as a percentage of the available bandwidth allocated for the service on the link. The utilization is the average for the last minute.
Mib	HdlcTransparent
Values	Decimal (0..100)

Units	%
Default	0

ATTRIBUTE Htds Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute indicates the utilization of the normal priority data received from the link as a percentage of the available bandwidth allocated for the service on the link. The utilization is the average for the last minute.
Mib	HdlcTransparent
Values	Decimal (0..100)
Units	%
Default	0

COLLECTED STATS HdlcTransparentDataService Framer

Description	The statistics record generated by the HdlcTransparentDataService Framer component.

ATTRIBUTE Htds Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Htds Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Htds Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Htds Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Htds Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT Htds PermanentLogicalConnection (Plc)

Groups	"GROUP Htds Plc Provisioning (Prov)"
Scope	Application
Description	*Htds/n PLC* This is the description of the PLC Component for the HTDS service.
Mib	HdlcTransparent
Common Verbs	Help List Display

GROUP Htds Plc Provisioning (Prov)

Properties	Provisioned
Description	This group contains all provisionable attributes for a permanent logical connection. Note that all of the attributes are valid and provisionable on both ends of a connection. However with the exception of *remoteName*, all operational attributes are derived from the originating end provisioning, which may be either end unless *remoteName* is not provisioned on one end.
Mib	HdlcTransparent

ATTRIBUTE Htds Plc remoteName (rName)

Access	Read and write
Criticality	Process
Description	This attribute specifies the *PLC*'s remote end point's address in the format of a component name. The syntax of a component is: "em/node type/instance". For an alternative representation of end point's addresses, see *addressToCall* and l*ocalAddress PLC* attributes. When using component name representation, end points are identified using a node name and a service name. As an example, the end point component for a third Htds service on node MoonBase is: "*EM/MoonBase HTDS/3*". If the *remoteName* is provisioned, it must match the name of the remote end or the connection will not be established even if the remote end is provisioned correctly. If no *remoteName* is provisioned, then this *LC* will accept connections from any other remote *LC* and it will not originate calls. Connections establish faster and are unique if both ends are provisioned with *remoteName*. *RemoteName* should be used when the remote end of the connection resides within the same topology region. If it resides in a different topology region, then *addressToCall* and *localAddress PLC* attributes should be used. When both *remoteName* and *addressToCall* are provisioned, *addressToCall* takes precedence. That is, connection will be established to the service specified by *addressToCall*. These strings are case insensitive, but the complete component name must be input.
Mib	HdlcTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Htds Plc setupPriority (spri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the priority at which a path is established. Zero(0) is the highest priority and four(4) is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority.*
Mib	HdlcTransparent
Values	Decimal (0..4)
Default	2

ATTRIBUTE Htds Plc holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the priority that a path holds once it is established. Zero(0) is the highest priority and four(4) is the lowest. A path's *holdingPriority* determines its likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority.*
Mib	HdlcTransparent
Values	Decimal (0..4)
Default	2

ATTRIBUTE Htds Plc requiredTxBandwidth (tbw)

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth reserved by a path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced and is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that Transmit at this end represents Receive at the remote end. Note that when the values do not correspond the originating end of the connection determines the value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Units	bit/s
Default	64000

ATTRIBUTE Htds Plc requiredRxBandwidth (rbw)

Access	Read and write
Criticality	Process
Description	This attribute specifies the bandwidth reserved by a path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced and is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that Transmit at this end represents Receive at the remote end. Note that when the values do not correspond the originating end of the connection determines the value.
Mib	HdlcTransparent

Values	Decimal (0..4294967295)
Units	bit/s
Default	64000

ATTRIBUTE Htds Plc requiredTrafficType (rttyp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of traffic transmitted over the path. There are eight(8) possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five(5) other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType***,** will be candidates for this connection.
Mib	HdlcTransparent
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	data

ATTRIBUTE Htds Plc permittedTrunkTypes (pttyp)

Access	Read and write
Criticality	Process

Description	This attribute specifies up to eight(8) types of trunk that can be used on the route. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six(6) remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.
Mib	HdlcTransparent
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	(terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Htds Plc requiredSecurity (rsec)

Access	Read and write
Criticality	Process
Description	This attribute specifies the required minimum level of security of the trunks on the route. Zero(0) represents the most secure and seven(7) represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	HdlcTransparent
Values	Decimal (0..7)
Default	4

ATTRIBUTE Htds Plc requiredCustomerParm (rcparm)

Access	Read and write
Criticality	Process
Description	This attribute specifies the allowed customer defined parameter of the trunks on the route. Its value, a number from zero(0) to seven(7), is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero(0) to seven(7). The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	HdlcTransparent
Values	Decimal (0..7)
Default	4

ATTRIBUTE Htds Plc pathAttributeToMinimize (pamin)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether a route is selected on the basis of minimizing the cost or the delay. Each trunk has a cost and a delay metric associated with it. The cost or delay of a route is the sum of the cost or delay metrics of all the trunks on the route. The route selection algorithm uses this attribute as the minimization criteria. If more than one route is found while using this attribute as the minimization criteria, then the route with the smallest non-minimization metric is chosen amongst the equivalent routes.
Mib	HdlcTransparent
Values	cost delay
Default	cost

ATTRIBUTE Htds Plc maximumAcceptableCost (maxCost)

Access	Read and write
Criticality	Process
Description	This attribute specifies an upper bound on the cost metric of a route, which is the sum of the cost metrics of all trunks on the route. The cost metric is the *trunkCost* attribute of the *Trunk* component. This attribute is used to accept or reject a path after the route selection algorithm has been applied, regardless of the minimization criteria. It is possible that there may not be a route with an acceptable cost.
Mib	HdlcTransparent
Values	Decimal (0..65535)
Default	1280

ATTRIBUTE Htds Plc maximumAcceptableDelay (maxDelay)

Access	Read and write
Criticality	Process
Description	This attribute specifies an upper bound on the delay of a route, which is the sum of the delay of all trunks on the route. It should be provisioned with a reasonable maximum acceptable delay for the end to end one way delay of a 512 byte packet. Note that the delay for a trunk can be a provisioned (with override) or measured value on the trunk. PORs does not recommend using override for the delay on a trunk since this has little added value for PORs traffic. Remember, that the trunk *measuredRoundTripDelay* (ms) discovered through the Trunk staging protocols, divided by two and truncated, to provide the one way delay, is used to populate the topological database. The value includes emission, propagation, and queuing delays. A 512 byte data packet is used to perform the measurement. This value is updated periodically by Trunks and reflects the operating delay of the trunk. PORs uses this attribute to accept or reject a path after the route

	selection algorithm has been applied, regardless of the minimization criteria.
Mib	HdlcTransparent
Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Htds Plc emissionPriority (epri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the urgency with which packets on the path are emitted by the trunks on the route. *EmissionPriority* of Zero(0) indicates the highest emission priority, while two (2) indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	HdlcTransparent
Values	Decimal (1..2)
Default	1

ATTRIBUTE Htds Plc discardPriority (dpri)

Access	Read and write
Criticality	Process
Description	This attribute specifies the importance of the packets on the path. One(1) is used for paths carrying the most important traffic, and three(3) is used for paths carrying the least important traffic. Packets with lower *discardPriority* (numerically) are discarded after packets with a higher *discardPriority* (numerically).
Mib	HdlcTransparent
Values	Decimal (1..3)

Default	2

ATTRIBUTE Htds Plc pathType (pType)

Access	Read and write
Criticality	Process
Description	This attribute specifies if the path for this PLC is determined automatically or by static provisioning. The default (***normal***) is to automatically choose a route with Route Selection. ***Normal*** *pathTypes* require less provisioning and can dynamically handle path failures. The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	HdlcTransparent
Values	normal manual forced
Default	normal

ATTRIBUTE Htds Plc pathFailureAction (pfa)

Access	Read and write
Criticality	Process

Description	This attribute specifies whether the application can tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is chosen, the application is informed as soon as possible about a failure by disconnection. If the attribute is set to ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends.
Mib	HdlcTransparent
Values	reRoutePath disconnectConnection
Default	reRoutePath

ATTRIBUTE Htds Plc bumpPreference (bpref)

Access	Read and write
Criticality	Process
Description	This attribute specifies when bumping occurs in the route selection process. A connection with higher (numerically less) *setupPriority* may bump a connection with lower (numerically higher) *holdingPriority* in order to acquire its bandwidth and be established. By default, bumping occurs only when it is necessary. That is, a connection will bump another connection only if there is no other way for the connection to be established. A connection may be set to always bump in order to find the best route it may have.
Mib	HdlcTransparent

Values	bumpWhenNecessary bumpToObtainBestRoute
Default	bumpWhenNecessary

ATTRIBUTE Htds Plc optimization (opt)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	HdlcTransparent
Values	disabled enabled
Default	enabled

ATTRIBUTE Htds Plc addressToCall (addrToCall)

Access	Read and write
Criticality	Process
Description	This attribute specifies the *PLC*'s remote end point's address in the format of a NSAP address. As such it must consist of a string of hex digits although not all 40 digits must be specified. For an alternative representation of end point's addresses, see *remoteName* attribute. If the *addressToCall* is provisioned, it must match *localAddress* provisioned on the remote end or the connection will not be established. Connections establish faster and are unique if both ends are provisioned with *addressToCall*. *AddressToCall* must be used when the remote end of the connection resides in different topology region. If it resides in the same topology region, then *remoteName* may be used.

	When both *remoteName* and *addressToCall* are provisioned, *addressToCall* takes precedence. That is, connection will be established to the service specified by *addressToCall*.
Mib	HdlcTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Htds Plc localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the *PLC*'s end point address in the format of an NSAP address. As such it must consist of a string of hex digits although not all 40 digits must be specified. *LocalAddress* must share a prefix with MOD *nodePrefix* or one of MOD *alternatePorsPrefixes* for this node, otherwise PORS will not be able to route calls to this service. *LocalAddress* is used in conjunction with *addressToCall*. That is, the end responsible for originating calls must have *addressToCall* provisioned, while the end responsible for terminating calls must have *localAddress* provisioned. In such a case, *addressToCall* on the originating end must match exactly the *localAddress* of the terminating end. Note that both ends may be originating and terminating at the same time. That is, both ends may have *addressToCall* and *localAddress* provisioned as long as *addressToCall* and *localAddress* on different ends are identical.
Mib	HdlcTransparent
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Htds Plc maximumAcceptableGatewayCost (maxGateCost)

Access	Read and write
Criticality	Process

Description	This attribute specifies an upper bound on the gateway cost metric of a route, which is the sum of the gateway cost metrics of all gateway links on the route. It has the same semantics as the *maximumAcceptableCost* except that gateway cost metrics are used instead of trunk cost metrics. Gateway cost metrics are provisioned under *Trunk Address* component of a gateway link specifying a gateway costs of reaching an address through the link.
Mib	HdlcTransparent
Values	Decimal (0..65535)
Default	2048

ATTRIBUTE Htds Plc manualPath (mpath)

Access	Read and write
Criticality	Process
Description	This attribute specifies the sequence of trunks to be used as the route for the path, thus bypassing PORS' automatic route selection. If the path fails the validation, no other path can be selected[1]. This attribute should only be used in special cases since the route selection algorithm is able to find and maintain the best routes. A related path attribute, the *pathType*, determines if this route will be used as a manual or forced path type. As an example, the trunk component name for the third trunk on node MoonBase is "*EM/MoonBase Trk/3*". Note that only the first end of the trunk that the packet would encounter is provisioned. These strings are case insensitive but the complete component name must be input. Note 1: the trunk designation must be a 3-letter form, e.g., 'trk'. Note 2: only the outbound trunks component names are used to provision the ***manualPath***. Note 3: It is recommended to have two independent routes specified for a manual path by specifying a different ***manualPath*** (non-symmetric) for each end. In this case, there is no way to select which route will be used (first up wins) but if one path is

	torn down due to a failure then the other ***manualPath*** may be used to reroute the path.
Mib	HdlcTransparent
Vector of	String (0..40, ASCII)
Index	Decimal (0..9)
Default	([10] "")

COMPONENT Htds LogicalConnection (LCo)

Groups	"GROUP Htds LCo PathData" "GROUP Htds LCo Statistics (Stats)"
Scope	Application
Description	...*Lc* This component contains all of the operation attributes for a Path Oriented Logical Connection.
Mib	HdlcTransparent
Common Verbs	Help List Display

VERB RERoute Htds LCo

Impact	Service
Description	RERoute ..Lc This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *RERoute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified. This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively. When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path. If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP Htds LCo PathData

Properties	Operational
Description	This group contains all operational attributes for the path oriented LCo.
Mib	HdlcTransparent

ATTRIBUTE Htds LCo state

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs

while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.

Mib: HdlcTransparent

Values:
pathDown
selectingRoute
connecting
pathUp
pathDownRetrying

Default: No default

ATTRIBUTE Htds LCo overrideRemoteName (orn)

Access: Read: All
Write: All

Description: If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.

Mib: HdlcTransparent

Values: String (0..40, ASCII)

Default: ""

ATTRIBUTE Htds LCo end

Access: Read only

Description: This attribute identifies whether this is the calling or called end of the path.

Mib: HdlcTransparent

Values	calling called
Default	No default

ATTRIBUTE Htds LCo costMetric (cost)

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	HdlcTransparent
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Htds LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.
Mib	HdlcTransparent
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE Htds LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to

	this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	HdlcTransparent
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE Htds LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	HdlcTransparent
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Htds LCo holdingPriority (hpri)

Access	Read only

Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	HdlcTransparent
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Htds LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Htds LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value
Mib	HdlcTransparent
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Htds LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType***,** will be candidates for this connection.
Mib	HdlcTransparent
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Htds LCo permittedTrunkTypes (pttyp)

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.

Mib	HdlcTransparent
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Htds LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	HdlcTransparent
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Htds LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks

	whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	HdlcTransparent
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Htds LCo emissionPriority (epri)

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority. EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	HdlcTransparent
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Htds LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority.* One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).
Mib	HdlcTransparent
Values	Decimal (1..3)
Default	No default

ATTRIBUTE Htds LCo pathType (pType)

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	HdlcTransparent
Values	normal manual forced
Default	No default

ATTRIBUTE Htds LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of an un-

segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.

Mib	HdlcTransparent
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Htds LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	HdlcTransparent
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Htds LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This reason is also issued when there is no physical connectivity between two end nodes.
Mib	HdlcTransparent

Values
none
destinationNameTooLong
destinationNotSpecified
unknownDestinationName
incorrectDestination
incorrectDestinationEndPoint
unknownSource
unknownDestination
sameNode
routeCostTooMuch
routesDelayTooLong
attributesNotMet
anError
attributeProfileProblem
manualPathIndexProblem

Default
none

ATTRIBUTE Htds LCo lastTearDownReason

Access
Read only

Description
This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons:
none - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up.
normalShutDown - This path has gone down due to normal call termination.
insufficientTxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction.
insufficientRxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction.
trunkFailure- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute.

trunkCardFailure- A trunk FP card has failed along the path.
accessCardFailure- The FP on which the peer access service was running has failed.
operatorForced- The path has terminated due to the operator locking a trunk along the path.
lostLcnClash- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.

optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib	HdlcTransparent
Values	none normalShutDown insufficientTxLcOrBandwidth insufficientRxLcOrBandwidth trunkFailure trunkCardFailure operatorForced lostLcnClash networkCongestion trunkNotFound farEndNotFound wrongModuleReached farEndBusy callLoopedBack unknownReason farEndNotReady remoteNameMismatch serviceTypeMismatch reconnectFromFarEnd bumped accessCardFailure optimized overrideRemoteName trunkOrFarEndDidNotSupportMode
Default	none

ATTRIBUTE Htds LCo pathFailureAction

Access	Read only
Description	This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends
Mib	HdlcTransparent
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE Htds LCo bumpPreference (bpref)

Access	Read only
Description	This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is lower (numerically higher) than the connection's *setupPriority*. A connection may also always bump in order to obtain the best route.
Mib	HdlcTransparent

Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE Htds LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	HdlcTransparent
Values	disabled enabled
Default	No default

ATTRIBUTE Htds LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	HdlcTransparent
Values	Time (DHMS)
Default	No default

ATTRIBUTE Htds LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.

Mib	HdlcTransparent
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP Htds LCo Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	HdlcTransparent

ATTRIBUTE Htds LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	HdlcTransparent
Values	Long Integer
Default	No default

ATTRIBUTE Htds LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	HdlcTransparent
Values	Long Integer
Default	No default

ATTRIBUTE Htds LCo pktsFromNetwork

Access	Read only

Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	HdlcTransparent
Values	Long Integer
Default	No default

ATTRIBUTE Htds LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	HdlcTransparent
Values	Long Integer
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Htds

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component IpDlciGr

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component IpDlciGr

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COMPONENT IpDlciGroup (IpDlciGrp)

Instance	Decimal (1..4294967295)
Groups	"GROUP IpDlciGrp CustomerIdentifierData (CidData)" "GROUP IpDlciGrp IfEntryProv (IfEntry)" "GROUP IpDlciGrp Provisioned (Prov)" "GROUP IpDlciGrp MediaProv (Mp)" "GROUP IpDlciGrp OsiState (State)" "GROUP IpDlciGrp OperationalStatus (OperStatus)"
Scope	Application
Description	*IpDlciGroup/n* This component represents a logical interface between a Virtual Router and a FrameRelay Interface (*FrUni*). An *IpDlciGroup* associates multiple frame relay *DataLinkConnectionIdentifer*s (*Dlci*) with a single *VirtualRouter ProtocolPort*. The *IpDlciGroup* component is associated with a *ProtocolPort* using the *linkToProtcolPort* attribute and to frame

	relay *Dlci*s using the *linkToFrDlci* attribute in each *FrConnection* subcomponent.
Mib	IpDlciGroup
Subcomponents	"COMPONENT IpDlciGrp FrConnection (Frc)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP IpDlciGrp CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager

	(referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	IpDlciGroup
Values	Decimal (0; 1..8191)
Default	0

GROUP IpDlciGrp IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	IpDlciGroup
Values	up down testing
Default	up

ATTRIBUTE IpDlciGrp ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	IpDlciGroup

Values	Decimal (1..65535)
Default	No default

GROUP IpDlciGrp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *IpDlciGroup* component.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp maxTransmissionUnit (mtuSize)

Access	Read and write
Description	This attribute specifies the size of the largest datagram (including the frame relay header) which can be sent on the interface.
Mib	IpDlciGroup
Values	Decimal (262..9190)
Units	octets
Default	1604

GROUP IpDlciGrp MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the Media Application component.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute contains a protocol port component name. The attribute associates the application with a protocol port.
Mib	IpDlciGroup

Values	Link (Service, linkToMedia)
Default	No default

GROUP IpDlciGrp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	IpDlciGroup
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE IpDlciGrp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	IpDlciGroup
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE IpDlciGrp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	IpDlciGroup

Values	idle active (activ) busy
Default	idle

GROUP IpDlciGrp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	IpDlciGroup
Values	up down testing
Default	up

COMPONENT IpDlciGrp FrConnection (Frc)

Instance	Decimal (1..255)
Groups	"GROUP IpDlciGrp Frc Provisioned (Prov)" "GROUP IpDlciGrp Frc OsiState (State)" "GROUP IpDlciGrp Frc Statistics (Stats)"
Scope	Application

Description	*IpDlciGrp/n FrConnection/n* This component represents a virtual connection over which internetworking frames are relayed between IP and frame relay.
Mib	IpDlciGroup
Common Verbs	Help List Display Add DELete

GROUP IpDlciGrp Frc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *FrConnection* component.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp Frc linkToFrDlci (frDlci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the frame relay *Dlci IpConn* component that this connection is associated with.
Mib	IpDlciGroup
Values	Link (Hardware, linkToIpDlciGrp)
Default	No default

ATTRIBUTE IpDlciGrp Frc ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the Frame Relay connection. This value is used to distinguish the connection from others for the purpose of IP forwarding and accounting.

Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers.

If an IP packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one Frame Relay connection, then one of the connections is selected for transmitting the packet. The selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet.

DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component. Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component.

Modifying this attribute will reset the *FrConnection*.

If the *FrConnection* is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the Frame Relay connection. See the description of *Vr Ip CosPolicyGroup* for more information.

Mib	IpDlciGroup
Values	Decimal (0..3)
Default	0

ATTRIBUTE IpDlciGrp Frc linkToIpLogicalInterface (ipIf)

Access	Read and write
Description	This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ipAddress*, that this connection is associated with. When set, the value of this attribute must be consistent with the *linkToProtocolPort* attribute value of the parent *IpDlciGroup* component. That is, they must both point to the same *ProtocolPort* component.

Mib	IpDlciGroup
Values	Link (Service, linkToMediaConnection)
Default	No default

GROUP IpDlciGrp Frc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp Frc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	IpDlciGroup

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE IpDlciGrp Frc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	IpDlciGroup
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE IpDlciGrp Frc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	IpDlciGroup
Values	idle active (activ) busy
Default	idle

GROUP IpDlciGrp Frc Statistics (Stats)

Properties	Operational
Description	This group contains the packet based statistics maintained for the *FrConnection* component.
Mib	IpDlciGroup

ATTRIBUTE IpDlciGrp Frc inUnknownProtocol

Access	Read only
Description	This attribute counts the packets received on this connection which are discarded because they contain an unknown protocol. This counter wraps around to ***0*** when it exceeds its maximum value.
Mib	IpDlciGroup
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE IpDlciGrp Frc inUnsupportedProtocol

Access	Read only
Description	This attribute counts the packets received on this connection which are discarded because they contain an unsupported protocol. This includes packets received for protocols not currently bound to the associated *ProtocolPort* component. This counter wraps around to ***0*** when it exceeds its maximum value.
Mib	IpDlciGroup
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE IpDlciGrp Frc inLastDiscardedProtocolHeader

Access	Read only
Description	This attribute indicates the first eight octets of the most recent packet that was received from the interface with an unknown or unsupported protocol.
Mib	IpDlciGroup
Values	String (1..8, Hex)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component IpDlciGr

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component IpiFr

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Component IpiFr

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COMPONENT IpInterfaceOverFrameRelay (IpiFr)

Groups	"GROUP IpiFr Provisioned (Prov)"
Scope	Application
Description	*IP Interface over Frame Relay*

The *IP interface over Frame Relay* component allows external Network Management Stations using Frame Relay PVC connections to perform the network management functions on the node.

Network management stations can be directly connected to a node with a Frame Relay PVC connection, or indirectly

	connected via an IP routing capable device which has a Frame Relay PVC connection to the node.
Mib	IpiFr
Subcomponents	"COMPONENT IpiFr DataNetworkAddress (Dna)"
Opt. Subcomp.	"COMPONENT IpiFr LogicalChannelNumber (Lcn)" "COMPONENT IpiFr StaticRoute (Sr)"
Dyn. Subcomp.	"COMPONENT IpiFr Route (R)"
Common Verbs	Help List Display Add DELete

GROUP IpiFr Provisioned (Prov)

Properties	Provisioned
Description	This group provides the provisionable attributes for the IpiFr component.
Mib	IpiFr

ATTRIBUTE IpiFr ipAddress (ipa)

Access	Read and write
Description	This attribute specifies the unique Internet Protocol (IP) Address that represents the IP address of the IPI service.
Mib	IpiFr
Values	IP address
Default	0.0.0.0

ATTRIBUTE IpiFr maximumNumberOfLcn (maxLcn)

Access	Read only

Description	This attribute specifies the maximum number of LCNs that are supported on this service. It specifies the maximum number of connections from external network management sites to this IpiFr service.
Mib	IpiFr
Values	Decimal (24)
Default	24

ATTRIBUTE IpiFr subnetMask (sm)

Access	Read and write
Description	This attribute specifies the subnetwork mask for the IPI service.
Mib	IpiFr
Values	IP address
Default	255.0.0.0

COMPONENT IpiFr DataNetworkAddress (Dna)

Groups	"GROUP IpiFr Dna Address" "GROUP IpiFr Dna OutgoingOptions" "GROUP IpiFr Dna IncomingOptions" "GROUP IpiFr Dna CallOptions"
Scope	Application
Description	*IpiFr Dna* This is the description of the Ipi Frame Relay *Dna* component. It is offers a subset of the generic *Dna* component attributes
Mib	IpiFr
Opt. Subcomp.	"COMPONENT IpiFr Dna ClosedUserGroup (Cug)"
Common Verbs	Help List Display

GROUP IpiFr Dna Address

Properties	Provisioned
Description	*Address* group contains attributes common to all *Dna's*. Every *Dna* used in the network is defined with this group of 2 attributes. String of address digits is complemented by type of address and Npi. These attributes are used to interpret format of the address digits.
Mib	IpiFr

ATTRIBUTE IpiFr Dna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Component
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *Dna* that is entered. Address may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Mib	IpiFr
Values	x121 e164
Default	x121

ATTRIBUTE IpiFr Dna dataNetworkAddress (dna)

Access	Read and write
Criticality	Component
Description	*Dna* attribute contains digits which form unique identifier of the customer interface. It can be compared (approximation only) to telephone number where phone number identifies unique telephone set. *Dna* digits are selected and assigned by network operators. *MaximumLenOfDna* is 15digits.
Mib	IpiFr
Values	BCD (1..15)

Default	No default

GROUP IpiFr Dna OutgoingOptions

Properties	Provisioned
Description	*OutgoingOptions* group defines call options of a *Dna* for calls which are made out of the interface represented by *Dna*. All these options are not used for calls arriving to the interface represented by *Dna*.
Mib	IpiFr

ATTRIBUTE IpiFr Dna outCalls (ouc)

Access	Read only
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing calls (from the DTE to the network) can be made using this particular *D*na. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Outgoing Calls Barred' feature for *Dnas* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	IpiFr
Values	disallowed allowed
Default	disallowed

ATTRIBUTE IpiFr Dna outDefaultPriority (odf)

Access	Read only
Criticality	Component
Description	This attribute, if set to ***normal*** indicates that the default priority for outgoing calls (from the DTE to the network) using this particular *Dna* is normal priority - if the priority is not specified by the DTE. If this attribute is set to ***high*** then the default priority for outgoing calls using this particular *Dna* is high priority.

	It can be overridden by the *discardPriority* under *DLCI Direct Call* subcomponent.
Mib	IpiFr
Values	normal high
Default	high

ATTRIBUTE IpiFr Dna defaultTransferPriority (dtp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the default transfer priority to network for all outgoing calls using this particular *Dna*. It is overRidden by the transferPriority provisioned in the *DLCI* Direct Call sub-component. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), routing metric (delay or throughput). When the transfer priority is set at ***high***, the trunk queue is set to high, the routing metric is set to delay. When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput. The default of *defaultTransferPriority* is ***high.***
Mib	IpiFr
Values	normal high

Default	high

ATTRIBUTE IpiFr Dna transferPriorityOverRide (tpor)

Access	Read and write
Criticality	Component
Description	When this attribute is set to ***yes***, the called end will use the calling end provisioning data on transfer priority to override its own provisioning data. If it is set ***no***, the called end will use its own provisioning data on transfer priority. For more information about transfer priority, please refer to the previous attribute *defaultTransferPriority.* The default of *transferPriorityOverRide* is ***yes***.
Mib	IpiFr
Values	yes no
Default	yes

GROUP IpiFr Dna IncomingOptions

Properties	Provisioned
Description	*IncomingOptions* defines set of options for incoming calls. These options are used for calls arriving to the interface represented by *Dna*. For calls originated from the interface, *IncomingOptions* attributes are not used.
Mib	IpiFr

ATTRIBUTE IpiFr Dna incCalls (inc)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then incoming calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This

	attribute corresponds to the CCITT 'Incoming Calls Barred' feature for DNAs in that incoming calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	IpiFr
Values	disallowed allowed
Default	allowed

ATTRIBUTE IpiFr Dna incAccess (ina)

Access	Read and write
Criticality	Component
Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) from the open (non-CUG) part of the network are permitted. It also permits incoming calls from DTEs that have Outgoing Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Closed User Group with Incoming Access' feature for *Dnas* in that incoming access is granted if this attribute is set to a value of ***allowed***.
Mib	IpiFr
Values	disallowed allowed
Default	disallowed

GROUP IpiFr Dna CallOptions

Properties	Provisioned
Description	*CallOptions* group defines additional options for calls not related directly to direction of a call.

Mib	IpiFr

ATTRIBUTE IpiFr Dna serviceCategory (cat)

Access	Read only
Criticality	Component
Description	This attribute is assigned for each different type of service within which this *Dna* is configured. It is placed into the Service Category attribute in the accounting record by both ends of the VC.
Mib	IpiFr
Values	gsp x25 enhancedIti ncs mlti sm ici dsp3270 iam mlhi term3270 iti bsi hostIti x75 hdsp3270 api3201 sdlc snaMultiHost redirectionServ trSnaTpad offnetNui gasServer vapServer vapAgent frameRelay ipiVc ipiFr

Default	ipiFr

ATTRIBUTE IpiFr Dna accountClass (acl)

Access	Read and write
Criticality	Component
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. Use of this attribute is decided by network operator and it is an arbitrary number.
Mib	IpiFr
Values	Decimal (0..255)
Default	0

ATTRIBUTE IpiFr Dna serviceExchange (sre)

Access	Read and write
Criticality	Component
Description	This attribute is an arbitrary number, entered by the network operator. It is included in the accounting record created by the VC.
Mib	IpiFr
Values	Decimal (0..255)
Default	0

COMPONENT IpiFr Dna ClosedUserGroup (Cug)

Instance	Decimal (0..255)
Groups	"GROUP IpiFr Dna Cug CugOptions"
Scope	Application
Description	*IpiFr Dna ClosedUserGroup* This group defines options associated with national or

international *CUG* Identifier. Other *DNAs* in the network can have *CUGs* defined which groups these *DNAs* by *CUG interlockCode*. If *DNAs* are defined with *CUGs*, calls from *DNAs* which do not have the same *interlockCode* defined are refused. Attributes *incAccess* and *outAccess* can override this rule. *IpiFr* handles only incoming calls. Therefore, Closed User Group for this interface is defined for validation of incoming PVC calls only.

Mib IpiFr

Common Verbs

Help
List
Display
Add
DELete

GROUP IpiFr Dna Cug CugOptions

Properties Provisioned

Description

This group defines options for a CUG. Attributes in this group define *ClosedUserGroup* options associated with *interlockCode*. *DNA's* with the same *CUG* (*interlockCode*) can make calls within this group. Various combinations which permit or prevent calls in the same *CUG* group are defined here.

Mib IpiFr

ATTRIBUTE IpiFr Dna Cug type

Access Read and write

Description This attribute specifies the CUG type - the CUG is either a national CUG, or an international CUG. International closed user groups are usually established between DTEs for which there is an X.75 Gateway between; whereas national closed user groups are usually established between DTEs for which there is no X.75 Gateway between. (National CUGs cannot normally traverse an X.75 Gateway).
If this attribute is set to ***national***, then the *CUG* is a national *CUG*, in which case, the *dnic* should be left at its default value

since it is not part of a national *CUG*. If this attribute is set to ***international***, then the *CUG* is an international *CUG*, in which case, the *dnic* should be set appropriately as part of the *CUG interlockCode*.

Mib: IpiFr

Values: national
international

Default: national

ATTRIBUTE IpiFr Dna Cug dnic

Access: Read and write

Description: This attribute specifies the *dnic* (Data Network ID Code) of the *CUG* by which packet networks are identified. This attribute is not applicable if the *CUG* is a ***national*** *CUG*, as specified by the CUG *type* attribute. There are usually 1 or 2 *dnics* assigned per country, for public networks. The U.S. is an exception where each BOC has a *dnic*. Also, a group of private networks can have its own *dnic*.

dnic value is not an arbitrary number. It is assigned by international agreement and controlled by CCITT.

Mib: IpiFr

Values: BCD (4)

Default: 0000

ATTRIBUTE IpiFr Dna Cug interlockCode (ilc)

Access: Read and write

Description:

This attribute specifies the *CUG* identifier of a national or international *CUG* call. It is an arbitrary number and it also can be called CUG in some descriptions. Interfaces (*DNA's*) defined with this number can make calls to *DNA's* with the same *interlockCode*.

Mib: IpiFr

Values	Decimal (0..65535)
Default	65535

ATTRIBUTE IpiFr Dna Cug incCalls (inc)

Access	Read and write
Description	This attribute, if set to ***allowed*** indicates that incoming calls (from the network to the DTE) can be made using this particular CUG. If set to ***disallowed***, then incoming calls cannot be made using this CUG - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Incoming Calls Barred' feature for CUGs in that incoming calls are barred if this attribute is set to a value of ***disallowed***.
Mib	IpiFr
Values	disallowed allowed
Default	allowed

COMPONENT IpiFr LogicalChannelNumber (Lcn)

Instance	Decimal (16..39)
Groups	"GROUP IpiFr Lcn OsiState (State)" "GROUP IpiFr Lcn Operational (Oper)" "GROUP IpiFr Lcn Provisioned (Prov)"
Scope	Application
Description	*IpiFr Lcn/n* This component represents one *Logical Channel Number*

responsible for logical connection with the PVC. There can be up to 24 instances of *Lcn* on the *IpiFr* component.

Mib	IpiFr
Subcomponents	"COMPONENT IpiFr Lcn DirectCall (Dc)"
Dyn. Subcomp.	"COMPONENT IpiFr Lcn Vc"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP IpiFr Lcn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpiFr

ATTRIBUTE IpiFr Lcn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: IpiFr

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE IpiFr Lcn operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: IpiFr

Values:
enabled (ena)
disabled (dis)

Default	disabled

ATTRIBUTE IpiFr Lcn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	IpiFr
Values	idle active (activ) busy
Default	idle

ATTRIBUTE IpiFr Lcn availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is

reservedForTest. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	IpiFr
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE IpiFr Lcn proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: IpiFr

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE IpiFr Lcn controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: IpiFr

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE IpiFr Lcn alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib IpiFr

Set of underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default No default

ATTRIBUTE IpiFr Lcn standbyStatus (osiStby)

Access Read only

Description If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib IpiFr

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE IpiFr Lcn unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	IpiFr
Values	false true
Default	false

GROUP IpiFr Lcn Operational (Oper)

Properties	Operational
Description	This group contains status of the internal IP network interface.
Mib	IpiFr

ATTRIBUTE IpiFr Lcn ipInterfaceDevice (ipIfD)

Access	Read only
Description	The status of the internal IP network interface is *inactive* until either the remoteIpAddress attribute is provisioned, or an IP packet is exchanged between a Network Management Station and the internal IP network interface (via the LCN). At this point, the status changes to *active*.

Mib	IpiFr
Values	inactive active
Default	inactive

ATTRIBUTE IpiFr Lcn opRemoteIpAddress (opRmtIpa)

Access	Read only
Description	This attribute indicates the IP address of the remote network device connected to this interface. The value is either 0.0.0.0 until the first data packet is received from the remote end, or is the value provisioned in *remoteIpAddress*.
Mib	IpiFr
Values	IP address
Default	0.0.0.0

ATTRIBUTE IpiFr Lcn packetsSent (pktS)

Access	Read only
Description	This attribute counts the number of IP packets sent from this interface.
Mib	IpiFr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE IpiFr Lcn packetsReceived (pktRx)

Access	Read only
Description	This attribute counts the number of IP packets received from the remote network device.
Mib	IpiFr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE IpiFr Lcn discardTxPackets (discTxPkt)

Access	Read only
Description	This attribute counts the number of IP packets destined to the remote end which were discarded by this interface.
Mib	IpiFr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE IpiFr Lcn discardRcvPackets (discRxPkt)

Access	Read only
Description	This attribute counts the number of IP packets received from the remote end which were discarded by this interface.
Mib	IpiFr
Values	Decimal (0..4294967295)
Default	No default

GROUP IpiFr Lcn Provisioned (Prov)

Properties	Provisioned
Description	This group provides the provisionable attributes for the *IpiFR Lcn* component.
Mib	IpiFr

ATTRIBUTE IpiFr Lcn remoteIpAddress (rmtIpa)

Access	Read and write
Criticality	Component
Description	This attribute specifies the IP address of the remote device connected to this *Lcn* interface. This device can be a host, and / or a gateway. If the device is a gateway, and *StaticRoute*s are defined using this gateway, it is recommended that this attribute be set. It

is also recommended to set this attribute, if management applications such as Software Download and SNMP, which can initiate IP traffic with Network Management Stations, are potentially using this *Lcn* interface. IP routing information within IpiFr is not known or activated for this *Lcn* interface until the remoteIpAddress is known.

When the destination IpAddress is left at its default value of 0.0.0.0, the calling IP address is learnt from the first data packet received.

Mib	IpiFr
Values	IP address
Default	0.0.0.0

COMPONENT IpiFr Lcn DirectCall (Dc)

Groups	"GROUP IpiFr Lcn Dc Options"
Scope	Application
Description	*IPIFR Lcn/x DC* This component defines direct call options for calls issued without operator intervention. Connection is complete and can be initiated automatically.
Mib	IpiFr
Common Verbs	Help List Display

GROUP IpiFr Lcn Dc Options

Properties	Provisioned
Description	Options group defines attributes associated with direct call. It defines complete connection in terms of path and call options. This connection can be permanent (pvc) or, in future release, switched (svc). It can have facilities. The total number of bytes of facilities including the facility codes, and all of the facility data from all of the four classes of facilities:

	CCITT_Facilities DTE_Facilities National_Facilities International_Facilities must not exceed 512 bytes.
Mib	IpiFr

ATTRIBUTE IpiFr Lcn Dc remoteNpi (rnpi)

Access	Read and write
Description	RemoteNumbering Plan Indicator (Npi) indicates the numbering plan used in the *remoteDna*.
Mib	IpiFr
Values	x121 e164
Default	x121

ATTRIBUTE IpiFr Lcn Dc remoteDna (rdna)

Access	Read and write
Description	This attribute specifies the Data Network Address (*Dna*) of the remote. This is the called (destination) DTE address (*Dna*) to which this direct call will be sent. Initially, the called DTE address attribute must be present, that is, there must be a valid destination address. However, it may be possible in the future to configure the direct call with a mnemonic address, in which case, this attribute will contain a zero-length *Dna*, and the mnemonic address will be carried as one of the facilities.
Mib	IpiFr
Values	BCD (1..15)
Default	No default

ATTRIBUTE IpiFr Lcn Dc remoteDlci (rdlci)

Access	Read and write

Description	This attribute provides the value of the remote DLCI (Data Link Connection Identifier)
Mib	IpiFr
Values	Decimal (16..1007)
Default	No default

ATTRIBUTE IpiFr Lcn Dc type

Access	Read only
Description	This attribute specifies the type of *Vc* call: ***permanentMaster***, ***permanentSlave***, If the value is set to ***permanentMaster,*** then a permanent connection will be established between 2 ends. The remote end must be defined as a ***permanentSlave, permanentBackupSlave*** or ***permanentSlaveWithBackup***. The connection cannot be established if the remote end is defined as anything else. The end defined as ***permanentMaster*** always initiates the calls. It will attempt to call once per minute. If the value is set to ***permanentSlave*** then a permanent connection will be established between 2 ends. The remote end must be defined as a ***permanentMaster.*** The connection cannot be established if the remote end is defined as anything else. The ***permanentSlave*** *end* will attempt to call once per minute.
Mib	IpiFr
Values	permanentMaster (master) permanentSlave (slave)
Default	permanentSlave

ATTRIBUTE IpiFr Lcn Dc transferPriority (tp)

Access	Read and write
Description	This attribute specifies the transfer priority to network for the outgoing calls using this particular *DLCI*. It overRides the *defaultTransferPriority* provisioned in its associated *Dna*

component.

The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority.

Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), routing metric (delay or throughput).

When the transfer priority is set at ***high***, the trunk queue is set to high, the routing metric is set to delay.

When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput.

The default of *transferPriority* is ***useDnaDefTP***. It means using the provisioning value under *defaultTransferPriority* of its associated *Dna* for this *DLCI*.

Mib	IpiFr
Values	normal high useDnaDefTP
Default	useDnaDefTP

ATTRIBUTE IpiFr Lcn Dc discardPriority (dp)

Access	Read and write
Description	This attribute specifies the discard priority for outgoing call using this *DLCI*. The discard priority has three provisioning values: ***normal***, ***high***, and ***useDnaDefPriority***. Traffic with normal priority are discarded first than the traffic with high priority. The *Dna* default value (provisioned by *outDefaultPriority*) is taken if this attribute is set to the value ***useDnaDefPriority***.

The default of *discardPriority* is ***useDnaDefPriority***.

Mib: IpiFr

Values:
normal
high
useDnaDefPriority

Default: useDnaDefPriority

COMPONENT IpiFr Lcn Vc

Groups:
"GROUP IpiFr Lcn Vc CallData (Cad)"
"GROUP IpiFr Lcn Vc IntervalData (Intd)"
"GROUP IpiFr Lcn Vc FrameRelayData (Frd)"

Scope: Application

Description: This component defines attributes collected by Frame Relay *Vc*.

Mib: IpiFr

Common Verbs:
Help
List
Display

VERB Ping IpiFr Lcn Vc

Impact: Passive

Description: Ping *[-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)]* FrUni/<*n*> Dlci/<*n*> Vc

Ping causes a query packet to be sent to the destination module where the Frame Relay DLCI VC terminates. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the ping query packet will be the same as that of the Frame Relay data except at the source and destination module. The ping

packets originate from the CP rather than the Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the Frame Relay FP.

Note that this command does not provide any information regarding the status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified.

The ping command can be issued with or without options. If no options are specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the roundTripDelay option is specified, the command reports the time taken to reach the destination and back. For the roundTripDelay option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the ping packets are generated and bounced back by the CP rather than the Frame Relay DLCI's FP.

The ping command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual

number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

GROUP IpiFr Lcn Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.
Mib	IpiFr

ATTRIBUTE IpiFr Lcn Vc type

Access	Read only

Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.
Mib	IpiFr
Values	pvc svc spvc frf10spvc
Default	No default

ATTRIBUTE IpiFr Lcn Vc state

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	IpiFr
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE IpiFr Lcn Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	IpiFr

Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE IpiFr Lcn Vc diagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	IpiFr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE IpiFr Lcn Vc previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	IpiFr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE IpiFr Lcn Vc calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	IpiFr

Values	x121 e164
Default	No default

ATTRIBUTE IpiFr Lcn Vc calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	IpiFr
Values	BCD (1..15)
Default	No default

ATTRIBUTE IpiFr Lcn Vc calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	IpiFr
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE IpiFr Lcn Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	IpiFr
Values	x121 e164
Default	No default

ATTRIBUTE IpiFr Lcn Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	IpiFr
Values	BCD (1..15)
Default	No default

ATTRIBUTE IpiFr Lcn Vc callingLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	IpiFr
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE IpiFr Lcn Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	IpiFr
Values	yes no
Default	No default

ATTRIBUTE IpiFr Lcn Vc fastSelectCall

Access	Read only

Description	This attribute displays that this is a fast select call.
Mib	IpiFr
Values	yes no
Default	No default

ATTRIBUTE IpiFr Lcn Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	IpiFr
Values	high normal
Default	No default

ATTRIBUTE IpiFr Lcn Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	IpiFr
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE IpiFr Lcn Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	IpiFr

Values	normal high
Default	No default

ATTRIBUTE IpiFr Lcn Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	IpiFr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE IpiFr Lcn Vc maxSubnetPktSize

Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	IpiFr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE IpiFr Lcn Vc rcosToNetwork (rcosto)

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	IpiFr
Values	throughput delay multimedia
Default	No default

ATTRIBUTE IpiFr Lcn Vc rcosFromNetwork (rcosfrom)

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	IpiFr
Values	throughput delay multimedia
Default	No default

ATTRIBUTE IpiFr Lcn Vc emissionPriorityToNetwork (epto)

Access	Read only
Description	This attribute displays the network internal emission priority to the network.
Mib	IpiFr
Values	normal high interrupting
Default	No default

ATTRIBUTE IpiFr Lcn Vc emissionPriorityFromNetwork (epfrom)

Access	Read only
Description	This attribute displays the network internal emission priority from the network.
Mib	IpiFr
Values	normal high interrupting
Default	No default

ATTRIBUTE IpiFr Lcn Vc dataPath (dapa)

Access	Read only
Description	This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed value of this attribute can be different from the provisioned value. If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system) If the connection is using ***dprsMcsOnly*** data path, the string ***dprsMcsOnly*** is displayed. If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.
Mib	IpiFr
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE IpiFr Lcn Vc dprsMcsEndPoint (dmep)

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components. If the connection is using ***dprsOnly*** data path, this attribute is empty. If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.
Mib	IpiFr
List of	The name of the component
Default	No default

GROUP IpiFr Lcn Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	IpiFr

ATTRIBUTE IpiFr Lcn Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	IpiFr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE IpiFr Lcn Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	IpiFr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE IpiFr Lcn Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	IpiFr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE IpiFr Lcn Vc startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	IpiFr
Values	Time (DHMS)
Default	No default

ATTRIBUTE IpiFr Lcn Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	IpiFr
Values	Decimal (0..4294967295)

Default	No default

GROUP IpiFr Lcn Vc FrameRelayData (Frd)

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods. Frame Relay *Vc* uses a best effort data packet delivery protocol and a different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*. Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers
Mib	IpiFr

ATTRIBUTE IpiFr Lcn Vc frmCongestedToSubnet

Access	Read only
Description	This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc cannotForwardToSubnet

Access	Read only
Description	This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion. Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc notDataXferToSubnet

Access	Read only
Description	This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.
Mib	IpiFr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE IpiFr Lcn Vc combErrorsFromSubnet

Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc duplicatesFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc notDataXferFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc frmLossTimeouts

Access	Read only
Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc ooSeqByteCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc peakOoSeqPktCount

Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	IpiFr
Values	Decimal (0..5000)

Default	No default

ATTRIBUTE IpiFr Lcn Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal subnet packet disorder (not due to subnet packet discard). Current implementation also uses this statistics to set a maximum size for the out-of-sequenced queue.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc sendSequenceNumber

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	IpiFr
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE IpiFr Lcn Vc pktRetryTimeouts

Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.

Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc peakRetryQueueSize

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc subnetRecoveries

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.
Mib	IpiFr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE IpiFr Lcn Vc ooSeqPktCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss

	frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	IpiFr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE IpiFr Lcn Vc peakOoSeqByteCount

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	IpiFr
Values	Decimal (0..50000)
Default	No default

COMPONENT IpiFr StaticRoute (Sr)

Instance	IP address
Groups	"GROUP IpiFr Sr Provisioned (Prov)"
Scope	Application
Description	*IpiFr StaticRoute/destIpAddress* This component contains information for setting up a static routes on the IpiFr service. These provisioned static IP routes allow the ability to specify IP routes to network management stations that are not directly connected to the node. The component is indexed by a destination IP Address. It represents the static IP route to a particular IP host, subnetwork, or network. The default route IP address is indexed by 0.0.0.0. Note that sub-network routes are identified using IpiFr's provisioned *subnetMask*. This *subnetMask* only applies to the IP

network for which IpiFr's IP Address belongs. Therefore, sub-network routes are only supported for this local IP network.

Mib IpiFr

Common Verbs
Help
List
Display
Add
DELete

GROUP IpiFr Sr Provisioned (Prov)

Properties Provisioned

Description

This group provides the provisionable parameters for setting up a static route.

Mib IpiFr

ATTRIBUTE IpiFr Sr gatewayIpAddress (gtyIpa)

Access Read and write

Criticality Component

Description

The attribute specifies the IP Address of the next hop in this route to the destination IP Address. For this static route to be active, the value of this attribute must match the *opRemoteIpAddress* attribute of one of the *Lcn* components.

Mib IpiFr

Values IP address

Default 0.0.0.0

ATTRIBUTE IpiFr Sr backupGatewayIpAddress (bGtyIpa)

Access Read and write

Criticality Component

Description	The attribute specifies an ordered list of alternative gateways to use for the route to the destination IP Address. This attribute is only supported for the default route. If the *Lcn* interface of the current gateway IP Address fails, then the *backupGatewayIpAddress*es, listed in this attribute, are searched, in order, for a gatewayIpAddress with an enabled *Lcn*. If found, the static route to this destination IP Address is updated to use the found gateway IP Address. Note that an *Lcn* interface can fail due to either the *Vc* through the network failing, or an *Lmi* indication that the far-end link is failed.
Mib	IpiFr
Values	IP address
Replication	Decimal (1..23)
Default	No default

COMPONENT IpiFr Route (R)

Instance	IP address
Groups	"GROUP IpiFr R Operational (Oper)"
Scope	Application
Description	*IpiFr Route/destIpAddress* This dynamic component represents an active IP route within the IpiFr service. The component is indexed by the destination IP Address of the IP route. It represents the IP route to a particular IP host, subnetwork, or network. The default route IP address is indexed by 0.0.0.0. Note that only an active route is shown as an *IpiFr Route/<IP_Address>*. A provisioned static route (that is, *IpiFr StaticRoute/<IP_Address>*) will be listed as an active route only if it's Lcn interface is enabled (that is, the associated VC through

	the network is up, and the Frame Relay *Lmi* is reporting the far-end link is up).
Mib	IpiFr
Common Verbs	Help List Display

GROUP IpiFr R Operational (Oper)

Properties	Operational
Description	This group contains operational status of the static route
Mib	IpiFr

ATTRIBUTE IpiFr R gtyIpAddr (gtyIpa)

Access	Read only
Description	The attribute specifies the IP Address of the next hop in this route to the destination IP Address.
Mib	IpiFr
Values	IP address
Default	0.0.0.0

ATTRIBUTE IpiFr R lcnIf (lcnIf)

Access	Read only
Description	This attribute specifies the *Lcn* interface used by this IP route.
Mib	IpiFr
Values	Decimal (16..39)
Default	No default

ATTRIBUTE IpiFr R type

Access	Read only

Description	This attribute indicates whether a route is going to a host or a subnet or a network.
Mib	IpiFr
Values	host subnet network
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component IpiFr

Release 6.1

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7400/15000/20000

Component Ipivc

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COMPONENT IpInterfaceOverVc (Ipivc)

Groups	"GROUP Ipivc Provisioned (Prov)"
Scope	Application
Description	IpiVc The IP interface over VC allows access to the module for external network management.
Mib	IpiVc
Subcomponents	"COMPONENT Ipivc DataNetworkAddress (Dna)"
Opt. Subcomp.	"COMPONENT Ipivc DefaultRoute (Dr)"
Dyn. Subcomp.	"COMPONENT Ipivc LogicalChannelNumber (Lcn)"
Common Verbs	Help List Display Add DELete

GROUP Ipivc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the IpiVc component.

Mib	IpiVc

ATTRIBUTE Ipivc ipAddress (ipa)

Access	Read and write
Description	This IP Address represents the IP address of the IP interface.
Mib	IpiVc
Values	IP address
Default	0.0.0.0

ATTRIBUTE Ipivc maximumNumberOfLcn (maxLcn)

Access	Read only
Description	This attribute contains the maximum number of LCNs that can be setup to the IP Interface over Vc. It defines the maximum number of calls that the external network management systems can setup to IpiVc simultaneously.
Mib	IpiVc
Values	Decimal (24)
Default	24

COMPONENT Ipivc DataNetworkAddress (Dna)

Groups	"GROUP Ipivc Dna Address" "GROUP Ipivc Dna OutgoingOptions" "GROUP Ipivc Dna IncomingOptions" "GROUP Ipivc Dna CallOptions"
Scope	Application
Description	*IpiVc Dna* This is the description of the generic *Vc Dna* component. It includes the super-set of all attributes which may apply to a VC. Particular applications will typically offer only a subset of these

	attributes by providing a definition of their own Dna subcomponent.
Mib	IpiVc
Subcomponents	"COMPONENT Ipivc Dna ClosedUserGroup (Cug)"
Common Verbs	Help List Display

GROUP Ipivc Dna Address

Properties	Provisioned
Description	DnaAddress group contains attributes common to all Dna's. Every Dna used in the network is defined with this group 0f 2 attributes. String of address digits is complemented by type of address and Npi. These attributes are used to interpret format of the address digits.
Mib	IpiVc

ATTRIBUTE Ipivc Dna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Component
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the Dna that is entered. Address may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Mib	IpiVc
Values	x121 e164
Default	x121

ATTRIBUTE Ipivc Dna dataNetworkAddress (dna)

Access	Read and write
Criticality	Component
Description	*Dna* attribute contains digits which form unique identifier of the customer. It is the equivalent of the telephone number in the telephone network. MaximumLenOfDna is 15digits.
Mib	IpiVc
Values	BCD (1..15)
Default	No default

GROUP Ipivc Dna OutgoingOptions

Properties	Provisioned
Description	DnaOutOptionsProv group defines call options of a Dna for calls which are made out of the interface represented by Dna. All these options are not used for calls arriving to the interface represented by Dna.
Mib	IpiVc

ATTRIBUTE Ipivc Dna outCalls (ouc)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing calls (from the DTE to the network) can be made using this particular DNA. If set to a value of ***disallowed***, then outgoing calls cannot be made using this DNA - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Outgoing Calls Barred' feature for DNAs in that outgoing calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this DNA to be usable.
Mib	IpiVc

Values	disallowed allowed
Default	disallowed

ATTRIBUTE Ipivc Dna defaultTransferPriority (dtp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the default transfer priority to network for all outgoing calls using this particular *Dna*. It is overRidden by the transferPriority provisioned in the *DLCI* Direct Call sub-component. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), routing metric (delay or throughput). When the transfer priority is set at ***high***, the trunk queue is set to high, the routing metric is set to delay. When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput. The default of *defaultTransferPriority* is ***normal***.
Mib	IpiVc
Values	normal high
Default	normal

ATTRIBUTE Ipivc Dna transferPriorityOverRide (tpor)

Access	Read and write
Criticality	Component
Description	When this attribute is set to ***yes***, the called end will use the calling end provisioning data on transfer priority to override its own provisioning data. If it is set ***no***, the called end will use its own provisioning data on transfer priority. For more information about transfer priority, please refer to the previous attribute *defaultTransferPriority.* The default of *transferPriorityOverRide* is ***no***.
Mib	IpiVc
Values	yes no
Default	no

GROUP Ipivc Dna IncomingOptions

Properties	Provisioned
Description	DnaIncOptions defines a set of options for incoming calls. These options are used for calls arriving to the interface represented by Dna. For calls originated from the interface, IncomingOptions attributes are not used.
Mib	IpiVc

ATTRIBUTE Ipivc Dna incCalls (inc)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) can be made to this DNA. If set to a value of ***disallowed***, then incoming calls cannot be made to this DNA - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Incoming Calls Barred'

feature for DNAs in that incoming calls are barred if this attribute is set to a value of ***disallowed***.

Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this DNA to be usable.

Mib	IpiVc
Values	disallowed allowed
Default	allowed

ATTRIBUTE Ipivc Dna incHighPriorityReverseCharge (ihp)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that incoming high priority, reverse charged calls (from the network to the DTE) can be made to this DNA. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls will be cleared by the local DCE. This attribute, together with the *incNormalPriorityReverseChargeCalls* attribute corresponds to the CCITT 'Reverse Charging Acceptance' feature for DNAs in that reverse charged calls are accepted if both attributes are set to a value of ***allowed***. This attribute is ignored if the corresponding attribute, incCalls is set to a value of ***disallowed***.
Mib	IpiVc
Values	disallowed allowed
Default	allowed

ATTRIBUTE Ipivc Dna incNormalPriorityReverseCharge (inp)

Access	Read only
Criticality	Component

Description	This attribute, if set to a value of ***allowed*** indicates that incoming normal priority, reverse charged calls (from the network to the DTE) can be made to this DNA. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls will be cleared by the local DCE. This attribute, together with the *incHighPriorityReverseChargeCalls* attribute corresponds to the CCITT 'Reverse Charging Acceptance' feature for DNAs in that reverse charged calls are accepted if both attributes are set to a value of ***allowed***. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	IpiVc
Values	disallowed allowed
Default	allowed

ATTRIBUTE Ipivc Dna incIntlNormalCharge (iin)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that incoming international normal charged calls (from the network to the DTE) can be made to this DNA. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls will be cleared by the local DCE. This attribute also currently controls access to/from the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls (also normal charged) are allowed. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	IpiVc
Values	disallowed allowed
Default	allowed

ATTRIBUTE Ipivc Dna incIntlReverseCharge (iir)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that incoming international reverse charged calls (from the network to the DTE) can be made to this DNA. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls will be cleared by the local DCE. This attribute also currently controls access to/from the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls (also normal charged) are ***allowed***. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	IpiVc
Values	disallowed allowed
Default	allowed

ATTRIBUTE Ipivc Dna incFastSelect (ifs)

Access	Read only
Criticality	Component
Description	This attribute specifies whether fast select calls may be received. This attribute, if set to a value of ***allowed*** indicates that incoming fast select calls (from the network to the DTE) can be made to this DNA. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Fast Select Acceptance' feature for DNAs in that incoming fast select calls are accepted if this attribute is set to a value of ***allowed***. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	IpiVc

Values	disallowed allowed
Default	disallowed

ATTRIBUTE Ipivc Dna incSameService (iss)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls from the same service type (for example, X.25, ITI, SNA) (from the network to the DTE) can be made to this DNA. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls are cleared by the local DCE. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	IpiVc
Values	disallowed allowed
Default	allowed

ATTRIBUTE Ipivc Dna incChargeTransfer (ict)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***yes*** indicates that the charges for incoming normal charged calls from a DTE with the same NIC (calls from the network to the DTE) will be transferred to the called DTE. If set to a value of ***no***, then charges will not be transferred. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	IpiVc
Values	no yes

Default	no

ATTRIBUTE Ipivc Dna incAccess (ina)

Access	Read only
Criticality	Component
Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) from the open (non-CUG) part of the network are permitted. It also permits incoming calls from DTEs that have Outgoing Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made to this DNA - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Closed User Group with Incoming Access' feature for DNAs in that incoming access is granted if this attribute is set to a value of ***allowed***.
Mib	IpiVc
Values	disallowed allowed
Default	disallowed

GROUP Ipivc Dna CallOptions

Properties	Provisioned
Description	DnaCallOptions group defines additional options for calls not related directly to direction of a call.
Mib	IpiVc

ATTRIBUTE Ipivc Dna serviceCategory (cat)

Access	Read only
Criticality	Component
Description	This attribute is computed based on the type of service within which this DNA is configured. It is placed into the Service Category attributes in the accounting record by both ends of the VC.

Mib	IpiVc
Values	gsp x25 enhancedIti ncs mlti sm ici dsp3270 iam mlhi term3270 iti bsi hostIti x75 hdsp3270 api3201 sdlc snaMultiHost redirectionServ trSnaTpad offnetNui gasServer vapServer vapAgent frameRelay ipiVc
Default	ipiVc

ATTRIBUTE Ipivc Dna packetSizes (pks)

Access	Read only
Criticality	Component
Description	This attribute indicates the allowable packet sizes supported for calls setup using this DNA. To set a given packet size to be allowed on the DNA, the packet size is entered, and the corresponding bit in the structure is set to a value of 1. To set a given packet size to be disallowed on the DNA, the packet size is

	entered preceded with the '~' character, and the corresponding bit in the structure is set to a value of 0. CCITT recommends that packet size 128 always be supported.
Mib	IpiVc
Set of	16 32 64 128 256 512 1024 2048 4096
Default	(2048)

ATTRIBUTE Ipivc Dna defaultRecvFrmNetworkPacketSize (rps)

Access	Read only
Criticality	Component
Description	This attribute indicates the default local receive packet size from network to DTE for all calls using this particular DNA.
Mib	IpiVc
Values	16 32 64 128 256 512 1024 2048 4096
Default	2048

ATTRIBUTE Ipivc Dna defaultSendToNetworkPacketSize (sps)

Access	Read only
Criticality	Component
Description	This attribute indicates the default local send packet size from DTE to network for all calls using this particular DNA.
Mib	IpiVc
Values	16 32 64 128 256 512 1024 2048 4096
Default	2048

ATTRIBUTE Ipivc Dna defaultRecvFrmNetworkThruputClass (drt)

Access	Read only
Criticality	Component
Description	This attribute indicates the default receive throughput class for all calls using this particular DNA.
Mib	IpiVc
Values	Decimal (0..15)
Default	10

ATTRIBUTE Ipivc Dna defaultSendToNetworkThruputClass (dst)

Access	Read only
Criticality	Component
Description	This attribute indicates the default send throughput class for all calls using this particular DNA.

Mib	IpiVc
Values	Decimal (0..15)
Default	10

ATTRIBUTE Ipivc Dna defaultRecvFrmNetworkWindowSize (rws)

Access	Read only
Criticality	Component
Description	This attribute indicates the default number of data packets that can be received by the DTE from the DCE before more packets can be received. This view is oriented with respect to the DTE.
Mib	IpiVc
Values	Decimal (1..7)
Default	2

ATTRIBUTE Ipivc Dna defaultSendToNetworkWindowSize (sws)

Access	Read only
Criticality	Component
Description	This attribute indicates the number of data packets that can be transmitted from the DTE to the DCE and must be acknowledged before more packets can be transmitted.
Mib	IpiVc
Values	Decimal (1..7)
Default	2

ATTRIBUTE Ipivc Dna packetSizeNegotiation (psn)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***local*** indicates that packet sizes can be negotiated locally at the interface irrespective of the remote interface. If set to a value of ***endToEnd***, then local

	negotiation is not permitted and packet sizes are negotiated between both ends of the VC.
Mib	IpiVc
Values	endToEnd local
Default	local

ATTRIBUTE Ipivc Dna accountClass (acl)

Access	Read and write
Criticality	Component
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. Use of this attribute is decided by network operator. This attribute is returned by the local VC in the accounting record for all calls setup using this particular DNA.
Mib	IpiVc
Values	Decimal (0..255)
Default	0

ATTRIBUTE Ipivc Dna serviceExchange (sre)

Access	Read and write
Criticality	Component
Description	This attribute is an arbitrary number, Data Service Exchange, as entered by the network operator and reported in accounting record. It is converted into an internal 8-bit integer value for use in the accounting record as well as in various X.25 and X.75 Tariff utilities.
Mib	IpiVc
Values	Decimal (0..255)
Default	0

ATTRIBUTE Ipivc Dna cugFormat (cft)

Access	Read only
Criticality	Component
Description	This attribute specifies which cug format is used when DTE signals CUG indices, basic or extended. This attribute, if set to a value of ***extended*** indicates that the DTE signals and receives CUG indices in extended CUG format. If set to a value of ***basic***, then the DTE signals and receives CUG indices in the basic CUG format.
Mib	IpiVc
Values	basic extended
Default	basic

ATTRIBUTE Ipivc Dna cug0AsNonCugCall (cnc)

Access	Read only
Criticality	Component
Description	This attribute, if set to a value of ***allowed*** indicates that when a CUG index of 0 is signaled in a call request packet, the call is treated as a non-CUG call. If this attribute is set to a value of ***disallowed***, then a CUG index of 0 is treated as an index, and an attempt is made to find the particular CUG corresponding with the DNA.
Mib	IpiVc
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Ipivc Dna fastSelectCallsOnly (fso)

Access	Read only
Criticality	Component

Description	This attribute, if set to a value of ***yes***, indicates that the service is permitted restricted fast select calls only in both the incoming and the outgoing directions using this DNA. If set to a value of ***no***, then non fast select calls are permitted as well.
Mib	IpiVc
Values	no yes
Default	no

COMPONENT Ipivc Dna ClosedUserGroup (Cug)

Groups	"GROUP Ipivc Dna Cug CugOptions"
Scope	Application
Description	*IpiVc Dna Cug* Closed User Group options defines options associated with national or international Cug Identifier. Other DNAs in the network can have CUGs defined which groups these DNAs by CUG Interlock Code. If DNAs are defined with CUGs, calls from DNAs that do not have the same interlock code are refused. Attributes *incAccess* and *outAccess* can override this rule.
Mib	IpiVc
Common Verbs	Help List Display

GROUP Ipivc Dna Cug CugOptions

Properties	Provisioned
Description	This group defines options for Dna closed user group. Attributes in this group define options associated with interlockCode. Dna's with the same Cug (interlockCode) can make calls within this group. Various combinations which permit or prevent calls in the same Cug group are defined here.
Mib	IpiVc

ATTRIBUTE Ipivc Dna Cug type

Access	Read and write
Description	This attribute specifies the CUG type - the CUG is either a national CUG, or an international CUG. International closed user groups are usually established between DTEs for which there is an X.75 Gateway between; whereas national closed user groups are usually established between DTEs for which there is no X.75 Gateway between. (National CUGs cannot normally traverse an X.75 Gateway). If this attribute is set to ***national***, then the CUG is a national CUG, in which case, the DNIC should be left at its default value of BCD.0000 since it is not part of a national CUG. If this attribute is set to ***international***, then the CUG is an international CUG, in which case, the DNIC should be set appropriately as part of the CUG interlock code.
Mib	IpiVc
Values	national international
Default	national

ATTRIBUTE Ipivc Dna Cug dnic

Access	Read and write
Description	This attribute specifies the DNIC (Data Network ID Code) of the Cug by which packet networks are identified if the Cug is an International Cug - it is specified as 4 BCD digits. This attribute is not applicable if the Cug is a National Cug, as specified by the Cug TYPE attribute. There are usually 1 or 2 DNICs assigned per country, for public networks. The U.S. is an exception where each BOC has a DNIC. Also, a group of private networks can have its own DNIC. DNIC value is not an arbitrary number. It is assigned by international agreement and controlled by CCITT.
Mib	IpiVc
Values	BCD (4)

Default	0000

ATTRIBUTE Ipivc Dna Cug interlockCode (ilc)

Access	Read and write
Description	This attribute specifies the Cug Identifier of a national or international Cug call. It is an arbitrary number and it also can be called Cug in some descriptions. Interfaces (DNAs) defined with this number can make calls to DNAs with the same interlock code.
Mib	IpiVc
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Ipivc Dna Cug outCalls (ouc)

Access	Read only
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing calls (from the DTE into the network) can be made using this particular CUG. If set to a value of ***disallowed***, then outgoing calls cannot be made using this CUG - such calls will be cleared by the local DCE. This attribute corresponds to the CCITT 'Outgoing Calls Barred' feature for CUGs in that outgoing calls are barred if this attribute is set to a value of ***disallowed***.
Mib	IpiVc
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Ipivc Dna Cug incCalls (inc)

Access	Read only
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) can be made using this particular CUG. If set to a value of ***disallowed***, then incoming calls cannot be made using this CUG - such calls will be cleared

by the local DCE.
This attribute corresponds to the CCITT 'Incoming Calls Barred' feature for CUGs in that incoming calls are barred if this attribute is set to a value of ***disallowed***.

Mib: IpiVc

Values: disallowed
allowed

Default: allowed

ATTRIBUTE Ipivc Dna Cug privileged (pri)

Access: Read and write

Description: This attribute, if set to a value of ***yes*** indicates that this CUG is a privileged CUG. In DPN, at least one side of a call setup within a CUG must have the CUG as a privileged CUG. If set to a value of ***no***, then the CUG is not privileged.
If both the local DTE and the remote DTE subscribe to the CUG, but it is not privileged, then the call will be cleared. This attribute is typically used for a host DTE which must accept calls from many other DTEs in which case the other DTEs cannot call one another, but can call the host. In this example, the host would have the privileged CUG, and the other DTEs would belong to the same CUG, but it would not be privileged.

Mib: IpiVc

Values: no
yes

Default: yes

COMPONENT Ipivc DefaultRoute (Dr)

Groups: "GROUP Ipivc Dr Provisioned (Prov)"

Scope: Application

Description:

IpiVc DefaultRoute

This component contains information for setting up a default

route on the IpiVc service.The default route feature permits establishment of a TCP/IP connection to the Software Distribution (SDS).

Mib IpiVc

Common Verbs

Help
List
Display
Add
DELete

GROUP Ipivc Dr Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisionable attributes for setting up a default route on the IpiVc service.

Mib IpiVc

ATTRIBUTE Ipivc Dr callingIpAddress (ipa)

Access Read and write

Criticality Component

Description

The field specifies the IP Address of the remote end, which issues the X.25 call.

Mib IpiVc

Values IP address

Default 0.0.0.0

ATTRIBUTE Ipivc Dr callingNumberingPlanIndicator (npi)

Access Read and write

Criticality Component

Description	This field specifies the numbering plan of the address.
Mib	IpiVc
Values	x121 e164
Default	x121

ATTRIBUTE Ipivc Dr callingDataNetworkAddress (dna)

Access	Read and write
Criticality	Component
Description	This field specifies the address (in Binary Coded Decimal BCD format) assigned to the remote end.
Mib	IpiVc
Values	BCD (1..15)
Default	No default

COMPONENT Ipivc LogicalChannelNumber (Lcn)

Instance	Decimal (16..39)
Groups	"GROUP Ipivc Lcn OsiState (State)" "GROUP Ipivc Lcn Operational (Oper)"
Scope	Application
Description	IpiVc Lcn/<n> The Logical Channel Number responsible for the logical

connection with the VC. There can be up to 24 instances of Lcn on the IpiVc component.

Mib IpiVc

Dyn. Subcomp. "COMPONENT Ipivc Lcn Vc"

Common Verbs
Help
List
Display
LOCK
Unlock

GROUP Ipivc Lcn OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib IpiVc

ATTRIBUTE Ipivc Lcn adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: IpiVc

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Ipivc Lcn operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: IpiVc

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Ipivc Lcn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	IpiVc
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Ipivc Lcn availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can

be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	IpiVc
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Ipivc Lcn proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: IpiVc

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Ipivc Lcn controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: IpiVc

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Ipivc Lcn alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib IpiVc

Set of underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default No default

ATTRIBUTE Ipivc Lcn standbyStatus (osiStby)

Access Read only

Description If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib IpiVc

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Ipivc Lcn unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	IpiVc
Values	false true
Default	false

GROUP Ipivc Lcn Operational (Oper)

Properties	Operational
Description	This group contains status of the internal IP network interface.
Mib	IpiVc

ATTRIBUTE Ipivc Lcn ipInterfaceDevice (ioIfD)

Access	Read only
Description	The status of the internal IP network interface is *inactive* until an IP packet is exchanged between a Network Management Station and the internal IP network interface (via the LCN). At this point, the status changes to *active*.
Mib	IpiVc

Values	inactive active
Default	inactive

ATTRIBUTE Ipivc Lcn remoteIpAddress (rmtIpa)

Access	Read only
Description	This attribute specifies the IP address of the remote network device connected to this interface. The destinationIpAddress default is 0.0.0.0, until the first data packet is received from the remote end.
Mib	IpiVc
Values	IP address
Default	0.0.0.0

ATTRIBUTE Ipivc Lcn packetsSent (pktS)

Access	Read only
Description	This attribute counts the number of IP packets sent from this interface.
Mib	IpiVc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ipivc Lcn packetsReceived (pktRx)

Access	Read only
Description	This attribute counts the number of IP packets received from the remote network device.
Mib	IpiVc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ipivc Lcn discardTxPackets (discTxPkt)

Access	Read only
Description	This attribute counts the number of IP packets destined to the remote end which were discarded by the interface.
Mib	IpiVc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ipivc Lcn discardRcvPackets (discRxPkt)

Access	Read only
Description	This attribute counts number of IP packets received from the remote end which were discarded by this interface.
Mib	IpiVc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Ipivc Lcn Vc

Groups	"GROUP Ipivc Lcn Vc CallData (Cad)" "GROUP Ipivc Lcn Vc IntervalData (Intd)" "GROUP Ipivc Lcn Vc Statistics (Stats)"
Scope	Application
Description	... *Vc()* This component defines display of general Vc dynamic attributes
Mib	IpiVc
Common Verbs	Help List Display

GROUP Ipivc Lcn Vc CallData (Cad)

Properties	Operational

Description	This group represents operational call data related to General *Vc*. It can be displayed only for General *Vc* which is created by application.
Mib	IpiVc

ATTRIBUTE Ipivc Lcn Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc*** or ***svc***. *type* is provided at provisioning time.
Mib	IpiVc
Values	pvc svc
Default	No default

ATTRIBUTE Ipivc Lcn Vc state

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	IpiVc
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Ipivc Lcn Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	IpiVc
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Ipivc Lcn Vc diagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	IpiVc
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Ipivc Lcn Vc previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	IpiVc
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Ipivc Lcn Vc calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	IpiVc
Values	x121 e164
Default	No default

ATTRIBUTE Ipivc Lcn Vc calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	IpiVc
Values	BCD (1..15)
Default	No default

ATTRIBUTE Ipivc Lcn Vc calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	IpiVc
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Ipivc Lcn Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.

Mib	IpiVc
Values	x121 e164
Default	No default

ATTRIBUTE Ipivc Lcn Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	IpiVc
Values	BCD (1..15)
Default	No default

ATTRIBUTE Ipivc Lcn Vc callingLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	IpiVc
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Ipivc Lcn Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	IpiVc
Values	yes no

Default	No default

ATTRIBUTE Ipivc Lcn Vc fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	IpiVc
Values	yes no
Default	No default

ATTRIBUTE Ipivc Lcn Vc localRxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of send packets.
Mib	IpiVc
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE Ipivc Lcn Vc localTxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of send packets.
Mib	IpiVc
Values	unknown 16

	32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE Ipivc Lcn Vc localTxWindowSize

Access	Read only
Description	This attribute displays the send window size provided on incoming call packets or the default when a call request packet does not explicitly provide the window size.
Mib	IpiVc
Values	Decimal (0..127)
Default	No default

ATTRIBUTE Ipivc Lcn Vc localRxWindowSize

Access	Read only
Description	This attribute displays the receive window size provided on incoming call packets or the default when a call request does not explicitly provide the window sizes.
Mib	IpiVc
Values	Decimal (0..127)
Default	No default

ATTRIBUTE Ipivc Lcn Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	IpiVc

Values	high normal
Default	No default

ATTRIBUTE Ipivc Lcn Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	IpiVc
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE Ipivc Lcn Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	IpiVc
Values	normal high
Default	No default

ATTRIBUTE Ipivc Lcn Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	IpiVc
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Ipivc Lcn Vc subnetTxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of the data packets on this *Vc*.
Mib	IpiVc
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE Ipivc Lcn Vc subnetTxWindowSize

Access	Read only
Description	This attribute displays the current send window size of *Vc*.
Mib	IpiVc
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Ipivc Lcn Vc subnetRxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of receive packets.
Mib	IpiVc
Values	unknown 16 32

	64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE Ipivc Lcn Vc subnetRxWindowSize

Access	Read only
Description	This attribute displays the receive window size provided on incoming call packets and to the default when a call request does not explicitly provide the window sizes.
Mib	IpiVc
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Ipivc Lcn Vc maxSubnetPktSize

Access	Read only
Description	This attribute displays the maximum packet size allowed on *Vc*.
Mib	IpiVc
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Ipivc Lcn Vc transferPriorityToNetwork

Access	Read only
Description	This attribute displays the priority in which data is transferred to the network. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with

normal priority.

Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput).

When the transfer priority is set at ***high***, the trunk queue is set to high, the routing metric is set to delay.

When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput.

Mib: IpiVc

Values: normal
high

Default: No default

ATTRIBUTE Ipivc Lcn Vc transferPriorityFromNetwork

Access: Read only

Description: This attribute displays the priority in which data is transferred from the network.

The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority.

Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput).

When the transfer priority is set at ***high***, and the trunk queue is set to high, the routing metric is set to delay.

When the transfer priority is set at ***normal***, the trunk queue is set to normal, and the routing metric is set to throughput.

Mib: IpiVc

Values	normal high
Default	No default

GROUP Ipivc Lcn Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	IpiVc

ATTRIBUTE Ipivc Lcn Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	IpiVc
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Ipivc Lcn Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	IpiVc

Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Ipivc Lcn Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	IpiVc
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Ipivc Lcn Vc startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	IpiVc
Values	Time (DHMS)
Default	No default

ATTRIBUTE Ipivc Lcn Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both

ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.

Mib IpiVc

Values Decimal (0..4294967295)

Default No default

GROUP Ipivc Lcn Vc Statistics (Stats)

Properties Operational

Description ... *Statistics(Stats)*
This group defines general attributes collected by general *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots.
Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods.

Mib IpiVc

ATTRIBUTE Ipivc Lcn Vc ackStackingTimeouts

Access Read only

Description This attribute counts the number of ack stacking timer expiries. It is used as an indicator of the acknowledgment behavior across the subnet when ack stacking is in effect. If it expires often, usually this means end users will experience longer delay.
The ack stacking timer specifies how long the *Vc* will wait before finally sending the subnet acknowledgment. if this attribute is set to a value of 0, then the *Vc* will automatically return acknowledgment packets without delay. If this attribute is set to a value other than zero, then the *Vc* will wait for this amount of time in an attempt to piggyback the acknowledgment packet on another credit or data packet. If the *Vc* cannot piggyback the

acknowledgment packet within this time, then the packet is returned without piggybacking.

Mib IpiVc

Values Decimal (0..5000)

Default No default

ATTRIBUTE Ipivc Lcn Vc outOfRangeFrmFromSubnet

Access Read only

Description This attribute counts the number of subnet frames discarded due to the sequence number being out of range.
Two Categories apply for the General *Vc*
1) lost Acks (previous Range)
2) unexpected Packets (next Range)
Vc internally maintains its own sequence number of packet order and sequencing. Due to packet retransmission, *Vc* may receive duplicate packets that have the same *Vc* internal sequence number. Only 1 copy is accepted by the *Vc* and other copies of the same packets are detected through this count. This attribute can be used to record the frequency of packet retransmission due to *Vc* and other part of the subnet.

Mib IpiVc

Values Decimal (0..5000)

Default No default

ATTRIBUTE Ipivc Lcn Vc duplicatesFromSubnet

Access Read only

Description

This attribute counts the number of subnet packets discarded due to duplication. It is used to detect software error fault or duplication caused by retransmitting.

Mib IpiVc

Values Decimal (0..5000)

Default No default

ATTRIBUTE Ipivc Lcn Vc frmRetryTimeouts

Access	Read only
Description	This attribute counts the number of frames which have retransmission time-out. If packets from *Vc* into the subnet are discarded by the subnet, the source *Vc* will not receive any acknowledgment. The retransmission timer then expires and packets will be retransmitted again. Note that the *Vc* idle probe may be retransmitted and is included in this count. This statistics does not show the distribution of how many times packets are retransmitted (e.g. first retransmission results in successful packet forwarding).
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc peakRetryQueueSize

Access	Read only
Description	This attribute indicates the peak size of the retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. It records the largest body of unacknowledged packets.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc peakOoSeqQueueSize

Access	Read only
Description	This attribute indicates the peak size of the out of sequence queue. This attribute is used as an indicator of the sequencing behavior across the subnet. It records the largest body of out of sequence packets.

Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute indicates the peak size of the sequence packet queue. This attribute is used as an indicator of the sequencing behavior across the subnet. It records the largest body of out of sequence packets, which by the receipt of an expected packet have been transformed to expected packets. The number of times this peak is reached is not recorded as it is traffic dependent.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc peakStackedAcksRx

Access	Read only
Description	This attribute indicates the peak size of wait acks. This attribute is used as an indicator of the acknowledgment behavior across the subnet. It records the largest collective acknowledgment.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc subnetRecoveries

Access	Read only
Description	This attribute counts the number of successful *Vc* recovery attempts. This attribute is used as an indicator of how many times the *Vc*

	path is broken but can be recovered. This attribute is useful to record the number of network path failures.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc windowClosuresToSubnet

Access	Read only
Description	This attribute counts the number of window closures to subnet. A packet may have been sent into the subnet but its acknowledgment from the remote *Vc* has not yet been received. This is a 8 bit sequence number.This number is useful in detecting whether the *Vc* is sending any packet into the subnet.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc windowClosuresFromSubnet

Access	Read only
Description	This attribute counts the number of window closures from subnet. This attribute is useful in detecting whether the *Vc* is receiving any packet from the subnet.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Ipivc Lcn Vc wrTriggers

Access	Read only
Description	This attribute displays the number of times the *Vc* stays within the W-R region. The W-R region is a value used to determined the timing of credit transmission. Should the current window size be beneath this value, the credits will be transmitted immediately.

	Otherwise, they will be transmitted later with actual data. The wrTriggers statistic is therefore used to analyze the flow control and credit mechanism.
Mib	IpiVc
Values	Decimal (0..5000)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Ipivc

Release 6.1

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7400/15000/20000

Component IuxIf

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component luxlf

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COMPONENT IuxInterface (IuxIf)

Instance	Decimal (1..16383)
Groups	"GROUP IuxIf CustomerIdentifierData (CidData)" "GROUP IuxIf Provisioned (Prov)" "GROUP IuxIf OsiState (State)"
Scope	Application
Description	*IuxInterface/n* This component represents the UTRAN Interface. A particular instance represents either an Iub interface, an Iur Interface, or an Iucs interface. On U-Plane, the *Path* subcomponents represent the individual AAL2 paths within this UTRAN interface. On C-Plane, the *SignallingBearer* components represent the bearers for AAL5 terminated traffic.
Mib	IuxIfRnc
Opt. Subcomp.	"COMPONENT IuxIf Path" "COMPONENT IuxIf SignallingBearer (Sig)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP IuxIf CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	IuxIfRnc

ATTRIBUTE IuxIf customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	IuxIfRnc
Values	Decimal (0; 1..8191)
Default	0

GROUP IuxIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *IuxIf* component.

Mib	IuxIfRnc

ATTRIBUTE IuxIf commentText

Access	Read and write
Description	This attribute specifies an arbitrary string whose use is left to the discretion of the system administrator. It is not used by the system. For example, this attribute could be used to specify the type of interface (for example, Iub, Iur, or Iucs) or the name of the Node B, remote RNC, or SGSN endpoint which is logically connected to this Iu interface.
Mib	IuxIfRnc
Values	String (0..60, ASCII)
Default	""

ATTRIBUTE IuxIf loadBalancingMethod (lb)

Access	Read and write
Criticality	Component
Description	This attribute specifies the load balancing scheme to be used by the system when distributing the paths of this *IuxIf* component across the protocol converter type '*Lp Ap Rnc*' device. The value ***spread*** means the paths of this *IuxIf* component are assigned to the protocol converter in a round-robin fashion. The value ***weighted*** means the paths of this *IuxIf* component are assigned to the protocol converter based on the expected traffic load of this *IuxIf*. The suggested value for SGSN and remote RNC is ***spread***. The suggested value for Node B is ***weighted***.
Mib	IuxIfRnc
Values	spread weighted
Default	weighted

ATTRIBUTE IuxIf weight

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected traffic load from the far-end equipment attached to this UTRAN interface relative to other interfaces. It is used by the system for load balancing when using the ***weighted*** method. A larger value represents a larger traffic load.
Mib	IuxIfRnc
Values	Decimal (0..1000)
Default	500

GROUP IuxIf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IuxIfRnc

ATTRIBUTE IuxIf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users

only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: IuxIfRnc

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE IuxIf operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: IuxIfRnc

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE IuxIf usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in

use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: IuxIfRnc

Values:
idle
active (activ)
busy

Default: idle

COMPONENT IuxIf Path

Instance: Decimal (1..65535)

Groups:
"GROUP IuxIf Path Provisioned (Prov)"
"GROUP IuxIf Path OsiState (State)"
"GROUP IuxIf Path Operational (Oper)"

Scope: Application

Description:
IuxIf/n Path/n
This component represents an ATM AAL2 path within this UTRAN interface. Each path is associated with an ATM PVC endpoint.

Mib: IuxIfRnc

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP IuxIf Path Provisioned (Prov)

Properties: Provisioned

Description	This group contains the provisioned attributes for the *Path* component.
Mib	IuxIfRnc

ATTRIBUTE IuxIf Path atmConnection

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM nailed up endpoint that this path will use. For example, *AtmIf/n Vcc/vpi.vci Nep.*
Mib	IuxIfRnc
Values	Link (Hardware, applicationName)
Default	No default

ATTRIBUTE IuxIf Path qos

Access	Read and write
Criticality	Component
Description	This attribute specifies the QoS (Quality of Service) for this path.
Mib	IuxIfRnc
Values	Decimal (0..3)
Default	0

ATTRIBUTE IuxIf Path pathOwner

Access	Read and write
Criticality	Component
Description	This attribute is used to select the owner of the path according to Q.2630.1. On a path between two RNC nodes, this attribute is used to select the order of CID allocation to reduce the probability of collisions. The RNC node which is configured as the owner of this path allocates CIDs from 8 upwards. The RNC node which is not configured as the owner of this path allocates CIDs from 255 downwards.

To reduce the probability of CID collision, the RNCs at each end of an Iur interface should have this attribute set to different values. This attribute is only meaningful to the Iur interface. It is not used by other Iu interfaces.

Mib: IuxIfRnc

Values: yes
no

Default: yes

GROUP IuxIf Path OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: IuxIfRnc

ATTRIBUTE IuxIf Path adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is

	administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	IuxIfRnc
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE IuxIf Path operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	IuxIfRnc
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE IuxIf Path usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	IuxIfRnc
Values	idle active (activ) busy
Default	idle

GROUP IuxIf Path Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Path* component.
Mib	IuxIfRnc

ATTRIBUTE IuxIf Path remoteBlockingStatus

Access	Read only
Description	This attribute indicates if this path is remotely blocked or not within this UTRAN interface. The path is remotely blocked if it is locked by the remote node.
Mib	IuxIfRnc
Values	blocked unblocked
Default	No default

ATTRIBUTE IuxIf Path localBlockingStatus

Access	Read only
Description	This attribute indicates whether this path is locally blocked or not within this UTRAN interface. The path is locally blocked if it is locked by the local node.
Mib	IuxIfRnc

Values	blocked unblocked
Default	No default

COMPONENT IuxIf SignallingBearer (Sig)

Instance	Decimal (0..6)
Scope	Application
Description	*IuxIf/n Sig/n* This component represents the C-Plane part of the UTRAN interface. An instance of it can be the SAAL-UNI connection used for the Iub.
Mib	IuxIfRnc
Opt. Subcomp.	"COMPONENT IuxIf Sig SaalUni"
Common Verbs	Help List Display Add DELete

COMPONENT IuxIf Sig SaalUni

Groups	"GROUP IuxIf Sig SaalUni OsiState (State)"
Scope	Application
Description	*IuxIf/n Sig/m SaalUni* This component represents an Signalling ATM Adaptation Layer

	User-Netowrk Interface for a particular Signalling Bearer within this UTRAN interface.
Mib	IuxIfRnc
Opt. Subcomp.	"COMPONENT IuxIf Sig SaalUni NailedupAccessPoint (Nap)"
Common Verbs	Help List Display Add DELete

GROUP IuxIf Sig SaalUni OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IuxIfRnc

ATTRIBUTE IuxIf Sig SaalUni adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: IuxIfRnc

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE IuxIf Sig SaalUni operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: IuxIfRnc

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE IuxIf Sig SaalUni usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has

spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: IuxIfRnc

Values:
idle
active (activ)
busy

Default: idle

COMPONENT IuxIf Sig SaalUni NailedupAccessPoint (Nap)

Groups: "GROUP IuxIf Sig SaalUni Nap Provisioned (Prov)"

Scope: Application

Description: *IuxIf/n Sig/m SaalUni Nap*
This component is used to link AAL5 represents an Signalling ATM Adaptation Layer User-Netowrk Interface for a particular Signalling Bearer within this UTRAN interface.

Mib: IuxIfRnc

Common Verbs:
Help
List
Display
Add
DELete

GROUP IuxIf Sig SaalUni Nap Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioned attributes for the *NailedupAccessPoint* component.

Mib: IuxIfRnc

ATTRIBUTE IuxIf Sig SaalUni Nap atmConnection

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM nailed up endpoint that this path will use. For example, *AtmIf/n Vcc/vpi.vci Nep*.
Mib	IuxIfRnc
Values	Link (Hardware, applicationName)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component IuxIf

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Lac

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COMPONENT Layer2TunnelingProtocolAccessConcentrator (Lac)

Instance	Decimal (1..15)
Groups	"GROUP Lac Provisioned (Prov)" "GROUP Lac Operational (Oper)" "GROUP Lac CustomerIdentifierData (CidData)"
Scope	Application
Description	*Layer2TunnelingProtocolAccessConcentrator/n* This component represents the Layer 2 Tunneling Protocol (L2TP) functionality on a Logical Processor. This component behaves as an L2TP Access Concentrator (LAC). An instance of this component is provisioned for each Logical Processor that is to have L2TP functionality.
Mib	WirelessL2tp
Subcomponents	"COMPONENT Lac L2tpNetworkServer (Lns)"
Common Verbs	Help List Display Add DELete

GROUP Lac Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Lac* component.
Mib	WirelessL2tp

ATTRIBUTE Lac linkToUdpPort (lToPort)

Access	Read: All Write: All
Description	This attribute specifies a link to the *GprsIpServer IpAddress Udp Port* component. The IP address specified becomes the source IP address and the UDP port specified becomes the source port for communication with the external LNS. Changing this value causes the *Lac* to reset its communication links with the *GprsIpServer*. Transactions being processed may be affected.
Mib	WirelessL2tp
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Lac linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the link to a Logical Processor that this *Lac* is to use.
Mib	WirelessL2tp
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Lac hostName (host)

Access	Read: All Write: All

Description	This attribute specifies the host name the *Lac* component uses in communication with the external LNS. The host name will be sent in the Host Name Attribute Value Pair (AVP) and may be used by the external LNS for tunnel authentication. It is recommended that all host names be distinct.
Mib	WirelessL2tp
Values	String (0..80, ASCII)
Default	""

GROUP Lac Operational (Oper)

Properties	Operational
Description	This group contains operational attributes of the LAC.
Mib	WirelessL2tp

ATTRIBUTE Lac vendorName (vName)

Access	Read: All Write: Illegal
Description	This attribute identifies the vendor name of the L2TP protocol stack. This information is communicated to the external LNS in the Vendor Name Attribute Value Pair (AVP).
Mib	WirelessL2tp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Lac firmwareRev (firmRev)

Access	Read: All Write: Illegal
Description	This attribute identifies defines the firmware or software revision for the L2TP protocol stack. This information is communicated to the external LNS in the Firmware Revision Attribute Value Pair (AVP).
Mib	WirelessL2tp

Values	Decimal (0..2147483646)
Default	No default

ATTRIBUTE Lac protocolVersion (protoVers)

Access	Read: All Write: Illegal
Description	This attribute indicates the supported L2TP protocol version and revision numbers. Supported versions are identified in the form of version.revision.
Mib	WirelessL2tp
List of	String (3..7, ASCII)
List Size	10
Default	No default

GROUP Lac CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	WirelessL2tp

ATTRIBUTE Lac customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those

	components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	WirelessL2tp
Values	Decimal (0; 1..8191)
Default	0

COMPONENT Lac L2tpNetworkServer (Lns)

Groups	"GROUP Lac Lns Provisioned (Prov)" "GROUP Lac Lns TunnelProv (Tunnel)" "GROUP Lac Lns Operational (Oper)" "GROUP Lac Lns TunnelStatistics (TunStats)"
Scope	Application
Description	*Lac/n L2tpNetworkServer/n* This component represents the external L2TP Network Server (LNS) that communicates with the *Lac* component.
Mib	WirelessL2tp
Common Verbs	Help List Display

GROUP Lac Lns Provisioned (Prov)

Properties	Provisioned
Description	This group contains miscellaneous provisionable attributes of the *Lac Lns* component.
Mib	WirelessL2tp

ATTRIBUTE Lac Lns ipAddress (ipAddr)

Access	Read: All Write: All
Description	This attribute specifies the IP address of the external LNS. The value must not be set to 0.0.0.0.
Mib	WirelessL2tp
Values	IP address
Default	No default

ATTRIBUTE Lac Lns udpPort (udpPort)

Access	Read: All Write: All
Description	This attribute specifies the UDP port on the external LNS used by this *Lac*. This must match the UDP port provisioned on that LNS.
Mib	WirelessL2tp
Values	Decimal (0..65535)
Default	1701

ATTRIBUTE Lac Lns useLengthField (useLen)

Access	Read: All Write: All
Description	This attribute specifies if the *Lac* should use a length field in L2TP data messages. The value of ***yes*** should be used when compatibility is needed with LNSs that may require the length field to be utilized. Proper operation of L2TP over UDP/IP does not require the length field to be used in data messages.
Mib	WirelessL2tp
Values	yes no
Default	no

ATTRIBUTE Lac Lns useHiddenAvps (hidAvps)

Access	Read: All Write: All
Description	This attribute specifies if the *Lac* should use hidden Attribute Value Pairs (AVPs) in the control messages sent to the LNS. The value of ***no*** is used if the LNS does not support hidden AVPs for all control messages. The value of ***yes*** is permitted if *secret* is not empty.
Mib	WirelessL2tp
Values	yes no
Default	no

ATTRIBUTE Lac Lns snoopAccm (snoop)

Access	Read: All Write: All
Description	This attribute specifies if the *Lac* should snoop for Asynchronous Control Character Map (ACCM) Link Control Protocol (LCP) packets in the Point-to-Point Protocol (PPP) data stream. Setting this to ***yes*** will allow the L2TP stack to immediately detect any negotiated ACCM changes. This will prevent needlessly dropped PPP packets in the event the LNS's Set Link Info (SLI) message is delayed in transit relative to the time the ACCM negotiation takes effect. Additionally, this option allows operability with LNSs that do not support the L2TP SLI message.
Mib	WirelessL2tp
Values	yes no
Default	yes

GROUP Lac Lns TunnelProv (Tunnel)

Properties	Provisioned

Description	This group contains provisionable attributes describing the configuration requirements for both incoming and outgoing tunnel connection attempts.
Mib	WirelessL2tp

ATTRIBUTE Lac Lns hostName (host)

Access	Read: All Write: All
Description	This attribute specifies the host name of the external LNS. This is the host name expected to be sent by the external LNS in the Host Name Attribute Value Pair (AVP) and may be used to authenticate the LNS.
Mib	WirelessL2tp
Values	String (0..80, ASCII)
Default	""

ATTRIBUTE Lac Lns authentication (auth)

Access	Read: All Write: All
Description	This attribute specifies how the *Lac* authenticates the LNS. The value ***none*** indicates that no authentication is performed. The value ***simple*** indicates that peers are authenticated simply by their host name as described in the Host Name AVP. The value ***challenge*** indicates that all peers are challenged to prove their identification. This mechanism is described in the L2TP protocol specification.
Mib	WirelessL2tp
Values	none simple challenge
Default	none

ATTRIBUTE Lac Lns secret

Access	Read: Illegal Write: All
Description	This attribute specifies the shared secret used during the tunnel authentication phase of tunnel establishment. This must match the shared secret provisioned on the LNS.
Mib	WirelessL2tp
Values	String (0..255, ASCII)
Default	""

ATTRIBUTE Lac Lns helloInterval (hello)

Access	Read: All Write: All
Description	This attribute specifies the interval in which Hello (or keep-alive) packets are sent by the *Lac* to the external LNS.
Mib	WirelessL2tp
Values	Decimal (0..3600)
Units	seconds
Default	60

ATTRIBUTE Lac Lns idleTimeout (idleTo)

Access	Read: All Write: All
Description	This attribute specifies the period of time that an established tunnel between the *Lac* and the external LNS with no active sessions waits before disconnecting the tunnel. A value of zero indicates that the tunnel disconnects immediately after the last session disconnects. A value of -1 leaves the tunnel up indefinitely.
Mib	WirelessL2tp
Values	Signed (-1..86400)

Units	seconds
Default	-1

ATTRIBUTE Lac Lns controlRWS (ctlRWS)

Access	Read: All Write: All
Description	This attribute specifies the control channel receive window size for tunnels between the *Lac* and the external LNS. It specifies the maximum number of packets the external LNS can send without waiting for an acknowledgement from the *Lac*.
Mib	WirelessL2tp
Values	Decimal (1..24)
Default	4

ATTRIBUTE Lac Lns maxRetrans (maxReTx)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of retransmissions which the *Lac* attempts for tunnels to the external LNS before assuming that the LNS is no longer responding.
Mib	WirelessL2tp
Values	Decimal (4..32)
Default	5

ATTRIBUTE Lac Lns maxRetransTimeout (maxReTxTo)

Access	Read: All Write: All
Description	This attribute specifies the maximum retransmission timeout interval which the *Lac* waits before retransmitting a control packet that has not been acknowledged by the external LNS.
Mib	WirelessL2tp
Values	Decimal (1..32)

Units	seconds
Default	16

ATTRIBUTE Lac Lns payloadSequencing (payldSeq)

Access	Read: All Write: All
Description	This attribute specifies whether session payload packets are requested to be sent with sequence numbers from the external LNS. The value ***never*** indicates that the *Lac* never initiates sequencing but does sequencing if asked by the external LNS. The value ***always*** indicates that the *Lac* sends the Sequencing Required Attribute Value Pair (AVP) during session establishment.
Mib	WirelessL2tp
Values	never always
Default	always

ATTRIBUTE Lac Lns reassemblyTimeout (reasTo)

Access	Read: All Write: All
Description	This attribute specifies the time the *Lac* waits before processing payload packets that were received out of sequence. A low value increases the chance of delayed packets to be discarded (which may cause the PPP decompression engine to reset) while a high value may cause more queueing and possibly degrade throughput if packets are truly lost. The default value is zero which will result in all delayed packets being lost.
Mib	WirelessL2tp
Values	Decimal (0..2147483646)
Units	msec
Default	0

GROUP Lac Lns Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Lac Lns* component.
Mib	WirelessL2tp

ATTRIBUTE Lac Lns lastErrors (lastErrs)

Access	Read: All Write: Illegal
Description	This attribute gives textual descriptions of the last five tunnel errors. Each description is displayed with a result code, an error code, and and may include a message describing the reason or error.
Mib	WirelessL2tp
Vector of	String (0..255, ASCII)
Index	Decimal (1..5)
Default	No default

GROUP Lac Lns TunnelStatistics (TunStats)

Properties	Operational
Description	This group contains attributes that are used to describe the current status and statistics of tunnels.
Mib	WirelessL2tp

ATTRIBUTE Lac Lns totalTunnels (totTun)

Access	Read: All Write: Illegal
Description	This attribute counts the tunnels between the *Lac* and the external LNS that have successfully reached the established state. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns failedTunnels (failTun)

Access	Read: All Write: Illegal
Description	This attribute counts the tunnels between the *Lac* and the external LNS that failed to reach the established state. This count includes the failed tunnel authentication attempts as counted by *failedAuthentication.* The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns failedAuthentication (failAuth)

Access	Read: All Write: Illegal
Description	This attribute counts the failed tunnel connection attempts detected locally by the *Lac* and those reported as failed by the external Lns. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns activeTunnels (actTun)

Access	Read: All Write: Illegal
Description	This attribute indicates the tunnels that are currently active between the *Lac* and the external LNS.
Mib	WirelessL2tp

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns totalSessions (totSes)

Access	Read: All Write: Illegal
Description	This attribute counts the sessions that have successfully reached the established state on the tunnels between the *Lac* and the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns failedSessions (failSes)

Access	Read: All Write: Illegal
Description	This attribute counts the sessions that failed to reach the established state on the tunnels between the *Lac* and the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns activeSessions (actSes)

Access	Read: All Write: Illegal
Description	This attribute indicates the sessions that are currently active on the tunnels between the *Lac* and the external LNS.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Lac Lns controlRecvOctets (ctlRecvOct)

Access	Read: All Write: Illegal
Description	This attribute counts the control channel octets received by the *Lac* from the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns controlRecvPackets (ctlRecvPkt)

Access	Read: All Write: Illegal
Description	This attribute counts the control channel packets received by the *Lac* from the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns controlSendOctets (ctlSndOct)

Access	Read: All Write: Illegal
Description	This attribute counts the contol channel octets that were transmitted by the *Lac* to the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns controlSendPackets (ctlSndPkt)

Access	Read: All Write: Illegal
Description	This attribute counts the control packets that were transmitted by the *Lac* to the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns payloadRecvOctets (payRecvOct)

Access	Read: All Write: Illegal
Description	This attribute counts the payload channel octets that were received by the *Lac* from the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns payloadRecvPackets (payRecvPkt)

Access	Read: All Write: Illegal
Description	This attribute counts the payload channel packets that were received by the *Lac* from the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns payloadRecvDiscards (payRecvDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the received payload packets that were discarded by the *Lac*. The primary reason for payload packet discards is flow control ocurring due to the difference in the data rates between the slower mobile connection and the faster network connection. Other possible reasons for discards are that payload packets are too big, are badly formed, or are out of sequence. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns payloadSendOctets (paySndOct)

Access	Read: All Write: Illegal
Description	This attribute counts the payload channel octets that were transmitted by the *Lac* to the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lac Lns payloadSendPackets (paySndPkt)

Access	Read: All Write: Illegal
Description	This attribute counts the payload packets that were transmitted by the *Lac* to the external LNS. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessL2tp

Values	Decimal (0..4294967295)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Lac

Release 6.1

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Component Laps

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COMPONENT LineAutomaticProtectionSwitching (Laps)

Instance	Decimal (0..15999)
Groups	"GROUP Laps CustomerIdentifierData (CidData)" "GROUP Laps Provisioned (Prov)" "GROUP Laps OsiState (State)" "GROUP Laps Operational (Oper)"
Scope	Device
Description	*AutomaticProtectionSwitching/n* This component manages the line protection of a SONET or SDH interface. Line Automatic Protection Switching (LAPS) can switch traffic from an active line onto a standby line when a failure or degradation occurs on the active line. **Note**: The *Lp/n Sonet/m Test* component *or Lp/n Sdh/m Test* component functionality is not supported when that line is

provisioned as either working or protection line of the *Laps* component.

Mib: Laps

Opt. Subcomp.: "COMPONENT Laps Sts"
"COMPONENT Laps Vc4"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

VERB PROTECTIONLOCKOUT (PROTLOCK) Laps

Impact: Service

Description: *ProtectionLockout Laps/n*
This command has different behaviors based on the protocol type which is provisioned.

A) The *protocol* attribute is set to ***standard***:

This command instructs the *Laps* component to lock out the protection line from being used as the receive active line. If the protection line is active when the *ProtectionLockout* command is entered, the working line is made active even if there is a failure or degradation present on the working line.

This command is ignored when the following conditions exist:

1) The *mode* attribute value is set to ***unidirectional*** and a *nearEndRequest* attribute already has a value of ***lockoutOfProtection***.
2) The *mode* attribute value is set to ***bidirectional*** and a *nearEndRequest* attribute or *farEndRequest* attribute already has a value of ***lockoutOfProtection***.

B) The *protocol* attribute is set to ***g841AnnexB***:

This command instructs the *Laps* component to freeze the selector in its current position such that the receive active line cannot be changed. All requests are ignored while this command is in effect. This command is treated as a local request and is not signaled to the far end.

C) The *protocol* attribute is set to ***yProtection***:

This command is not applicable when the protocol attribute is set to ***yProtection***.

For applicable protocol types, the command remains in effect until it is cancelled with the *Clear* command. This command can only be issued when the *Laps* component is unlocked.

VERB SWITCH Laps

Impact	Service
Description	*Switch [-force] [-workingToProtection] [-protectionToWorking] Laps/n* This command instructs the *Laps* component to switch the *nearEndRxActiveLine* attribute from the working line to the protection line (or vice versa). While this occurring the *nearEndRequest* attribute value is ***manualSwitch***. If the *-force* option is specified, the *Laps* component is instructed to switch. The *nearEndRequest* attribute value is ***forcedSwitch.*** The *-force* option must always be used when the *Laps protocol* attribute is set to ***g841AnnexB***. The *switch* command, with various options described above, can only be issued if the *Laps* component is unlocked. It remains in effect until it is cancelled either with the *'clear laps/n"* command, or until a higher value for the *nearEndRequest* attribute (or *farEndRequest* attribute if the provisioned *mode* attribute value is set to ***bidirectional***) goes into effect. If the *-workingToProtection* option is specified, the *Laps* component switches the *nearEndRxActiveLine* attribute from the

working line to the protection line.

If the *-protectionToWorking* option is specified, the *Laps* component switches the *nearEndRxActiveLine* attribute from the protection line to the working line.

This command is ignored when the following conditions exist:

1) An equal or higher priority value for the *nearEndRequest* attribute is already in effect
2) An equal or higher priority value for the *farEndRequest* attribute is already in effect if the provisioned *mode* attribute value is set to ***bidirectional***.
For the list of request priorities refer to the description for the *Laps nearEndRequest* attribute.

This command is not applicable when the protocol attribute is set to ***yProtection***.

This command can only be issued when the *Laps* component is unlocked.

VERB CLEAR Laps

Impact	Service
Description	*Clear Laps/n* This command clears the *nearEndRequest* attribute if the value is ***lockoutOfProtection***, ***forcedSwitch***, or ***manualSwitch***. This command is not applicable when the protocol attribute is set to ***yProtection***. This command can only be issued when the *Laps* component is unlocked.

GROUP Laps CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib	Laps

ATTRIBUTE Laps customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Laps* component.
Mib	Laps

ATTRIBUTE Laps workingLine (working)

Access	Read and write
Criticality	Process

Description	This attribute is a link to the *Sonet* or *Sdh* component that provides the *Laps* component's working line (working line one in ITU-T G.841 Annex B terms). This attribute must be set. The *workingLine* attribute and *protectionLine* attribute pairs must be valid. LAPS (Line Automatic Protection Switching) protection can be configured between paired ports on the card or between corresponding ports on adjacent cards. The following semantic checks exist for the *workingLine* and *protectionLine* attributes: The *workingLine* and *protectionLine* attributes can link ports on two different LPs (Logical Processor): - the port number must match (that is, port zero on *Lp*/m must link to port 0 on *Lp*/n, and so forth). - the *Sonet* or *Sdh* components specified by the link must not have a *Sts* or *Vc4* component. - each *Lp* must link to exactly one card (that is, the *spareCard* attribute is not allowed to be set on either *Lp).* - each *Lp* must link to the same type of card (that is, the *shelf card/n cardType* attribute must be identical for both cards). - the two cards must be in adjacent slots in the shelf, with the lower-numbered slot being an even number. - each *Lp* must link to the same *LogicalProcessorType* component. - if the two lines of the protection pair are on different *Lps*, then the *connectionPoolCapacity* attribute value of the *Lp Eng Arc Ov* components for the two adjacent *Lps* must be the same. The *workingLine* and *protectionLine* attributes can link to a pair of ports under the same LP (Logical Processor) for the following cards: - for ***4pOC3SmIrAtm*** and ***4pOC3MmAtm*** cards, the port number pair must be 0-1 or 2-3. - for the ***1pOC12SmLrAtm*** card, the port number pair must be between the two ports 0-1.
Mib	Laps
Values	Link (Hardware, lineAutomaticProtectionSwitch)

Default	No default

ATTRIBUTE Laps protectionLine (protection)

Access	Read and write
Criticality	Process
Description	This attribute is a link to the *Sonet* or *Sdh* component that provides the *Laps*' component protection line (working line two in ITU-T G.841 Annex B terms). This attribute must be set. The same rules apply as described in the *workingLine* attribute.
Mib	Laps
Values	Link (Hardware, lineAutomaticProtectionSwitch)
Default	No default

ATTRIBUTE Laps mode

Access	Read and write
Description	This attribute specifies the protection mode to use. If set to value of ***unidirectional***, the *Laps* component of the near end (NE) can decide independently of the far end (FE) which channel, either working or protection, is active for receive. For this value, the transmit and receive may be on different channels. Therefore, one end may receive from the protection line while the other end receives from the active line. If set to ***bidirectional*** value, it instructs the *Laps* component of the NE to decide jointly with the FE which channel, either working or protection, is to be active for receiving. For this value, the transmit and receive are on the same channel. Therefore both ends receive from the same line. If set to ***notApplicable*** value, it instructs the *Laps* component not to use this attribute when no k-byte information is exchanged. The ***notApplicable*** value must be used when the ***yProtection*** protocol is set.

Note that if either end of the *Laps* component is set to ***unidirectional***, the *Laps* component operates in ***unidirectional*** mode. In other words, ***bidirectional*** mode takes effect if and only if both ends of the *Laps* components are in ***bidirectional*** mode.

Mib: Laps

Values:
notApplicable
unidirectional
bidirectional

Default: unidirectional

ATTRIBUTE Laps revertive

Access: Read and write

Description: This attribute specifies whether revertive switching is to be used.

When this attribute value is set to ***no***, the *Laps* component will not revert the receive active line from protection back to working when a working line request is cleared.

When this attribute value is set to ***yes***, the *Laps* component will revert the receive active line from protection back to working when a working line request is cleared and after the provisioned value of *waitToRestorePeriod* attribute has expired.

When this attribute is set to ***notApplicable***, it instructs the *Laps* component not to use this attribute for the specified protocol. The ***notApplicable*** value must be used when the ***yProtection*** protocol is set because the concept of line switchover does not exist.

Note that it is acceptable for the near end and far end to be provisioned with a mix of revertive and nonrevertive switching; one end can be revertive and the other nonrevertive.

Mib: Laps

Values:
no
yes
notApplicable

Default	no

ATTRIBUTE Laps holdOffTime (hoTime)

Access	Read and write
Description	This attribute specifies the delay between the detection of a signal failure or signal degradation on the active line and the initiation of a line switchover. When this attribute is set to ***infinite***, it instructs the *Laps* component to never switch automatically. The ***infinite*** value must be used when the ***yProtection*** protocol is set.
Mib	Laps
Values	Decimal (0.0..10.0) infinite
Units	seconds
Default	0.0

ATTRIBUTE Laps waitToRestorePeriod (wtrPeriod)

Access	Read and write
Description	This attribute has a different meaning based on the protocol type provisioned. A) The *protocol* attribute is set to ***standard***: This attribute specifies the time (in minutes) during which the protection line remains the receive active line after the working line recovers from the fault that caused the switch. This attribute is only applicable when the *revertive* attribute value is set to ***yes***. B) The *protocol* attribute is set to ***g841AnnexB***: This attribute specifies the time (in minutes) after which a Signal Fail or Signal Degrade condition has cleared, but before which the line with the condition is considered in service. Once this time reaches zero, traffic continues to be received from the current receive active line by swapping the primary and

secondary section labels. No line switch takes place.

C) The *protocol* attribute is set to ***yProtection***:

When this attribute is set to ***infinite***, it instructs the *Laps* component to wait an infinite time.

Mib	Laps
Values	Decimal (5..12) infinite
Units	minutes
Default	5

ATTRIBUTE Laps signalDegradeRatio (sdRatio)

Access	Read and write
Description	This attribute specifies the minimum bit error ratio (BER) for which a signal degradation failure is declared. Its value is the exponent of the BER, which corresponds to a BER range of 10e-5 through 10e-9. The switch initiation time for a signal degradation varies depending on the observed BER (***not*** the provisioned *signalDegradeRatio*), as described in the following table. **BER - Switch Initiation Time (OC-3)** 10e-5 - 1 second 10e-6 - 10 seconds 10e-7 - 100 seconds 10e-8 - 16 minutes 40 seconds 10e-9 - 2 hours 46 minutes 40 seconds The clearing threshold for a signal degradation is one-tenth the value of the *signalDegradeRatio* attribute. For example, if the provisioned *signalDegradeRatio* attribute is ***-5***, the corresponding clearing threshold is 10e-6. The clearing time varies depending on the clearing threshold (***not*** the observed BER), and can be determined from the above table.

When this attribute is set to ***notApplicable***, it instructs the *Laps* component not to degrade *Laps* when BER is observed. The ***notApplicable*** value must be used when the ***yProtection*** protocol is set.

Mib: Laps

Values: Signed (-9..-5)
notApplicable

Default: -5

ATTRIBUTE Laps mimicAps

Access: Read and write

Criticality: Process

Description: This attribute specifies whether the Mimic APS protocol should be enabled.

Mimic APS is a Nortel Networks proprietary protocol to allow for an Automatic Protection Switching variant to be used between Nortel Networks Multiservice Switch 15000 FPs and other hardware that supports the Mimic APS protocol.

It currently only supports the following four-port OC3 multi-mode and single-mode FPs: ***4pOC3SmIrAtm*** and ***4pOC3MmAtm***.

When the *mimicAps* attribute is set to ***enabled***, the Mimic APS protocol is used. The Mimic APS protocol supports only unidirectional non-revertive modes of APS and as such the *mode* and *revertive* attributes must be set to ***unidirectional*** and ***no*** respectively.

When this attribute is set to ***notApplicable***, it instructs the *Laps* component not to use this attribute for the specified protocol. The ***notApplicable*** value must be used when the ***yProtection*** protocol is set.

Mib: Laps

Values	disabled enabled notApplicable
Default	disabled

ATTRIBUTE Laps protocol

Access	Read and write
Criticality	Process
Description	This attribute specifies the protocol used to protect the physical interfaces. The value ***standard*** indicates that 1+1 linear APS is used, as described in the standards document GR-253 published by Telcordia and G.841 published by the ITU-T. The value ***g841AnnexB*** indicates that optimized 1+1 bidirectional switching is used, as described in the standard G.841 Annex B published by the ITU-T. This value is only supported on the ***16pOC3SmIrAtm*** card type. The *mode* attribute must be set to ***bidirectional***, the *revertive* attribute set to ***no***, and the *holdOffTime* attribute set to ***0*** when the *protocol* attribute is set to ***g841AnnexB***. The value ***yProtection*** indicates that *Laps* component is used only for equipment protection and hitless software migration. This value is only supported on the ***16pOC3PosAtm*** card type. The *mode* attribute must be set to ***notApplicable***, the *revertive* attribute set to ***notApplicable***, the *mimicAps* attribute set to ***notApplicable***, the *holdOffTime* attribute set to ***infinite,*** the *waitToRestorePeriod* attribute set to ***infinite***, the *signalDegradeRatio* attribute set to ***notApplicable***, and the *primarySectionMismatchTime* attribute set to ***infinite*** when the *protocol* attribute is set to ***yProtection***.
Mib	Laps

Values	standard g841AnnexB yProtection
Default	standard

ATTRIBUTE Laps primarySectionMismatchTime

Access	Read and write
Description	This attribute specifies the time to wait after a primary section mismatch defect is detected/cleared, before raising/clearing an alarm. A primary section mismatch occurs when the received and transmitted channels in the K2 byte do not match. When this attribute is set to ***infinite***, it instructs the *Laps* component not to raise an alarm when the K2 byte do not match. The ***infinite*** value must be used when the ***yProtection*** protocol is set. This attribute only applies when the *protocol* attribute is set to ***g841AnnexB***.
Mib	Laps
Values	Decimal (50..1000) infinite
Units	msec
Default	50

ATTRIBUTE Laps sendLineAisDuringMigration

Access	Read and write
Description	This attribute specifies whether *Sonet*/*Sdh* ports linked to a *Laps* component in an inter-card configuration will send the Line Alarm Indication Signal (AIS-L) during the migration active stage of a Hitless Software Migration or Hitless Software Patching. The migration active stage for a card begins when the card is first loaded on the migration active shelf and ends when

the migration active shelf becomes the active shelf. *Sonet*/*Sdh* ports are not in service during the migration active stage of a software migration.

Sending AIS-L during software migration is used to inform the far end equipment that the *Sonet*/*Sdh* port is not available. If this attribute is set to ***no***, the other end might try to use the *Sonet*/*Sdh* port that goes through a software migration. The recommended value for this attribute is ***yes*** when the far end equipment is another Nortel Networks Multiservice Switch.

If this attribute is set to ***yes***, AIS-L is sent during software migration and this may cause an extended traffic outage when the *Sonet*/*Sdh* ports are connected to an equipment that delays clearing of Signal Degrade (SD) and Signal Fail (SF) conditions. Such delays are sometimes implemented to reduce the number of rapid protection switching oscillations.

This attribute does not affect the behavior of *Sonet*/*Sdh* ports linked to a *Laps* component in an intra-card configuration or *Sonet*/*Sdh* ports that are not linked to a *Laps* component.

Mib: Laps

Values: no
yes

Default: no

GROUP Laps OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Laps

ATTRIBUTE Laps adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Laps operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps availabilityStatus (osiAvail)

Access	Read only

Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is

one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Laps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Laps proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn’t initialize autonomously) that initialization is required

before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Laps
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Laps controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Laps

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Laps alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Laps

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Laps standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and

containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Laps

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Laps unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Laps

Values:
false
true

Default: false

GROUP Laps Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the *Laps* component.

Mib	Laps

ATTRIBUTE Laps nearEndRxActiveLine (neRxLine)

Access	Read only
Description	This attribute indicates which near end line is active for receiving data from the far end.
Mib	Laps
Values	protection working
Default	No default

ATTRIBUTE Laps nearEndRequest (neReq)

Access	Read only
Description	This attribute indicates the request currently being ***transmitted*** to the far end in the SONET/SDH line overhead K1 byte of the protection line. Requests are prioritized so that high priority requests preempt or block those with a lower priority. The possible requests, in order of priority from highest to lowest, are as follows. ***lockoutOfProtection*** — the working line is prevented from switching to the protection line under any circumstance due to a '*ProtectionLockout Laps/n*' command being in effect. ***forcedSwitch*** — the line indicated by the attribute *nearEndRequestChannel* has a '*Switch -force laps/n*' command in effect against it. Note that a ***signalFail*** value on the protection line has higher priority than a ***forcedSwitch*** value. ***signalFail*** — the line indicated by the attribute *nearEndRequestChannel* is experiencing a signal failure (SF). Failures include LOS, LOF, received AIS-L, a signal BER exceeding 10e-3, or a locked *Sonet/Sdh* component. Note that a ***signalFail*** value on the protection line has higher priority than a ***forceSwitch*** value. ***signalDegrade*** — the line indicated by the attribute

nearEndRequestChannel is experiencing a signal degradation (SD).

manualSwitch — the line indicated by the attribute *nearEndRequestChannel* has a *Switch* command in effect against it.

waitToRestore — the protection line is active, the *revertive* attribute value is ***yes***, and the working line has recovered from a signal failure (SF) or signal degradation (SD). After the period defined by the attribute *waitToRestorePeriod*, the working line automatically reverts to being the receive active line and the *nearEndRequest* attribute value changes to ***noRequest***.

reverseRequest — the line indicated by the attribute *nearEndRequestChannel* is active due to a request from the far end. This request is only applicable when the provisioned *mode* attribute value is ***bidirectional***.

doNotRevert — the protection line is active, provisioned attribute *revertive* is set to ***no***, and either: (1) the working line has recovered from a *signalFail* or ***signalDegrade***; or (2) a ***forcedSwitch*** or ***manualSwitch*** request has been cleared. The receive active line does not automatically revert to the working line.

noRequest — the working line is active and no other requests are in effect.

This attribute does not apply, and is filtered out, when the *protocol* attribute is set to ***yProtection***.

Mib

Laps

Values

lockoutOfProtection
forcedSwitch
signalFail
signalDegrade
manualSwitch
waitToRestore
reverseRequest

	doNotRevert noRequest
Default	No default

ATTRIBUTE Laps nearEndRequestChannel (neReqChan)

Access	Read only
Description	This attribute indicates to which channel the *nearEndRequest* applies. The protection channel refers to working channel two in ITU-T G.841 Annex B terms. This attribute does not apply, and is filtered out, when the *protocol* attribute is set to ***yProtection***.
Mib	Laps
Values	protection working
Default	No default

ATTRIBUTE Laps farEndRequest (feReq)

Access	Read only
Description	This attribute indicates the request currently being ***received*** from the far end in the SONET/SDH line overhead K1 byte of the protection line. Requests are prioritized so that high priority requests preempt or block those with a lower priority. The possible requests, in order of priority from highest to lowest, are as follows. ***lockoutOfProtection*** — indicates the working line is prevented from switching to the protection line under any circumstances due to a *ProtectionLockout* command being in effect in the far end. ***forcedSwitch*** — the line indicated by the attribute *farEndRequestChannel* has a "*Switch -force*" command in effect against it. Note that a ***signalFail*** value on the protection line has higher priority than a ***forcedSwitch*** value.

signalFail — the line indicated by the attribute *farEndRequestChannel* is experiencing a signal failure (SF). Failures include LOS, LOF, received AIS-L, a signal BER exceeding 10e-3, or a locked *Sonet* component. Note that a ***signalFail*** value on the protection line has higher priority than a ***forceSwitch*** value.

signalDegrade — the line indicated by the attribute *farEndRequestChannel* is experiencing a signal degradation (SD).

manualSwitch — the line indicated by the attribute *farEndRequestChannel* has a *Switch* command in effect against it.

waitToRestore — the FE protection line is active, the FE *revertive* attribute value is ***yes***, and the FE working line has recovered from a signal failure (SF) or signal degradation (SD). After the period defined by the attribute *waitToRestorePeriod*, the FE working line automatically reverts to being the receive active line and the *farEndRequest* attribute value changes to ***noRequest***.

reverseRequest — the line indicated by the attribute *farEndRequestChannel* is active due to a request from the far end. This request is only applicable when the provisioned *mode* attribute is set to ***bidirectional***.

doNotRevert — the FE protection line is active, the FE provisioned attribute *revertive* is ***no***, and either: (1) the FE working line has recovered from a *signalFail* or *signalDegrade*; or (2) a *forcedSwitch* or *manualSwitch* request has been cleared in the FE. The receive active line in the will not automatically revert to the working line in the far end.

noRequest — the FE working line is active and no other requests are in effect.

This attribute does not apply, and is filtered out, when the *protocol* attribute is set to ***yProtection***.

Mib

Laps

Values	lockoutOfProtection forcedSwitch signalFail signalDegrade manualSwitch waitToRestore reverseRequest doNotRevert noRequest
Default	No default

ATTRIBUTE Laps farEndRequestChannel (feReqChan)

Access	Read only
Description	This attribute indicates to which channel the *farEndRequest* applies. The protection channel refers to working channel two in ITU-T G.841 Annex B terms.
Mib	Laps
Values	protection working
Default	No default

ATTRIBUTE Laps sdOnLines

Access	Read only
Description	This attribute indicates which lines, if any, are currently experiencing a signal degradation (SD). This attribute does not apply, and is filtered out, when the *protocol* attribute is set to ***yProtection***.
Mib	Laps
Set of	protection working
Default	No default

ATTRIBUTE Laps switchovers

Access	Read only
Description	This attribute counts the number of times that a switchover of the active line has occurred since the *Laps* component became active. This attribute does not apply, and is filtered out, when the *protocol* attribute is set to ***yProtection***.
Mib	Laps
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Laps timeUntilRestore

Access	Read only
Description	This attribute has a different meaning based on the protocol type provisioned: A) The *protocol* attribute is set to ***standard***: This attribute indicates the amount of time until the receive active line is automatically switched back from the protection line to the working line. It is only applicable for a *Laps* component that is provisioned to be revertive, currently has the protection line as the receive active line, and has a *nearEndRequest* attribute value of ***waitToRestore***. B) The *protocol* attribute is set to ***g841AnnexB***: This attribute indicates the amount of time until the line which previously had a Signal Fail or Signal Degrade condition is considered back in service. Once this time reaches zero, traffic continues to be received from the current receive active line by swapping the primary and secondary section labels. No line switch takes place. C) The *protocol* attribute is set to ***yProtection***:

	This attribute does not apply and is filtered out.
Mib	Laps
Values	Decimal (0..12)
Units	minutes
Default	No default

ATTRIBUTE Laps protocolFailureAlarm (pfAlarm)

Access	Read only
Description	This attribute indicates whether the *Laps* component is experiencing an APS protocol failure alarm. Protocol failure alarms include the protection switching byte mismatch alarm (code 7011 5270) and the channel mismatch failure alarm (code 7011 5271). This attribute does not apply to G.841 Annex B APS. It is filtered out when the *protocol* attribute is set to ***g841AnnexB***. It is also filtered out when the *protocol* attribute is set to ***yProtection***.
Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps modeMismatchAlarm (mmAlarm)

Access	Read only
Description	This attribute indicates whether the *Laps* component is experiencing a LAPS mode mismatch alarm (code 7011 5272). This alarm indicates either: (1) that the far end is operating with a 1:n switching architecture, as opposed to 1+1; or (2) that the value of the *mode* attribute on the far end is different from the value of the mode attribute on the near end.

When a mode mismatch occurs: (1) if the far end is operating with a 1:n switching architecture it will operate as 1+1; and (2) if either end has a provisioned *mode* attribute value of ***unidirectional*** then both ends will operate unidirectionally.

This attribute does not apply to G.841 Annex B APS. It is filtered out when the *protocol* attribute is set to ***g841AnnexB***. It is also filtered out when the *protocol* attribute is set to ***yProtection***.

Mib: Laps

Values: on
off

Default: No default

ATTRIBUTE Laps primarySectionMismatchAlarm (psmAlarm)

Access: Read only

Description: This attribute indicates whether the *Laps* component is experiencing a primary section mismatch alarm (code 7011 5276). This alarm indicates the primary section indicated in the received K2 byte of the SDH line overhead has not matched the primary section transmitted in the K2 byte for 50 milliseconds.

This attribute does not apply, and will be filtered out, when the *protocol* attribute is set to ***standard*** or ***yProtection***.

Mib: Laps

Values: on
off

Default: No default

ATTRIBUTE Laps primarySection (ps)

Access: Read only

Description: This attribute indicates which line is currently labelled as the primary section.

This attribute does not apply, and is filtered out, when the *protocol* attribute is set to ***standard*** or ***yProtection***.

Mib: Laps

Values:
protection
working

Default: No default

COMPONENT Laps Sts

Instance: Decimal (0..11)

Groups:
"GROUP Laps Sts Provisioned (Prov)"
"GROUP Laps Sts CustomerIdentifierData (CidData)"
"GROUP Laps Sts OsiState (State)"
"GROUP Laps Sts IfEntryProv (IfEntry)"
"GROUP Laps Sts OperationalStatus (OperStatus)"
"GROUP Laps Sts Operational (Oper)"
"GROUP Laps Sts Statistics (Stats)"
"GROUP Laps Sts Provisioned (Prov)"

Scope: Device

Description:
Lp/n Sonet/n Sts/n
Laps/n Sts/n
Pbg/n Sts/n

This component controls a path signal that is carried within a SONET signal.

The instance number of the *Sts* component must be 0 for components on cards that do not support channelization.

On FPs supporting channelization. the Sts index indicates the sub-channel within the main optical payload.

Mib: Laps

Opt. Subcomp.: "COMPONENT Laps Sts AtmCell (Cell)"
"COMPONENT Laps Sts Vt1dot5"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Laps Sts Provisioned (Prov)

Properties: Provisioned

Description

This group contains all of the provisioning data for the component.

Mib: Laps

ATTRIBUTE Laps Sts applicationFramerName (framer)

Access: Read and write

Description

This attribute defines which application is running on the path.

Mib: Laps

Values: Link

Default: No default

GROUP Laps Sts CustomerIdentifierData (CidData)

Properties: Provisioned

Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

ATTRIBUTE Laps Sts customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Sts OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific

	information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Sts adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Laps Sts operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Laps Sts usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Laps Sts availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: Laps

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Laps Sts proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Laps
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Laps Sts controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Laps

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Laps Sts alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently

being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Laps

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Laps Sts standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	Laps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Laps Sts unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Laps
Values	false true
Default	false

GROUP Laps Sts IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Sts ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

ATTRIBUTE Laps Sts ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Sts OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib	Laps

ATTRIBUTE Laps Sts snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

GROUP Laps Sts Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	Laps

ATTRIBUTE Laps Sts lopAlarm (lop)

Access	Read only
Description	This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds.

The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: Laps

Values: on
off

Default: No default

ATTRIBUTE Laps Sts rxAisAlarm (ais)

Access: Read only

Description

This attribute displays whether a Path Alarm Indication Signal (P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: Laps

Values
on
off

Default
No default

ATTRIBUTE Laps Sts rxRfiAlarm (rfi)

Access
Read only

Description

This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or STM frames (bit 5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib
Laps

Values
on
off

Default
No default

ATTRIBUTE Laps Sts signalLabelMismatch (slm)

Access
Read only

Description

This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have

been entered.

A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds.

A P-UNEQ failure condition is entered when P-UNEQ defects have been observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds.

The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps Sts txAis

Access	Read only

Description

This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib Laps

Values on
off

Default No default

ATTRIBUTE Laps Sts txRdi

Access Read only

Description

This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib Laps

Values on
off

Default No default

GROUP Laps Sts Statistics (Stats)

Properties Operational

Description

This group contains the statistics data for the component.

Mib Laps

ATTRIBUTE Laps Sts pathErrorFreeSec (pefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a near-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Sts pathCodeViolations (pcv)

Access: Read only

Description

This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Sts pathErroredSec (pes)

Access: Read only

Description

This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts pathSevErroredSec (pses)

Access	Read only
Description	This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than *x* PCVs or one or more LOP or path AIS defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts pathAisLopSec (pals)

Access	Read only
Description	This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts pathUnavailSec (puas)

Access	Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Sts pathFailures (pf)

Access: Read only

Description

This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Sts farEndPathErrorFreeSec (fepefs)

Access: Read only

Description

This attribute counts the one second intervals that the component has been in a far-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts farEndPathErroredSec (fepes)

Access	Read only
Description	This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than *x* FEPCVs or one or more P-RDI defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Sts farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Sts farEndPathUnavailSec (fepuas)

Access Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes

unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts farEndPathFailures (fepf)

Access	Read only
Description	This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

GROUP Laps Sts Provisioned (ChProv)

Properties	Provisioned
Description	This group contains the provisioning data for *Sts* components provisioned under *Sonet* components that support channelization..
Mib	Laps

ATTRIBUTE Laps Sts txPathTrace

Access	Read and write

Description	This attribute specifies the high order path identifier. The string must be constructed with 7-bit characters only. The path identifier is padded by null characters if necessary to form a 64-octet path trace message transmitted in byte J1 of 64 outgoing SONET frames. At the remote end, the path trace is reassembled, and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected, an alarm is issued. The functionality supported by this attribute is not available.
Mib	Laps
Values	String (0..64, ASCII)
Default	""

ATTRIBUTE Laps Sts expectedRxPathTrace

Access	Read and write
Description	This attribute specifies the expected path trace identifier which is used to identify the high order path. This attribute must match the corresponding *txPathTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. The functionality supported by this attribute is not available.
Mib	Laps
Values	String (0..64, ASCII)
Default	""

ATTRIBUTE Laps Sts concatNumber

Access	Read and write
Criticality	Process
Description	This attribute specifies the STS concatenation level for the *Sts* component on channelized cards. It must be set to a concatenation level supported by the FP upon which the *Sts* is defined, except for non-channelized cards, in which case it must be set to 0. For example, a value of 1 in this attribute would represent STS-1 concatenation, while a value of 3 would

represent STS-3c, a value of 12 would represent STS-12c, and so forth. *Sts* channelization to the tributary level is supported only if this attribute is set to 1.

Mib: Laps

Values: Decimal (0; 1; 3; 12; 48)

Default: No default

COMPONENT Laps Sts AtmCell (Cell)

Groups:
"GROUP Laps Sts Cell Provisioned (Prov)"
"GROUP Laps Sts Cell Operational (Oper)"
"GROUP Laps Sts Cell Statistics (Stats)"

Scope: Device

Description:

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib: Laps

Common Verbs:
Help
List
Display
Add
DELete

GROUP Laps Sts Cell Provisioned (Prov)

Properties: Provisioned

Description:

This group contains the provisioning attributes for the *AtmCell* component.

Mib Laps

ATTRIBUTE Laps Sts Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib Laps

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Laps Sts Cell scrambleCellPayload (scramble)

Access Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib Laps

Values off
on

Default No default

ATTRIBUTE Laps Sts Cell correctSingleBitHeaderErrors

Access Read and write

Description

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib Laps

Values off
on

Default off

ATTRIBUTE Laps Sts Cell clearDelay (clear)

Access Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib Laps

Values Decimal (0..60)

Units	minutes
Default	0

ATTRIBUTE Laps Sts Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Laps
Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Laps Sts Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit

established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Laps Sts Cell lcdStateDelay (delay)

Access: Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..50)

Units: msec

Default: No default

ATTRIBUTE Laps Sts Cell hecErrorIntervalLimit (hIntLimit)

Access: Read and write

Description

This attribute counts the instances of the *hecSamplingInterval*

attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..25)

Default: 1

GROUP Laps Sts Cell Operational (Oper)

Properties: Operational

Description:

This group contains the common operational attributes for the *AtmCell* component.

Mib: Laps

ATTRIBUTE Laps Sts Cell lcdAlarm (lcd)

Access: Read only

Description:

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7

consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib: Laps

Values: on
off

Default: off

GROUP Laps Sts Cell Statistics (Stats)

Properties: Operational

Description:

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib: Laps

ATTRIBUTE Laps Sts Cell uncorrectableHeaderErrors (ucErr)

Access: Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Sts Cell sevErroredSec (ses)

Access: Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Sts Cell receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Laps
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Laps Sts Cell transmitCellUtilization (txutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Laps
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Laps Sts Cell correctableHeaderErrors (cErr)

Access	Read only

Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

COMPONENT Laps Sts Vt1dot5

Instance	l [Decimal (1..7)] m [Decimal (1..4)]
Groups	"GROUP Laps Sts Vt1dot5 CustomerIdentifierData (CidData)" "GROUP Laps Sts Vt1dot5 OsiState (State)" "GROUP Laps Sts Vt1dot5 IfEntryProv (IfEntry)" "GROUP Laps Sts Vt1dot5 OperationalStatus (OperStatus)" "GROUP Laps Sts Vt1dot5 Operational (Oper)" "GROUP Laps Sts Vt1dot5 Statistics (Stats)"
Scope	Device
Description	*Lp/n Sonet/n Sts/k Vt1dot5/l,m* *Laps/n Sts/k Vt1dot5/l,m*

This component represents the *Vt1.5* low order path signal that is carried within a SONET signal.

Mib: Laps

Opt. Subcomp.: "COMPONENT Laps Sts Vt1dot5 DS1"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Laps Sts Vt1dot5 CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: Laps

ATTRIBUTE Laps Sts Vt1dot5 customerIdentifier (cid)

Access: Read and write

Description: This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager

	(referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Sts Vt1dot5 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Laps Sts Vt1dot5 operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Laps Sts Vt1dot5 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in

use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Laps Sts Vt1dot5 availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Laps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Laps

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Laps

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Laps

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Laps

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Laps Sts Vt1dot5 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Laps
Values	false true
Default	false

GROUP Laps Sts Vt1dot5 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps

Values	up down testing
Default	up

ATTRIBUTE Laps Sts Vt1dot5 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Sts Vt1dot5 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing

Default up

GROUP Laps Sts Vt1dot5 Operational (Oper)

Properties Operational

Description

This group contains the common operational data for the component.

Mib Laps

ATTRIBUTE Laps Sts Vt1dot5 rxAisAlarm

Access Read only

Description

This attribute indicates whether a Tributary Unit Alarm Indication Signal (TU-AIS) alarm state has been entered. A TU-AIS alarm state is entered when TU-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-AIS defect occurs when three consecutive TU pointers are in the all 1's state. This alarm is cleared after no TU-AIS defect has been detected for 10 seconds +/- 0.5 seconds.

Mib Laps

Values on
off

Default No default

ATTRIBUTE Laps Sts Vt1dot5 rxRdiAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Remote Defect Indicator (LP-RDI) alarm state has been entered. An LP-RDI alarm state is entered when LP-RDI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RDI defect occurs when RDI conditions are detected in five consecutive frames. This alarm is cleared after no LP-RDI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 rxRfiAlarm

Access	Read only
Description	This attribute indicates whether a Low Order Path Remote Failure Indicator (LP-RFI) alarm state has been entered. An LP-RFI alarm state is entered when LP-RFI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RFI defect occurs when a RFI condition is detected. This alarm is cleared after no LP-RFI defect has been detected for 10 seconds +/- 0.5 seconds.
Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 unequippedAlarm

Access	Read only
Description	This attribute indicates whether a Low Order Path Unequipped (LP-UNEQ) alarm state has been entered. An LP-UNEQ alarm state is entered when LP-UNEQ defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-UNEQ defect occurs when an unequipped condition is detected for five consecutive multi frames. This alarm is cleared after no LP-UNEQ defect has been detected for 10 seconds +/- 0.5 seconds.
Mib	Laps
Values	on off

Default No default

ATTRIBUTE Laps Sts Vt1dot5 traceIdMismatchAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Trace Identification Mismatch (LP-TIM) alarm state has been entered. An LP-TIM alarm state is entered when LP-TIM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-TIM defect occurs when a TIM condition is detected. This alarm is cleared after no LP-TIM defect has been detected for 10 seconds +/- 0.5 seconds.

Mib Laps

Values on
off

Default No default

ATTRIBUTE Laps Sts Vt1dot5 lopAlarm

Access Read only

Description

This attribute indicates whether a Tributary Unit Loss of Pointer (TU-LOP) alarm state has been entered. An TU-LOP alarm state is entered when TU-LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-LOP defect occurs when eight consecutive invalid pointer values or eight consecutive New Data Flag (NDF) pointers are detected. This alarm is cleared after no TU-LOP defect has been detected for 10 seconds +/- 0.5 seconds.

Mib Laps

Values on
off

Default No default

ATTRIBUTE Laps Sts Vt1dot5 txAis

Access	Read only
Description	This attribute indicates whether the Low order Path Alarm Indication Signal (LP-AIS) is being transmitted on the low order path. The LP-AIS signal is transmitted when the component *adminState* is *locked* or *operationalState* is *disabled* and *availabilityStatus* is *dependency.*
Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 txRdi

Access	Read only
Description	This attribute indicates whether the Low Order Path Remote Defect Indication (LP-RDI) is being transmitted on the low order path. The LP-RDI signal is transmitted upon detection of TU-LOP, TU-AIS, LP-TIM or LP-UNEQ. The value is *off* when the component *adminState* is *locked* or *operationalState* is *disabled* and *availabilityStatus* is *dependency.*
Mib	Laps
Values	on off
Default	No default

GROUP Laps Sts Vt1dot5 Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 pathErrorFreeSec (pefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a near-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 pathCodeViolations (pcv)

Access	Read only
Description	This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 pathErroredSec (pes)

Access	Read only
Description	This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.

Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 pathSevErroredSec (pses)

Access	Read only
Description	This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than *x* PCVs or one or more LOP or path AIS defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 pathAisLopSec (pals)

Access	Read only
Description	This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 pathUnavailSec (puas)

Access	Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Sts Vt1dot5 pathFailures (pf)

Access: Read only

Description

This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathErrorFreeSec (fepefs)

Access: Read only

Description

This attribute counts the one second intervals that the component has been in a far-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathErroredSec (fepes)

Access	Read only
Description	This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than *x* FEPCVs or one or more P-RDI defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathUnavailSec (fepuas)

Access Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable,

the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Sts Vt1dot5 farEndPathFailures (fepf)

Access: Read only

Description

This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Laps Sts Vt1dot5 DS1

Groups:
"GROUP Laps Sts Vt1dot5 DS1 Provisioned (Prov)"
"GROUP Laps Sts Vt1dot5 DS1 CustomerIdentifierData (CidData)"
"GROUP Laps Sts Vt1dot5 DS1 AdminInfo (AdminInfo)"
"GROUP Laps Sts Vt1dot5 DS1 IfEntryProv (IfEntry)"
"GROUP Laps Sts Vt1dot5 DS1 OperationalStatus (OperStatus)"
"GROUP Laps Sts Vt1dot5 DS1 OsiState (State)"
"GROUP Laps Sts Vt1dot5 DS1 Operational (Oper)"
"GROUP Laps Sts Vt1dot5 DS1 Statistics (Stats)"

Scope: Application

Description

Lp/n DS3/n DS1/n
The *DS1* component controls and monitors a DS1 tributary of a channelized DS3 port on a Function Processor that supports channelization of a DS3.

Mib

Laps

Subcomponents

"COMPONENT Laps Sts Vt1dot5 DS1 Channel (Chan)"

Dyn. Subcomp.

"COMPONENT Laps Sts Vt1dot5 DS1 Test (Test)"

Common Verbs

Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Laps Sts Vt1dot5 DS1 Provisioned (Prov)

Properties

Provisioned

Description

This group contains all of the provisioning data for a *DS1* component.

Mib

Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 lineType (lineType)

Access

Read and write

Description

This attribute defines the framing of the DS1 tributary.
d4 defines a framing pattern of 12 frames per multiframe.
esf defines a framing pattern of 24 frames per multiframe.
d4Cas defines a framing pattern of 12 frames per multiframe with channel associated signalling.
esfCas defines a framing pattern of 24 frames per multiframe with channel associated signalling.
unframed defines an unknown framing pattern for clear channels.

For the ***4pDS3ChAtm*** card, only ***d4*** and ***esf*** framing patterns are

permitted.

The ***4pDS3ChAal1*** card supports the ***d4*** and ***esf*** framing patterns, as well as ***unframed***.

Mib: Laps

Values:
d4
esf
d4Cas
esfCas
unframed

Default: esf

ATTRIBUTE Laps Sts Vt1dot5 DS1 zeroCoding (zeroCoding)

Access: Read and write

Criticality: Component

Description:

This attribute defines the zero encoding on the DS1 tributary.
bit7Stuffing sets bit 7 of every timeslot to a one to guarantee ones's density. This reduces the available bandwidth of the channel by 1/8.
none does no zero encoding, it does not change any value of the bits in the timeslot. The value ***none*** is compatible with any zero coding scheme which transports all 8 data bits in a timeslot (this would include both ***ami*** and ***b8zs*** values of the *DS1 zeroCoding* attribute).

Mib: Laps

Values:
bit7Stuffing
none

Default: none

ATTRIBUTE Laps Sts Vt1dot5 DS1 clockingSource (clockingSource)

Access: Read and write

Description:

This attribute specifies the source of the transmit clock for the

DS1 tributary.
When the clocking source is ***local***, the crystal on the port generates the clocking for the DS1 tributary.
When the clocking source is ***line***, the port synchronizes to the clock from the DS1 tributary.
When the clocking source is ***module***, the port's clock synchronizes to the clock provided by the oscillator on the active CP.
When the clocking source is ***sameAsDs3***, the Ds1 port's clock synchronizes to the same clock source as that of its parent Ds3 port.

On a ***1pDS3C*** card, if the *NetworkSynchronization (NS)* component is present, the default value of this attribute will be ***module***; otherwise it will be ***line***.

On a ***2pDS3cAal*** card, the only valid values are ***local*** and ***module***. If the *NS* component is present, the default value of this attribute will be ***module***; otherwise it will be ***local***.

On the ***4pDS3Ch***, ***4pDS3ChAtm***, and ***4pDS3ChAal1*** cards, the only valid value is ***sameAsDs3***. This is because a DS1 must have the same clocking source as its parent DS3.

Mib	Laps
Values	local line module sameAsDs3
Default	No default

GROUP Laps Sts Vt1dot5 DS1 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Sts Vt1dot5 DS1 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.

Mib	Laps
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	Laps
Values	String (0..60, ASCII)
Default	No default

GROUP Laps Sts Vt1dot5 DS1 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

ATTRIBUTE Laps Sts Vt1dot5 DS1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Sts Vt1dot5 DS1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

GROUP Laps Sts Vt1dot5 DS1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each

attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Laps Sts Vt1dot5 DS1 operationalState (osiOper)

Access: Read only

Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Sts Vt1dot5 DS1 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps

Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps Sts Vt1dot5 DS1 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Laps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Laps
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 controlStatus (osiCntrl)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Laps
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the

attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Laps

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is

present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Laps

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Laps Sts Vt1dot5 DS1 unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Laps

Values:
false
true

Default false

GROUP Laps Sts Vt1dot5 DS1 Operational (Oper)

Properties Operational

Description

This group contains the common operational data for a component in a digital hierarchy interface.

Mib Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 rxAisAlarm (rxAisAlarm)

Access Read only

Description

This attribute indicates whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds
+/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period. If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** for the duration of an AIS alarm state.
The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.

Mib Laps

Values on
off

Default off

ATTRIBUTE Laps Sts Vt1dot5 DS1 lofAlarm (lofAlarm)

Access Read only

Description

This attribute indicates whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF

defects (2 out of 5 framing bits in error) have been detected for 3 seconds +/- 0.5 seconds. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state
The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values: on
off

Default: off

ATTRIBUTE Laps Sts Vt1dot5 DS1 rxRaiAlarm (rxRaiAlarm)

Access: Read only

Description

This attribute indicates whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds. The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

Mib: Laps

Values: on
off

Default: off

ATTRIBUTE Laps Sts Vt1dot5 DS1 txAisAlarm (txAisAlarm)

Access	Read only
Description	This attribute indicates whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the tributary is in a locked state.
Mib	Laps
Values	on off
Default	off

ATTRIBUTE Laps Sts Vt1dot5 DS1 txRaiAlarm (txRaiAlarm)

Access	Read only
Description	This attribute indicates whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the tributary detects a LOF alarm condition.
Mib	Laps
Values	on off
Default	off

GROUP Laps Sts Vt1dot5 DS1 Statistics (Stats)

Properties	Operational
Description	This group contains the common statistical data for a component in a digital hierarchy interface.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 runningTime (runningTime)

Access	Read only
Description	This attribute counts the number of seconds since the tributary was activated.

Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 errorFreeSec (efs)

Access	Read only
Description	This attribute counts the number of seconds that the tributary has been in an error free state.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 erroredSec (es)

Access	Read only
Description	This attribute counts the number of errored seconds the tributary has counted since it was activated. An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 sevErroredSec (ses)

Access	Read only
Description	This attribute counts the number of severely errored seconds the tributary has counted since it was activated. A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.

Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 sevErroredFrmSec (sefs)

Access	Read only
Description	This attribute counts the number of severely errored framing seconds the tributary has counted since it was activated A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 unavailSec

Access	Read only
Description	This attribute counts the total number of seconds that the tributary has been in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 crcErrors (crcErrors)

Access	Read only
Description	This attribute counts the total number of CRC-6 errors. These will only be counted when the *lineType* is ***esf***.

Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 frmErrors (frmErrors)

Access	Read only
Description	This attribute counts the total number of frame errors. A frame error is an error in the framing bits.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 slipErrors (slipErrors)

Access	Read only
Description	The total number of times that the line experienced a controlled frame slip.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

COMPONENT Laps Sts Vt1dot5 DS1 Channel (Chan)

Instance	Decimal (0..23)
Groups	"GROUP Laps Sts Vt1dot5 DS1 Chan Provisioned (Prov)" "GROUP Laps Sts Vt1dot5 DS1 Chan CustomerIdentifierData (CidData)" "GROUP Laps Sts Vt1dot5 DS1 Chan IfEntryProv (IfEntry)" "GROUP Laps Sts Vt1dot5 DS1 Chan OperationalStatus (OperStatus)" "GROUP Laps Sts Vt1dot5 DS1 Chan OsiState (State)" "GROUP Laps Sts Vt1dot5 DS1 Chan Operational (Oper)" "GROUP Laps Sts Vt1dot5 DS1 Chan AdminInfo (AdminInfo)"

Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port. Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots. Similarly, the ***1pDS3C*** card type only allows one channel per port, and this is automatically provisioned with all available timeslots.
Mib	Laps
Opt. Subcomp.	"COMPONENT Laps Sts Vt1dot5 DS1 Chan AtmCell (Cell)" "COMPONENT Laps Sts Vt1dot5 DS1 Chan TrunkConditioning (Tc)"
Dyn. Subcomp.	"COMPONENT Laps Sts Vt1dot5 DS1 Chan Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Laps Sts Vt1dot5 DS1 Chan Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisional data for a *Channel* component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan timeslots (ts)

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used

by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component.

For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.

Mib	Laps
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

20
21
22
23
24
25
26
27
28
29
30
31

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan timeslotDataRate (dataRate)

Access Read and write

Criticality Component

Description

This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute.

When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s.

When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s.

On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card.

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***.

One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.

Mib: Laps

Values: 56k
doNotOverride

Default: doNotOverride

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan applicationFramerName

Access: Read and write

Description:

This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.

Mib: Laps

Values: Link (Service, interfaceName)

Default: No default

GROUP Laps Sts Vt1dot5 DS1 Chan CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan customerIdentifier (cid)

Access: Read and write

Description: This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-

level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Sts Vt1dot5 DS1 Chan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Sts Vt1dot5 DS1 Chan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

GROUP Laps Sts Vt1dot5 DS1 Chan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each

attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan operationalState (osiOper)

Access: Read only

Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps

Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Laps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Laps
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan controlStatus (osiCntrl)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Laps
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the

attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Laps
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is

present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Laps

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Laps

Values:
false
true

Default	false

GROUP Laps Sts Vt1dot5 DS1 Chan Operational (Oper)

Properties	Operational
Description	This group contains all of the operational data for a *Channel* component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan actualChannelSpeed

Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.
Mib	Laps
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Laps Sts Vt1dot5 DS1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Laps
Values	String (0..20, ASCII)

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan commentText

Access Read and write

Description

Any miscellaneous text about the facility.

Mib Laps

Values String (0..60, ASCII)

Default No default

COMPONENT Laps Sts Vt1dot5 DS1 Chan Test (Test)

Groups "GROUP Laps Sts Vt1dot5 DS1 Chan Test OsiState (State)"
"GROUP Laps Sts Vt1dot5 DS1 Chan Test Setup (Setup)"
"GROUP Laps Sts Vt1dot5 DS1 Chan Test Results (Results)"

Scope Application

Description

The *Test* component is configured to control a hardware facility test on a physical (*V*35, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib Laps

Common Verbs

Help
List
Display

VERB START Laps Sts Vt1dot5 DS1 Chan Test

Impact Service

Description

This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Laps Sts Vt1dot5 DS1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Laps Sts Vt1dot5 DS1 Chan Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Laps

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Laps

Values	idle active (activ) busy
Default	idle

GROUP Laps Sts Vt1dot5 DS1 Chan Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Laps
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end.

payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Laps

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test frmSize (size)

Access: Read and write

Description

This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also

ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: Laps

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test frmPatternType (fpt)

Access: Read and write

Description:

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: Laps

Values:
ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default: ccitt32kBitPattern

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test customizedPattern (cp)

Access: Read and write

Description:

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: Laps

Values: Hex (H.0..H.ffffffff)

Units: Hex

Default H.55555555

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test dataStartDelay (dsd)

Access Read and write

Description

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib Laps

Values Decimal (0..1814400)

Units seconds

Default 0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test displayInterval (di)

Access Read and write

Description

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib Laps

Values Decimal (0..30240)

Units minutes

Default 5

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test duration

Access Read and write

Description

This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.

Mib: Laps

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 1.00

GROUP Laps Sts Vt1dot5 DS1 Chan Test Results (Results)

Properties: Operational

Description

This group contains all the statistics related attributes of the *Test* component.

Mib: Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test causeOfTermination

Access: Read only

Description

This attribute indicates either the status of the test or the cause of the test's termination:

a value of ***neverStarted*** indicates that the test has not yet been started.

a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a

loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	Laps
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test bitsTx

Access	Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test bitsRx

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test bytesRx

Access Read only

Description

This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test frmRx

Access Read only

Description This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test erroredFrmRx

Access Read only

Description This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate

any frame.

For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib: Laps

Values: Long Integer

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test bitErrorRate

Access: Read only

Description

This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib: Laps

Values: String (5, ASCII)

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test elapsedTime

Access: Read only

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib: Laps

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 0.00

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Test timeRemaining

Access: Read only

Description

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib: Laps

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 0.00

COMPONENT Laps Sts Vt1dot5 DS1 Chan AtmCell (Cell)

Groups: "GROUP Laps Sts Vt1dot5 DS1 Chan Cell Provisioned (Prov)"
"GROUP Laps Sts Vt1dot5 DS1 Chan Cell Operational (Oper)"
"GROUP Laps Sts Vt1dot5 DS1 Chan Cell Statistics (Stats)"

Scope: Device

Description

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell*

component appears under all port components running on ATM cards.

Mib: Laps

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Laps Sts Vt1dot5 DS1 Chan Cell Provisioned (Prov)

Properties: Provisioned

Description:

This group contains the provisioning attributes for the *AtmCell* component.

Mib: Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell alarmActDelay (act)

Access: Read and write

Description:

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib: Laps

Values: Decimal (0..2000)

Units: msec

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell scrambleCellPayload (scramble)

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	Laps
Values	off on
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	Laps
Values	off on
Default	off

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Laps
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Laps

Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Laps
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell lcdStateDelay (delay)

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell* component is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.

This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..50)

Units: msec

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell hecErrorIntervalLimit (hIntLimit)

Access: Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..25)

Default: 1

GROUP Laps Sts Vt1dot5 DS1 Chan Cell Operational (Oper)

Properties: Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell lcdAlarm (lcd)

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib Laps

Values on
off

Default off

GROUP Laps Sts Vt1dot5 DS1 Chan Cell Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access	Read only
Description	This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell sevErroredSec (ses)

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3*

component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell receiveCellUtilization (rxutil)

Access: Read only

Description:

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib: Laps

Values: Decimal (0..100)

Units: %

Default: 0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell transmitCellUtilization (txutil)

Access: Read only

Description:

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen

when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib: Laps

Values: Decimal (0..100)

Units: %

Default: 0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Cell correctableHeaderErrors (cErr)

Access: Read only

Description:

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Laps Sts Vt1dot5 DS1 Chan TrunkConditioning (Tc)

Groups: "GROUP Laps Sts Vt1dot5 DS1 Chan Tc Provisioned (Prov)"
"GROUP Laps Sts Vt1dot5 DS1 Chan Tc Operational (Op)"

Scope: Device

Description:

Lp/n Ds1/n Chan/n Tc
Lp/n E1/n Chan/n Tc
Lp/n Ds3/n Ds1/n Chan/n Tc
Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc
Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc
Laps/n Vc4/n Vc12/k,l,m E1 Chan/n T*c*
Laps/n Sts/n Vt1dot5/l,m Ds1 Chan/n T*c*

The *Tc* component is used to provision and monitor trunk

conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service.

Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined.

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib	Laps
Common Verbs	Help List Display Add DELete

GROUP Laps Sts Vt1dot5 DS1 Chan Tc Provisioned (Prov)

Properties	Provisioned
Description	This group contains all specific provisioning data for a *Tc* component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc replacementData (data)

Access	Read and write
Description	This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions. The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values: DS1 MUX Out Of Service Code = 0x1A E1 MUX Out Of Service Code = 0xFF On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***. On the ***4pOC3ChSmIr*** and ***2pOC3ChSmIrVsp3*** cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.
Mib	Laps
Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc signalOneDuration (duration)

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits.

If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions.

The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.

Mib	Laps
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc noServiceResponse (resp)

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.
Mib	Laps
Values	autoConfigure tc ais noResponse
Default	autoConfigure

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc signalOne (sigOne)

Access	Read and write

Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	Laps
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc signalTwo (sigTwo)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	Laps
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Laps Sts Vt1dot5 DS1 Chan Tc Operational (Op)

Properties	Operational
Description	This group contains all specific operational data for a *Tc* component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc ingressConditioning (inCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI)
Mib	Laps
Values	off on
Default	off

ATTRIBUTE Laps Sts Vt1dot5 DS1 Chan Tc egressConditioning (egCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the PDH line.

When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.***

When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***.

Trunk conditioning is transmitted towards the PDH line under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

Mib: Laps

Values: off
on

Default: off

COMPONENT Laps Sts Vt1dot5 DS1 Test (Test)

Groups: "GROUP Laps Sts Vt1dot5 DS1 Test OsiState (State)"
"GROUP Laps Sts Vt1dot5 DS1 Test Setup (Setup)"
"GROUP Laps Sts Vt1dot5 DS1 Test Results (Results)"

Scope: Application

Description

The *Test* component is configured to control a hardware facility test on a physical (*V*35, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib: Laps

Common Verbs:
Help
List
Display

VERB START Laps Sts Vt1dot5 DS1 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Laps Sts Vt1dot5 DS1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Laps Sts Vt1dot5 DS1 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

	The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Laps
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Laps

Values:
idle
active (activ)
busy

Default: idle

GROUP Laps Sts Vt1dot5 DS1 Test Setup (Setup)

Properties: Operational

Description:
This group contains all of the operational data for a *Test* component.

Mib: Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test purpose (purpose)

Access: Read and write

Description:
This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib: Laps

Values: String (0..40, ASCII)

Default: No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test type (type)

Access: Read and write

Description:
This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.

manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Laps

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	Laps
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	Laps
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the

attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: Laps

Values: Hex (H.0..H.ffffffff)

Units: Hex

Default: H.55555555

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test dataStartDelay (dsd)

Access: Read and write

Description:

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib: Laps

Values: Decimal (0..1814400)

Units: seconds

Default: 0

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test displayInterval (di)

Access: Read and write

Description:

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib: Laps

Values: Decimal (0..30240)

Units	minutes
Default	5

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Laps Sts Vt1dot5 DS1 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Laps

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	Laps
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed

patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Laps

Values Long Integer

Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test erroredFrmRx

Access	Read only

Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Laps
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Laps Sts Vt1dot5 DS1 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Laps Vc4

Instance	Decimal (0..3)
Groups	"GROUP Laps Vc4 Provisioned (Prov)" "GROUP Laps Vc4 CustomerIdentifierData (CidData)" "GROUP Laps Vc4 OsiState (State)" "GROUP Laps Vc4 IfEntryProv (IfEntry)" "GROUP Laps Vc4 OperationalStatus (OperStatus)" "GROUP Laps Vc4 Operational (Oper)" "GROUP Laps Vc4 Statistics (Stats)"
Scope	Device

Description	*Lp/n Sdh/n Vc4/n* *Laps/n Vc4/n* This component controls a VC4 path signal that is carried within an SDH signal. The instance number of the *Vc4* component is 0. The *Vc4* component may only be defined on Nortel Networks Multiservice Switch FPs that support STM.
Mib	Laps
Opt. Subcomp.	"COMPONENT Laps Vc4 AtmCell (Cell)" "COMPONENT Laps Vc4 Vc12"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Laps Vc4 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for the component.
Mib	Laps

ATTRIBUTE Laps Vc4 applicationFramerName (framer)

Access	Read and write
Description	This attribute defines which application is running on the path.
Mib	Laps
Values	Link

Default	No default

ATTRIBUTE Laps Vc4 pathTraceLength

Access	Read and write
Description	This attribute specifies the transmitted path trace message length. The *pathTraceLength* attribute at transmitting and receiving end must match.
Mib	Laps
Values	16 64
Default	16

ATTRIBUTE Laps Vc4 txPathTrace

Access	Read and write
Description	This attribute specifies the high order path identifier. The string must be constructed with 7-bit characters only. If *pathTraceLength* is 16, the path identifier is prefixed with a CRC byte and padded by null characters if necessary to form a 16-octet path trace message transmitted in byte J1 of 16 outgoing SDH frames. If *pathTraceLength* is 64, the path identifier is padded by null characters if necessary to form a 64-octet path trace message transmitted in byte J1 of 64 outgoing SDH frames. At the remote end, the path trace is reassembled, the CRC is checked if necessary and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected, an alarm is issued. Usage guidelines for path trace message are found in clause 3 of the ITU G.831 standard which defines the Access Point Identifier format. The functionality supported by this attribute is not available.
Mib	Laps
Values	String (0..64, Extended ASCII)

Default ""

ATTRIBUTE Laps Vc4 expectedRxPathTrace

Access Read and write

Description This attribute specifies the expected path trace identifier which is used to identify the high order path. This attribute must match the corresponding *txPathTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued.

The functionality supported by this attribute is not available.

Mib Laps

Values String (0..64, Extended ASCII)

Default ""

ATTRIBUTE Laps Vc4 concatNumber

Access Read and write

Criticality Process

Description

This attribute specifies the number of contiguous Administration Unit 4 (AU-4) concatenated together. AU-4s can be concatenated together to form an AU-4-4c or AU-4-16c (4 or 16 concatenated AU-4s) which can transport payloads requiring greater capacity than one Container-4 capacity.

Only *Vc4/0* can have *concatNumber* set to 16 and only *Vc4/0*, *Vc4/4*, *Vc4/8* or *Vc4/12* can have *concatNumber* set to 4.

When a *Vc4* uses concatenation, the other concatenated *Vc4* instance number cannot be used. For example, if *Vc4/0 concatNumber* is 4, the next provisionable *Vc4* is *Vc4/4*.

Vc4 channelization, indicated by provisioning subcomponents such as *Vc12*, is allowed only if this attribute is set to 1. This value must be set to 0 for card types which do not support the use of this attribute.

Mib	Laps
Values	0 1 4 16
Default	No default

GROUP Laps Vc4 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

ATTRIBUTE Laps Vc4 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Laps
Values	Decimal (0; 1..8191)

Default	0

GROUP Laps Vc4 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Vc4 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Laps Vc4 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Vc4 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Laps Vc4 availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be

applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: Laps

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default No default

ATTRIBUTE Laps Vc4 proceduralStatus (osiProc)

Access Read only

Description If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Laps
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Laps Vc4 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.

Mib	Laps
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Laps Vc4 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Laps
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Laps Vc4 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Laps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)

Default	notSet

ATTRIBUTE Laps Vc4 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Laps
Values	false true
Default	false

GROUP Laps Vc4 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Vc4 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

ATTRIBUTE Laps Vc4 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Vc4 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Vc4 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

GROUP Laps Vc4 Operational (Oper)

Properties	Operational

Description

This group contains the common operational data for the component.

Mib Laps

ATTRIBUTE Laps Vc4 lopAlarm (lop)

Access Read only

Description

This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds.

The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib Laps

Values on
off

Default No default

ATTRIBUTE Laps Vc4 rxAisAlarm (ais)

Access Read only

Description

This attribute displays whether a Path Alarm Indication Signal

(P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: Laps

Values: on
off

Default: No default

ATTRIBUTE Laps Vc4 rxRfiAlarm (rfi)

Access: Read only

Description

This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or STM frames (bit 5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until

the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: Laps

Values: on
off

Default: No default

ATTRIBUTE Laps Vc4 signalLabelMismatch (slm)

Access: Read only

Description

This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have been entered.

A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds.

A P-UNEQ failure condition is entered when P-UNEQ defects have been observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds.

The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: Laps

Values: on, off

Default: No default

ATTRIBUTE Laps Vc4 txAis

Access: Read only

Description

This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: Laps

Values: on, off

Default: No default

ATTRIBUTE Laps Vc4 txRdi

Access: Read only

Description

This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left

offline by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: Laps

Values: on
off

Default: No default

GROUP Laps Vc4 Statistics (Stats)

Properties: Operational

Description:
This group contains the statistics data for the component.

Mib: Laps

ATTRIBUTE Laps Vc4 pathErrorFreeSec (pefs)

Access: Read only

Description:
This attribute counts the one second intervals that the component has been in a near-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Vc4 pathCodeViolations (pcv)

Access: Read only

Description:
This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Vc4 pathErroredSec (pes)

Access: Read only

Description

This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Vc4 pathSevErroredSec (pses)

Access: Read only

Description

This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than *x* PCVs or one or more LOP or path AIS defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Vc4 pathAisLopSec (pals)

Access	Read only
Description	This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 pathUnavailSec (puas)

Access	Read only
Description	This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 pathFailures (pf)

Access	Read only

Description

This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 farEndPathErrorFreeSec (fepefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a far-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 farEndPathCodeViolations (fepcv)

Access Read only

Description

This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 farEndPathErroredSec (fepes)

Access Read only

Description

This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than *x* FEPCVs or one or more P-RDI defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Vc4 farEndPathUnavailSec (fepuas)

Access: Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Vc4 farEndPathFailures (fepf)

Access: Read only

Description

This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Laps Vc4 AtmCell (Cell)

Groups:
"GROUP Laps Vc4 Cell Provisioned (Prov)"
"GROUP Laps Vc4 Cell Operational (Oper)"
"GROUP Laps Vc4 Cell Statistics (Stats)"

Scope: Device

Description:

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib: Laps

Common Verbs:
Help
List
Display
Add
DELete

GROUP Laps Vc4 Cell Provisioned (Prov)

Properties: Provisioned

Description:

This group contains the provisioning attributes for the *AtmCell* component.

Mib: Laps

ATTRIBUTE Laps Vc4 Cell alarmActDelay (act)

Access	Read and write
Description	This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.
Mib	Laps
Values	Decimal (0..2000)
Units	msec
Default	No default

ATTRIBUTE Laps Vc4 Cell scrambleCellPayload (scramble)

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	Laps
Values	off on
Default	No default

ATTRIBUTE Laps Vc4 Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	Laps
Values	off on
Default	off

ATTRIBUTE Laps Vc4 Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Laps
Values	Decimal (0..60)
Units	minutes

Default 0

ATTRIBUTE Laps Vc4 Cell hecSampleInterval (hSample)

Access Read and write

Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib Laps

Values Decimal (0..25)

Units seconds

Default 0

ATTRIBUTE Laps Vc4 Cell hecErrorLimit (hLimit)

Access Read and write

Description

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a

hecErrorInterval attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Laps Vc4 Cell lcdStateDelay (delay)

Access: Read and write

Description:

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..50)

Units: msec

Default: No default

ATTRIBUTE Laps Vc4 Cell hecErrorIntervalLimit (hIntLimit)

Access: Read and write

Description:

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is

generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..25)

Default: 1

GROUP Laps Vc4 Cell Operational (Oper)

Properties: Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib: Laps

ATTRIBUTE Laps Vc4 Cell lcdAlarm (lcd)

Access: Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been

detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib: Laps

Values: on
off

Default: off

GROUP Laps Vc4 Cell Statistics (Stats)

Properties: Operational

Description:
This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib: Laps

ATTRIBUTE Laps Vc4 Cell uncorrectableHeaderErrors (ucErr)

Access: Read only

Description:
This attribute indicates the number of uncorrectable ATM cell

header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Vc4 Cell sevErroredSec (ses)

Access: Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Vc4 Cell receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Laps
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Laps Vc4 Cell transmitCellUtilization (txutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Laps
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Laps Vc4 Cell correctableHeaderErrors (cErr)

Access	Read only
Description	This attribute indicates the number of correctable ATM cell

	header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

COMPONENT Laps Vc4 Vc12

Instance	k [Decimal (1..3)] l [Decimal (1..7)] m [Decimal (1..3)]
Groups	"GROUP Laps Vc4 Vc12 Provisioned (Prov)" "GROUP Laps Vc4 Vc12 CustomerIdentifierData (CidData)" "GROUP Laps Vc4 Vc12 OsiState (State)" "GROUP Laps Vc4 Vc12 IfEntryProv (IfEntry)" "GROUP Laps Vc4 Vc12 OperationalStatus (OperStatus)" "GROUP Laps Vc4 Vc12 Operational (Oper)" "GROUP Laps Vc4 Vc12 Statistics (Stats)"
Scope	Device
Description	*Lp/n Sdh/n Vc4/n Vc12/k,l,m* *Laps/n Vc4/n Vc12/k,l,m* This component controls the VC12 low order path signal that is carried within an SDH signal. The *Vc12* component may only be provisioned on Nortel

Networks Multiservice Switch FPs that support STM and channelization.

Mib: Laps

Opt. Subcomp.: "COMPONENT Laps Vc4 Vc12 E1"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Laps Vc4 Vc12 Provisioned (Prov)

Properties: Provisioned

Description

This group contains all of the provisioning data for the component.

Mib: Laps

ATTRIBUTE Laps Vc4 Vc12 txPathTrace

Access: Read and write

Description

This attribute specifies the low order path identifier. The string must be constructed with 7-bit characters only. The path identifier is prefixed with a CRC byte and padded by null characters if necessary to form a 16-octet path trace message transmitted in byte J2 of 16 outgoing SDH frames. At the remote end, the path trace is reassembled, the CRC is checked and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected and the *expectedRxPathTrace* attribute is not an empty string (default value), an alarm is issued.

Usage guidelines for path trace message are found in clause 3 of the ITU G.831 standard which defines the Access Point Identifier format.

	The functionality supported by this attribute is available on the *4pOC3Ch* functional processor.
Mib	Laps
Values	String (0..15, Extended ASCII)
Default	""

ATTRIBUTE Laps Vc4 Vc12 expectedRxPathTrace

Access	Read and write
Description	This attribute specifies the expected path trace identifier which is used to identify the low order path. This attribute must match the corresponding *txPathTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. If an empty string (default value) is provisioned, the Low Order Path Trace Identification Mismatch (LP-TIM) defect is ignored. The functionality supported by this attribute is available on the *4pOC3Ch* functional processor.
Mib	Laps
Values	String (0..15, Extended ASCII)
Default	""

GROUP Laps Vc4 Vc12 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute,

the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Vc4 Vc12 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or

Lock command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Laps Vc4 Vc12 operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Vc4 Vc12 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps Vc4 Vc12 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: Laps

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Laps Vc4 Vc12 proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been

initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Laps

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Laps Vc4 Vc12 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Laps

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Laps Vc4 Vc12 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Laps

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Laps Vc4 Vc12 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	Laps
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Laps Vc4 Vc12 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Laps
Values	false true
Default	false

GROUP Laps Vc4 Vc12 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.

Mib	Laps
Values	up down testing
Default	up

ATTRIBUTE Laps Vc4 Vc12 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Vc4 Vc12 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps

Values	up down testing
Default	up

GROUP Laps Vc4 Vc12 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 rxAisAlarm

Access	Read only
Description	This attribute indicates whether a Tributary Unit Alarm Indication Signal (TU-AIS) alarm state has been entered. A TU-AIS alarm state is entered when TU-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-AIS defect occurs when three consecutive TU pointers are in the all 1's state. This alarm is cleared after no TU-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
Mib	Laps
Values	on off
Default	No default

ATTRIBUTE Laps Vc4 Vc12 rxRdiAlarm

Access	Read only
Description	This attribute indicates whether a Low Order Path Remote Defect Indicator (LP-RDI) alarm state has been entered. An LP-RDI alarm state is entered when LP-RDI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The

LP-RDI defect occurs when RDI conditions are detected in five consecutive frames. This alarm is cleared after no LP-RDI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values: on
off

Default: No default

ATTRIBUTE Laps Vc4 Vc12 rxRfiAlarm

Access: Read only

Description:

This attribute indicates whether a Low Order Path Remote Failure Indicator (LP-RFI) alarm state has been entered. An LP-RFI alarm state is entered when LP-RFI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RFI defect occurs when a RFI condition is detected. This alarm is cleared after no LP-RFI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values: on
off

Default: No default

ATTRIBUTE Laps Vc4 Vc12 rxReiAlarm

Access: Read only

Description:

This attribute indicates whether a Low Order Path Remote Error Indicator (LP-REI) alarm state has been entered. An LP-REI alarm state is entered when LP-REI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-REI defect occurs when a REI condition is detected. This alarm is cleared after no LP-REI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values
on
off

Default
No default

ATTRIBUTE Laps Vc4 Vc12 bip2Alarm

Access
Read only

Description
This attribute indicates whether a Low Order Path Error Monitoring (BIP-2) alarm state has been entered. An BIP-2 alarm state is entered when BIP-2 defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The BIP-2 defect occurs when a mismatch between the calculated and received BIP-2 is detected. This alarm is cleared after no BIP-2 defect has been detected for 10 seconds +/- 0.5 seconds.

Mib
Laps

Values
on
off

Default
No default

ATTRIBUTE Laps Vc4 Vc12 unequippedAlarm

Access
Read only

Description
This attribute indicates whether a Low Order Path Unequipped (LP-UNEQ) alarm state has been entered. An LP-UNEQ alarm state is entered when LP-UNEQ defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-UNEQ defect occurs when an unequipped condition is detected for five consecutive multi frames. This alarm is cleared after no LP-UNEQ defect has been detected for 10 seconds +/- 0.5 seconds.

Mib
Laps

Values
on
off

Default
No default

ATTRIBUTE Laps Vc4 Vc12 traceIdMismatchAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Trace Identification Mismatch (LP-TIM) alarm state has been entered. An LP-TIM alarm state is entered when LP-TIM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-TIM defect occurs when a TIM condition is detected. This alarm is cleared after no LP-TIM defect has been detected for 10 seconds +/- 0.5 seconds.

Mib Laps

Values on
off

Default No default

ATTRIBUTE Laps Vc4 Vc12 lopAlarm

Access Read only

Description

This attribute indicates whether a Tributary Unit Loss of Pointer (TU-LOP) alarm state has been entered. An TU-LOP alarm state is entered when TU-LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-LOP defect occurs when eight consecutive invalid pointer values or eight consecutive New Data Flag (NDF) pointers are detected. This alarm is cleared after no TU-LOP defect has been detected for 10 seconds +/- 0.5 seconds.

Mib Laps

Values on
off

Default No default

ATTRIBUTE Laps Vc4 Vc12 txAis

Access Read only

Description

This attribute indicates whether the Low order Path Alarm Indication Signal (LP-AIS) is being transmitted on the low order path. The LP-AIS signal is transmitted when the component *adminState* is ***locked*** or *operationalState* is ***disabled*** and *availabilityStatus* is *dependency.*

Mib: Laps

Values: on
off

Default: No default

ATTRIBUTE Laps Vc4 Vc12 txRdi

Access: Read only

Description

This attribute indicates whether the Low Order Path Remote Defect Indication (LP-RDI) is being transmitted on the low order path. The LP-RDI signal is transmitted upon detection of TU-LOP, TU-AIS, LP-TIM or LP-UNEQ. The value is ***off*** when the component *adminState* is ***locked*** or *operationalState* is ***disabled*** and *availabilityStatus* is ***dependency***.

Mib: Laps

Values: on
off

Default: No default

GROUP Laps Vc4 Vc12 Statistics (Stats)

Properties: Operational

Description

This group contains the statistics data for the component.

Mib: Laps

ATTRIBUTE Laps Vc4 Vc12 pathErrorFreeSec (pefs)

Access: Read only

Description

This attribute counts the one second intervals that the component has been in a near-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 Vc12 pathCodeViolations (pcv)

Access Read only

Description

This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 Vc12 pathErroredSec (pes)

Access Read only

Description

This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 pathSevErroredSec (pses)

Access	Read only
Description	This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than *x* PCVs or one or more LOP or path AIS defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 pathAisLopSec (pals)

Access	Read only
Description	This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 pathUnavailSec (puas)

Access	Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Vc4 Vc12 pathFailures (pf)

Access: Read only

Description

This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Vc4 Vc12 farEndPathErrorFreeSec (fepefs)

Access: Read only

Description

This attribute counts the one second intervals that the component has been in a far-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 farEndPathErroredSec (fepes)

Access	Read only
Description	This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than *x* FEPCVs or one or more P-RDI defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 Vc12 farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib Laps

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Laps Vc4 Vc12 farEndPathUnavailSec (fepuas)

Access Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable,

the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Vc4 Vc12 farEndPathFailures (fepf)

Access: Read only

Description

This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Laps Vc4 Vc12 E1

Groups:
"GROUP Laps Vc4 Vc12 E1 Provisioned (Prov)"
"GROUP Laps Vc4 Vc12 E1 CustomerIdentifierData (CidData)"
"GROUP Laps Vc4 Vc12 E1 AdminInfo (AdminInfo)"
"GROUP Laps Vc4 Vc12 E1 IfEntryProv (IfEntry)"
"GROUP Laps Vc4 Vc12 E1 OperationalStatus (OperStatus)"
"GROUP Laps Vc4 Vc12 E1 OsiState (State)"
"GROUP Laps Vc4 Vc12 E1 Operational (Oper)"
"GROUP Laps Vc4 Vc12 E1 E1Operational (E1Oper)"
"GROUP Laps Vc4 Vc12 E1 Statistics (Stats)"

Scope: Device

Description

Lp/n E1/n
Lp/n Sdh/i Vc4/j Vc12/k,l,m E1
The *E1* component controls and monitors an E1 port or tributary on a Function Processor. The number of ports supported depends on the type of card, and is usually encoded in the *Shelf Card/n cardType*, for example 4pE1Aal1: 4 port. The lowest instance value is usually ***0***, except for the ***32pE1Aal*** card when it is ***1***.
No instance value is used when the E1 is a STM tributary.
Multi-Service cards have an instance range 0..31, except that instance values 30 and 31 are not available for an “ATM UNI port”. (An E1 “ATM UNI port” is an *E1* component with a single *Chan* whose *applicationFramerName* attribute is linked to an *AtmIf* component.)
The instance number of an *E1* “ATM UNI port” must not be the same as the instance number of an *IMA* group under the same *Lp*.

Mib

Laps

Subcomponents

"COMPONENT Laps Vc4 Vc12 E1 Channel (Chan)"

Dyn. Subcomp.

"COMPONENT Laps Vc4 Vc12 E1 Test (Test)"
"COMPONENT Laps Vc4 Vc12 E1 Dsp"
"COMPONENT Laps Vc4 Vc12 E1 Audio"

Common Verbs

Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Laps Vc4 Vc12 E1 Provisioned (Prov)

Properties

Provisioned

Description

This group contains all of the provisioning data for an E1 component.

Mib

Laps

ATTRIBUTE Laps Vc4 Vc12 E1 lineType (lineType)

Access	Read and write
Description	This attribute specifies the framing of the E1 line. When ***cas*** (channel associated signalling) is selected, timeslot 16 is reserved for multiframe signalling and only 30 timeslots are available for data. The signalling bits are not interpreted. When ***ccs*** (common channel signalling) is selected, timeslot 16 is not reserved for multiframe signalling and 31 timeslots are available for data. The signalling bits are not interpreted. When ***unframed*** is selected, a clear channel is defined whereby data from all timeslots including the framing data (in timeslot 0) and timeslot 16 are passed transparently. This value is valid only for AAL1 cards. For cell-based cards the ATM Forum specifies that timeslot 16 be reserved, leaving 30 timeslots available for data. The ***8pE1Atm*** and ***1pStm1ChSmIr*** cards support the ***ccs*** value only. The ***4pOC3ChSmIr*** card only supports the ***ccs*** and ***unframed*** values. For both these cards, the default value is ***ccs***. For all other cards, the default value is ***cas***.
Mib	Laps
Values	ccs cas unframed
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 clockingSource (clockingSource)

Access	Read and write
Description	This attribute defines the source of the transmit clock for the E1 line. When ***local*** is selected, the crystal on the port generates the clocking for the line. When ***line*** is selected, the port synchronizes to the clock from the facility.

When ***module*** is selected, the ports clock synchronizes to the clock provided by the oscillator on the active CP.

When ***otherPort*** is selected, the port synchronizes to the port with a clocking source of ***line***.

When ***srtsMode*** is selected, the port transmit frequency depends on the SRTS (Synchronous Residual Time-Stamp) received over the ATM network. SRTS information is also generated sent over the ATM network.

When ***adaptiveMode*** is selected, the port transmit frequency continually adapts to match the egress data received from the ATM network.

A port with ***srtsMode*** or ***adaptiveMode*** must have a single *Chan* which may be linked only to an *Aal1Ces*.service with serviceType ***unstructured***

If the *NetworkSynchronization* component is present, the default value of this attribute is ***module***, otherwise it defaults to ***line***, except for the ***3pE1Atm*** card, which it defaults to ***local***.
On a ***3pE1Atm*** card all ports must have the same value, and be either ***local*** or ***module***.

otherPort is valid only on AAL1 cards. ***srtsMode*** is valid only on AAL1 and Multi-Service Access cards. ***adaptiveMode*** is valid only on Multi-Service Access cards.

On ***4E1Aal1*** cards either:

all four ports' *clockingSource* values must be ***local*** OR
all four ports' *clockingSource* values must be ***module*** OR
one port's *clockingSource* value must be ***line*** and the other three must be ***otherPort***. A port can only have ***srtsMode*** selected if the other ports are ***module*** or ***srtsMode***.

Mib	Laps
Values	local line

module
otherPort
srtsMode
adaptiveMode

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 crc4Mode

Access: Read and write

Description:

This attribute defines whether the CRC-4 checking and generation on the E1 line is enabled or disabled.

The default CRC-4 mode is ***off*** except for the cell-based cards which default to ***on*** as per the ATM Forum.

Mib: Laps

Values:
on
off

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 sendRaiOnAis

Access: Read and write

Description:

This attribute defines whether the Remote Alarm Indicator (RAI) will be sent when receiving an AIS alarm. The value is ***yes*** by default; it can be changed to ***no*** only for ports on J2MV cards.

Mib: Laps

Values:
no
yes

Default: yes

ATTRIBUTE Laps Vc4 Vc12 E1 raiDeclareAlarmTime

Access: Read and write

Description:

This attribute specifies the period of time that a Remote Alarm

Indicator (RAI) must be present before declaring an RAI alarm. The value of ***auto*** sets the RAI declare time to the default value for E1 and E1C card types which do not have hardware support for RAI response. On E1C card types with hardware support, if the value of ***auto*** is set, RAI response is done according to the standards. If ***auto*** is set, the value of the *raiClearAlarmTime* attribute is ignored and ***auto*** is used. This attribute is for E1 and E1C card types only. For all other card types, the default value must be used.

Mib: Laps

Values: Decimal (1..20000)
auto

Units: msec

Default: 100

ATTRIBUTE Laps Vc4 Vc12 E1 raiClearAlarmTime

Access: Read and write

Description

This attribute specifies the period of time that a Remote Alarm Indicator (RAI) has been absent before clearing an RAI alarm. The value of ***auto*** sets the RAI clear time to the default value for E1 and E1C card types which do not have hardware support for RAI response. On E1C card types with hardware support, if the value of ***auto*** is set, RAI response is done according to the standards. If ***auto*** is set, the value of the *raiDeclareAlarmTime* attribute is ignored and ***auto*** is used. This attribute is for E1 and E1C card types only. For all other card types, the default value must be used.

Mib: Laps

Values: Decimal (1..20000)
auto

Units: msec

Default: 100

ATTRIBUTE Laps Vc4 Vc12 E1 ssmE1SaNumber

Access	Read and write
Description	This attribute specifies which of the five available Sa bits (Sa4 to Sa8) recommended in ITU G.704 is to be used for Synchronization Status Messages (SSM). If set to ***none***, the transmission of SSM is disabled on this port.
Mib	Laps
Values	Decimal (4..8) none
Default	none

GROUP Laps Vc4 Vc12 E1 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of

any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.

Mib: Laps

Values: Decimal (0; 1..8191)

Default: 0

GROUP Laps Vc4 Vc12 E1 AdminInfo (AdminInfo)

Properties: Provisioned

Description

This group contains the attributes pertaining to the vendor of the equipment.

Mib: Laps

ATTRIBUTE Laps Vc4 Vc12 E1 vendor

Access: Read and write

Description

This is the name of the vendor supplying the facility.

Mib: Laps

Values: String (0..20, ASCII)

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 commentText

Access: Read and write

Description

Any miscellaneous text about the facility.

Mib: Laps

Values: String (0..60, ASCII)

Default: No default

GROUP Laps Vc4 Vc12 E1 IfEntryProv (IfEntry)

Properties: Provisioned

Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

ATTRIBUTE Laps Vc4 Vc12 E1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Vc4 Vc12 E1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

GROUP Laps Vc4 Vc12 E1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Laps Vc4 Vc12 E1 operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Laps Vc4 Vc12 E1 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps Vc4 Vc12 E1 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Laps
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some

processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Laps

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Laps

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Laps

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Laps

Values:
hotStandby (hot)
coldStandby (cold)

providingService (serv)
notSet (nSet)

Default notSet

ATTRIBUTE Laps Vc4 Vc12 E1 unknownStatus (osiUnknw)

Access Read only

Description This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib Laps

Values false
true

Default false

GROUP Laps Vc4 Vc12 E1 Operational (Oper)

Properties Operational

Description

This group contains the common operational data for a component in a digital hierarchy interface.

Mib Laps

ATTRIBUTE Laps Vc4 Vc12 E1 losAlarm (losAlarm)

Access Read only

Description

This attribute displays whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS defects have been observed and accumulated for a period of 2 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). A LOS defect is detected upon observing all zeros for 150 ms (for **3pDS1Atm**,

3pE1Atm, **8pDS1Atm**, and **8pE1Atm** cards: upon observing 175 +/- 75 pulse positions with no pulses of either positive or negative polarity). If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOS alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOS alarm state.
The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values: on
off

Default: off

ATTRIBUTE Laps Vc4 Vc12 E1 rxAisAlarm (rxAisAlarm)

Access: Read only

Description

This attribute displays whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period (for **8pDS1Atm** cards: when both an Out Of Frame condition exists and a 1's density of at least 99.9% is present for a time T, where 3 ms ≤ T ≤ 75 ms; for **8pE1Atm** cards: when both an Out Of Frame condition exists and fewer than three 0's have been received in 512 bit periods). If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state.
The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.

Mib: Laps

Values
on
off

Default
off

ATTRIBUTE Laps Vc4 Vc12 E1 lofAlarm (lofAlarm)

Access
Read only

Description
This attribute displays whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds).
If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state
The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib
Laps

Values
on
off

Default
off

ATTRIBUTE Laps Vc4 Vc12 E1 rxRaiAlarm (rxRaiAlarm)

Access
Read only

Description
This attribute displays whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. For **3pDS1Atm**, and **8pDS1Atm** cards: alarm is declared immediately upon observing the defect is present, with no integration time. For

3pE1Atm, and **8pE1Atm** cards: alarm state is entered when the RAI defect indicator has been observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds (for **3pDS1Atm**, and **8pDS1Atm** cards: alarm is cleared immediately upon observing the defect is absent, with no integration time).
The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

Mib: Laps

Values: on
off

Default: off

ATTRIBUTE Laps Vc4 Vc12 E1 txAisAlarm (txAisAlarm)

Access: Read only

Description

This attribute displays whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the port is in a locked state.

Mib: Laps

Values: on
off

Default: off

ATTRIBUTE Laps Vc4 Vc12 E1 txRaiAlarm (txRaiAlarm)

Access: Read only

Description

This attribute displays whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the port detects a LOF alarm condition (for **3pDS1Atm**, **3pE1Atm**,

8pDS1Atm, and **8pE1Atm** cards: RAI is transmitted when the port detects a LOS, LOF, or AIS condition).

Mib: Laps

Values: on
off

Default: off

GROUP Laps Vc4 Vc12 E1 E1Operational (E1Oper)

Properties: Operational

Description

This group contains all of the operational data for a E1 component that are not defined in the DSCommonOp group.

Mib: Laps

ATTRIBUTE Laps Vc4 Vc12 E1 multifrmLofAlarm (multiLofAlarm)

Access: Read only

Description

This attribute indicates whether a multiframe LOF (loss of frame) alarm state is entered. A multiframe LOF alarm state is entered when a multiframe LOF defect (2 consecutive errors in the multiframe alignment signal) has been detected and accumulated for 2.5 seconds +/- 0.5 seconds. If the multiframe LOF defects are intermittently occurring, the multiframe LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The alarm is cleared when the defect is not detected for 10 seconds +/- 0.5 seconds. When the multiframe LOF alarm is on, a multiframe RAI alarm indicator is transmitted on the line.

The ***8pE1Atm*** card does not support the multiframe LOF alarm.

Mib: Laps

Values: on
off

Default off

ATTRIBUTE Laps Vc4 Vc12 E1 rxMultifrmRaiAlarm (rxMultiRaiAlarm)

Access Read only

Description

This attribute displays whether a multiframe RAI (remote alarm indicator) alarm state has been entered. A multiframe RAI alarm state is entered when a multiframe RAI alarm indicator (bit 6 of timeslot 16 in frame 0 is set to a one) is observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the multiframe RAI indicator is intermittently received, the multiframe RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The multiframe RAI alarm condition is cleared when the multiframe RAI alarm indication is not received for 10 seconds +/- 0.5 seconds. The multiframe RAI alarm is usually an indication that the far end facility is unable to gain multiframe synchronization.

The ***8pE1Atm*** card does not support the multiframe RAI alarm.

Mib Laps

Values on
off

Default off

ATTRIBUTE Laps Vc4 Vc12 E1 txMultifrmRaiAlarm (txMultiRaiAlarm)

Access Read only

Description

This attribute displays whether a multiframe RAI (remote alarm indicator) alarm is being sent on the E1 line. This is transmitted when the E1 port detects a multiframe LOF condition.

The ***8pE1Atm*** card does not generate the multiframe RAI alarm.

Mib Laps

Values
on
off

Default
off

ATTRIBUTE Laps Vc4 Vc12 E1 ssmE1Tx

Access
Read only

Description
This attribute indicates the current Synchronization Status Message (SSM) transmitted on the E1 port within the Sa byte defined in ITU G.704.
This attribute is filtered when *ssmE1SaNumber* is set to ***none***.

Mib
Laps

Values
Decimal (0..15)

Default
No default

ATTRIBUTE Laps Vc4 Vc12 E1 multifrmCRC4LofAlarm (multiCRC4LofAlarm)

Access
Read only

Description
This attribute indicates whether E1 CRC-4 multiframe LOF (loss of frame) alarm state is entered. A CRC-4 multiframe LOF alarm state is entered when a CRC-4 multiframe LOF defect (2 consecutive errors in the multiframe alignment signal) has been detected and accumulated for 2.5 seconds +/- 0.5 seconds. If the CRC-4 multiframe LOF defects are intermittently occurring, the CRC-4 multiframe LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The alarm is cleared when the defect is not detected for 10 seconds +/- 0.5 seconds.
The *multifrmCRC4LofAlarm* is not implemented for the ***E1***, ***1pE1V***, ***1pE1Mvp***, ***1pE1Mvpe***, ***4pE1Mvpe***, ***8pE1Atm***, ***E1C*** and ***4pE1Aal1*** cards.

Mib
Laps

Values
on
off

Default	off

GROUP Laps Vc4 Vc12 E1 Statistics (Stats)

Properties	Operational
Description	This group contains the common statistical data for a component in a digital hierarchy interface.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 runningTime (runningTime)

Access	Read only
Description	The number of seconds since the port component was activated.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 errorFreeSec (efs)

Access	Read only
Description	The number of seconds that the port has been in an error free state.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 erroredSec (es)

Access	Read only
Description	An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV

	error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 sevErroredSec (ses)

Access	Read only
Description	A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 sevErroredFrmSec (sefs)

Access	Read only
Description	A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 unavailSec

Access	Read only
Description	The total number of seconds that the interface is in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.

Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 bpvErrors (bpvErrors)

Access	Read only
Description	The current count of Bipolar Violations. A bipolar violation is an error in the alternate mark inversion pattern (AMI) on the line.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 crcErrors (crcErrors)

Access	Read only
Description	If the interface is a DS1 line, it is the current count of CRC-6 errors. These will only be counted when the lineType is ESF. If the interface is an E1 line, it is the total number of CRC-4 errors. These will only be counted when crc4Mode is on.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 frmErrors (frmErrors)

Access	Read only
Description	The current count of frame errors. A frame error is an error in the framing bits
Mib	Laps
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 losStateChanges (losChanges)

Access	Read only
Description	The total number of times that the line lost signal.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 slipErrors (slipErrors)

Access	Read only
Description	The total number of times that the line experienced a controlled frame slip. This attribute is incremented for ports on the voice cards (for example the 1pDS1V and the 1pE1V function processors) only.
Mib	Laps
Values	Decimal (0..4294967295)
Default	0

COMPONENT Laps Vc4 Vc12 E1 Channel (Chan)

Instance	Decimal (0..31)
Groups	"GROUP Laps Vc4 Vc12 E1 Chan Provisioned (Prov)" "GROUP Laps Vc4 Vc12 E1 Chan CustomerIdentifierData (CidData)" "GROUP Laps Vc4 Vc12 E1 Chan IfEntryProv (IfEntry)" "GROUP Laps Vc4 Vc12 E1 Chan OperationalStatus (OperStatus)" "GROUP Laps Vc4 Vc12 E1 Chan OsiState (State)" "GROUP Laps Vc4 Vc12 E1 Chan Operational (Oper)" "GROUP Laps Vc4 Vc12 E1 Chan AdminInfo (AdminInfo)"
Scope	Application

Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port. Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots.
Mib	Laps
Opt. Subcomp.	"COMPONENT Laps Vc4 Vc12 E1 Chan AtmCell (Cell)" "COMPONENT Laps Vc4 Vc12 E1 Chan TrunkConditioning (Tc)" "COMPONENT Laps Vc4 Vc12 E1 Chan FrameLinkMonitoring (Flm)"
Dyn. Subcomp.	"COMPONENT Laps Vc4 Vc12 E1 Chan Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Laps Vc4 Vc12 E1 Chan Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisional data for a *Channel* component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan timeslots (ts)

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1*

component.

For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.

Mib: Laps

Set of:
none
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

Default — No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan timeslotDataRate (dataRate)

Access — Read and write

Criticality — Component

Description

This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute.

When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s.

When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s.

On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card.

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***.

One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.

Mib — Laps

Values — 56k
doNotOverride

Default — doNotOverride

ATTRIBUTE Laps Vc4 Vc12 E1 Chan applicationFramerName

Access	Read and write
Description	This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.
Mib	Laps
Values	Link (Service, interfaceName)
Default	No default

GROUP Laps Vc4 Vc12 E1 Chan CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	Laps
Values	Decimal (0; 1..8191)
Default	0

GROUP Laps Vc4 Vc12 E1 Chan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

ATTRIBUTE Laps Vc4 Vc12 E1 Chan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Laps
Values	Decimal (1..65535)
Default	No default

GROUP Laps Vc4 Vc12 E1 Chan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Laps
Values	up down testing
Default	up

GROUP Laps Vc4 Vc12 E1 Chan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Laps

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Laps Vc4 Vc12 E1 Chan operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Laps
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Laps Vc4 Vc12 E1 Chan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Laps
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Laps Vc4 Vc12 E1 Chan availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: Laps

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Laps

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Laps

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Laps

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Laps

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Laps Vc4 Vc12 E1 Chan unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Laps

Values:
false
true

Default: false

GROUP Laps Vc4 Vc12 E1 Chan Operational (Oper)

Properties: Operational

Description:
This group contains all of the operational data for a *Channel* component.

Mib: Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan actualChannelSpeed

Access: Read only

Description	This attribute displays the measured link speed of the *Channel* component.
Mib	Laps
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Laps Vc4 Vc12 E1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Laps
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	Laps
Values	String (0..60, ASCII)
Default	No default

COMPONENT Laps Vc4 Vc12 E1 Chan Test (Test)

Groups	"GROUP Laps Vc4 Vc12 E1 Chan Test OsiState (State)" "GROUP Laps Vc4 Vc12 E1 Chan Test Setup (Setup)" "GROUP Laps Vc4 Vc12 E1 Chan Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.
Mib	Laps
Common Verbs	Help List Display

VERB START Laps Vc4 Vc12 E1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Laps Vc4 Vc12 E1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Laps Vc4 Vc12 E1 Chan Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Laps
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Laps

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Laps

Values: idle
active (activ)
busy

Default: idle

GROUP Laps Vc4 Vc12 E1 Chan Test Setup (Setup)

Properties: Operational

Description: This group contains all of the operational data for a *Test* component.

Mib: Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test purpose (purpose)

Access: Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib Laps

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib	Laps
Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	Laps
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit.

ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: Laps

Values: ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default: ccitt32kBitPattern

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test customizedPattern (cp)

Access: Read and write

Description:

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: Laps

Values: Hex (H.0..H.ffffffff)

Units: Hex

Default: H.55555555

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test dataStartDelay (dsd)

Access: Read and write

Description:

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib: Laps

Values: Decimal (0..1814400)

Units	seconds
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Laps
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Laps Vc4 Vc12 E1 Chan Test Results (Results)

Properties	Operational

Description

This group contains all the statistics related attributes of the *Test* component.

Mib Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test causeOfTermination

Access Read only

Description This attribute indicates either the status of the test or the cause of the test's termination:

a value of ***neverStarted*** indicates that the test has not yet been started.

a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: Laps

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test bitsTx

Access: Read only

Description:

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: Laps

Values: Long Integer

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test bytesTx

Access: Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test bitsRx

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test bytesRx

Access Read only

Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Laps
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Laps Vc4 Vc12 E1 Chan AtmCell (Cell)

Groups	"GROUP Laps Vc4 Vc12 E1 Chan Cell Provisioned (Prov)" "GROUP Laps Vc4 Vc12 E1 Chan Cell Operational (Oper)" "GROUP Laps Vc4 Vc12 E1 Chan Cell Statistics (Stats)"
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.
Mib	Laps
Common Verbs	Help List Display Add DELete

GROUP Laps Vc4 Vc12 E1 Chan Cell Provisioned (Prov)

Properties	Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib Laps

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell scrambleCellPayload (scramble)

Access Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib	Laps
Values	off on
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	Laps
Values	off on
Default	off

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	Laps
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Laps
Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval*

attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell lcdStateDelay (delay)

Access: Read and write

Description:

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..50)

Units: msec

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell hecErrorIntervalLimit (hIntLimit)

Access: Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Laps

Values: Decimal (1..25)

Default: 1

GROUP Laps Vc4 Vc12 E1 Chan Cell Operational (Oper)

Properties: Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib: Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell lcdAlarm (lcd)

Access: Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation

(OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib: Laps

Values: on
off

Default: off

GROUP Laps Vc4 Vc12 E1 Chan Cell Statistics (Stats)

Properties: Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib: Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access: Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell sevErroredSec (ses)

Access: Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Laps
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell transmitCellUtilization (txutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Laps
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Cell correctableHeaderErrors (cErr)

Access	Read only

Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib: Laps

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Laps Vc4 Vc12 E1 Chan TrunkConditioning (Tc)

Groups: "GROUP Laps Vc4 Vc12 E1 Chan Tc Provisioned (Prov)"
"GROUP Laps Vc4 Vc12 E1 Chan Tc Operational (Op)"

Scope: Device

Description

Lp/n Ds1/n Chan/n Tc
Lp/n E1/n Chan/n Tc
Lp/n Ds3/n Ds1/n Chan/n Tc
Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc
Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc
Laps/n Vc4/n Vc12/k,l,m E1 Chan/n T*c*
Laps/n Sts/n Vt1dot5/l,m Ds1 Chan/n T*c*

The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service.

Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined.

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the

following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib	Laps
Common Verbs	Help List Display Add DELete

GROUP Laps Vc4 Vc12 E1 Chan Tc Provisioned (Prov)

Properties	Provisioned
Description	This group contains all specific provisioning data for a *Tc* component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc replacementData (data)

Access	Read and write
Description	This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component

under fault conditions.

The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values:
DS1 MUX Out Of Service Code = 0x1A
E1 MUX Out Of Service Code = 0xFF

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***.

On the ***4pOC3ChSmIr*** and ***2pOC3ChSmIrVsp3*** cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.

Mib	Laps
Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc signalOneDuration (duration)

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits. If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions. The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.
Mib	Laps
Values	Decimal (0..60)
Units	seconds

Default 0

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc noServiceResponse (resp)

Access Read and write

Description This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available:

autoConfigure - automatically configure the channels response.
tc - transmit trunk conditioning on all timeslots provisioned in the egress direction.
ais - transmit AIS in the egress direction.
noResponse - no response is sent in the egress direction.

A value of ***autoConfigure*** will result in TC being transmitted for all card types.

Mib Laps

Values autoConfigure
tc
ais
noResponse

Default autoConfigure

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc signalOne (sigOne)

Access Read and write

Description This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined.

For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.

Mib	Laps
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc signalTwo (sigTwo)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	Laps
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Laps Vc4 Vc12 E1 Chan Tc Operational (Op)

Properties	Operational
Description	This group contains all specific operational data for a *Tc* component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc ingressConditioning (inCon)

Access	Read only

Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI)
Mib	Laps
Values	off on
Default	off

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Tc egressConditioning (egCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the PDH line. When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the PDH line under the following conditions:

	bufferUnderflow (BU) AAL1 protocol errors.
Mib	Laps
Values	off on
Default	off

COMPONENT Laps Vc4 Vc12 E1 Chan FrameLinkMonitoring (Flm)

Groups	"GROUP Laps Vc4 Vc12 E1 Chan Flm Provisioned (Prov)" "GROUP Laps Vc4 Vc12 E1 Chan Flm Operational (Op)"
Scope	Device
Description	*Lp/n E1/n Chan/n FrameLinkMonitoring* This component provides a monitoring function specific to a Frame Relay Channel on an E1 line. It combines the status of E1 channel-associated-signalling A-bits and HDLC frame defect.
Mib	Laps
Common Verbs	Help List Display Add DELete

GROUP Laps Vc4 Vc12 E1 Chan Flm Provisioned (Prov)

Properties	Provisioned
Description	This group contains all specific provisioning data for an *Flm* component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Flm aBitMonitoring (aBit)

Access	Read and write
Description	This attribute controls the monitoring of A-bit defects.

Mib	Laps
Values	disabled enabled
Default	enabled

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Flm hdlcMonitoring (hdlc)

Access	Read and write
Description	This attribute controls the monitoring of HDLC defect.
Mib	Laps
Values	disabled enabled
Default	No default

GROUP Laps Vc4 Vc12 E1 Chan Flm Operational (Op)

Properties	Operational
Description	This group contains all specific operational data for an *Flm* component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Chan Flm flmStatus (status)

Access	Read only
Description	This attribute indicates the status of a Frame Relay channel on an E1 line. By combining the E1 channel-associated-signalling (CAS) A-bits status, and HDLC defect, a single value indicates the likely cause of the failure. This mechanism assumes that the far end equipment loops back signaling A-bits for some or all of the timeslots in a channel. The A-bits in channel are transmitted as ‘0’. If they are all received as ‘0’, it is assumed that the E1 link is up in both directions. The presence of HDLC frames indicates that the service is connected. When A-bits and HDLC frames are correctly received, ***frameLinkUp*** is indicated.

When neither are received, ***frameLinkDown*** is indicated.

When HDLC frames are not receive but A-bits are not at fault, ***lossOfHdlc*** is indicated.

When HDLC frames are received, but there is a fault in any of timeslot's A-bits on a channel ***lossOfAbit*** is indicated.

Mib: Laps

Values:
notMonitoring
frameLinkUp
frameLinkDown
lossOfHdlc
lossOfAbit

Default: No default

COMPONENT Laps Vc4 Vc12 E1 Test (Test)

Groups:
"GROUP Laps Vc4 Vc12 E1 Test OsiState (State)"
"GROUP Laps Vc4 Vc12 E1 Test Setup (Setup)"
"GROUP Laps Vc4 Vc12 E1 Test Results (Results)"

Scope: Application

Description:

The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.

Mib: Laps

Common Verbs:
Help
List
Display

VERB START Laps Vc4 Vc12 E1 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Laps Vc4 Vc12 E1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Laps Vc4 Vc12 E1 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Laps

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Laps Vc4 Vc12 E1 Test operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Laps

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Laps Vc4 Vc12 E1 Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Laps

Values:
idle
active (activ)
busy

Default: idle

GROUP Laps Vc4 Vc12 E1 Test Setup (Setup)

Properties: Operational

Description:
This group contains all of the operational data for a *Test* component.

Mib: Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Test purpose (purpose)

Access: Read and write

Description:
This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib: Laps

Values: String (0..40, ASCII)

Default: No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test type (type)

Access: Read and write

Description:
This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.

manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Laps

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Laps Vc4 Vc12 E1 Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	Laps
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Laps Vc4 Vc12 E1 Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	Laps
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Laps Vc4 Vc12 E1 Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the

attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: Laps

Values: Hex (H.0..H.ffffffff)

Units: Hex

Default: H.55555555

ATTRIBUTE Laps Vc4 Vc12 E1 Test dataStartDelay (dsd)

Access: Read and write

Description:

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib: Laps

Values: Decimal (0..1814400)

Units: seconds

Default: 0

ATTRIBUTE Laps Vc4 Vc12 E1 Test displayInterval (di)

Access: Read and write

Description:

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib: Laps

Values: Decimal (0..30240)

Units	minutes
Default	5

ATTRIBUTE Laps Vc4 Vc12 E1 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Laps Vc4 Vc12 E1 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Laps

ATTRIBUTE Laps Vc4 Vc12 E1 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	Laps
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed

patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Laps Vc4 Vc12 E1 Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib Laps

Values Long Integer

Default No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Laps

Values Long Integer

Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test erroredFrmRx

Access	Read only

Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Laps
Values	Long Integer
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Laps
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Laps Vc4 Vc12 E1 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Laps Vc4 Vc12 E1 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Laps
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Laps Vc4 Vc12 E1 Dsp

Scope	Device
Description	*LogicalProcessor/n E1/0 Dsp* The *Dsp* component presents the status of the Digital Signal Processors (DSPs) present on a voice card. A voice card's *Dsp* component is created automatically whenever the parent E1 component becomes active, and remains in

existence as long as the E1 component exists. *Dsp* components cannot be added or deleted.

Mib: Laps

Common Verbs:
- Help
- List
- Display

COMPONENT Laps Vc4 Vc12 E1 Audio

Scope: Device

Description: *LogicalProcessor/n E1/0 Audio*
The *Audio* component presents the audio status of the channels on a voice card.
A voice card's *Audio* component is created automatically whenever the parent E1 component becomes active, and remains in existence as long as the E1 component exists. *Audio* components cannot be added or deleted.

Mib: Laps

Common Verbs:
- Help
- List
- Display

Nortel Networks Multiservice Switch 7400/15000/20000

Component Laps

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component La

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component La

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COMPONENT LanApplication (La)

Instance	Decimal (0..255)
Groups	"GROUP La CustomerIdentifierData (CidData)" "GROUP La MediaProvisioned (MediaProv)" "GROUP La IfEntryProv (IfEntry)" "GROUP La OsiState (State)" "GROUP La OperationalStatus (OperStatus)" "GROUP La Operational (Oper)"
Scope	Application
Description	*LanApplication/n* The *LanApplication* component, using the *Framer* subcomponent, is used to provide the interface either between the

	VirtualRouter ProtocolPort and a LAN component such as *Ethernet*, or to an *EthernetVirtualLineService* component.
Mib	LanDrivers
Subcomponents	"COMPONENT La Framer"
Opt. Subcomp.	"COMPONENT La EthernetVirtualLineService (Evls)" "COMPONENT La EthernetVirtualConnection (Evc)" "COMPONENT La Vlan" "COMPONENT La EthernetPolicy (Policy)"
Dyn. Subcomp.	"COMPONENT La EthernetStatistics (Stats)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP La CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LanDrivers

ATTRIBUTE La customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID

provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	LanDrivers
Values	Decimal (0; 1..8191)
Default	0

GROUP La MediaProvisioned (MediaProv)

Properties	Provisioned
Description	This group contains the base provisioning data for the *LanApplication/n* component.
Mib	LanDrivers

ATTRIBUTE La linkToProtocolPort

Access	Read and write
Description	This attribute specifies the *ProtocolPort* component to which the application is associated. This attribute must not be set if there is an *EthernetVirtualLineService* subcomponent under this *LanApplication* component or the *enetConnection* attribute is set.
Mib	LanDrivers
Values	Link (Service, linkToMedia)
Default	No default

ATTRIBUTE La enetConnection

Access	Read and write

Description	This attribute specifies the Enet component to which the application is associated. This attribute must not be set if there is an *EthernetVirtualLineService* subcomponent under this *LanApplication* component or the *linkToProtocolPort* attribute is set.
Mib	LanDrivers
Values	Link (Service, linkToEnetIf)
Default	No default

GROUP La IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LanDrivers

ATTRIBUTE La ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

ATTRIBUTE La ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.

Mib	LanDrivers
Values	Decimal (1..65535)
Default	No default

GROUP La OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LanDrivers

ATTRIBUTE La adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LanDrivers

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE La operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LanDrivers
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE La usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	LanDrivers
Values	idle active (activ) busy
Default	idle

GROUP La OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LanDrivers

ATTRIBUTE La snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

GROUP La Operational (Oper)

Properties	Operational
Description	This group contains operational attributes specific to the *LanApplication* component.
Mib	LanDrivers

ATTRIBUTE La macAddress

Access	Read only

Description	This attribute indicates the media access controller (MAC) address which was assigned to this component by the system. The value is displayed in canonical format. No two stations in a network may have the same MAC address.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

COMPONENT La EthernetVirtualLineService (Evls)

Scope	Application
Description	*La/n EthernetVirtualLineService* This component represents the Ethernet Virtual Line Service. It can be configured on an Ethernet interface that is operating in either port-mode or VLAN-mode. It enables the provisioning of both end-to-end and single-ended EVCs. The end-to-end configuration originates and terminates the EVC on an Ethernet interface. The single-ended configuration originates the EVC on an Ethernet interface and terminates it on an ATM interface. When the Ethernet interface is operating in port-mode, this component cannot co-exist with the *linkToProtocolPort* or *enetConnection* attributes being set.
Mib	LanDrivers
Subcomponents	"COMPONENT La Evls EthernetLocalAddress (LocalAddr)"
Common Verbs	Help List Display Add DELete

COMPONENT La Evls EthernetLocalAddress (LocalAddr)

Groups	"GROUP La Evls LocalAddr Provisioned (Prov)" "GROUP La Evls LocalAddr Operational (Oper)"
Scope	Application
Description	*La/x Evls EthernetLocalAddress* This component represents the local address of the Ethernet interface for the Ethernet Virtual Line Service in the network.
Mib	LanDrivers
Common Verbs	Help List Display

GROUP La Evls LocalAddr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetLocalAddress* component.
Mib	LanDrivers

ATTRIBUTE La Evls LocalAddr nsapAddress (nsapAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies a 40-digit ATM address in standard ISO NSAP format. This is the local address of the Ethernet interface for the Ethernet Virtual Line Service within the ATM routing database. If the default value is used, an internal NSAP address is generated using the value of the *ModuleData nodePrefix* attribute and the value of the End System Identifier (ESI) that is the assigned number for EVLS. This internal NSAP address can be displayed using the *EthernetLocalAddress activeNsapAddress* operational attribute.

Mib	LanDrivers
Values	String (40, AESANsapAddress)
Default	470000000000000000000000000000000000000000

GROUP La Evls LocalAddr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the *EthernetLocalAddress* component.
Mib	LanDrivers

ATTRIBUTE La Evls LocalAddr activeNsapAddress (actNsapAddr)

Access	Read only
Description	This attribute indicates the operational local NSAP address of the Ethernet interface for the Ethernet Virtual Line Service in the ATM Network.
Mib	LanDrivers
Values	String (0..40, ASCII)
Default	No default

COMPONENT La EthernetVirtualConnection (Evc)

Groups	"GROUP La Evc Provisioned (Prov)" "GROUP La Evc OsiState (State)" "GROUP La Evc OperationalStatus (OperStatus)" "GROUP La Evc Operational (Oper)" "GROUP La Evc Statistics (Stats)"
Scope	Application
Description	*La/x EthernetVirtualConnection* *La/x Vlan/y EthernetVirtualConnection* When this component is added to a *LanApplication* component, it represents a VC that is established between this Ethernet interface and either another Ethernet interface or an ATM UNI VCC.

When this component is added to a *Vlan* component, it represents a VC that is established between this Ethernet VLAN and either another Ethernet VLAN or an ATM UNI VCC.

The EVC is established over an ATM PNNI network using an ATM SPVC VCC. It can be configured to use a dedicated ATM transport VC, or to aggregate with other EVCs over a shared ATM transport VC established by the *EthernetTransportSystem* component. This latter option is only available when this component exists under the *LanApplication* component in VLAN-mode, or under a *Vlan* component.

This EVC is used to transparently transport Ethernet v2.0 and IEEE 802.3 frames. These frames are stripped of the Ethernet FCS and encapsulated using RFC2684 bridged mode encapsulation before being transported.

When this component is under the *LanApplication* component in port-mode, and the *EthernetPolicy* component does not exist, the default behavior of EVLS is to accept all frames received from the Ethernet interface. If the *EthernetPolicy* component exists, and the and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, only untagged and priority-tagged frames are accepted, all other frames are discarded and counted by the *EthernetStatistics unknownVlanId* statistic. With this same configuration, and the *unknownVlanIdTreatment* attribute set to ***accept***, all frames are accepted.

When this component is under the *LanApplication* component in VLAN-mode, and the port-VLAN is configured with an EVC, and the *EthernetPolicy* component does not exist, the default behavior of EVLS is to discard all unknown VLAN-tagged frames received from the Ethernet interface. If the *EthernetPolicy* component exists, and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, only untagged, priority-tagged and port-VLAN ID (VID=1) frames are accepted, all other frames are either accepted by a configured *Vlan* component instance, or discarded and counted by the *EthernetStatistics unknownVlanId* statistic. With this same configuration, and the *unknownVlanIdTreatment* attribute set to

accept, all untagged, priority-tagged, port-VLAN ID frames and unknown VLAN-tagged frames received from the Ethernet interface are classified as port-VLAN traffic.

When this component is under the *Vlan* component, only frames with their VID set to this *Vlan* component instance are accepted by this EVC.

Mib	LanDrivers
Opt. Subcomp.	"COMPONENT La Evc EthernetSourceEvc (SrcEvc)" "COMPONENT La Evc EthernetQualityOfService (EQoS)"
Opt. Subcomp.	"COMPONENT La Evc EvcSpvc (Spvc)"
Common Verbs	Help List Display Add DELete

GROUP La Evc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetVirtualConnection* component.
Mib	LanDrivers

ATTRIBUTE La Evc aggregation (aggr)

Access	Read and write
Description	This attribute specifies whether to use a dedicated ATM VC to establish the connection, or to aggregate with other EVCs over a shared ATM VC established by the *EthernetTransportSystem* component.

The possible values are:

disabled: this value indicates that this EVC should use a dedicated transport VC established by this component.

enabled: this value indicates that this EVC should be aggregated over a shared transport VC established by the *EthernetTransportSystem* component.

Mib LanDrivers

Values disabled
enabled

Default disabled

GROUP La Evc OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib LanDrivers

ATTRIBUTE La Evc adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: LanDrivers

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE La Evc operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: LanDrivers

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE La Evc usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LanDrivers
Values	idle active (activ) busy
Default	idle

GROUP La Evc OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LanDrivers

ATTRIBUTE La Evc snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

GROUP La Evc Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the *EthernetVirtualConnection* component.

Mib	LanDrivers

ATTRIBUTE La Evc remoteAddress (rAddr)

Access	Read only
Description	This attribute indicates the 40-digit NSAP address of the far end Ethernet interface to which this EVC is established.
Mib	LanDrivers
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE La Evc remoteVlanId (rVlanId)

Access	Read only
Description	This attribute indicates the identifier of the VLAN on the far end Ethernet interface to which this EVC is established.
Mib	LanDrivers
Values	Decimal (1..4094)
Default	No default

GROUP La Evc Statistics (Stats)

Properties	Operational
Description	This group contains statistics for the *EthernetVirtualConnection* component.
Mib	LanDrivers

ATTRIBUTE La Evc vcDownDiscards (vcDownDisc)

Access	Read only
Description	This attribute counts the frames received from the Ethernet interface for this EVC that have been discarded because the ATM transport VC was inactive. The value wraps to zero when it exceeds the maximum value.

Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT La Evc EthernetSourceEvc (SrcEvc)

Groups	"GROUP La Evc SrcEvc Provisioned (Prov)"
Scope	Application
Description	*La/x Evc EthernetSourceEvc* *La/x Vlan/y Evc EthernetSourceEvc* This component represents the connection setup information used by the calling end of this EVC to establish connectivity to either a far end Ethernet interface, or in the case that the *EthernetSourceVcc* is also configured to a far end ATM UNI. This component must exist if the *EvcSpvc* component is provisioned.
Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Evc SrcEvc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetSourceEvc* component.
Mib	LanDrivers

ATTRIBUTE La Evc SrcEvc remoteAddress (rAddr)

Access	Read and write
Criticality	Component

Description	For an end-to-end EVC configuration, this attribute specifies the 40-digit NSAP address of the far end Ethernet interface to which this EVC is to be established. For a single-ended EVC configuration, this attribute specifies the 40-digit NSAP address of the far end ATM UNI to which this EVC is to be established.
Mib	LanDrivers
Values	String (40, AESANsapAddress)
Default	No default

ATTRIBUTE La Evc SrcEvc remoteVlanId (rVlanId)

Access	Read and write
Criticality	Component
Description	This attribute specifies the identifier of the VLAN on the far end Ethernet interface to which this EVC is to be established. When the *EthernetSourceEvc* component exists under the *La Evc* component in port mode, this attribute must be set to a value of ***1***.
Mib	LanDrivers
Values	Decimal (1..4094)
Default	No default

ATTRIBUTE La Evc SrcEvc retryPeriod (retry)

Access	Read and write
Description	This attribute specifies the interval at which an SPVC connection attempts re-establishment after the calling end of the SPVC initiates the setup request and receives a release message.
Mib	LanDrivers
Values	Decimal (10..3600)
Units	seconds

Default	20

COMPONENT La Evc EthernetQualityOfService (EQoS)

Instance	Decimal (0..0)
Groups	"GROUP La Evc EQoS Provisioned (Prov)" "GROUP La Evc EQoS QoSAtmProv (AtmProv)"
Scope	Network
Description	*La/n Evc EthernetQualityOfService/m* *La/n vlan/x Evc EthernetQualityOfService/m* This component represents the Ethernet traffic management parameters for the traffic received from and transmitted to the ATM VCC.
Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Evc EQoS Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetQualityOfService* component.
Mib	LanDrivers

ATTRIBUTE La Evc EQoS committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR), in kbits per second, for this connection. It is the average rate up to which the network delivers service frames and meets the performance objectives defined by the Ethernet per-hop behavior of this connection. This value is used to derive the sustained cell

rate (SCR) traffic management parameter for the ATM VC.

Changing the value of this attribute will not take effect until *lock/unlock La* or *Vlan* component or *clear* the SPVC connection.

Mib	LanDrivers
Values	Decimal (64..512695)
Units	kbit/s
Default	10000

ATTRIBUTE La Evc EQoS excessInformationRate (eir)

Access	Read and write
Description	This attribute specifies the maximum bandwidth, in kbits per second, for this connection. It is the average rate up to which the network may deliver service frames without any performance objectives. This value is used in conjunction with the *EQoS cir* attribute to derive the peak cell rate (PCR) traffic management parameter for the ATM VC. Changing the value of this attribute will not take effect until *lock/unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (64..512695)
Units	kbit/s
Default	10000

ATTRIBUTE La Evc EQoS committedBurstSize (cbs)

Access	Read and write
Description	This attribute specifies the maximum number of bits available for use by sequential service frames sent at the Ethernet interface speed to remain CIR-conformant. This value must be divisible by a value of 8.

	Changing the value of this attribute will not take effect until *lock*/ *unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (80000..100000000)
Units	bits
Default	800000

ATTRIBUTE La Evc EQoS ethernetPerHopBehavior (ePhb)

Access	Read and write
Description	This attribute specifies the Ethernet per-hop behavior for this connection. It is used to derive the traffic management parameters for the ATM VC. Consistent with the Multiservice Switch Differentiated Services Domain type for IP services, the following mapping is defined for EVLS: The value of ***df*** specifies that the traffic class is standard, the connection class is equal to 0, and the ATM service category is ubr. The value of ***af21*** specifies that the traffic class is silver, the connection class is equal to 1, and the ATM service category is nrt-vbr. The value of ***af31*** specifies that the traffic class is gold, the connection class is equal to 2, and the ATM service category is rt-vbr. The value of ***ef*** specifies that the traffic class is premium, the connection class is equal to 3, and the ATM service category is cbr. Changing the value of this attribute will not take effect until *lock*/ *unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers

Values	Decimal (0..63) df af21 af31 ef
Default	df

ATTRIBUTE La Evc EQoS averageFrameSize (afs)

Access	Read and write
Description	This attribute specifies the expected average frame size, in bytes, for this connection. This average frame size is used to determine the average overhead factor to be used in deriving the SCR and PCR traffic management parameters for the ATM VC. Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (64..9182)
Units	bytes
Default	512

GROUP La Evc EQoS QoSAtmProv (AtmProv)

Properties	Provisioned
Description	This group contains the provisioned attributes related to ATM traffic management parameters for the *EthernetQualityOfService* component.
Mib	LanDrivers

ATTRIBUTE La Evc EQoS packetWiseDiscard (pd)

Access	Read and write
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the received and transmitted directions for this connection. Packet-wise discard functions apply to AAL5 frame traffic.

Packet-wise functions increase the “goodput” of the link. The receive packet-wise function is Partial Packet Discard (PPD).

PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded, for example due to UPC. All cells are discarded up to but not including the EOM cell. The PPD function increases the “goodput” of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

A value of ***enabled*** means packet-wise discard functions are applied to receive traffic and transmit traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to receive traffic and transmit traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the forward and the backward direction. When this attribute is set to ***disabled***, forward frame discard and backward frame discard are not requested in the SPVC call setup.

The packet-wise discard functions that are active are visible in the *Spvc packetWiseDiscard* operational attribute.

Mib	LanDrivers
Values	disabled enabled
Default	disabled

COMPONENT La Evc EvcSpvc (Spvc)

Instance	Decimal (0..0)
Groups	"GROUP La Evc Spvc Operational (Oper)" "GROUP La Evc Spvc EvcSpvcCon (SpvcCon)" "GROUP La Evc Spvc VcAggregation (VcAgg)"
Scope	Network

Description	*La/x Evc EvcSpvc/m* *La/x Vlan/y Evc EvcSpvc/m* This component represents one of the SPVC endpoints of the ATM transport connection. This component can be dynamically created or provisioned. When this component is dynamically created, it implicitly indicates that a connection has been established and this SPVC is the called endpoint of the VCC. The *EvcSpvc endPoint* operational attribute is used to indicate the called end. This dynamically created component does not exist when there is no connection. When this component is provisioned, it implies that this is the calling endpoint of the VCC. It does not imply that a connection is established. A provisioned *EvcSpvc* component allows initiation of the setup request to the called end of the ATM transport connection.
Mib	LanDrivers
Opt. Subcomp.	"COMPONENT La Evc Spvc EthernetSourceVcc (SrcVcc)"
Dyn. Subcomp.	"COMPONENT La Evc Spvc AtmConnection (AtmCon)" "COMPONENT La Evc Spvc EtsTrspCon (TrspCon)"
Common Verbs	Help List Display Add DELete

VERB Clear (Clr) La Evc Spvc

Impact	Service
Description	*Clear La/n Evc Spvc/m* *Clear La/n Vlan/x Evc Spvc/m* This command can be issued on the calling or called SPVC endpoint. At the calling end, this command tears down the active SPVC connection and tries to re-establish the connection immediately. At the called end, this command tears down the active SPVC connection and waits for a new incoming call request. If there is no active SPVC, the *clear* command has no effect.

GROUP La Evc Spvc Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *EvcSpvc* component. Only the *retryFailures* attribute is displayed when the *Evc aggregation* attribute has a value of ***enabled***. When the *Evc aggregation* attribute has a value of ***disabled***, this group is displayed in calling end, and only *spvcStatus* and *endPoint* attributes are displayed in called end.
Mib	LanDrivers

ATTRIBUTE La Evc Spvc spvcStatus (status)

Access	Read only
Description	This attribute indicates the status of the incoming and outgoing connection. ***serviceNotReady*** indicates that the component is initialising when first created; a connection has not been established, and no incoming setup requests are processed. ***serviceReady*** indicates that a connection has not yet been established and that setup requests are sent in calling end of the

SPVC or that the setup request is expected in the called end of the SPVC.

waitingForConnect indicates that a connection has not been established and the component is waiting to restart.

connected indicates that a connection has been established.

setupFailed indicates that the ATM Networking resources are not available to setup the connection at the calling end of the SPVC

connectFailed indicates that the ATM Networking resources are not avaialble to setup the connection at the called end of the SPVC.

releaseFailed indicates that the connection release attempts have failed.

Mib: LanDrivers

Values:
serviceNotReady
serviceReady
waitingForConnect
connected
setupFailed
connectFailed
releaseFailed

Default: No default

ATTRIBUTE La Evc Spvc endPoint (endPt)

Access: Read only

Description: This attribute indicates whether this SPVC is the called or calling endpoint of the VCC. If the value is ***called***, this is the endpoint that receives the setup request from the remote end of the ATM transport connection. If the value is ***calling,*** this is the endpoint that initiates the setup request to the remote end of the ATM transport connection.

Mib: LanDrivers

Values	called calling
Default	No default

ATTRIBUTE La Evc Spvc retryFailures (failures)

Access	Read only
Description	This attribute indicates the consecutive failed connection attempts prior to the current attempt. It is reset to ***0*** whenever a connection is successfully established. The value wraps to ***0*** when it exceeds the maximum value. If this attribute increments, please refer to the *EvcSpvc lastSetupFailureCause* and *EvcSpvc lastSetupFailureDiagnostic* attributes for diagnostics.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE La Evc Spvc lastSetupFailureCause (failCause)

Access	Read only
Description	This attribute indicates the cause of the last ATM transport connection setup failure. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	LanDrivers
Values	Decimal (0..255)
Default	No default

ATTRIBUTE La Evc Spvc lastSetupFailureDiagnostic (failDiag)

Access	Read only
Description	This attribute indicates a diagnostic to supplement the *EvcSpvc lastSetupFailureCause* attribute.

	The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	LanDrivers
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE La Evc Spvc lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause of the last ATM transport connection teardown. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	LanDrivers
Values	Decimal (0..255)
Default	No default

ATTRIBUTE La Evc Spvc lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates a diagnostic to supplement the *EvcSpvc lastTearDownCause* attribute. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	LanDrivers
Values	String (0..8, ASCII)
Default	No default

GROUP La Evc Spvc EvcSpvcCon (SpvcCon)

Properties	Operational

Description	This group contains operational data associated with ATM SPVC for the *EvcSpvc* component. This group is not displayed when the *Evc aggregation* attribute has a value of ***enabled.***
Mib	LanDrivers

ATTRIBUTE La Evc Spvc serviceCategory (sc)

Access	Read only
Description	This attribute indicates the ATM service category of the SPVC connection. For the called end of the SPVC, if the value of the *spvcStatus* attribute is ***connected***, this attribute can have a value of ***ubr***, ***rtvbr***, ***nrtvbr,*** or ***cbr***. For the calling end of the SPVC, this attribute reflects the mapping value of the *EQoS ethernetPerHopBehavior* attribute.
Mib	LanDrivers
Values	notAvailable (notAvail) unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) constantBitRate (cbr)
Default	No default

ATTRIBUTE La Evc Spvc peakCellRate01 (pcr01)

Access	Read only
Description	This attribute indicates the Peak Cell Rate (PCR) of the ATM VCC to which this interworking function is linked for all cells (with CLP=0 and CLP=1). The *pcr01* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.
Mib	LanDrivers

Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE La Evc Spvc sustainedCellRate0 (scr0)

Access	Read only
Description	This attribute indicates the Sustained Cell Rate (SCR) of the ATM VCC to which this interworking function is linked for cells (with CLP=0). The *scr0* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE La Evc Spvc maximumBurstSize0 (mbs0)

Access	Read only
Description	This attribute indicates the Maximum Burst Size (MBS) of the ATM VCC to which this interworking function is linked for cells (with CLP=0). The *mbs0* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE La Evc Spvc trafficDescType (tdt)

Access	Read only

Description	This attribute indicates the type of traffic management which is applied to the received and transmitted directions of this connection as defined in the ATM Forum.
Mib	LanDrivers
Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE La Evc Spvc qosClass (qos)

Access	Read only
Description	This attribute indicates the quality of service for this connection. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified QOS class; no objective is specified for the performance parameters. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	LanDrivers

Values	0 1 2 3 4
Default	No default

ATTRIBUTE La Evc Spvc bearerClassBbc (bcBbc)

Access	Read only
Description	This attribute indicates the bearer capability for this connection. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is displayed, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements.When ***c*** is displayed, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it. Class ***x*** service is a connection-oriented ATM transport service where the AAL, trafficType (***cbr*** or ***vbr***), and timing requirements are user defined (that is, transparent to the network). When the value of this attribute is ***x***, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.
Mib	LanDrivers
Values	a c x
Default	No default

ATTRIBUTE La Evc Spvc bestEffort

Access	Read only
Description	This attribute indicates value of best effort parameter in the ATM Traffic Descriptor Information Element. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.
Mib	LanDrivers
Values	notIndicated indicated
Default	No default

ATTRIBUTE La Evc Spvc packetWiseDiscard (pd)

Access	Read only
Description	This attribute indicates the current set of packet-wise discard functions in effect in the received and transmitted data directions at this connection point. A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning the SPVC, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.
Mib	LanDrivers
Set of	ppd
Default	No default

ATTRIBUTE La Evc Spvc qosParameters (qp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the backward and forward

directions for this connection.

The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR).

The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR).

The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.

Mib	LanDrivers
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

GROUP La Evc Spvc VcAggregation (VcAgg)

Properties	Operational
Description	This group contains the operational attributes for the *EvcSpvc* component when this EVC is connected using a shared VC established by the ETS component. This group is displayed when the *Evc aggregation* attribute has a value of ***enabled***.
Mib	LanDrivers

ATTRIBUTE La Evc Spvc aggregationStatus (aggStatus)

Access	Read only
Description	This attribute indicates the aggregation status of this EVC. The possible values are: ***notApplicable*** indicates the initial state of this EVC.

aggregationReleased indicates that this EVC has been released. Refer to *aggregationLastFailureCause* attribute for the diagnostic.

aggregationRejected indicates that this EVC's attempt to use aggregation has been rejected by ETS. Refer to *aggregationLastFailureCause* attribute for the diagnostic.

aggregationConnected indicates that this EVC has been successfully aggregated over a shared transport VC.

Mib: LanDrivers

Values:
notApplicable
aggregationReleased
aggregationRejected
aggregationConnected

Default: No default

ATTRIBUTE La Evc Spvc aggregationLastFailureCause (aggFailCause)

Access: Read only

Description: This attribute indicates the cause of the last connection aggregation failure.

notApplicable indicates that this EVC is successfully established over a shared transport VC.

spvcNotAvail indicates that the shared transport VC matching this *lanApplication* instance and this EVC's *remoteAddress* and that satisfies its *ethernetPerHopBehavior*, was disabled at the time of the last EVC setup attempt.

noServiceCategoryMatch indicates that all shared transport VC's matching this *lanApplication* instance and this EVC's *remoteAddress* can not satisfy this EVC's *ethernetPerHopBehavior* at the time of the last EVC setup attempt.

waitingForEtsReply indicates that this EVC has initiated a

connection setup request for aggregation, to the ETS, and is waiting for a reply.
noNsapPrefixMatch indicates that all shared transport VC's matching this *lanApplication* instance do not match this EVC's *remoteAddress*, at the time of the last EVC setup attempt.

etsNotReady indicates the Ethernet Transport System is not yet available to process connection requests.

etsBusy indicates there are too many outstanding requests to the *EthernetTransportSystem* component on the CP from this FP.

Mib	LanDrivers
Values	notApplicable spvcNotAvail noServiceCategoryMatch waitingForEtsReply noNsapPrefixMatch etsNotReady etsBusy
Default	No default

COMPONENT La Evc Spvc EthernetSourceVcc (SrcVcc)

Groups	"GROUP La Evc Spvc SrcVcc Provisioned (Prov)"
Scope	Device
Description	*La/x Evc Spvc/m EthernetSourceVcc* *La/x Vlan/y Evc Spvc/m EthernetSourceVcc* This component specifies the far end ATM UNI information for a single-ended EVC configuration. If the *Evc aggregation* attribute has a value of ***enabled***, this component cannot be provisioned under the *Spvc* component. This component takes precedence over the *EthernetSourceEvc*

component if both exist, forcing a single-ended EVC configuration.

Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Evc Spvc SrcVcc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetSourceVcc* component.
Mib	LanDrivers

ATTRIBUTE La Evc Spvc SrcVcc calledVpiVci (cdVpiVci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the far end ATM UNI VCC that is the called end of this EVC.
Mib	LanDrivers
Values	Integer Sequence (0..255; 32..65536)
Default	No default

COMPONENT La Evc Spvc AtmConnection (AtmCon)

Groups	"GROUP La Evc Spvc AtmCon Operational (Oper)"
Scope	Device

Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	LanDrivers
Common Verbs	Help List Display

GROUP La Evc Spvc AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	LanDrivers

ATTRIBUTE La Evc Spvc AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	LanDrivers
Values	The name of the component
Default	No default

COMPONENT La Evc Spvc EtsTrspCon (TrspCon)

Groups	"GROUP La Evc Spvc TrspCon Operational (Oper)"
Scope	Device
Description	*La/x Evc Spvc/m EtsTrspCon* *La/x Vlan/y Evc Spvc/m EtsTrspCon* This component represents each connection established by the *EthernetTransportSystem* component. It indicates the next hop

Ets EvlsAtmTransport Spvc, where the traffic flow for this EVC is transmitted to and from where it is received.

Mib LanDrivers

Common Verbs
Help
List
Display

GROUP La Evc Spvc TrspCon Operational (Oper)

Properties Operational

Description This group contains the operational attributes for the *EtsTrspCon* component.

Mib LanDrivers

ATTRIBUTE La Evc Spvc TrspCon transportEndPoint (trspEP)

Access Read only

Description This attribute indicates the component name of the *Ets EAtmTrsp/m Spvc/n* component to which this EVC is established.

Mib LanDrivers

Values The name of the component

Default No default

COMPONENT La Vlan

Instance Decimal (2..4094)

Groups
"GROUP La Vlan VlanProvisioned (VlanProv)"
"GROUP La Vlan IfEntryProv (IfEntry)"
"GROUP La Vlan OsiState (State)"
"GROUP La Vlan OperationalStatus (OperStatus)"

Scope Application

Description *La/n Vlan/m*

This component represents an Ethernet Virtual Local Area Network (VLAN). It is responsible for the Ethernet U-plane

(user-plane) protocol for the specified *LanApplication* instance. The instance values of 0 and 1 are reserved VLAN IDs. The value of 0 is reserved for priority tagged traffic, and 1 is for port-VLAN tagged traffic. The instance value is used to identify the logical connection, multiplexed within the physical channel, with which an Ethernet frame is associated. All frames carried within a particular physical channel and carrying the same VLAN identifier value are associated with the same logical connection.

Each *Vlan* component instance can be either linked to a *VirtualRouter* or a *VpnRouteForwarder* component, or configured to establish an *EthernetVirtualConnection* component. Semantic checks enforce that either the *EthernetVirtualConnection* subcomponent is provisioned under the *Vlan* component, or the *linkToProtocolPort* or *enetConnection* attribute is set.

Mib	LanDrivers
Subcomponents	"COMPONENT La Vlan EthernetStatistics (Stats)"
Opt. Subcomp.	"COMPONENT La Vlan EthernetVirtualConnection (Evc)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP La Vlan VlanProvisioned (VlanProv)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Vlan* component.
Mib	LanDrivers

ATTRIBUTE La Vlan linkToProtocolPort

Access	Read and write
Criticality	Component
Description	This attribute specifies the *ProtocolPort* component to which the application is associated. This attribute must not be set if the *Vlan enetConnection* attribute is set or there is the *EthernetVirtualConnection* subcomponent under this *Vlan* component.
Mib	LanDrivers
Values	Link (Service, linkToMedia)
Default	No default

ATTRIBUTE La Vlan enetConnection

Access	Read and write
Description	This attribute specifies the *Enet* component to which the application is associated. This attribute must not be set if the *Vlan linkToProtocolPort* attribute is set or there is the *EthernetVirtualConnection* subcomponent under this *Vlan* component.
Mib	LanDrivers
Values	Link (Service, linkToEnetIf)
Default	No default

GROUP La Vlan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LanDrivers

ATTRIBUTE La Vlan ifAdminStatus (ifState)

Access	Read and write

Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

ATTRIBUTE La Vlan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LanDrivers
Values	Decimal (1..65535)
Default	No default

GROUP La Vlan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LanDrivers

ATTRIBUTE La Vlan adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LanDrivers
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE La Vlan operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LanDrivers

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE La Vlan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LanDrivers
Values	idle active (activ) busy
Default	idle

GROUP La Vlan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LanDrivers

ATTRIBUTE La Vlan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable

to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib LanDrivers

Values
up
down
testing

Default up

COMPONENT La Vlan EthernetVirtualConnection (Evc)

Groups
"GROUP La Vlan Evc Provisioned (Prov)"
"GROUP La Vlan Evc OsiState (State)"
"GROUP La Vlan Evc OperationalStatus (OperStatus)"
"GROUP La Vlan Evc Operational (Oper)"
"GROUP La Vlan Evc Statistics (Stats)"

Scope Application

Description
La/x EthernetVirtualConnection
La/x Vlan/y EthernetVirtualConnection

When this component is added to a *LanApplication* component, it represents a VC that is established between this Ethernet interface and either another Ethernet interface or an ATM UNI VCC.

When this component is added to a *Vlan* component, it represents a VC that is established between this Ethernet VLAN and either another Ethernet VLAN or an ATM UNI VCC.

The EVC is established over an ATM PNNI network using an ATM SPVC VCC. It can be configured to use a dedicated ATM transport VC, or to aggregate with other EVCs over a shared ATM transport VC established by the *EthernetTransportSystem* component. This latter option is only available when this component exists under the *LanApplication* component in VLAN-mode, or under a *Vlan* component.

This EVC is used to transparently transport Ethernet v2.0 and IEEE 802.3 frames. These frames are stripped of the Ethernet

FCS and encapsulated using RFC2684 bridged mode encapsulation before being transported.

When this component is under the *LanApplication* component in port-mode, and the *EthernetPolicy* component does not exist, the default behavior of EVLS is to accept all frames received from the Ethernet interface. If the *EthernetPolicy* component exists, and the and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, only untagged and priority-tagged frames are accepted, all other frames are discarded and counted by the *EthernetStatistics unknownVlanId* statistic. With this same configuration, and the *unknownVlanIdTreatment* attribute set to ***accept***, all frames are accepted.

When this component is under the *LanApplication* component in VLAN-mode, and the port-VLAN is configured with an EVC, and the *EthernetPolicy* component does not exist, the default behavior of EVLS is to discard all unknown VLAN-tagged frames received from the Ethernet interface. If the *EthernetPolicy* component exists, and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, only untagged, priority-tagged and port-VLAN ID (VID=1) frames are accepted, all other frames are either accepted by a configured *Vlan* component instance, or discarded and counted by the *EthernetStatistics unknownVlanId* statistic. With this same configuration, and the *unknownVlanIdTreatment* attribute set to ***accept***, all untagged, priority-tagged, port-VLAN ID frames and unknown VLAN-tagged frames received from the Ethernet interface are classified as port-VLAN traffic.

When this component is under the *Vlan* component, only frames

	with their VID set to this *Vlan* component instance are accepted by this EVC.
Mib	LanDrivers
Opt. Subcomp.	"COMPONENT La Vlan Evc EthernetSourceEvc (SrcEvc)" "COMPONENT La Vlan Evc EthernetQualityOfService (EQoS)"
Opt. Subcomp.	"COMPONENT La Vlan Evc EvcSpvc (Spvc)"
Common Verbs	Help List Display Add DELete

GROUP La Vlan Evc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetVirtualConnection* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc aggregation (aggr)

Access	Read and write
Description	This attribute specifies whether to use a dedicated ATM VC to establish the connection, or to aggregate with other EVCs over a shared ATM VC established by the *EthernetTransportSystem* component. The possible values are: ***disabled***: this value indicates that this EVC should use a dedicated transport VC established by this component. ***enabled***: this value indicates that this EVC should be aggregated over a shared transport VC established by the *EthernetTransportSystem* component.
Mib	LanDrivers

Values	disabled enabled
Default	disabled

GROUP La Vlan Evc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LanDrivers
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE La Vlan Evc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LanDrivers
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE La Vlan Evc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LanDrivers

Values	idle active (activ) busy
Default	idle

GROUP La Vlan Evc OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

GROUP La Vlan Evc Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the *EthernetVirtualConnection* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc remoteAddress (rAddr)

Access	Read only

Description	This attribute indicates the 40-digit NSAP address of the far end Ethernet interface to which this EVC is established.
Mib	LanDrivers
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE La Vlan Evc remoteVlanId (rVlanId)

Access	Read only
Description	This attribute indicates the identifier of the VLAN on the far end Ethernet interface to which this EVC is established.
Mib	LanDrivers
Values	Decimal (1..4094)
Default	No default

GROUP La Vlan Evc Statistics (Stats)

Properties	Operational
Description	This group contains statistics for the *EthernetVirtualConnection* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc vcDownDiscards (vcDownDisc)

Access	Read only
Description	This attribute counts the frames received from the Ethernet interface for this EVC that have been discarded because the ATM transport VC was inactive. The value wraps to zero when it exceeds the maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT La Vlan Evc EthernetSourceEvc (SrcEvc)

Groups	"GROUP La Vlan Evc SrcEvc Provisioned (Prov)"
Scope	Application
Description	*La/x Evc EthernetSourceEvc* *La/x Vlan/y Evc EthernetSourceEvc* This component represents the connection setup information used by the calling end of this EVC to establish connectivity to either a far end Ethernet interface, or in the case that the *EthernetSourceVcc* is also configured to a far end ATM UNI. This component must exist if the *EvcSpvc* component is provisioned.
Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Vlan Evc SrcEvc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetSourceEvc* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc SrcEvc remoteAddress (rAddr)

Access	Read and write
Criticality	Component
Description	For an end-to-end EVC configuration, this attribute specifies the 40-digit NSAP address of the far end Ethernet interface to which this EVC is to be established.

	For a single-ended EVC configuration, this attribute specifies the 40-digit NSAP address of the far end ATM UNI to which this EVC is to be established.
Mib	LanDrivers
Values	String (40, AESANsapAddress)
Default	No default

ATTRIBUTE La Vlan Evc SrcEvc remoteVlanId (rVlanId)

Access	Read and write
Criticality	Component
Description	This attribute specifies the identifier of the VLAN on the far end Ethernet interface to which this EVC is to be established. When the *EthernetSourceEvc* component exists under the *La Evc* component in port mode, this attribute must be set to a value of ***1***.
Mib	LanDrivers
Values	Decimal (1..4094)
Default	No default

ATTRIBUTE La Vlan Evc SrcEvc retryPeriod (retry)

Access	Read and write
Description	This attribute specifies the interval at which an SPVC connection attempts re-establishment after the calling end of the SPVC initiates the setup request and receives a release message.
Mib	LanDrivers
Values	Decimal (10..3600)
Units	seconds
Default	20

COMPONENT La Vlan Evc EthernetQualityOfService (EQoS)

Instance	Decimal (0..0)

Groups	"GROUP La Vlan Evc EQoS Provisioned (Prov)" "GROUP La Vlan Evc EQoS QoSAtmProv (AtmProv)"
Scope	Network
Description	*La/n Evc EthernetQualityOfService/m* *La/n vlan/x Evc EthernetQualityOfService/m* This component represents the Ethernet traffic management parameters for the traffic received from and transmitted to the ATM VCC.
Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Vlan Evc EQoS Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetQualityOfService* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc EQoS committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR), in kbits per second, for this connection. It is the average rate up to which the network delivers service frames and meets the performance objectives defined by the Ethernet per-hop behavior of this connection. This value is used to derive the sustained cell rate (SCR) traffic management parameter for the ATM VC. Changing the value of this attribute will not take effect until *lock/unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers

Values	Decimal (64..512695)
Units	kbit/s
Default	10000

ATTRIBUTE La Vlan Evc EQoS excessInformationRate (eir)

Access	Read and write
Description	This attribute specifies the maximum bandwidth, in kbits per second, for this connection. It is the average rate up to which the network may deliver service frames without any performance objectives. This value is used in conjunction with the *EQoS cir* attribute to derive the peak cell rate (PCR) traffic management parameter for the ATM VC. Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (64..512695)
Units	kbit/s
Default	10000

ATTRIBUTE La Vlan Evc EQoS committedBurstSize (cbs)

Access	Read and write
Description	This attribute specifies the maximum number of bits available for use by sequential service frames sent at the Ethernet interface speed to remain CIR-conformant. This value must be divisible by a value of 8. Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (80000..100000000)
Units	bits

Default	800000

ATTRIBUTE La Vlan Evc EQoS ethernetPerHopBehavior (ePhb)

Access	Read and write
Description	This attribute specifies the Ethernet per-hop behavior for this connection. It is used to derive the traffic management parameters for the ATM VC. Consistent with the Multiservice Switch Differentiated Services Domain type for IP services, the following mapping is defined for EVLS: The value of ***df*** specifies that the traffic class is standard, the connection class is equal to 0, and the ATM service category is ubr. The value of ***af21*** specifies that the traffic class is silver, the connection class is equal to 1, and the ATM service category is nrt-vbr. The value of ***af31*** specifies that the traffic class is gold, the connection class is equal to 2, and the ATM service category is rt-vbr. The value of ***ef*** specifies that the traffic class is premium, the connection class is equal to 3, and the ATM service category is cbr. Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (0..63) df af21 af31 ef
Default	df

ATTRIBUTE La Vlan Evc EQoS averageFrameSize (afs)

Access	Read and write
Description	This attribute specifies the expected average frame size, in bytes, for this connection. This average frame size is used to determine the average overhead factor to be used in deriving the SCR and PCR traffic management parameters for the ATM VC. Changing the value of this attribute will not take effect until *lock*/*unlock La* or *Vlan* component or *clear* the SPVC connection.
Mib	LanDrivers
Values	Decimal (64..9182)
Units	bytes
Default	512

GROUP La Vlan Evc EQoS QoSAtmProv (AtmProv)

Properties	Provisioned
Description	This group contains the provisioned attributes related to ATM traffic management parameters for the *EthernetQualityOfService* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc EQoS packetWiseDiscard (pd)

Access	Read and write
Description	This attribute specifies whether packet-wise discard functions are to be enabled or disabled in the received and transmitted directions for this connection. Packet-wise discard functions apply to AAL5 frame traffic. Packet-wise functions increase the “goodput” of the link. The receive packet-wise function is Partial Packet Discard (PPD). PPD allows the connection to discard the remainder of a cell-forwarded AAL5 frame if one cell of this frame has been discarded, for example due to UPC. All cells are discarded up to

but not including the EOM cell. The PPD function increases the "goodput" of the link, since cells which are only going to be discarded at the AAL5 reassembly point are not transmitted.

A value of ***enabled*** means packet-wise discard functions are applied to receive traffic and transmit traffic at this connection point. A value of ***disabled*** means packet-wise discard functions are not applied to receive traffic and transmit traffic at this connection point.

At a SPVC origin on a PNNI interface, a value of ***enabled*** specifies that frame discard is requested in the forward and the backward direction. When this attribute is set to ***disabled***, forward frame discard and backward frame discard are not requested in the SPVC call setup.

The packet-wise discard functions that are active are visible in the *Spvc packetWiseDiscard* operational attribute.

Mib	LanDrivers
Values	disabled enabled
Default	disabled

COMPONENT La Vlan Evc EvcSpvc (Spvc)

Instance	Decimal (0..0)
Groups	"GROUP La Vlan Evc Spvc Operational (Oper)" "GROUP La Vlan Evc Spvc EvcSpvcCon (SpvcCon)" "GROUP La Vlan Evc Spvc VcAggregation (VcAgg)"
Scope	Network
Description	*La/x Evc EvcSpvc/m* *La/x Vlan/y Evc EvcSpvc/m* This component represents one of the SPVC endpoints of the ATM transport connection. This component can be dynamically created or provisioned.

When this component is dynamically created, it implicitly indicates that a connection has been established and this SPVC is the called endpoint of the VCC. The *EvcSpvc endPoint* operational attribute is used to indicate the called end. This dynamically created component does not exist when there is no connection.

When this component is provisioned, it implies that this is the calling endpoint of the VCC. It does not imply that a connection is established. A provisioned *EvcSpvc* component allows initiation of the setup request to the called end of the ATM transport connection.

Mib	LanDrivers
Opt. Subcomp.	"COMPONENT La Vlan Evc Spvc EthernetSourceVcc (SrcVcc)"
Dyn. Subcomp.	"COMPONENT La Vlan Evc Spvc AtmConnection (AtmCon)" "COMPONENT La Vlan Evc Spvc EtsTrspCon (TrspCon)"
Common Verbs	Help List Display Add DELete

VERB Clear (Clr) La Vlan Evc Spvc

Impact	Service
Description	*Clear La/n Evc Spvc/m* *Clear La/n Vlan/x Evc Spvc/m* This command can be issued on the calling or called SPVC endpoint. At the calling end, this command tears down the active SPVC connection and tries to re-establish the connection immediately. At the called end, this command tears down the active SPVC connection and waits for a new incoming call request. If there is no active SPVC, the *clear* command has no effect.

GROUP La Vlan Evc Spvc Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *EvcSpvc* component. Only the *retryFailures* attribute is displayed when the *Evc aggregation* attribute has a value of ***enabled***. When the *Evc aggregation* attribute has a value of ***disabled***, this group is displayed in calling end, and only *spvcStatus* and *endPoint* attributes are displayed in called end.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc Spvc spvcStatus (status)

Access	Read only
Description	This attribute indicates the status of the incoming and outgoing connection. ***serviceNotReady*** indicates that the component is initialising when first created; a connection has not been established, and no incoming setup requests are processed. ***serviceReady*** indicates that a connection has not yet been established and that setup requests are sent in calling end of the

SPVC or that the setup request is expected in the called end of the SPVC.

waitingForConnect indicates that a connection has not been established and the component is waiting to restart.

connected indicates that a connection has been established.

setupFailed indicates that the ATM Networking resources are not available to setup the connection at the calling end of the SPVC

connectFailed indicates that the ATM Networking resources are not avaialble to setup the connection at the called end of the SPVC.

releaseFailed indicates that the connection release attempts have failed.

Mib LanDrivers

Values serviceNotReady
serviceReady
waitingForConnect
connected
setupFailed
connectFailed
releaseFailed

Default No default

ATTRIBUTE La Vlan Evc Spvc endPoint (endPt)

Access Read only

Description This attribute indicates whether this SPVC is the called or calling endpoint of the VCC. If the value is ***called***, this is the endpoint that receives the setup request from the remote end of the ATM transport connection. If the value is ***calling,*** this is the endpoint that initiates the setup request to the remote end of the ATM transport connection.

Mib LanDrivers

Values	called calling
Default	No default

ATTRIBUTE La Vlan Evc Spvc retryFailures (failures)

Access	Read only
Description	This attribute indicates the consecutive failed connection attempts prior to the current attempt. It is reset to ***0*** whenever a connection is successfully established. The value wraps to ***0*** when it exceeds the maximum value. If this attribute increments, please refer to the *EvcSpvc lastSetupFailureCause* and *EvcSpvc lastSetupFailureDiagnostic* attributes for diagnostics.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE La Vlan Evc Spvc lastSetupFailureCause (failCause)

Access	Read only
Description	This attribute indicates the cause of the last ATM transport connection setup failure. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	LanDrivers
Values	Decimal (0..255)
Default	No default

ATTRIBUTE La Vlan Evc Spvc lastSetupFailureDiagnostic (failDiag)

Access	Read only
Description	This attribute indicates a diagnostic to supplement the *EvcSpvc lastSetupFailureCause* attribute.

	The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	LanDrivers
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE La Vlan Evc Spvc lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause of the last ATM transport connection teardown. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	LanDrivers
Values	Decimal (0..255)
Default	No default

ATTRIBUTE La Vlan Evc Spvc lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates a diagnostic to supplement the *EvcSpvc lastTearDownCause* attribute. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	LanDrivers
Values	String (0..8, ASCII)
Default	No default

GROUP La Vlan Evc Spvc EvcSpvcCon (SpvcCon)

Properties	Operational
Description	This group contains operational data associated with ATM SPVC for the *EvcSpvc* component.

This group is not displayed when the *Evc aggregation* attribute has a value of ***enabled.***

Mib LanDrivers

ATTRIBUTE La Vlan Evc Spvc serviceCategory (sc)

Access Read only

Description This attribute indicates the ATM service category of the SPVC connection.

For the called end of the SPVC, if the value of the *spvcStatus* attribute is ***connected***, this attribute can have a value of ***ubr***, ***rtvbr***, ***nrtvbr,*** or ***cbr***.

For the calling end of the SPVC, this attribute reflects the mapping value of the *EQoS ethernetPerHopBehavior* attribute.

Mib LanDrivers

Values notAvailable (notAvail)
unspecifiedBitRate (ubr)
rtVariableBitRate (rtvbr)
nrtVariableBitRate (nrtvbr)
constantBitRate (cbr)

Default No default

ATTRIBUTE La Vlan Evc Spvc peakCellRate01 (pcr01)

Access Read only

Description This attribute indicates the Peak Cell Rate (PCR) of the ATM VCC to which this interworking function is linked for all cells (with CLP=0 and CLP=1).

The *pcr01* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.

Mib LanDrivers

Values Decimal (0..4294967295)

Units	cell/s
Default	No default

ATTRIBUTE La Vlan Evc Spvc sustainedCellRate0 (scr0)

Access	Read only
Description	This attribute indicates the Sustained Cell Rate (SCR) of the ATM VCC to which this interworking function is linked for cells (with CLP=0). The *scr0* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE La Vlan Evc Spvc maximumBurstSize0 (mbs0)

Access	Read only
Description	This attribute indicates the Maximum Burst Size (MBS) of the ATM VCC to which this interworking function is linked for cells (with CLP=0). The *mbs0* attribute is derived from the traffic parameters under the *EthernetQualityOfService* component.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE La Vlan Evc Spvc trafficDescType (tdt)

Access	Read only

Description	This attribute indicates the type of traffic management which is applied to the received and transmitted directions of this connection as defined in the ATM Forum.
Mib	LanDrivers
Values	1 2 3 4 5 6 7 8 9
Default	No default

ATTRIBUTE La Vlan Evc Spvc qosClass (qos)

Access	Read only
Description	This attribute indicates the quality of service for this connection. Class 1 supports a QOS that meets Service Class A performance requirements (circuit emulation, constant bit rate video). Class 2 supports a QOS that meets Service Class B performance requirements (variable bit rate audio and video). Class 3 supports a QOS that meets Service Class C performance requirements (Connection-Oriented Data Transfer). Class 4 supports a QOS that meets Service Class D performance requirements (Connectionless Data Transfer). Class 0 is the unspecified QOS class; no objective is specified for the performance parameters. A value of ***notApplicable*** is displayed in the case of nailed-up PVCs for which this attribute has no significance.
Mib	LanDrivers

Values	0 1 2 3 4
Default	No default

ATTRIBUTE La Vlan Evc Spvc bearerClassBbc (bcBbc)

Access	Read only
Description	This attribute indicates the bearer capability for this connection. Class ***a*** service is a connection-oriented, constant bit rate ATM transport service. Class ***a*** service has end to end timing requirements and may require stringent cell loss, cell delay and cell delay variation performance.When ***a*** is displayed, the user is requesting more than an ATM only service. The network may look at the AAL to provide interworking based upon its contents. Class ***c*** service is a connection-oriented, variable bit rate ATM transport service. Class ***c*** service has no end-to-end timing requirements.When ***c*** is displayed, the user is requesting more than an ATM only service. The network interworking function may look at the AAL and provide service based on it. Class ***x*** service is a connection-oriented ATM transport service where the AAL, trafficType (***cbr*** or ***vbr***), and timing requirements are user defined (that is, transparent to the network). When the value of this attribute is ***x***, the user is requesting an ATM only service from the network. In this case, the network shall not process any higher layer protocol.
Mib	LanDrivers
Values	a c x
Default	No default

ATTRIBUTE La Vlan Evc Spvc bestEffort

Access	Read only
Description	This attribute indicates value of best effort parameter in the ATM Traffic Descriptor Information Element. The value ***indicated*** implies that the quality of service for this connection is not guaranteed. The value ***notIndicated*** implies that the quality of service for this connection is guaranteed.
Mib	LanDrivers
Values	notIndicated indicated
Default	No default

ATTRIBUTE La Vlan Evc Spvc packetWiseDiscard (pd)

Access	Read only
Description	This attribute indicates the current set of packet-wise discard functions in effect in the received and transmitted data directions at this connection point. A value of ***ppd*** indicates that the Partial Packet Discard (PPD) function is in effect. PPD may be applied at an intermediate connecting point for a connection which is transporting frame traffic (AAL5 at the endpoint). PPD is controlled by provisioning the SPVC, and by call setup parameters in the AAL and Traffic Descriptor Information Elements.
Mib	LanDrivers
Set of	ppd
Default	No default

ATTRIBUTE La Vlan Evc Spvc qosParameters (qp)

Access	Read only
Description	This attribute is a vector of three elements that indicate the quality of service parameters for the backward and forward

directions for this connection.

The ***cdv*** element indicates the acceptable peak-to-peak Cell Delay Variation (CDV) of real-time connections (CBR and rt-VBR).

The ***ctd*** element indicates the acceptable maximum Cell Transfer Delay (maxCtd) of real-time connections (CBR and rt-VBR).

The ***clr*** element indicates the acceptable Cell Loss Ratio (CLR) of CBR, rt-VBR, and nrt-VBR connections.

Mib	LanDrivers
Vector of	Decimal (0..2147483647)
Index	cdv ctd clr
Default	No default

GROUP La Vlan Evc Spvc VcAggregation (VcAgg)

Properties	Operational
Description	This group contains the operational attributes for the *EvcSpvc* component when this EVC is connected using a shared VC established by the ETS component. This group is displayed when the *Evc aggregation* attribute has a value of ***enabled***.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc Spvc aggregationStatus (aggStatus)

Access	Read only
Description	This attribute indicates the aggregation status of this EVC. The possible values are: ***notApplicable*** indicates the initial state of this EVC.

aggregationReleased indicates that this EVC has been released. Refer to *aggregationLastFailureCause* attribute for the diagnostic.

aggregationRejected indicates that this EVC's attempt to use aggregation has been rejected by ETS. Refer to *aggregationLastFailureCause* attribute for the diagnostic.

aggregationConnected indicates that this EVC has been successfully aggregated over a shared transport VC.

Mib: LanDrivers

Values:
notApplicable
aggregationReleased
aggregationRejected
aggregationConnected

Default: No default

ATTRIBUTE La Vlan Evc Spvc aggregationLastFailureCause (aggFailCause)

Access: Read only

Description: This attribute indicates the cause of the last connection aggregation failure.

notApplicable indicates that this EVC is successfully established over a shared transport VC.

spvcNotAvail indicates that the shared transport VC matching this *lanApplication* instance and this EVC's *remoteAddress* and that satisfies its *ethernetPerHopBehavior*, was disabled at the time of the last EVC setup attempt.

noServiceCategoryMatch indicates that all shared transport VC's matching this *lanApplication* instance and this EVC's *remoteAddress* can not satisfy this EVC's *ethernetPerHopBehavior* at the time of the last EVC setup attempt.

waitingForEtsReply indicates that this EVC has initiated a connection setup request for aggregation, to the ETS, and is

waiting for a reply.
noNsapPrefixMatch indicates that all shared transport VC's matching this *lanApplication* instance do not match this EVC's *remoteAddress*, at the time of the last EVC setup attempt.

etsNotReady indicates the Ethernet Transport System is not yet available to process connection requests.

etsBusy indicates there are too many outstanding requests to the *EthernetTransportSystem* component on the CP from this FP.

Mib: LanDrivers

Values:
notApplicable
spvcNotAvail
noServiceCategoryMatch
waitingForEtsReply
noNsapPrefixMatch
etsNotReady
etsBusy

Default: No default

COMPONENT La Vlan Evc Spvc EthernetSourceVcc (SrcVcc)

Groups: "GROUP La Vlan Evc Spvc SrcVcc Provisioned (Prov)"

Scope: Device

Description:
La/x Evc Spvc/m EthernetSourceVcc
La/x Vlan/y Evc Spvc/m EthernetSourceVcc

This component specifies the far end ATM UNI information for a single-ended EVC configuration.

If the *Evc aggregation* attribute has a value of ***enabled***, this component cannot be provisioned under the *Spvc* component.

This component takes precedence over the *EthernetSourceEvc*

	component if both exist, forcing a single-ended EVC configuration.
Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Vlan Evc Spvc SrcVcc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetSourceVcc* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc Spvc SrcVcc calledVpiVci (cdVpiVci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the far end ATM UNI VCC that is the called end of this EVC.
Mib	LanDrivers
Values	Integer Sequence (0..255; 32..65536)
Default	No default

COMPONENT La Vlan Evc Spvc AtmConnection (AtmCon)

Groups	"GROUP La Vlan Evc Spvc AtmCon Operational (Oper)"
Scope	Device

Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	LanDrivers
Common Verbs	Help List Display

GROUP La Vlan Evc Spvc AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	LanDrivers

ATTRIBUTE La Vlan Evc Spvc AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	LanDrivers
Values	The name of the component
Default	No default

COMPONENT La Vlan Evc Spvc EtsTrspCon (TrspCon)

Groups	"GROUP La Vlan Evc Spvc TrspCon Operational (Oper)"
Scope	Device
Description	*La/x Evc Spvc/m EtsTrspCon* *La/x Vlan/y Evc Spvc/m EtsTrspCon* This component represents each connection established by the *EthernetTransportSystem* component. It indicates the next hop

Ets EvlsAtmTransport Spvc, where the traffic flow for this EVC is transmitted to and from where it is received.

Mib: LanDrivers

Common Verbs:
Help
List
Display

GROUP La Vlan Evc Spvc TrspCon Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the *EtsTrspCon* component.

Mib: LanDrivers

ATTRIBUTE La Vlan Evc Spvc TrspCon transportEndPoint (trspEP)

Access: Read only

Description: This attribute indicates the component name of the *Ets EAtmTrsp/m Spvc/n* component to which this EVC is established.

Mib: LanDrivers

Values: The name of the component

Default: No default

COMPONENT La Vlan EthernetStatistics (Stats)

Groups: "GROUP La Vlan Stats EthIfStatsOper (EthIfStats)"
"GROUP La Vlan Stats EthStatsOper (EthStats)"

Scope: Application

Description: *La/n EthernetStatistics*
La/n Vlan/m EthernetStatistics

This component represents the statistics on this Ethernet Interface.

This component only exists under the *La* component for ***4pEth100BaseT***, ***8pEth100BaseT*** and ***4pGe*** FPs and always

exists under the *Vlan* component.

When this Ethernet interface is configured on the ***4pEth100BaseT***, ***8pEth100BaseT*** and ***4pGe*** FPs, the system automatically creates this component under the *LanApplication* component.

When this component is under the *LanApplication* component in port-mode, it identifies the statistics for all frames received and transmitted on this Ethernet interface. When this component is under the *LanApplication* component in VLAN-mode, this component identifies the statistics for all frames received and transmitted on this Ethernet interface that are classified as port-VLAN traffic. In addition, this component identifies all frames that are received on this Ethernet interface that are discarded to a VID mismatch.

When this component exists under the *Vlan* component, it identifies the statistics for this *Vlan* component for all VLAN-tagged frames that are received and transmitted on this Ethernet interface with their VID set to this *Vlan* component instance.

Mib: LanDrivers

Common Verbs:
- Help
- List
- Display

GROUP La Vlan Stats EthIfStatsOper (EthIfStats)

Properties: Operational

Description: This group contains statistics for the *EthernetStatistics* component. This group is not displayed when the parent of *EthernetStatistics* is the *Vlan* component.

Mib: LanDrivers

ATTRIBUTE La Vlan Stats unknownVlanId (unknownVlan)

Access: Read only

Description	This attribute counts the total number of frames received from this Ethernet interface for a VLAN that is not configured on the interface, and as a result discarded. When this interface is operating in port-mode and the *EthernetPolicy unknownVlanIdTreatment* value is ***discard***, it counts discarded IEEE 802.1Q VLAN-tagged frames with a non-zero VID. When this interface is operating in VLAN-mode, it counts discarded IEEE 802.1Q VLAN-tagged frames that have no corresponding *Vlan* component instance configured, and additionally untagged, priority-tagged, and port-VLAN ID tagged (VID=1) frames when the port-VLAN is not configured on this interface. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, and the port-VLAN is configured, this counter does not increment. This counter wraps to zero when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Vlan Stats lastUnknownVlanId

Access	Read only
Description	This attribute indicates the IEEE 802.1Q VLAN identifier of the most recent frame that is discarded due to a mismatch in the *Vlan* component instance on this Ethernet interface. When the Ethernet interface is operating in VLAN-mode, this attribute indicates the port-VLAN ID (VID=1) for untagged, priority-tagged and port-VLAN ID tagged frames. The value of ***notApplicable*** means no traffic with an unknown VLAN Id has been received and the *unknownVlanId* counter is zero.

When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept,*** this attribute should be ignored.

Mib LanDrivers

Values Decimal (1..4095)
notApplicable

Default notApplicable

GROUP La Vlan Stats EthStatsOper (EthStats)

Properties Operational

Description This group contains operational attributes for the *EthernetStatistics* component.

Mib LanDrivers

ATTRIBUTE La Vlan Stats rxFrames

Access Read only

Description If the parent of *EthernetStatistics* is the *LanApplication* component, this attribute counts the number of IEEE 802.3 or Ethernet v2.0 untagged, priority-tagged, port-VLAN tagged and VLAN-tagged frames received from this Ethernet interface for this *LanApplication* component.

When this interface is operating in port-mode and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, this count includes IEEE 802.3 and Ethernet v2.0 untagged frames, and IEEE 802.1Q priority-tagged frames only. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count includes all frames received from this Ethernet interface for this *LanApplication* component.

When this interface is operating in VLAN-mode, the port-VLAN is configured, and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard,*** this count includes, in addition to the port-mode frames, the IEEE 802.1Q port-VLAN tagged frames. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count additionally includes all IEEE 802.1Q

VLAN-tagged frames received, that do not have a corresponding *Vlan* component instance configured.

When this interface is operating in VLAN-mode, and the port-VLAN is not configured, this count does not increment.

If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of frames in IEEE 802.1Q VLAN-tagged frames that are received from this Ethernet interface with their VID set to this *Vlan* component instance.

This counter wraps to zero when it exceeds its maximum value.

Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Vlan Stats txFrames

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of Ethernet v2.0 untagged or port-VLAN tagged frames transmitted to this Ethernet interface for this *LanApplication* component. When this interface is operating in port-mode, this count includes only Ethernet v2.0 untagged frames. When this interface is operating in VLAN-mode, this count includes either Ethernet v2.0 untagged or IEEE 802.1Q port-VLAN tagged frames, depending on the value of the *EthernetPolicy egressTagRule* attribute. If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of IEEE 802.1Q VLAN-tagged frames that are transmitted to this Ethernet interface with their VID set to this *Vlan* component instance. This counter wraps to zero when it exceeds its maximum value.

Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Vlan Stats rxBytes

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of bytes of IEEE 802.3 or Ethernet v2.0 untagged, priority-tagged, port-VLAN tagged and VLAN-tagged frames received from this Ethernet interface for this *LanApplication* component. When this interface is operating in port-mode and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, this count includes the number of bytes of IEEE 802.3 and Ethernet v2.0 untagged frames, and IEEE 802.1Q priority-tagged frames only. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count includes the number of bytes of all frames received from this Ethernet interface for this *LanApplication* component. When this interface is operating in VLAN-mode, and the port-VLAN is configured, and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, this count includes, in addition to the port-mode frames, the number of bytes of the IEEE 802.1Q port-VLAN tagged frames. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count additionally includes the number of bytes of all IEEE 802.1Q VLAN-tagged frames received, that do not have a corresponding *Vlan* component instance configured The number of bytes of a frame includes the MAC header up to, but not including the Ethernet FCS, and if present includes the IEEE 802.1Q tag header. If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of bytes in IEEE 802.1Q VLAN-tagged frames that are received from this Ethernet

interface with their VID set to this *Vlan* component instance.

This counter wraps to zero when it exceeds its maximum value.

Mib: LanDrivers

Values: Long Integer

Default: No default

ATTRIBUTE La Vlan Stats txBytes

Access: Read only

Description: If the parent of the *EthernetStatistics* component is the *LanApplication* component, the attribute counts the number of bytes in Ethernet v2.0 untagged or port-VLAN tagged frames transmitted to this Ethernet interface for this *LanApplication* component.

When this interface is operating in port-mode, this count includes only the number of bytes in Ethernet v2.0 untagged frames.

When this interface is operating in VLAN-mode, this count includes the number of bytes in either Ethernet v2.0 untagged or IEEE 802.1Q port-VLAN tagged frames, depending on the value of the *EthernetPolicy egressTagRule* attribute.

The number of bytes of a frame includes the MAC header up to, but not including, the Ethernet FCS, and if present includes the IEEE 802.1Q tag header.

If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of bytes in IEEE 802.1Q VLAN-tagged frames that are transmitted to this Ethernet interface with their VID set to this *Vlan* component instance.

This counter wraps to zero when it exceeds its maximum value.

Mib: LanDrivers

Values: Long Integer

Default: No default

ATTRIBUTE La Vlan Stats rxDiscFrames

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of frames received from this Ethernet interface that are discarded because a network is congested or the connection is disabled. When this interface is operating in port-mode, this count includes IEEE 802.3 or Ethernet v2.0 untagged, IEEE 802.1Q priority-tagged and VLAN ID with no zero frames. When this interface is in VLAN-mode, this count includes IEEE 802.3 or Ethernet v2.0 untagged, IEEE 802.1Q priority-tagged and VLAN tagged frames. If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of IEEE 802.1Q VLAN-tagged frames with their VID set to this *Vlan* component instance that are received from this Ethernet interface and discarded because a network is congested or the connection is disabled. If this counter increments, it is a sign of improper network engineering. It is prudent to properly engineer the network resources to avoid congestion conditions. A typical cause of the congestion condition may be that the offerred load from all ingress FPs onto the egress FP is greater than the capacity of that FP. Check the egress FP congestion level to determine remedial action. This counter wraps to zero when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Vlan Stats txDiscFrames

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of Ethernet v2.0 untagged or IEEE 802.1Q port-VLAN tagged frames transmitted to this Ethernet interface and discarded because a link is congested or the connection is disabled. When this interface is operating in port-mode, this count includes Ethernet v2.0 untagged frames only. When this interface is in VLAN-mode, this count includes either Ethernet v2.0 untagged, or IEEE 802.1Q port-VLAN tagged frames, depending on the value of the *EthernetPolicy egressTagRule* attribute. If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of IEEE 802.1Q VLAN-tagged frames with their VID set to this *Vlan* component instance that are transmitted to this Ethernet interface and discarded because a link is congested or the connection is disabled. If this counter increments, it is a sign of improper network engineering. It is prudent to properly engineer the network resources to avoid congestion conditions. A typical cause of the congestion condition may be that the offerred load from all ingress FPs onto this egress FP is greater than the capacity of this FP. Check this FP congestion level to determine remedial action. This counter wraps to zero when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT La EthernetStatistics (Stats)

Groups	"GROUP La Stats EthIfStatsOper (EthIfStats)" "GROUP La Stats EthStatsOper (EthStats)"
Scope	Application
Description	*La/n EthernetStatistics* *La/n Vlan/m EthernetStatistics* This component represents the statistics on this Ethernet Interface. This component only exists under the *La* component for ***4pEth100BaseT***, ***8pEth100BaseT*** and ***4pGe*** FPs and always exists under the *Vlan* component. When this Ethernet interface is configured on the ***4pEth100BaseT***, ***8pEth100BaseT*** and ***4pGe*** FPs, the system automatically creates this component under the *LanApplication* component. When this component is under the *LanApplication* component in port-mode, it identifies the statistics for all frames received and transmitted on this Ethernet interface. When this component is under the *LanApplication* component in VLAN-mode, this component identifies the statistics for all frames received and transmitted on this Ethernet interface that are classified as port-VLAN traffic. In addition, this component identifies all frames that are received on this Ethernet interface that are discarded to a VID mismatch. When this component exists under the *Vlan* component, it identifies the statistics for this *Vlan* component for all VLAN-

tagged frames that are received and transmitted on this Ethernet interface with their VID set to this *Vlan* component instance.

Mib: LanDrivers

Common Verbs: Help, List, Display

GROUP La Stats EthIfStatsOper (EthIfStats)

Properties: Operational

Description: This group contains statistics for the *EthernetStatistics* component. This group is not displayed when the parent of *EthernetStatistics* is the *Vlan* component.

Mib: LanDrivers

ATTRIBUTE La Stats unknownVlanId (unknownVlan)

Access: Read only

Description: This attribute counts the total number of frames received from this Ethernet interface for a VLAN that is not configured on the interface, and as a result discarded.

When this interface is operating in port-mode and the *EthernetPolicy unknownVlanIdTreatment* value is ***discard***, it counts discarded IEEE 802.1Q VLAN-tagged frames with a non-zero VID.

When this interface is operating in VLAN-mode, it counts discarded IEEE 802.1Q VLAN-tagged frames that have no corresponding *Vlan* component instance configured, and additionally untagged, priority-tagged, and port-VLAN ID tagged (VID=1) frames when the port-VLAN is not configured on this interface.

When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, and the port-VLAN is configured, this counter does not increment.

	This counter wraps to zero when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Stats lastUnknownVlanId

Access	Read only
Description	This attribute indicates the IEEE 802.1Q VLAN identifier of the most recent frame that is discarded due to a mismatch in the *Vlan* component instance on this Ethernet interface. When the Ethernet interface is operating in VLAN-mode, this attribute indicates the port-VLAN ID (VID=1) for untagged, priority-tagged and port-VLAN ID tagged frames. The value of ***notApplicable*** means no traffic with an unknown VLAN Id has been received and the *unknownVlanId* counter is zero. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept,*** this attribute should be ignored.
Mib	LanDrivers
Values	Decimal (1..4095) notApplicable
Default	notApplicable

GROUP La Stats EthStatsOper (EthStats)

Properties	Operational
Description	This group contains operational attributes for the *EthernetStatistics* component.
Mib	LanDrivers

ATTRIBUTE La Stats rxFrames

Access	Read only
Description	If the parent of *EthernetStatistics* is the *LanApplication* component, this attribute counts the number of IEEE 802.3 or Ethernet v2.0 untagged, priority-tagged, port-VLAN tagged and VLAN-tagged frames received from this Ethernet interface for this *LanApplication* component. When this interface is operating in port-mode and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, this count includes IEEE 802.3 and Ethernet v2.0 untagged frames, and IEEE 802.1Q priority-tagged frames only. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count includes all frames received from this Ethernet interface for this *LanApplication* component. When this interface is operating in VLAN-mode, the port-VLAN is configured, and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard,*** this count includes, in addition to the port-mode frames, the IEEE 802.1Q port-VLAN tagged frames. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count additionally includes all IEEE 802.1Q VLAN-tagged frames received, that do not have a corresponding *Vlan* component instance configured. When this interface is operating in VLAN-mode, and the port-VLAN is not configured, this count does not increment. If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of frames in IEEE 802.1Q VLAN-tagged frames that are received from this Ethernet interface with their VID set to this *Vlan* component instance. This counter wraps to zero when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Stats txFrames

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of Ethernet v2.0 untagged or port-VLAN tagged frames transmitted to this Ethernet interface for this *LanApplication* component. When this interface is operating in port-mode, this count includes only Ethernet v2.0 untagged frames. When this interface is operating in VLAN-mode, this count includes either Ethernet v2.0 untagged or IEEE 802.1Q port-VLAN tagged frames, depending on the value of the *EthernetPolicy egressTagRule* attribute. If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of IEEE 802.1Q VLAN-tagged frames that are transmitted to this Ethernet interface with their VID set to this *Vlan* component instance. This counter wraps to zero when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Stats rxBytes

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of bytes of IEEE 802.3 or Ethernet v2.0 untagged, priority-tagged, port-VLAN tagged and VLAN-tagged frames received from this Ethernet interface for this *LanApplication* component. When this interface is operating in port-mode and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, this count includes the number of bytes of IEEE 802.3

and Ethernet v2.0 untagged frames, and IEEE 802.1Q priority-tagged frames only. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count includes the number of bytes of all frames received from this Ethernet interface for this *LanApplication* component.

When this interface is operating in VLAN-mode, and the port-VLAN is configured, and the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***discard***, this count includes, in addition to the port-mode frames, the number of bytes of the IEEE 802.1Q port-VLAN tagged frames. When the *EthernetPolicy unknownVlanIdTreatment* attribute is set to ***accept***, this count additionally includes the number of bytes of all IEEE 802.1Q VLAN-tagged frames received, that do not have a corresponding *Vlan* component instance configured

The number of bytes of a frame includes the MAC header up to, but not including the Ethernet FCS, and if present includes the IEEE 802.1Q tag header.

If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of bytes in IEEE 802.1Q VLAN-tagged frames that are received from this Ethernet interface with their VID set to this *Vlan* component instance.

This counter wraps to zero when it exceeds its maximum value.

Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Stats txBytes

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, the attribute counts the number of bytes in Ethernet v2.0 untagged or port-VLAN tagged frames transmitted to this Ethernet interface for this *LanApplication* component.

When this interface is operating in port-mode, this count includes only the number of bytes in Ethernet v2.0 untagged frames.

When this interface is operating in VLAN-mode, this count includes the number of bytes in either Ethernet v2.0 untagged or IEEE 802.1Q port-VLAN tagged frames, depending on the value of the *EthernetPolicy egressTagRule* attribute.

The number of bytes of a frame includes the MAC header up to, but not including, the Ethernet FCS, and if present includes the IEEE 802.1Q tag header.

If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of bytes in IEEE 802.1Q VLAN-tagged frames that are transmitted to this Ethernet interface with their VID set to this *Vlan* component instance.

This counter wraps to zero when it exceeds its maximum value.

Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Stats rxDiscFrames

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of frames received from this Ethernet interface that are discarded because a network is congested or the connection is disabled. When this interface is operating in port-mode, this count includes IEEE 802.3 or Ethernet v2.0 untagged, IEEE 802.1Q priority-tagged and VLAN ID with no zero frames. When this interface is in VLAN-mode, this count includes IEEE 802.3 or Ethernet v2.0 untagged, IEEE 802.1Q priority-tagged and VLAN tagged frames. If the parent of the *EthernetStatistics* component is the *Vlan*

component, this attribute counts the number of IEEE 802.1Q VLAN-tagged frames with their VID set to this *Vlan* component instance that are received from this Ethernet interface and discarded because a network is congested or the connection is disabled.

If this counter increments, it is a sign of improper network engineering. It is prudent to properly engineer the network resources to avoid congestion conditions.

A typical cause of the congestion condition may be that the offerred load from all ingress FPs onto the egress FP is greater than the capacity of that FP. Check the egress FP congestion level to determine remedial action.

This counter wraps to zero when it exceeds its maximum value.

Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Stats txDiscFrames

Access	Read only
Description	If the parent of the *EthernetStatistics* component is the *LanApplication* component, this attribute counts the number of Ethernet v2.0 untagged or IEEE 802.1Q port-VLAN tagged frames transmitted to this Ethernet interface and discarded because a link is congested or the connection is disabled. When this interface is operating in port-mode, this count includes Ethernet v2.0 untagged frames only. When this interface is in VLAN-mode, this count includes either Ethernet v2.0 untagged, or IEEE 802.1Q port-VLAN tagged frames, depending on the value of the *EthernetPolicy egressTagRule* attribute. If the parent of the *EthernetStatistics* component is the *Vlan* component, this attribute counts the number of IEEE 802.1Q

VLAN-tagged frames with their VID set to this *Vlan* component instance that are transmitted to this Ethernet interface and discarded because a link is congested or the connection is disabled.

If this counter increments, it is a sign of improper network engineering. It is prudent to properly engineer the network resources to avoid congestion conditions.

A typical cause of the congestion condition may be that the offerred load from all ingress FPs onto this egress FP is greater than the capacity of this FP. Check this FP congestion level to determine remedial action.

This counter wraps to zero when it exceeds its maximum value.

Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT La EthernetPolicy (Policy)

Groups	"GROUP La Policy Provisioned (Prov)"
Scope	Application
Description	*La/n EthernetPolicy*

This component represents the policies for the *LanApplication* component in both network ingress and egress directions.

When this *LanApplication* instance is in VLAN-mode, these policies apply to the port-VLAN only.

Mib	LanDrivers
Common Verbs	Help List Display Add DELete

GROUP La Policy Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *EthernetPolicy* component.
Mib	LanDrivers

ATTRIBUTE La Policy unknownVlanIdTreatment (uvidtreat)

Access	Read and write
Criticality	Component
Description	This attribute specifies the treatment of IEEE 802.1Q VLAN tagged traffic received from the interface for which there is no provisioned *Vlan* component instance. The possible values are: ***discard***: this value specifies that all packets received from the interface, including control packets, that are tagged with a VLAN Id that is not configured on the port are to be discarded. The *EthernetStatistcs unknownVlanId* and *lastUnknownVlanId* attributes indicate those packets. ***accept***: when this Ethernet interface is operating in port-mode, this value specifies that all packets received from the interface, including control packets, that are VLAN-tagged are to be accepted and handled by the configured service. When this Ethernet interface is operating in VLAN-mode, this value specifies that all packets received from the interface, including control packets, that are tagged with a VLAN Id, that is not configured on the port, are to be treated by the port-VLAN. If the port-VLAN is not configured on the Ethernet interface, that traffic is discarded.
Mib	LanDrivers
Values	discard accept

Default	discard

ATTRIBUTE La Policy egressTagRule (egtag)

Access	Read only
Description	This attribute specifies the tagging rule for frames transmitted to the Ethernet interface. This attribute is only applicable if the Ethernet interface is operating in VLAN mode. Otherwise, this attribute is ignored, and has no effect on the traffic transmitted to the interface. The possible values are: ***untagged*** - this value specifies that all packets, including control packets that are associated with the port-VLAN, are transmitted on the Ethernet interface without an IEEE 802.1Q tag header. ***tagged*** - this value specifies that all packets, including control packets that are associated with the port-VLAN, are transmitted to the Ethernet interface with an IEEE 802.1Q tag header, with the VLAN ID value set to the port-VLAN ID (i.e. VID = 1).
Mib	LanDrivers
Values	untagged tagged
Default	untagged

COMPONENT La Framer

Groups	"GROUP La Framer Provisioned (Prov)" "GROUP La Framer Statistics (Stats)"
Scope	Application
Description	*LanApplication/n Framer* The *Framer* component is used to link a *LanApplication* to a Lan

	interface such as *Ethernet*, *Fddi*, *TokenRing* or *Ethernet100BaseT*.
Mib	LanDrivers
Common Verbs	Help List Display

GROUP La Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the link to the Lan interface such as *Ethernet*, *Fddi*, or *TokenRing*.
Mib	LanDrivers

ATTRIBUTE La Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute associates the *LanApplication* with a specific Lan interface such as *Ethernet*, *Fddi*, or *TokenRing*. This also defines the *LogicalProcessor* on which *Framer*'s parent component (as well as *Framer* itself) will run. Only one (1) LAN interface can be linked to a *Framer* except for *Ethernet100BaseT* LAN interface, for which up to two (2) interfaces residing on the same *LogicalProcessor* can be linked.
Mib	LanDrivers
List of	Link (Hardware, applicationFramerName)
List Size	2
Default	No default

GROUP La Framer Statistics (Stats)

Properties	Operational

Description	This group contains the operational statistics data for a *Framer* Component.
Mib	LanDrivers

ATTRIBUTE La Framer lrcErrors

Access	Read only
Description	This attribute counts of the number of frames or cells that have failed the Longintudinal Redundancy Check (LRC) as they were being sent to the link. This check is used to verify the integrity of the data prior to transmission. Usually the problem is on the originating card, with the destination card the only one reporting the error.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE La Framer rxFrames

Access	Read only
Description	This attribute counts the frames received from this interface.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Framer rxBytes

Access	Read only
Description	This attribute counts the bytes received from this interface.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Framer txFrames

Access	Read only
Description	This attribute counts the frames transmitted to this interface.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Framer txBytes

Access	Read only
Description	This attribute counts the bytes transmitted to this interface.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Framer rxDiscard

Access	Read only
Description	This attribute counts the frames received from this interface that are discarded due to a network congestion condition. If this counter increments, it is a sign of improper network engineering. It is prudent to properly engineer the network resources to avoid network congestion conditions.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Framer txDiscard

Access	Read only
Description	This attribute counts the frames transmitted to this interface that are discarded due to a network congestion condition. If this counter increments, it is a sign of improper network engineering.

	It is prudent to properly engineer the network resources to avoid network congestion conditions.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE La Framer rxFrameError

Access	Read only
Description	This attribute counts the frames received from this interface that are discarded due to frame reassembly errors.
Mib	LanDrivers
Values	Long Integer
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component La

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Lec

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

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COMPONENT LanEmulationClient (Lec)

Instance	Decimal (0..31)
Groups	"GROUP Lec CustomerIdentifierData (CidData)" "GROUP Lec IfEntryProv (IfEntry)" "GROUP Lec MediaProv (Mp)" "GROUP Lec Provisioned (Prov)" "GROUP Lec OsiState (State)" "GROUP Lec OperationalStatus (OperStatus)" "GROUP Lec Operational (Oper)" "GROUP Lec Statistics (Stats)"
Scope	Application
Description	*LanEmulationClient/n* This component represents a LAN Emulation Client (LEC) as specified in the ATM Forum LAN Emulation over ATM Specification (LANE). The LEC provides a MAC level emulated Ethernet service to higher layer protocols using ATM VCCs.

	The ‘laneClient’ feature must be provisioned on all ILS and ATM cards.
Mib	LaneClient
Dyn. Subcomp.	"COMPONENT Lec LeArpEntry (LeArp)" "COMPONENT Lec Connection (Conn)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lec CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component’s Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LaneClient

ATTRIBUTE Lec customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component’s CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator’s user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

	An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	LaneClient
Values	Decimal (0; 1..8191)
Default	0

GROUP Lec IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LaneClient

ATTRIBUTE Lec ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LaneClient
Values	up down testing
Default	up

ATTRIBUTE Lec ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LaneClient

Values	Decimal (1..65535)
Default	No default

GROUP Lec MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the Media Application component.
Mib	LaneClient

ATTRIBUTE Lec linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute contains a protocol port component name. The attribute associates the application with a protocol port.
Mib	LaneClient
Values	Link (Service, linkToMedia)
Default	No default

GROUP Lec Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *LanEmulationClient* component.
Mib	LaneClient

ATTRIBUTE Lec lanType

Access	Read and write
Criticality	Component
Description	This attribute specifies the data frame format for this LEC. Auto-configuring LECs use this attribute in their Configure requests. Manually-configured LECs use it in their Join requests. A value of ***unspecified*** implies that the data frame format is obtained

	from the LECS or LES. The value of this attribute may be overridden by the LECS or LES; *actualLanType* contains the actual value.
Mib	LaneClient
Values	unspecified ethernet
Default	unspecified

ATTRIBUTE Lec maxFrameSize

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum data frame size for this LEC. Auto-configuring LECs use this attribute in their Configure requests. Manually-configured LECs use it in their Join requests. A value of ***unspecified*** may only be used for auto-configuring LECs.
Mib	LaneClient
Values	unspecified 1516 1580 4544 9234 18190
Units	octets
Default	unspecified

ATTRIBUTE Lec lanName

Access	Read and write
Criticality	Component
Description	This attribute specifies the ELAN name for this LEC. Auto-configuring LECs use this attribute in their Configure requests. Manually-configured LECs use it in their Join requests. An empty string means unspecified.

	The value of this attribute may be overridden by the LECS or LES; *actualLanName* contains the actual value.
Mib	LaneClient
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Lec v2Capable (v2c)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this LEC exhibits LANE v2 behavior where it differs in its requirements from LANE v1 behavior.
Mib	LaneClient
Values	yes no
Default	yes

ATTRIBUTE Lec lecsAddress (lecsAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM address of the LECS. If this attribute is non-null, the LEC attempts to set up a Configuration Direct SVC to this address as the first step in the LECS Connect phase. Otherwise, the well known LECS ATM address is used. Only one of the attributes *lecsAddress* and *lesAddress* can be specified at one time.
Mib	LaneClient
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Lec lesAddress (lesAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM address of the LES. The LEC uses this address to connect directly to the LES, thus bypassing the LECS. A LEC which did not use the LECS is deemed to be manually-configured. Only one of the attributes *lecsAddress* and *lesAddress* can be specified at one time.
Mib	LaneClient
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Lec maxDataSvcs

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of Data Direct SVCs which this LEC can have active at any one time. When operating at the maximum, an SVC setup request releases the oldest 10% of the Data Direct SVCs of this LEC. A SET alarm is issued when *currDataSvcs* rises above 95% of this value and is CLEAR-ed when it falls below 85%. Set *maxDataSvcs* as low as acceptable since a fixed amount of memory is consumed proportional to this value on every LP with this feature present.
Mib	LaneClient
Values	Decimal (16..1018)
Default	16

ATTRIBUTE Lec maxArpEntries

Access	Read and write
Criticality	Component

Description	This attribute specifies the maximum number of entries which this LEC can have in its LE_ARP table at any one time. When operating at the maximum, if an additional entry must be installed, up to 10% of the oldest entries are removed. A SET alarm is issued when *currArpEntries* rises above 95% of this value and is CLEAR-ed when it falls below 85%.
Mib	LaneClient
Values	Decimal (32..10240)
Default	5120

ATTRIBUTE Lec ilsForwarder (ilsFwdr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *IlsForwarder* that this LEC is using.
Mib	LaneClient
Values	Link (Service, linkToTrafficSource)
Default	No default

GROUP Lec OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LaneClient

ATTRIBUTE Lec adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	LaneClient
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lec operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LaneClient
Values	enabled (ena) disabled (dis)

Default	disabled

ATTRIBUTE Lec usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LaneClient
Values	idle active (activ) busy
Default	idle

GROUP Lec OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LaneClient

ATTRIBUTE Lec snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LaneClient

Values	up down testing
Default	up

GROUP Lec Operational (Oper)

Properties	Operational
Description	This group contains the operational status attributes of the *LanEmulationClient* component.
Mib	LaneClient

ATTRIBUTE Lec actualLanType (actLanType)

Access	Read only
Description	This attribute indicates the data frame format of this LEC. This may come from the *lanType* attribute, LECS or LES. The data frame format is not ***unspecified*** for an operational LEC. This attribute represents the 'C2' LEC state parameter in the ATM Forum LANE specification. Token Ring data frame format is not supported. The LEC does not become operational if the LECS or LES specify a LAN type of Token Ring.
Mib	LaneClient
Values	unspecified ethernet
Default	No default

ATTRIBUTE Lec actualMaxFrameSize (actMaxFrameSize)

Access	Read only
Description	This attribute indicates the maximum data frame size of this LEC. This may come from the *maxFrameSize* attribute, LECS or LES. The value is not ***unspecified*** for an operational LEC.
Mib	LaneClient

Values	unspecified 1516 1580 4544 9234 18190
Units	octets
Default	No default

ATTRIBUTE Lec actualLanName (actLanName)

Access	Read only
Description	This attribute indicates the name of the ELAN to which this LEC is connected. This may come from the *lanName* attribute, LECS or LES. It may be null for an operational LEC. This attribute represents the ‘C5’ LEC state parameter in the ATM Forum LANE specification.
Mib	LaneClient
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Lec elanId

Access	Read only
Description	This attribute identifies the ELAN to which this LEC is connected. For v2, the value will be set in the configuration phase,
Mib	LaneClient
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lec actualV2Capable (v2)

Access	Read only

Description	This attribute indicates whether this LEC exhibits LANE v2 behavior. The value is set in the Join phase.
Mib	LaneClient
Values	yes no
Default	No default

ATTRIBUTE Lec configurationSource (configSource)

Access	Read only
Description	This attribute indicates whether this LEC used the LECS, and if so, the method used to establish the Configuration Direct VCC.
Mib	LaneClient
Values	usedProvisionedLecsAddress gotLecsAddressViaIlmi usedWellKnownLecsAddress usedLecsPvc didNotUseLecs
Default	No default

ATTRIBUTE Lec actualLecsAddress (actLecsAddr)

Access	Read only
Description	This attribute indicates the ATM address of the LECS used to configure this LEC. The address is null if the LECS was not used.
Mib	LaneClient
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Lec actualLesAddress (actLesAddr)

Access	Read only
Description	This attribute indicates the ATM address of the LES which is currently serving this LEC. The address is not null for an operational LEC.

	This attribute represents the ‘C9’ LEC state parameter in the ATM Forum LANE specification.
Mib	LaneClient
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Lec atmAddress (atmAddr)

Access	Read only
Description	This attribute indicates the ATM address of this LEC. This attribute represents the ‘C1’ LEC state parameter in the ATM Forum LANE specification.
Mib	LaneClient
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Lec macAddress (macAddr)

Access	Read only
Description	This attribute indicates the MAC address of this LEC. This attribute represents the ‘C6’ LEC state parameter in the ATM Forum LANE specification.
Mib	LaneClient
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lec lecId

Access	Read only
Description	This attribute indicates the LANE Client Identifier (LECID) assigned to this LEC by the LES during the Join phase. The LECID uniquely identifies a LEC on a particular ELAN. This attribute represents the ‘C14’ LEC state parameter in the ATM Forum LANE specification.

Mib	LaneClient
Values	Decimal (0..65279)
Default	No default

ATTRIBUTE Lec interfaceState

Access	Read only
Description	This attribute indicates the current state of the LEC. Note that *ifOperStatus* is ***up*** only when *interfaceState* is ***operational***. - ***initialState***: Some parameters (such as addresses and ELAN name) are known to the LEC. - ***lecsConnect***: LEC establishes Configuration Direct VCC to LECS. Manually-configured LECs skip this state. - ***configure***: LEC discovers LES. - ***join***: LEC establishes control connections to LES. LEC is assigned unique LECID and knows all ELAN parameters. - ***initialRegistration***: LEC may register additional MAC addresses with LES. This is in addition to the single MAC address registered during Join phase. - ***busConnect***: LEC issues LE_ARP to locate the BUS and sets up the connection. The BUS then establishes the Multicast Forward VCC to the LEC. - ***operational***: LEC is operational and can forward data traffic.
Mib	LaneClient
Values	initialState lecsConnect configure join initialRegistration busConnect operational
Default	No default

ATTRIBUTE Lec lastFailureResponseCode

Access	Read only

Description	The attribute indicates the status code from the last failed Configure or Join response. Failed responses are those for which the LE_CONFIGURE_RESPONSE / LE_JOIN_RESPONSE frame contains a non-zero code, or fails to arrive within a time-out period. If none of the LEC's requests have failed, this attribute has the value ***none***.
Mib	LaneClient
Values	none timeout undefinedError versionNotSupported invalidRequestParameters duplicateLanDestination duplicateAtmAddress insufficientResources accessDenied invalidRequesterId invalidLanDestination invalidAtmAddress noConfiguration leConfigureError insufficientInformation
Default	No default

ATTRIBUTE Lec lastFailureState

Access	Read only
Description	This attribute indicates the state that the LEC was in when it updated the *lastFailureResponseCode*. If *lastFailureResponseCode* is ***none***, this attribute has the value ***initialState***. See the *interfaceState* attribute for a description of each state.
Mib	LaneClient
Values	initialState lecsConnect configure join

	initialRegistration busConnect operational
Default	No default

GROUP Lec Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the *LanEmulationClient* component.
Mib	LaneClient

ATTRIBUTE Lec arpRequestsOut

Access	Read only
Description	This attribute counts the LE_ARP_REQUESTS sent by this LEC. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec arpRepliesIn

Access	Read only
Description	This attribute counts the LE_ARP_RESPONSES received by this LEC. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec arpRequestsIn

Access	Read only

Description	This attribute counts the LE_ARP_REQUESTS received by this LEC. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec arpRepliesOut

Access	Read only
Description	This attribute counts the LE_ARP_RESPONSES sent by this LEC. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec controlFramesOut

Access	Read only
Description	This attribute counts the control packets sent by this LEC. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec controlFramesIn

Access	Read only
Description	This attribute counts the control packets received by this LEC. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)

Default	No default

ATTRIBUTE Lec svcFailures

Access	Read only
Description	This attribute counts the number of SVCs that could not be set up. The reasons for failure are: - outgoing SVCs that this LEC failed to establish; - incoming SVCs that this LEC failed to establish; and - incoming SVCs that this LEC rejected for protocol or security reasons. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec currDataSvcs

Access	Read only
Description	This attribute counts the number of Data Direct SVCs that this LEC has in service.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec peakDataSvcs

Access	Read only
Description	The attribute is the peak value of *currDataSvcs*. In other words, this value is the maximum number of Data Direct SVCs that this LEC had in service at any one time.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec currArpEntries

Access	Read only
Description	This attribute counts the current number of entries that this LEC has in its LE ARP table.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec peakArpEntries

Access	Read only
Description	The attribute is the peak value *currArpEntries*. In other words, this value is the maximum number of entries that this LEC had in its LE ARP table at any one time.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec badControlFrames

Access	Read only
Description	This attribute counts the control frames discarded by the LEC due to invalid or illegal frame format, and those frames with a STATUS code other than “Success”. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec protocolViolations

Access	Read only
Description	This attribute counts the number of responses received by

Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec unsupportedTlvs

Access	Read only
Description	This attribute counts the number of times an unsupported TLV was
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

COMPONENT Lec LeArpEntry (LeArp)

Instance	String (6, Dashed Hex)
Groups	"GROUP Lec LeArp Operational (Oper)"
Scope	Application
Description	*Lec/n LeArpEntry/<Mac Address>* This component defines an entry in the LE_ARP table. Each entry contains information about the binding of one MAC address to one ATM address.
Mib	LaneClient
Common Verbs	Help List Display

VERB Clear Lec LeArp

Impact	Passive
Description	*Clear Lec/n LeArp/<Mac Address>* This verb removes the specified entry from the LE_ARP table.

GROUP Lec LeArp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *LeArpEntry* component.
Mib	LaneClient

ATTRIBUTE Lec LeArp atmAddress (atmAddr)

Access	Read only
Description	This attribute indicates the ATM address of the BUS or LEC associated with the MAC address of this entry. If the MAC address is the all-ones broadcast address, the entry is for the BUS.
Mib	LaneClient
Values	String (20, Hex)
Default	No default

ATTRIBUTE Lec LeArp isRemoteAddress (remote)

Access	Read only
Description	This attribute indicates whether this entry is for a local or remote MAC address. In this context, ‘local’ means a MAC address that is local to a LEC, and ‘remote’ means a MAC address for which the LEC is proxy. If ***yes***, the address is believed to be remote, or its local/remote status is unknown. If ***no***, the address is believed to be local; that is, registered with the LES by the LEC whose ATM address is *atmAddress*.
Mib	LaneClient
Values	yes no
Default	No default

ATTRIBUTE Lec LeArp connectionId (connId)

Access	Read only
Description	This attribute indicates the connection identifier associated with this entry. The connection identifier is the instance of the *Connection* component.
Mib	LaneClient
Values	Decimal (0..1022)
Default	No default

COMPONENT Lec Connection (Conn)

Instance	Decimal (0..1022)
Groups	"GROUP Lec Conn Operational (Oper)" "GROUP Lec Conn Statistics (Stats)"
Scope	Application
Description	*Lec/n Connection/n* This component defines an ATM connection (SVC) that is used by the LEC.
Mib	LaneClient
Dyn. Subcomp.	"COMPONENT Lec Conn AtmConnection (AtmCon)"
Common Verbs	Help List Display

VERB Clear Lec Conn

Impact	Passive
Description	*Clear Lec/n Conn/n* This verb clears the specified *Connection*. Clearing the BUS connection results in temporary loss of the ability to send/receive broadcast and unknown data traffic. Clearing a connection to the LES reinitializes the LEC.

GROUP Lec Conn Operational (Oper)

Properties	Operational
Description	This group contains the operational status attributes of the *Connection* component.
Mib	LaneClient

ATTRIBUTE Lec Conn remoteAtmAddress (remoteAtmAddr)

Access	Read only
Description	This attribute indicates the ATM address of the far end.
Mib	LaneClient
Values	String (20, Hex)
Default	No default

ATTRIBUTE Lec Conn age

Access	Read only
Description	This attribute indicates the age of this connection.
Mib	LaneClient
Values	Decimal (0..4292967295)
Units	seconds
Default	No default

ATTRIBUTE Lec Conn type

Access	Read only
Description	This attribute indicates the type of this connection.
Mib	LaneClient
Values	configurationDirectVcc (configDirect) controlDirectVcc (controlDirect) controlDistributeVcc (controlDistrib) dataDirectVcc (data)

	defaultMulticastSendVcc (dfltMcastSend) multicastForward (mcastFwd)
Default	No default

GROUP Lec Conn Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the *Connection* component.
Mib	LaneClient

ATTRIBUTE Lec Conn outFrames

Access	Read only
Description	This attribute counts the frames sent over this connection. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Lec Conn inFrames

Access	Read only
Description	This attribute counts the frames received over this connection. This counter wraps to zero when the maximum value is reached.
Mib	LaneClient
Values	Decimal (0..4292967295)
Default	No default

COMPONENT Lec Conn AtmConnection (AtmCon)

Groups	"GROUP Lec Conn AtmCon Operational (Oper)"
Scope	Device

Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	LaneClient
Common Verbs	Help List Display

GROUP Lec Conn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	LaneClient

ATTRIBUTE Lec Conn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	LaneClient
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Lec

Release 6.1

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Nortel Networks Multiservice Switch

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Component Liaf

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Nortel Networks Multiservice Switch 7400/15000/20000

Component Liaf

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COMPONENT LawfulInterceptAccessFunction (Liaf)

Instance	Decimal (1..15)
Groups	"GROUP Liaf Provisioned (Prov)" "GROUP Liaf Statistics (Stats)" "GROUP Liaf OsiState (State)" "GROUP Liaf WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Liaf/n* This component represents the Lawful Intercept Access Function (Liaf). Lawful Intercept is used by law enforcement agencies to monitor the activities of a subscriber on the network based on the IMSI or the MSISDN.
Mib	WirelessLiaf
Dyn. Subcomp.	"COMPONENT Liaf RemoteApplicationConnection (RaConn)"
Common Verbs	Help List Display Add DELete

GROUP Liaf Provisioned (Prov)

Properties	Provisioned

Description	This group contains provisionable attributes of the *LawfulInterceptAccessFunction (Liaf)* component.
Mib	WirelessLiaf

ATTRIBUTE Liaf linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor (LP) that the *LawfulInterceptAccessFunction (Liaf)* component is provisioned on. No more than one *LawfulInterceptAccessFunction (Liaf)* component can be linked to the same *LogicalProcessor* instance.
Mib	WirelessLiaf
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Liaf admfAddr

Access	Read: All Write: All
Description	This attribute specifies the IP address of the Lawful Intercept Gateway (LIG) Administrative Function (ADMF). The ADMF provides a list of target subscribers to be monitored by the *LawfulInterceptAccessFunction (Liaf)* component. Changing this value causes the outstanding transactions to be affected.
Mib	WirelessLiaf
Values	IP address
Default	No default

ATTRIBUTE Liaf admfPort

Access	Read: All Write: All

Description	This attribute specifies the IP port number of the Lawful Intercept Gateway (LIG) Administrative Function (ADMF). The ADMF provides a list of target subscribers to be monitored by the *LawfulInterceptAccessFunction (Liaf)* component. Changing this value causes the outstanding transactions to be affected.
Mib	WirelessLiaf
Values	Decimal (1024..65535)
Default	2000

ATTRIBUTE Liaf nsInterceptions (nsInt)

Access	Read: All Write: All
Description	This attribute specifies a capacity service level that represents a maximum number of monitored targets. When this number of monitored targets is reached, the OSI usage state transitions to busy and an alarm is generated.
Mib	WirelessLiaf
Values	Decimal (256..3000)
Default	256

ATTRIBUTE Liaf linkToLiClient

Access	Read: All Write: All
Description	This attribute specifies links to the UMTS/GPRS subscriber control entities that are handled by this *LawfulInterceptAccessFunction (Liaf)* component. This attribute must be set to *Usc* or *Gsc* instance, based on whether it is used in UMTS or GPRS. Changing this value causes the outstanding transactions to be affected.

Mib	WirelessLiaf
List of	Link (Service, linkToLisp)
Default	No default

ATTRIBUTE Liaf linkToPort

Access	Read: All Write: All
Description	This attribute specifies the IP address and TCP port numbers of the *LawfulInterceptAccessFunction (Liaf)* component. The IP Address and TCP Port numbers are specified by setting this attribute to link to the correct *Gips IpAddress Tcp Port* components on the same card. Two *Gips IpAddress Tcp Port* components must be assigned: one for the Lawful Intercept Gateway (LIG) Administration Function (ADMF) connectivity, and the second for LIG Delivery Function (DF) connectivity. Changing this value causes the outstanding transactions to be lost.
Mib	WirelessLiaf
List of	Link (Service, linkToApplication)
Default	No default

GROUP Liaf Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes of the *LawfulInterceptAccessFunction (Liaf)* component.
Mib	WirelessLiaf

ATTRIBUTE Liaf admfErrors (admf)

Access	Read: All Write: Illegal

Description	This attribute counts errors encountered by the *LawfulInterceptAccessFunction (Liaf)* component when decoding a message from the Lawful Intercept Gateway (LIG) Administrative Function (ADMF). It allows the user to determine if there is a problem (for example, formatting or corrupt data) with the messages received from the ADMF. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessLiaf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Liaf nsInterceptionsExceed (nsiExceed)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the number of monitored targets exceeds *nsInterceptions*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessLiaf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Liaf bufferOverFlows (buffOf)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCP buffer overflows. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessLiaf
Values	Decimal (0..4294967295)
Default	No default

GROUP Liaf OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessLiaf

ATTRIBUTE Liaf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	WirelessLiaf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Liaf operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	WirelessLiaf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Liaf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	WirelessLiaf
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Liaf availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to

place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	WirelessLiaf
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Liaf proceduralStatus (osiProc)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	WirelessLiaf
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Liaf controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	WirelessLiaf
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Liaf alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	WirelessLiaf
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Liaf standbyStatus (osiStby)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	WirelessLiaf
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Liaf unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

	The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	WirelessLiaf
Values	false true
Default	false

GROUP Liaf WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessLiaf

ATTRIBUTE Liaf customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessLiaf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Liaf customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessLiaf

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Liaf customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessLiaf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Liaf RemoteApplicationConnection (RaConn)

Instance	appType [String (1..8, ASCII)] shelfId [Decimal (0..15)] n [Decimal (1..15)]
Groups	"GROUP Liaf RaConn OsiState (State)" "GROUP Liaf RaConn WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	... *RemoteApplicationConnection/<appType, shelfId, n>* This component represents the Remote Application Connection information of an application that talks to applications on other shelves. For each application that it can communicate with, one of these connection components is created and is instantiated with the name of the remote application, the Id of the shelf on

which the application runs, and the instance number of the application. ShelfId ***0*** represents the Master shelf.

Mib WirelessLiaf

Dyn. Subcomp. "COMPONENT Liaf RaConn AtmConnection (AtmCon)"

Common Verbs
Help
List
Display

GROUP Liaf RaConn OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib WirelessLiaf

ATTRIBUTE Liaf RaConn adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: WirelessLiaf

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Liaf RaConn operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: WirelessLiaf

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Liaf RaConn usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	WirelessLiaf
Values	idle active (activ) busy
Default	idle

GROUP Liaf RaConn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessLiaf

ATTRIBUTE Liaf RaConn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessLiaf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Liaf RaConn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	WirelessLiaf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Liaf RaConn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessLiaf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Liaf RaConn AtmConnection (AtmCon)

Groups	"GROUP Liaf RaConn AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	WirelessLiaf
Common Verbs	Help List Display

GROUP Liaf RaConn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	WirelessLiaf

ATTRIBUTE Liaf RaConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	WirelessLiaf
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Liaf

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component LocalMed

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component LocalMed

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COMPONENT LocalMedia

Scope	Application
Description	*LocalMedia* The *LocalMedia* component represents a logical media and provides a functional interface to the APCs that are unaware of the *VirtualRouter* and Nortel Networks Multiservice Switch IP architecture. There may be at most one instance of the *LocalMedia* component. The component can be used to support inter-APC communication, or APC communication with external nodes.
Mib	LocalMedia
Subcomponents	"COMPONENT LocalMedia Interface (If)"
Common Verbs	Help List Display Add DELete

COMPONENT LocalMedia Interface (If)

Instance	Decimal (0..4)
Groups	"GROUP LocalMedia If CustomerIdentifierData (CidData)" "GROUP LocalMedia If IfEntryProv (IfEntry)" "GROUP LocalMedia If MediaProv (Mp)" "GROUP LocalMedia If Provisioned (Prov)"

	"GROUP LocalMedia If OperationalStatus (OperStatus)" "GROUP LocalMedia If OsiState (State)"
Scope	Application
Description	*LocalMedia Interface/n* This component represents a logical interface to the *LocalMedia* component. The *Interface* component has to be linked to a *VirtualRouter ProtocolPort* component which has only one *LogicalInterface* subcomponent.
Mib	LocalMedia
Dyn. Subcomp.	"COMPONENT LocalMedia If PsfpIpServer (Pips)"
Common Verbs	Help List Display Add DELete

GROUP LocalMedia If CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LocalMedia

ATTRIBUTE LocalMedia If customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only

	the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	LocalMedia
Values	Decimal (0; 1..8191)
Default	0

GROUP LocalMedia If IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LocalMedia

ATTRIBUTE LocalMedia If ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LocalMedia
Values	up down testing
Default	up

ATTRIBUTE LocalMedia If ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component

Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LocalMedia
Values	Decimal (1..65535)
Default	No default

GROUP LocalMedia If MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the media base component.
Mib	LocalMedia

ATTRIBUTE LocalMedia If linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *ProtocolPort* to which this interface is linked to. The protocol port is the logical interface to the network. The protocol port component describes the logical characteristics of this interface.
Mib	LocalMedia
Values	Link (Service, linkToMedia)
Default	No default

GROUP LocalMedia If Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *If* component.
Mib	LocalMedia

ATTRIBUTE LocalMedia If maxTransmissionUnit (mtu)

Access	Read and write

Description	This attribute specifies the size of the largest datagram which can be sent on the interface. This includes the size of the header (if applicable) as well as the protocol data unit.
Mib	LocalMedia
Values	Decimal (256..9180)
Units	octets
Default	9180

ATTRIBUTE LocalMedia If trafficType (tt)

Access	Read and write
Criticality	Component
Description	This attribute specifies the supported traffic types of the *LocalMedia If* component. It contains one or more of the following values.***Rnc***, ***Cpds***, ***CpdsCoreNetwork, internalTraffic, locationServices***. ***Rnc***: This traffic type supports all types of traffic in RNC-IN. ***Cpds***: This traffic type supports all types of traffic in CPDS, except the traffic between PCU and PDSN. ***CpdsCoreNetwork***: This traffic type supports traffic between PCU and PDSN. ***internalTraffic***: This traffic type supports movable IP and PsfpIpServer feature. ***locationServices***: This traffic type supports AGPS feature.
Mib	LocalMedia
Set of	rnc cpds cpdsCoreNetwork internalTraffic locationServices

Default	No default

GROUP LocalMedia If OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LocalMedia

ATTRIBUTE LocalMedia If snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LocalMedia
Values	up down testing
Default	up

GROUP LocalMedia If OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LocalMedia

ATTRIBUTE LocalMedia If adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LocalMedia
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE LocalMedia If operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LocalMedia

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE LocalMedia If usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LocalMedia
Values	idle active (activ) busy
Default	idle

COMPONENT LocalMedia If PsfpIpServer (Pips)

Instance	Decimal (0..15)
Groups	"GROUP LocalMedia If Pips Operational (Oper)"
Scope	Application
Description	LocalMedia if/n PsfpIpServer

	This component represents the host PSFP IP Server under InwLocalMedia Interface.
Mib	LocalMedia
Dyn. Subcomp.	"COMPONENT LocalMedia If Pips Ip"
Common Verbs	Help List Display

GROUP LocalMedia If Pips Operational (Oper)

Properties	Operational
Description	This group hold PsfpIpServer operational data.
Mib	LocalMedia

ATTRIBUTE LocalMedia If Pips ipAddress

Access	Read only
Description	This component represent internet protocol (ip) in the PsfpIpServer.
Mib	LocalMedia
Values	IP address
Default	No default

ATTRIBUTE LocalMedia If Pips runOnCard

Access	Read only
Description	This attribute indicates the instance value corresponding to the card number of the PIPS.
Mib	LocalMedia
Values	Decimal (0..15)
Default	No default

COMPONENT LocalMedia If Pips Ip

Groups	"GROUP LocalMedia If Pips Ip Statistics (Stats)"
Scope	Application
Description	This component represent internet protocol (ip) in the PsfpIpServer.
Mib	LocalMedia
Dyn. Subcomp.	"COMPONENT LocalMedia If Pips Ip Udp" "COMPONENT LocalMedia If Pips Ip Icmp"
Common Verbs	Help List Display

GROUP LocalMedia If Pips Ip Statistics (Stats)

Properties	Operational
Description	This group contains the Internet Protocol (IP) related statistical attributes.
Mib	LocalMedia

ATTRIBUTE LocalMedia If Pips Ip inReceives (inRcvs)

Access	Read: All Write: Illegal
Description	This attribute counts all the incoming datagrams, including those counted in inErrors and inUnknownProtocols. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip inErrors (inErrs)

Access	Read: All Write: Illegal

Description	This attribute counts the input datagrams discarded due to errors in their IP headers, version number mismatch, other format errors, and time-to-live exceeded which have not already been filtered by the Virtual Router's IP forwarder. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip inUnknownProtocols (inUnkProtos)

Access	Read: All Write: Illegal
Description	This attribute counts the locally-addressed datagrams received successfully but discarded because of an unknown or unsupported protocol. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip inDelivers

Access	Read: All Write: Illegal
Description	This attribute counts the input datagrams successfully delivered to the IP user-protocols (including Internet Control Message Protocol (ICMP)). The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip outRequests (outReqs)

Access	Read: All Write: Illegal
Description	This attribute counts the datagrams which the local IP user-protocols (including Internet Control Message Protocol (ICMP)) supplied to IP in requests for transmission. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip reasmTimeOuts (reasmTo)

Access	Read: All Write: Illegal
Description	This attribute counts the IP packet reassembly time-outs at the receiving PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip reasmRequireds (reasmReqds)

Access	Read: All Write: Illegal
Description	This attribute counts the IP packets with the reassembly bit set. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip reasmOks

Access	Read: All Write: Illegal

Description	This attribute counts the IP packets successfully reassembled by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip reasmFails

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the PsfpIpServer is unable to assemble IP-fragments for any reason. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

COMPONENT LocalMedia If Pips Ip Udp

Groups	"GROUP LocalMedia If Pips Ip Udp Statistics (Stats)"
Scope	Application
Description	This component represents the UDP functionality supported by the PsfpIpServer.
Mib	LocalMedia
Common Verbs	Help List Display

GROUP LocalMedia If Pips Ip Udp Statistics (Stats)

Properties	Operational
Description	This group contains all UDP-related statistical attributes supported by the PsfpIpServer.

Mib	LocalMedia

ATTRIBUTE LocalMedia If Pips Ip Udp inDatagrams (inDg)

Access	Read: All Write: Illegal
Description	This attribute counts the UDP datagrams delivered to UDP users. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Udp outDatagrams (outDg)

Access	Read: All Write: Illegal
Description	This attribute counts the UDP datagrams sent from the UDP stack. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Udp inUnknownPorts (inUnkPorts)

Access	Read: All Write: Illegal
Description	This attribute counts the UDP datagrams received for which there was no associated application at the destination port. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Udp inErrors (inErr)

Access	Read: All Write: Illegal
Description	This attribute counts the received UDP datagrams that could not be delivered for reasons other than the lack of an application at the destination port. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

COMPONENT LocalMedia If Pips Ip Icmp

Groups	"GROUP LocalMedia If Pips Ip Icmp Statistics (Stats)"
Scope	Application
Description	This component represents the Internet Control Message (ICMP) functionality supported by the Pips. The ICMP provides feedback from an IP router or gateway to a source host. It can be used to report errors or verify the reachability of routers or end-system
Mib	LocalMedia
Common Verbs	Help List Display

GROUP LocalMedia If Pips Ip Icmp Statistics (Stats)

Properties	Operational
Description	This group contains the Internet Control Message Protocol (ICMP) related statistical attributes.
Mib	LocalMedia

ATTRIBUTE LocalMedia If Pips Ip Icmp inMsgs

Access	Read: All Write: Illegal

Description	This attribute counts the Internet Control Message Protocol (ICMP) messages received by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp inErrors (inErrs)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) messages received by the PsfpIpServer, but determined as having ICMP specific errors such as bad ICMP checksums or bad length. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp inTimeExceeds (inTimeEx)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) time exceeded messages received by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp outTimeExceeds (outTimeExcds)

Access	Read: All Write: Illegal

Description	This attribute counts the Internet Control Message Protocol (ICMP) time exceeded messages sent by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp inEchos (inEc)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) echo request messages received by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp outEchoReplies (outEcRe)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) echo reply messages sent by this PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp inTimestamps (inTiSta)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) timestamp request messages received by this

	PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp outTimestampReplies (outTsRep)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) timestamp reply messages sent by this PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp inDestUnreachs (inDestUnr)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) destination unreachable messages received by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp outDestUnreachs (outDestUnr)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) destination unreachable messages sent out by this

	PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp inParmProbs (inProb)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) parameter problem messages received by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp outParmProbs (outProbs)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) parameter problem messages sent by this PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.
Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE LocalMedia If Pips Ip Icmp inSrcQuenchs (inSrcQ)

Access	Read: All Write: Illegal
Description	This attribute counts the Internet Control Message Protocol (ICMP) source quench messages received by the PsfpIpServer. The counter wraps to zero when it exceeds the maximum value.

Mib	LocalMedia
Values	Decimal (0..4294967295)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component LocalMed

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component LpP

NN10600-060

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COMPONENT LpPair (LpP)

Instance	Integer Sequence (0..15; 0..15)
Scope	Application
Description	*LpPair/m.n* This component represents a pair of LPs, *LP/m* and *LP/n*. There are no real instances of this component which you can issue commands against. It is solely for the purpose of alarm handling for other components which can link to two LPs (for example, via a *LineAutomaticProtectionSwitching*, or *Laps*, component). These other components are typically spared across the two LPs, which means that the LP hierarchical clear alarms alone are not sufficient to properly clear certain alarms; use of the *LpPair* component does provide this. Thus, the name of an *LpPair* can appear in the related component name field of an alarm so that subsequent alarm clearing can be handled appropriately. It can also appear in the component name field of an alarm, for a hierarchical clear against the pair of LPs and for components which are spared across the two LPs. The LP alarms and their fields remain unchanged.
Mib	LogicalProcessor
Common Verbs	Help List Display

Nortel Networks Multiservice Switch 7400/15000/20000

Component LpP

Release 6.1

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COMPONENT LogicalProcessor (Lp)

Instance	Decimal (0..15)
Groups	"GROUP Lp Provisioned (Prov)" "GROUP Lp CustomerIdentifierData (CidData)" "GROUP Lp OsiState (State)" "GROUP Lp Operational (Oper)" "GROUP Lp Utilization (Util)" "GROUP Lp Capacity (Cap)"

"COLLECTED STATS LogicalProcessor"

Scope	Device
Description	*LogicalProcessor/n* The *LogicalProcessor* (*Lp*) component is a root component. One *Lp* component is created for each Logical Processor. An *Lp* may be configured to run on up to two cards; one as the main card, and the other as the spare card. When two cards are configured,

	the *Lp* runs on one card, and waits for that card to fail before starting to run on the other card.
Mib	LogicalProcessor
Subcomponents	"COMPONENT Lp Engineering (Eng)"
Opt. Subcomp.	"COMPONENT Lp BridgedSonet (Bso)" "COMPONENT Lp Enet" "COMPONENT Lp Fddi (Fi)" "COMPONENT Lp DS3" "COMPONENT Lp E3" "COMPONENT Lp DS1" "COMPONENT Lp E1" "COMPONENT Lp V35" "COMPONENT Lp X21" "COMPONENT Lp TokenRing (Tr)" "COMPONENT Lp Sonet" "COMPONENT Lp Sdh" "COMPONENT Lp JT2" "COMPONENT Lp Hssi"

"COMPONENT Lp IlsForwarder (IlsFwdr)"
"COMPONENT Lp InverseMultiplexerAtm (Ima)"
"COMPONENT Lp VoiceServicesProcessor (Vsp)"
"COMPONENT Lp Ethernet100BaseT (Eth100)"
"COMPONENT Lp OamEthernet (OamEnet)"
"COMPONENT Lp EDS1"
"COMPONENT Lp EE1"
"COMPONENT Lp PCUServicesProcessor (Pcusp)"
"COMPONENT Lp MultiLinkFrameRelay (Mlfr)"
"COMPONENT Lp NetworkProcessingUnit (Npu)"
"COMPONENT Lp Ethernet (Eth)"
"COMPONENT Lp LinkAggregation (Lag)"

Dyn. Subcomp. "COMPONENT Lp AdjunctProcessor (Ap)"

Common Verbs

Help
List
Display
Add
DELete
LOCK
Unlock

VERB RESET Lp

Impact Service

Description *Reset Lp/n*
Reset -force Lp/0

This command is used to reset the processor card on which this *LP* is currently running. Resetting a processor card implies: (1) resetting the hardware (as if the card had just been powered on), (2) performing the card's self-tests, and (3) reloading the software.

A *Reset* command issued against the CP (*Lp/0*) causes it to reload from the committed provisioning data file.

A *Reset* command issued against an FP causes it to reload the same software it was already running. This is the software load

that is derived from the provisioning data in the CP's current view (this may or may not be the committed view).

Options:
-force
This option causes the reset to occur against lp/0 even if the current or edit view differs from the committed view, or if the standby OAM Ethernet port is not available, or if the standby CP is currently loading the committed provisioning data file. Use of this option would cause the loss of data in any unsaved view, and any FPs running uncommitted data would restart. On any lp other than lp/0, -force has no meaning.

VERB RESTART Lp

Impact: Service

Description:

Restart Lp/n
Restart -force Lp/0

This command is used to restart the processor card on which this *LP* is currently running. Restarting a processor card causes the software to reinitialize itself and behave as if it had just been reloaded. A *Restart* command issued against the CP (*Lp/0*) causes it to restart using the committed provisioning data.

Options:
-force
This option causes the restart to occur against lp/0 even if the current or edit view differs from the committed view, or if the standby OAM Ethernet port is not available, or if the standby CP is currently loading the committed provisioning data file. Use of this option would cause the loss of data in any unsaved view, and any FPs running uncommitted data would restart. On any lp other than lp/0, -force has no meaning.

VERB RELOADcp (Reload) Lp

Impact Service

Description *ReloadCp -force -filename(<name>) Lp/0*

This command is used to force the CP to reload using a specified provisioning file instead of using the committed provisioning file. The command has a parameter that specifies the name of the file to use.

VERB SWITCHover Lp

Impact Service

Description *Switchover Lp/n*
Switchover -time(yyyy-mm-dd hh:mm) Lp/n
Switchover -cancel Lp/n
Switchover -force Lp/0

This command forces a sparing operation to occur. The *spareCard* becomes active if the *mainCard* is currently active or, alternatively, the *mainCard* becomes active if the *spareCard* is currently active.

Options:
-time
This option is used to specify the time when a scheduled switchover is to take effect.

-cancel
This option is used to cancel a scheduled switchover.

-force
This option causes the switchover to occur even if the current or edit view differs from the committed view. Use of this option would cause the loss of data in any unsaved view. In addition, any FPs running uncommitted data would restart.

GROUP Lp Provisioned (Prov)

Properties Provisioned

Description	This Group contains the provisionable attributes for the *LP* component.
Mib	LogicalProcessor

ATTRIBUTE Lp mainCard (main)

Access	Read and write
Description	This is the preferred processor card on which this *LP* should be assigned.
Mib	LogicalProcessor
Values	Link (Service, configuredLPs)
Default	No default

ATTRIBUTE Lp spareCard (spare)

Access	Read and write
Description	This is the spare processor card on which this *LP* should be assigned.
Mib	LogicalProcessor
Values	Link (Service, configuredLPs)
Default	No default

ATTRIBUTE Lp logicalProcessorType (lpt)

Access	Read and write
Description	This is the Logical Processor Type (LPT) that determines which software this *LP* will run.
Mib	LogicalProcessor
Values	Link (Service, logicalProcessors)
Default	No default

ATTRIBUTE Lp oneForNSparingBehavior

Access	Read and write
Description	This attribute specifies the sparing behavior in a 1 for N sparing configuration when a main card fails. If the attribute value is ***delayedSwitchOver***, the failure of a main card to recover as the active card will initiate a switchover to the spare card. This sparing behavior gives the failed main card a chance to recover and hence allows the main cards to remain protected by the spare card. If the attribute value is ***immediateSwitchOver***, the failure of a main card initiates an immediate switchover to the spare card. This sparing behavior provides greater emphasis on reducing outage time for a failed main card at the expense of leaving the other main cards unprotected.
Mib	LogicalProcessor
Values	delayedSwitchOver (delayedSO) immediateSwitchOver (immediateSO)
Default	delayedSwitchOver

ATTRIBUTE Lp linkToApplications

Access	Read only
Description	This attribute allows applications to link themselves directly to the *LP* component.
Mib	LogicalProcessor
List of	Link
List Size	256
Default	No default

GROUP Lp CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib	LogicalProcessor

ATTRIBUTE Lp customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp availabilityStatus (osiAvail)

Access	Read only

Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is

one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn’t initialize autonomously) that initialization is required

before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: LogicalProcessor

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: LogicalProcessor

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and

containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

GROUP Lp Operational (Oper)

Properties	Operational

Description

This Group contains the operational attributes for the LP component.

Mib LogicalProcessor

ATTRIBUTE Lp activeCard

Access Read only

Description

This attribute indicates on which card this LP is currently running (if any).

Mib LogicalProcessor

Values The name of the component

Default No default

ATTRIBUTE Lp mainCardStatus

Access Read only

Description

This attribute specifies the status of this LP's main card. The following values have been defined:
notProvisioned— No main card has been provisioned.
notAvailable— The main card is not available.
available— The main card is available (running as standby).
active— The main card is running as active.

Mib LogicalProcessor

Values notProvisioned
notAvailable
available
active

Default No default

ATTRIBUTE Lp spareCardStatus

Access Read only

Description

This attribute specifies the status of this LP's spare card. The following values have been defined:
notProvisioned— No spare card has been provisioned.
notAvailable— The spare card is not available.
alreadyInUse— The spare card is already in use by another LP.
available— The spare card is available (running as standby).
active— The spare card is running as active.

Mib

LogicalProcessor

Values

notProvisioned
notAvailable
alreadyInUse
available
active

Default

No default

ATTRIBUTE Lp restartOnCpSwitch

Access

Read only

Description

This attribute indicates whether the *Lp* always restarts upon a CP switchover.

The value is ***true*** if the *featureList* of the associated *Sw Lpt* component contains a feature that does not support hitless CP switchover. The value is also ***true*** when the ***noHitlessCpSwitch*** feature is provisioned on the CP.

A value of ***false*** does not guarantee "no restart"; dynamic conditions may still result in an FP restart when a CP switchover occurs.

Mib

LogicalProcessor

Values

false
true

Default

No default

ATTRIBUTE Lp scheduledSwitchover

Access	Read only
Description	This attribute indicates the execution time of the scheduled switchover. When there is no switchover scheduled the time is equals to 0 (0000-00-00 00:00).
Mib	LogicalProcessor
Values	Time (DHM)
Default	No default

GROUP Lp Utilization (Util)

Properties	Operational
Description	This group contains the operational attributes that specify the processor's utilization levels. When this group exists for an LP component, the attributes are representative of the active card.
Mib	LogicalProcessor

ATTRIBUTE Lp timeInterval

Access	Read only
Description	This attribute indicates the time period for which the average, minimum, and maximum utilization values are calculated. This attribute is reset to 0 every 15 minutes.
Mib	LogicalProcessor
Values	Decimal (0..15)
Units	minutes
Default	No default

ATTRIBUTE Lp cpuUtil

Access	Read only

Description	This attribute indicates an approximation of the current processor utilization level (expressed as a percentage).
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp cpuUtilAvg

Access	Read only
Description	This attribute indicates an average processor utilization level over the specified time period, *timeInterval*. This average is calculated based on one minute CPU utilization averages.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp cpuUtilAvgMin

Access	Read only
Description	This attribute indicates the minimum processor utilization level over a specified time period, *timeInterval*. This is based on one minute CPU utilization averages.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp cpuUtilAvgMax

Access	Read only
Description	This attribute indicates the maximum processor utilization level over a specified time period, *timeInterval*. This is based on one minute CPU utilization averages.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp sharedMsgBlockUsage

Access	Read only
Description	This attribute indicates the processor's current shared message block memory utilization.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp sharedMsgBlockUsageAvg

Access	Read only
Description	This attribute indicates the processor's average memory utilization of shared message blocks, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this average memory utilization is reset to the current usage, *sharedMsgBlockUsage*.
Mib	LogicalProcessor

Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp sharedMsgBlockUsageAvgMin

Access	Read only
Description	This attribute indicates the processor's minimum memory utilization of shared message blocks, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this minimum memory utilization is reset to the current usage, *sharedMsgBlockUsage*.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp sharedMsgBlockUsageAvgMax

Access	Read only
Description	This attribute indicates the processor's maximum memory utilization of shared message blocks, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this maximum memory utilization is reset to the current usage, *sharedMsgBlockUsage*.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp localMsgBlockUsage

Access	Read only
Description	This attribute indicates the processor's current memory utilization of message blocks which are used for local messaging on the card.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp localMsgBlockUsageAvg

Access	Read only
Description	This attribute indicates the processor's average memory utilization of message blocks used for local messaging on the card, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this average memory utilization is reset to the current usage, *localMsgBlockUsage.*
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp localMsgBlockUsageMin

Access	Read only
Description	This attribute indicates the processor's minimum memory utilization of message blocks used for local messaging on the card, calculated over a specified time period, *timeInterval*. This utilization value is updated at 15 second intervals. At the start of

each *timeInterval*, this minimum memory utilization is reset to the current usage, *localMsgBlockUsage*.

Mib LogicalProcessor

Values Decimal (0..2147483647)

Units kbyte

Default No default

ATTRIBUTE Lp localMsgBlockUsageMax

Access Read only

Description

This attribute indicates the processor's maximum memory utilization of message blocks used for local messaging on the card, calculated over a specified time period, *timeInterval*. This utilization value is updated at 15 second intervals. At the start of each *timeInterval*, this maximum memory utilization is reset to the current usage, *localMsgBlockUsage*.

Mib LogicalProcessor

Values Decimal (0..2147483647)

Units kbyte

Default No default

ATTRIBUTE Lp memoryUsage

Access Read only

Description

This attribute indicates the processor's current memory utilization for each type of memory.

Mib LogicalProcessor

Vector of Decimal (0..2147483647)

Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

ATTRIBUTE Lp memoryUsageAvg

Access	Read only
Description	This attribute indicates the processor's average memory utilization for each type of memory in the specified time period, *timeInterval*. This value is calculated using 15 second samples.
Mib	LogicalProcessor
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

ATTRIBUTE Lp memoryUsageAvgMin

Access	Read only
Description	This attribute indicates the processor's minimum memory utilization for each type of memory in the specified time period, *timeInterval*. This value is calculated using 15 second samples.
Mib	LogicalProcessor
Vector of	Decimal (0..2147483647)

Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

ATTRIBUTE Lp memoryUsageAvgMax

Access	Read only
Description	This attribute indicates the processor's maximum memory utilization for each type of memory in the specified time period, *timeInterval*. This value is calculated using 15 second samples.
Mib	LogicalProcessor
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

GROUP Lp Capacity (Cap)

Properties	Operational
Description	This group contains the operational attributes that specify the processor's capacity levels. When this group exists for an *LP* component, the attributes are representative of the active *Card*.
Mib	LogicalProcessor

ATTRIBUTE Lp sharedMsgBlockCapacity

Access	Read only

Description	This attribute indicates the processor card's shared message block memory capacity.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp localMsgBlockCapacity

Access	Read only
Description	This attribute indicates the processor card's local message block memory capacity. These message blocks are used for local messaging on the card.
Mib	LogicalProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp memoryCapacity

Access	Read only
Description	This attribute indicates the processor card's memory capacity for each type of memory.
Mib	LogicalProcessor
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

Default No default

COLLECTED STATS LogicalProcessor

Description The statistics record generated by the LogicalProcessor component.

ATTRIBUTE Lp cardNumber (ca)

Description This attribute is the card number associated to this statistical information.

Values Decimal (0..15)

ATTRIBUTE Lp cardStatus

Description This attribute indicates whether the card is running as ***active*** or ***standby***.

Values standby
active

ATTRIBUTE Lp cpuUtilAvg

Description
This attribute indicates an average processor utilization level over a the specified collection interval. This average is calculated based on one minute CPU utilization averages.

Values Decimal (0..100)

Units %

ATTRIBUTE Lp cpuUtilAvgMin

Description
This attribute indicates the minimum processor utilization level over a specified collection interval. This is calculated based on one minute CPU utilization averages.

Values Decimal (0..100)

Units %

ATTRIBUTE Lp cpuUtilAvgMax

Description	This attribute indicates the maximum processor utilization level over a specified collection interval. This is based on one minute CPU utilization averages.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp memoryCapacity

Description	This attribute indicates the processor's memory capacity for each type of memory.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp memoryUsageAvg

Description	This attribute indicates the processor's average memory utilization for each type of memory in the specified collection interval. This is calculated using 15 second samples.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp memoryUsageAvgMin

Description	This attribute indicates the processor's minimum memory utilization for each type of memory in the specified collection interval. This is calculated using 15 second samples.
Vector of	Decimal (0..2147483647)

Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp memoryUsageAvgMax

Description	This attribute indicates the processor's maximum memory utilization for each type of memory in the specified collection interval. This is calculated using 15 second samples.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp sharedMsgBlockCapacity

Description	This attribute indicates the processor's shared message block memory capacity.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp sharedMsgBlockUsageAvg

Description	This attribute indicates the processor's average shared message block memory utilization over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp sharedMsgBlockUsageAvgMin

Description	This attribute indicates the processor's minimum shared message block memory utilization over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)

Units	kbyte

ATTRIBUTE Lp sharedMsgBlockUsageAvgMax

Description	This attribute indicates the processor's maximum shared message block memory utilization over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockCapacity

Description	This attribute indicates the processor's local message block memory capacity. These message blocks are used for local messaging on the card.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockUsageAvg

Description	This attribute indicates the processor's average memory utilization of message blocks used for local messaging on the card, calculated over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockUsageMin

Description	This attribute indicates the processor's minimum memory utilization of message blocks used for local messaging on the card, calculated over a specified collection interval.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockUsageMax

Description	This attribute indicates the processor's maximum memory utilization of message blocks used for local messaging on the card, calculated over a specified collection interval.
Values	Decimal (0..2147483647)
Units	kbyte

COMPONENT Lp BridgedSonet (Bso)

Instance	Decimal (0..15)
Groups	"GROUP Lp Bso CustomerIdentifierData (CidData)" "GROUP Lp Bso Provisioned (Prov)" "GROUP Lp Bso OsiState (State)"
Scope	Device
Description	*Lp/n BridgedSonet/n* This component controls a bridge on a SONET card that is connected to the line hardware of the mate SONET card.
Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Bso CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp Bso customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Bso Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for a *BridgedSonet* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Bso portBridgeGroupLink (pbgl)

Access	Read and write
Description	This attribute specifies the name of the *Pbg* component. The specified *Pbg* component provides port bridging for a SONET line specified by *Pbg/n workingLine* and this *BridgedSonet* component.

Mib	LogicalProcessor
Values	Link
Default	No default

GROUP Lp Bso OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Bso adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Bso operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Bso usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has

spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Bso availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Bso proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: LogicalProcessor

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp Bso controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

	The value ***suspended*** indicates that the service has been administratively suspended.
Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Bso alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: LogicalProcessor

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp Bso standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: LogicalProcessor

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Bso unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

COMPONENT Lp Enet

Instance	Decimal (0..5)
Groups	"GROUP Lp Enet CustomerIdentifierData (CidData)" "GROUP Lp Enet IfEntryProv (IfEntry)" "GROUP Lp Enet Provisioned (Prov)" "GROUP Lp Enet AdminInfo (AdminInfo)" "GROUP Lp Enet OsiState (State)" "GROUP Lp Enet OperationalStatus (OperStatus)" "GROUP Lp Enet Operational (Oper)" "GROUP Lp Enet Statistics (Stats)"
Scope	Device
Description	*Lp/n Ethernet/n* This component defines an instance of an *Ethernet* station attached to a bus. One instance of this component will be created

for each hardware port. Each station will be provisioned prior to operating on the bus.

Mib: Enet

Subcomponents: "COMPONENT Lp Enet LanTest (Lt)"
"COMPONENT Lp Enet Test"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Lp Enet CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: Enet

ATTRIBUTE Lp Enet customerIdentifier (cid)

Access: Read and write

Description: This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

	An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	Enet
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Enet IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Enet

ATTRIBUTE Lp Enet ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Enet
Values	up down testing
Default	up

ATTRIBUTE Lp Enet ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Enet

Values	Decimal (1..65535)
Default	No default

GROUP Lp Enet Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes for the *Ethernet* component.
Mib	Enet

ATTRIBUTE Lp Enet heartbeatPacket

Access	Read and write
Description	The *heartbeat* packet feature is used to select whether or not the station will generate a *heartbeat* packet. If enabled, the station will generate one *heartbeat* packet every second. If disabled, the station will not generate any *heartbeat* packets.
Mib	Enet
Values	enabled disabled
Default	enabled

ATTRIBUTE Lp Enet applicationFramerName (framer)

Access	Read and write
Criticality	Process
Description	This attribute contains the component name of a *Framer* which is associated with the *Ethernet* component. This link is used by the component administration system (CAS) to identify which card the application component (associated with the *Framer* component) is to be created.
Mib	Enet
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp Enet AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Enet

ATTRIBUTE Lp Enet vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Enet
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Enet commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	Enet
Values	String (0..60, ASCII)
Default	No default

GROUP Lp Enet OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	Enet

ATTRIBUTE Lp Enet adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Enet
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Enet operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Enet

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Enet usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Enet

Values: idle
active (activ)
busy

Default: idle

GROUP Lp Enet OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: Enet

ATTRIBUTE Lp Enet snmpOperStatus

Access: Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Enet
Values	up down testing
Default	up

GROUP Lp Enet Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ethernet* component.
Mib	Enet

ATTRIBUTE Lp Enet macAddress

Access	Read only
Description	The medium access controller (MAC) address is an address that is only recognized by one station on the network The value of this attribute will be assigned by the system. MAC address is displayed in canonical format.
Mib	Enet
Values	String (6, Dashed Hex)
Default	No default

GROUP Lp Enet Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes for the *Ethernet* component.
Mib	Enet

ATTRIBUTE Lp Enet alignmentErrors

Access	Read only
Description	The *alignmentErrors* counter indicates the number of frames received which were not an integral number of octets in length. Frames will be checked for *alignmentErrors* before they are checked for Frame Check Sequence (FCS) errors. If there is an alignment error, the error will only be counted here and not in *fcsErrors*. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet fcsErrors

Access	Read only
Description	The *fcsErrors*, Frame Check Sequence (FCS) error, counter indicates the number of frames received which were an integral number of octets in length and did not pass the FCS check. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet singleCollisionFrames

Access	Read only
Description	The *singleCollisionFrames* counter indicates the number of frames successfully transmitted which experienced exactly one collision. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Lp Enet multipleCollisionFrames

Access	Read only
Description	The *multipleCollisionFrames* counter indicates the number of frames successfully transmitted which experienced more than one collision. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet sqeTestErrors

Access	Read only
Description	The *sqeTestErrors*, Signal Quality Error (SQE) Test errors, counter indicates the number of times the “SQE Test Error” message has been generated for the station. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet deferredTransmissions

Access	Read only
Description	The *deferredTransmissions* counter indicates the number of frames which experienced a transmission delay because the medium was busy. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet lateCollisions

Access	Read only
Description	The *lateCollisions* counter indicates the number of times a collision was detected later than 512 bit-times into the transmission of a packet. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet excessiveCollisions

Access	Read only
Description	The *excessiveCollisions* counter indicates the number of frames which failed to get transmitted due to excessive collisions. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet macTransmitErrors

Access	Read only
Description	The Medium Access Controller (MAC) transmit error counter indicates the number of times that a transmission failed due to internal MAC transmit errors. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet carrierSenseErrors

Access	Read only

Description	The carrier sense error counter indicates the number of times that the carrier sense condition was lost or never asserted when attempting to transmit a frame. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet frameTooLongs

Access	Read only
Description	The frame too long counter indicates the number of frames received which exceeded the maximum frame size. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Enet macReceiveErrors

Access	Read only
Description	The Medium Access Controller (MAC) receive error counter indicates the number of times a receive failed due to internal MAC receive errors. This counter wraps around after it exceeds its maximum value.
Mib	Enet
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Lp Enet LanTest (Lt)

Groups	"GROUP Lp Enet Lt TestOp (Top)"
Scope	Device

Description	*Lp/n Fddi/n LanTest*, or *Lp/n Ethernet/n LanTest*, or *Lp/n TokenRing/n LanTest, or* *Lp/n IlsForwarder/n LanTest* The LanTest component is used to control testing on LAN interfaces. This includes LLC layer loopback, on-card loopback, SNMP required tests, and any testing to be done in the lab or manufacturing.
Mib	Enet
Dyn. Subcomp.	"COMPONENT Lp Enet Lt FrameCompare (FrmCmp)" "COMPONENT Lp Enet Lt FrameCopy (FrmCpy)" "COMPONENT Lp Enet Lt PortConfig (PrtCfg)" "COMPONENT Lp Enet Lt FrameBuild (Fb)" "COMPONENT Lp Enet Lt Control (Cntl)"
Common Verbs	Help List Display

VERB Start Lp Enet Lt

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of LanTest.

VERB Stop Lp Enet Lt

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp Enet Lt

Impact	Service
Description	This verb is used to reset the LanTest component.

VERB Get Lp Enet Lt

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt

Impact	Passive
Description	This verb is used to display the list of arguments to an attribute.

GROUP Lp Enet Lt TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt FrameCompare (FrmCmp)

Groups	"GROUP Lp Enet Lt FrmCmp TestOp (Top)"
Scope	Device

Description	This component compares frames received from the hardware and emulator during testing.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt FrmCmp

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCompare component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt FrmCmp

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt FrmCmp TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt FrmCmp tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt FrameCopy (FrmCpy)

Groups	"GROUP Lp Enet Lt FrmCpy TestOp (Top)"

Scope	Device
Description	This component receives its input from FrameBuild and places it upon the hardware which sends it to the appropriate emulator.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt FrmCpy

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCopy component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt FrmCpy

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt FrmCpy TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt FrmCpy tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt PortConfig (PrtCfg)

Groups	"GROUP Lp Enet Lt PrtCfg TestOp (Top)"
Scope	Device
Description	This component controls the emulator and hardware to ensure frames output from each will match in FrameCompare.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt PrtCfg

Impact	Passive
Description	*This verb is used to get and display operational parameters for the LanTest PortConfig component. This includes attributes set using the Set verb.*

VERB Tlist Lp Enet Lt PrtCfg

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt PrtCfg TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt PrtCfg tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)

Default	No default

COMPONENT Lp Enet Lt FrameBuild (Fb)

Groups	"GROUP Lp Enet Lt Fb TestOp (Top)"
Scope	Device
Description	LanTest Framebuild This component controls the building of all frames built and sent by the LanTest component. Each component under FrameBuild builds a portion of a packet or frame.
Mib	Enet
Dyn. Subcomp.	"COMPONENT Lp Enet Lt Fb TransmitInfo (TxInfo)" "COMPONENT Lp Enet Lt Fb FddiMac (MacFddi)" "COMPONENT Lp Enet Lt Fb EthernetMac (MacEnet)" "COMPONENT Lp Enet Lt Fb TokenRingMac (MacTr)" "COMPONENT Lp Enet Lt Fb DataField (Data)" "COMPONENT Lp Enet Lt Fb IpHeader (IpH)" "COMPONENT Lp Enet Lt Fb LlcHeader (Llch)" "COMPONENT Lp Enet Lt Fb AppleHeader (AppleH)" "COMPONENT Lp Enet Lt Fb IpxHeader (IpxH)"
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameBuild component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb TransmitInfo (TxInfo)

Groups	"GROUP Lp Enet Lt Fb TxInfo TestOp (Top)"
Scope	Device
Description	LanTest TransmitInfo This component builds a transmit header which is attached to all frames transmitted on LAN interfaces.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb TxInfo

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TransmitInfo component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb TxInfo

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb TxInfo TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb TxInfo tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb FddiMac (MacFddi)

Groups	"GROUP Lp Enet Lt Fb MacFddi TestOp (Top)"
Scope	Device
Description	LanTest FddiMac This component builds an FDDI MAC header which is attached to all FDDI frames.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb MacFddi

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FddiMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb MacFddi

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb MacFddi TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb MacFddi tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb EthernetMac (MacEnet)

Groups	"GROUP Lp Enet Lt Fb MacEnet TestOp (Top)"
Scope	Device

Description	LanTest EthernetMac This component builds an Ethernet MAC header which is attached to all Ethernet frames.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb MacEnet

Impact	Passive
Description	This verb is used to get and display operational parameters LanTest EthernetMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb MacEnet

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb MacEnet TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb MacEnet tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb TokenRingMac (MacTr)

Groups	"GROUP Lp Enet Lt Fb MacTr TestOp (Top)"
Scope	Device
Description	LanTest TokenRingMac This component builds a Token Ring MAC header which is attached to all Token Ring frames.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb MacTr

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TokenRingMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb MacTr

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb MacTr TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb MacTr tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)

Default	No default

COMPONENT Lp Enet Lt Fb DataField (Data)

Groups	"GROUP Lp Enet Lt Fb Data TestOp (Top)"
Scope	Device
Description	This component adds a data field to frame.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb Data

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest DataField component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb Data

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb Data TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb Data tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)

Default	No default

COMPONENT Lp Enet Lt Fb IpHeader (IpH)

Groups	"GROUP Lp Enet Lt Fb IpH TestOp (Top)"
Scope	Device
Description	LanTest IpHeader This component adds an IP header to a frame or packet.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb IpH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest IpHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb IpH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb IpH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb IpH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet

Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb LlcHeader (Llch)

Groups	"GROUP Lp Enet Lt Fb Llch TestOp (Top)"
Scope	Device
Description	LanTest LlcHeader This component adds an LLC 802.2 or Ethernet header to a frame or packet.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb Llch

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest LlcHeader component. This includes attributes set using the SET verb.

VERB Tlist Lp Enet Lt Fb Llch

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb Llch TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb Llch tData (td)

Access	Read and write

Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb AppleHeader (AppleH)

Groups	"GROUP Lp Enet Lt Fb AppleH TestOp (Top)"
Scope	Device
Description	This component adds an AppleTalk header to a frame or packet.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb AppleH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest AppleHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb AppleH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb AppleH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb AppleH tData (td)

Access	Read and write

Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Fb IpxHeader (IpxH)

Groups	"GROUP Lp Enet Lt Fb IpxH TestOp (Top)"
Scope	Device
Description	This component adds an IPX header to a frame or packet.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Fb IpxH

Impact	Passive
Description	This verb is used to get and display operational parameters forLanTest IpxHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Fb IpxH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Fb IpxH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Fb IpxH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Lt Control (Cntl)

Groups	"GROUP Lp Enet Lt Cntl TestOp (Top)"
Scope	Device
Description	LanTest Control This component controls the overall testing by telling the FrameBuild component to start and check the FrameCompare component to see if the test is complete.
Mib	Enet
Common Verbs	Help List Display

VERB Get Lp Enet Lt Cntl

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest Control component. This includes attributes set using the Set verb.

VERB Tlist Lp Enet Lt Cntl

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Enet Lt Cntl TestOp (Top)

Properties	Operational

Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	Enet

ATTRIBUTE Lp Enet Lt Cntl tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	Enet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Enet Test

Groups	"GROUP Lp Enet Test PortTestOp (PTO)" "GROUP Lp Enet Test Results (Results)"
Scope	Device
Description	*Lp/n Fddi/n Test*, or *Lp/n Ethernet/n Test*, or *Lp/n TokenRing/n Test, or* *Lp/n IlsForwarder/n Test* The Test component is used to do StartUp port test for LAN cards.
Mib	Enet
Common Verbs	Help List Display

VERB Start Lp Enet Test

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of Test.

VERB Stop Lp Enet Test

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp Enet Test

Impact	Service
Description	This verb is used to reset the Test component.

GROUP Lp Enet Test PortTestOp (PTO)

Properties	Operational
Description	This group contains the operational data for the *LanPortTest* component.
Mib	Enet

ATTRIBUTE Lp Enet Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: card test sets up an internal loop on the board and runs a bit error rate test; manual test assumes the line is looped back externally and a bit error rate test is performed; localLoop test loops back the local modem and performs a bit error rate test; remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test; externalLoop test loops back the line to the far end; payloadLoop test only loops back the payload data received from the incoming line; Note that localLoop, remoteLoop and payloadLoop are not supported by all function processors.
Mib	Enet
Values	onCard normal wrapA wrapB thruA thruB

	extWrapA extWrapB extThruA extThruB extWrapAB extWrapBA
Default	No default

ATTRIBUTE Lp Enet Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes.
Mib	Enet
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp Enet Test duration (duration)

Access	Read and write
Description	This attribute specifies the duration of the test data transmission. In the case of an externalLoop, this is the time that the loop is in effect. Note that dataStartDelay does not apply to the externalLoop.
Mib	Enet
Values	Decimal (1..30240)
Units	minutes
Default	1

GROUP Lp Enet Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the Test component.

Mib	Enet

ATTRIBUTE Lp Enet Test elapsedTime

Access	Read only
Description	This attribute is the number of minutes elapsed since the test started for an externalLoop test. For a data test, this is the time since test data was first transmitted.
Mib	Enet
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Enet Test timeRemaining

Access	Read only
Description	This attribute is the number of minutes remaining before the test is to be stopped according to the duration attribute.
Mib	Enet
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Enet Test causeOfTermination

Access	Read only
Description	This attribute records the reason the test is terminated.
Mib	Enet
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning

Default	neverStarted

ATTRIBUTE Lp Enet Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.
Mib	Enet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Enet Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. This counter is not expected to reach its maximum value.
Mib	Enet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Enet Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	Enet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Enet Test bitsRx

Access	Read only

Description	This attribute counts the bits received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	Enet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Enet Test erroredFrmRx

Access	Read only
Description	This attribute counts the errored frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	Enet
Values	Long Integer
Default	No default

COMPONENT Lp Fddi (Fi)

Instance	Decimal (0)
Groups	"GROUP Lp Fi CustomerIdentifierData (CidData)" "GROUP Lp Fi IfEntryProv (IfEntry)" "GROUP Lp Fi SmtProvisioned (SmtProv)" "GROUP Lp Fi MacProvisioned (MacProv)" "GROUP Lp Fi AdminInfo (AdminInfo)" "GROUP Lp Fi OsiState (State)" "GROUP Lp Fi OperationalStatus (OperStatus)" "GROUP Lp Fi SmtOperational (SmtOper)" "GROUP Lp Fi MacOperational (MacOper)" "GROUP Lp Fi MacCOperational (MacCOper)" "GROUP Lp Fi NcMacOperational (NcMacOper)"
Scope	Device
Description	*Lp/n Fddi/n* This component defines an instance of a FDDI station attached to

a ring. One instance of this component must be created for each hardware interface. Each station must be provisioned prior to inserting into the ring.

Mib LanDrivers

Subcomponents "COMPONENT Lp Fi LanTest (Lt)"
"COMPONENT Lp Fi PhysicalLayer (Phy)"
"COMPONENT Lp Fi Test"

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp Fi CustomerIdentifierData (CidData)

Properties Provisioned

Description This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib LanDrivers

ATTRIBUTE Lp Fi customerIdentifier (cid)

Access Read and write

Description This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those

	components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	LanDrivers
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Fi IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LanDrivers

ATTRIBUTE Lp Fi ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

ATTRIBUTE Lp Fi ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component

Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LanDrivers
Values	Decimal (1..65535)
Default	No default

GROUP Lp Fi SmtProvisioned (SmtProv)

Properties	Provisioned
Description	This group contains the provisionable Station Management (SMT) attributes of the *Fddi* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi userData

Access	Read and write
Description	The user data field is used to identify the FDDI interface on the ring. The user data contains a message with a maximum of 32 characters.
Mib	LanDrivers
Values	String (0..32, ASCII)
Default	FDDI

ATTRIBUTE Lp Fi acceptAa

Access	Read and write
Description	The *acceptAa* attribute defines the station type A to station type A connection policy. If ***enabled***, the connection will be accepted. If ***disabled***, the connection will be rejected.
Mib	LanDrivers
Values	enabled disabled
Default	disabled

ATTRIBUTE Lp Fi acceptBb

Access	Read and write
Description	The *acceptBb* attribute defines the station type B to station type B connection policy. If ***enabled***, the connection will be accepted. If ***disabled***, the connection will be rejected.
Mib	LanDrivers
Values	enabled disabled
Default	disabled

ATTRIBUTE Lp Fi acceptAs

Access	Read and write
Description	The *acceptAs* attribute defines the station type A to station type S connection policy. If ***enabled***, the connection will be accepted. If ***disabled***, the connection will be rejected.
Mib	LanDrivers
Values	enabled disabled
Default	disabled

ATTRIBUTE Lp Fi acceptBs

Access	Read and write
Description	The *acceptBs* attribute defines the station type B to station type S connection policy. If ***enabled***, the connection will be accepted. If ***disabled***, the connection will be rejected.
Mib	LanDrivers
Values	enabled disabled
Default	disabled

ATTRIBUTE Lp Fi acceptAm

Access	Read and write
Description	The *acceptAm* attribute defines the station type A to station type M connection policy. If ***enabled***, the connection will be accepted. If ***disabled***, the connection will be rejected.
Mib	LanDrivers
Values	enabled disabled
Default	enabled

ATTRIBUTE Lp Fi acceptBm

Access	Read and write
Description	The *acceptBm* attribute defines the station type B to station type M connection policy. If ***enabled***, the connection will be accepted. If ***disabled***, the connection will be rejected.
Mib	LanDrivers
Values	enabled disabled
Default	enabled

ATTRIBUTE Lp Fi useThruBa

Access	Read and write
Description	The *useThruBa* attribute is used to configure the requested path of the associated station. If ***enabled***, only the secondary preferred path is permitted. If ***disabled***, only the primary preferred path is permitted.
Mib	LanDrivers
Values	enabled disabled
Default	disabled

ATTRIBUTE Lp Fi neighborNotifyInterval

Access	Read and write
Description	The *neighborNotifyInterval* attribute contains the amount of time, expressed in seconds, between neighbor notification frames.
Mib	LanDrivers
Values	Decimal (2..30)
Units	seconds
Default	30

ATTRIBUTE Lp Fi statusReportPolicy

Access	Read and write
Description	The *statusReportPolicy* attribute indicates whether or not the station will generate status reporting frames for its implemented events and conditions. If ***true***, the station will generate the status frames. If ***false***, the station will not generate the status frames.
Mib	LanDrivers
Values	true false
Default	true

ATTRIBUTE Lp Fi traceMaxExpirationTimer (traceExp)

Access	Read and write
Description	The *traceMaxExpirationTimer* attribute is used to configure the maximum propagation time, expressed in milliseconds, for a trace on a FDDI topology. This value places a lower bound on the detection time for an unrecovered ring.
Mib	LanDrivers
Values	Decimal (0..1000000)
Units	msec
Default	7000

ATTRIBUTE Lp Fi applicationFramerName (framer)

Access	Read and write
Criticality	Process
Description	This attribute contains the component name of a *Framer* which is associated with the *Fddi* component. This defines which *LanApplication/n Framer* will be using this *Fddi* interface.
Mib	LanDrivers
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp Fi MacProvisioned (MacProv)

Properties	Provisioned
Description	This group contains the provisionable MAC attributes of the *Fddi* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi tokenRequestTimer (tReq)

Access	Read and write
Description	The *tokenRequestTimer* value contains the token request value assigned to the associated medium access controller (MAC). Warning: Changes to this attribute can have adverse effects on the performance of the FDDI ring. Therefore it is recommended that this parameter only be modified by personnel with a thorough understanding of the consequences that may result from changes to this attribute.
Mib	LanDrivers
Values	Decimal (20480..1340000000)
Units	nsec
Default	165290000

ATTRIBUTE Lp Fi tokenMaxTimer (tMax)

Access	Read and write
Description	The *tokenMaxTimer* value is the maximum timer value the negotiated token rotation time may assume. Warning: Changes to this attribute can have adverse effects on the performance of the FDDI ring. Therefore it is recommended that this parameter only be modified by personnel with a thorough understanding of the consequences that may result from changes to this attribute.
Mib	LanDrivers
Values	Decimal (40960..1342200000)
Units	nsec
Default	167770000

ATTRIBUTE Lp Fi validTransmissionTimer (tvx)

Access	Read and write
Description	The *validTransmissionTimer* (Tvx) value specifies the amount of time required for a valid transmission. The station must receive a valid transmission once every Tvx. Warning: Changes to this attribute can have adverse effects on the performance of the FDDI ring. Therefore it is recommended that this parameter only be modified by personnel with a thorough understanding of the consequences that may result from changes to this attribute.
Mib	LanDrivers
Values	Decimal (40960..1342200000)
Units	nsec
Default	2621400

GROUP Lp Fi AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LanDrivers

ATTRIBUTE Lp Fi vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LanDrivers
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Fi commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LanDrivers
Values	String (0..60, ASCII)
Default	No default

GROUP Lp Fi OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	LanDrivers

ATTRIBUTE Lp Fi adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LanDrivers
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Fi operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: LanDrivers

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Fi usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: LanDrivers

Values: idle
active (activ)
busy

Default: idle

GROUP Lp Fi OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: LanDrivers

ATTRIBUTE Lp Fi snmpOperStatus

Access: Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

GROUP Lp Fi SmtOperational (SmtOper)

Properties	Operational
Description	This group contains the operational station management (SMT) attributes of the *Fddi* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi version

Access	Read only
Description	The *version* attribute contains a copy of the currently supported version numbers of the management information base (MIB) and the station management (SMT).
Mib	LanDrivers
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Lp Fi bypassPresent

Access	Read only
Description	The *bypassPresent* attribute indicates whether the optical bypass switch is present on its AB port pair. If ***true***, the optical bypass switch is present. If ***false***, it is not present.
Mib	LanDrivers

Values	true false
Default	No default

ATTRIBUTE Lp Fi ecmState

Access	Read only
Description	The *ecmState*, Entity Coordination Manager (ECM), state indicates the current state of the ECM state machine.
Mib	LanDrivers
Values	out in trace leave pathTest insert check deinsert
Default	No default

ATTRIBUTE Lp Fi cfState

Access	Read only
Description	The *cfState* attribute indicates the current state of the configuration management (CFM) state machine.
Mib	LanDrivers
Values	isolated localA localB localAB localS wrapA wrapB wrapAB wrapS cWrapA cWrapB

	cWrapS thru
Default	No default

GROUP Lp Fi MacOperational (MacOper)

Properties	Operational
Description	This group contains the operational Medium Access Controller (MAC) attributes of the of the *Fddi* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi ringLatency

Access	Read only
Description	The *ringLatency* attribute contains the measured ring latency of the ring the station is attached to.
Mib	LanDrivers
Values	Decimal (1280..1342000000)
Units	nsec
Default	No default

ATTRIBUTE Lp Fi macAddress

Access	Read only
Description	The medium access controller (MAC) address is an address that is recognized by only one station on the attached ring. The value of this attribute is assigned by the system. This attribute is displayed in canonical format. The non-canonical version of this address is indicated in *ncMacAddress*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi upstreamNeighbor

Access	Read only
Description	The *upstreamNeighbor* attribute contains the MAC address associated with the upstream neighbor station on the ring. This attribute is displayed in canonical format. The non-canonical version of this address is indicated in *ncUpstreamNeighbor.*
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi downstreamNeighbor

Access	Read only
Description	The *downstreamNeighbor* attribute contains the MAC address associated with the downstream station on the ring. This attribute is displayed in canonical format. The non-canonical version of this address is indicated in *ncDownstreamNeighbor.*
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi oldUpstreamNeighbor

Access	Read only
Description	*The oldUpstreamNeighbor* attribute contains the previous value of the MAC address associated with the upstream station on the ring. This attribute is displayed in canonical format. The non-canonical version of this address is indicated in *ncOldUpstreamNeighbor.*
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi oldDownstreamNeighbor

Access	Read only
Description	The *oldDownstreamNeighbor* attribute contains the previous value of the MAC address associated with the downstream station on the ring. This attribute is displayed in canonical format. The non-canonical version of this address is indicated in *ncOldDownstreamNeighbor.*
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi dupAddressTest

Access	Read only
Description	The *dupAddressTest* attribute indicates the condition results of the duplicate address test. If ***notDone***, the test has not been executed. If ***pass***, the test has successfully executed. If ***fail***, the test has failed.
Mib	LanDrivers
Values	notDone pass fail
Default	No default

ATTRIBUTE Lp Fi tokenNegotiatedTimer (tNeg)

Access	Read only
Description	The *tokenNegotiatedTimer* specifies the negotiated token rotation time.
Mib	LanDrivers
Values	Decimal (80..1340000000)
Units	nsec
Default	167772000

ATTRIBUTE Lp Fi frameCounts

Access	Read only
Description	The *frameCounts* attribute contains the number of frames that have been received by the station. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi copiedCounts

Access	Read only
Description	The *copiedCounts* attribute contains the number of frames successfully copied into this station's receive buffers, not including MAC control frames. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi transmitCounts

Access	Read only
Description	The *transmitCounts* attribute contains the number of frames transmitted by this station, not including MAC control frames. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi errorCounts

Access	Read only

Description	The *errorCounts* attribute contains the number of error frames first detected by this station. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi lostCounts

Access	Read only
Description	The *lostCounts* attribute contains the number of instances that the station has detected a format error during frame reception such that the frame was stripped. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Fi rmtState

Access	Read only
Description	The *rmtState*, ring management (RMT), state indicates the current state of the RMT state machine.
Mib	LanDrivers
Values	isolated nonOp ringOp detect nonOpDup ringOpDup directed trace
Default	No default

ATTRIBUTE Lp Fi frameErrorFlag

Access	Read only
Description	The *frameErrorFlag* attribute indicates the MAC frame error condition status. If ***true***, a MAC frame error is present. If ***false***, a MAC frame error condition is not present.
Mib	LanDrivers
Values	true false
Default	No default

GROUP Lp Fi MacCOperational (MacCOper)

Properties	Operational
Description	This group contains the operational attributes of the Medium Access Controller (MAC) Counters Table of the *Fddi* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi tokenCounts

Access	Read only
Description	The *tokenCounts* attribute contains the number of times the station has received a token. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi tvxExpiredCounts

Access	Read only
Description	The *tvxExpiredCounts*, Transmission Valid eXpired (TVX), attribute contains the number of times that TVX timer has expired. This counter may increment as stations go on and off the ring. A rapidly increasing value may indicate a problem. This counter will wrap around after it reaches its maximum value.

Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi notCopiedCounts

Access	Read only
Description	The *notCopiedCounts* attribute contains the number of times that the station has detected a frame addressed to itself but did not copy it due to local buffer congestion. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi lateCounts

Access	Read only
Description	The *lateCounts* attribute contains the number of token rotation time (TRT) expirations since the station was reset or a token was received. This counter may increment as stations go on and off the ring. A rapidly increasing value may indicate a problem. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi ringOpCounts

Access	Read only
Description	The *ringOpCounts* attribute contains the number of times the station has made the transition from the ring not operational state to the ring operational state.
Mib	LanDrivers

Values	Decimal (0..4294967295)
Default	0

GROUP Lp Fi NcMacOperational (NcMacOper)

Properties	Operational
Description	This group contains the operational attributes of the *Fddi* component related to non-canonical MAC addresses.
Mib	LanDrivers

ATTRIBUTE Lp Fi ncMacAddress

Access	Read only
Description	The medium access controller (MAC) address is an address that is recognized by only one station on the attached ring. The value of this attribute is assigned by the system. This attribute is displayed in non-canonical format. The canonical version of this address is indicated in *macAddress*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi ncUpstreamNeighbor

Access	Read only
Description	The *ncUpstreamNeighbor* attribute contains the MAC address associated with the upstream neighbor station on the ring. This attribute is displayed in non-canonical format. The canonical version of this address is indicated in *upstreamNeighbor*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi ncDownstreamNeighbor

Access	Read only

Description	The *ncDownstreamNeighbor* attribute contains the MAC address associated with the downstream station on the ring. This attribute is displayed in non-canonical format. The canonical version of this address is indicated in *downstreamNeighbor*
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi ncOldUpstreamNeighbor

Access	Read only
Description	*The ncOldUpstreamNeighbor* attribute contains the previous value of the MAC address associated with the upstream station on the ring. This attribute is displayed in non-canonical format. The canonical version of this address is indicated in *oldUpstreamNeighbor.*
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Fi ncOldDownstreamNeighbor

Access	Read only
Description	The *ncOldDownstreamNeighbor* attribute contains the previous value of the MAC address associated with the downstream station on the ring. This attribute is displayed in non-canonical format. The canonical version of this address is indicated in *oldDownstreamNeighbor.*
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

COMPONENT Lp Fi LanTest (Lt)

Groups	"GROUP Lp Fi Lt TestOp (Top)"

Scope	Device
Description	*Lp/n Fddi/n LanTest*, or *Lp/n Ethernet/n LanTest*, or *Lp/n TokenRing/n LanTest, or* *Lp/n IlsForwarder/n LanTest* The LanTest component is used to control testing on LAN interfaces. This includes LLC layer loopback, on-card loopback, SNMP required tests, and any testing to be done in the lab or manufacturing.
Mib	LanDrivers
Dyn. Subcomp.	"COMPONENT Lp Fi Lt FrameCompare (FrmCmp)" "COMPONENT Lp Fi Lt FrameCopy (FrmCpy)" "COMPONENT Lp Fi Lt PortConfig (PrtCfg)" "COMPONENT Lp Fi Lt FrameBuild (Fb)" "COMPONENT Lp Fi Lt Control (Cntl)"
Common Verbs	Help List Display

VERB Start Lp Fi Lt

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of LanTest.

VERB Stop Lp Fi Lt

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp Fi Lt

Impact	Service
Description	This verb is used to reset the LanTest component.

VERB Get Lp Fi Lt

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt

Impact	Passive
Description	This verb is used to display the list of arguments to an attribute.

GROUP Lp Fi Lt TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt FrameCompare (FrmCmp)

Groups	"GROUP Lp Fi Lt FrmCmp TestOp (Top)"
Scope	Device

Description	This component compares frames received from the hardware and emulator during testing.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt FrmCmp

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCompare component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt FrmCmp

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt FrmCmp TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt FrmCmp tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt FrameCopy (FrmCpy)

Groups	"GROUP Lp Fi Lt FrmCpy TestOp (Top)"

Scope	Device
Description	This component receives its input from FrameBuild and places it upon the hardware which sends it to the appropriate emulator.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt FrmCpy

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCopy component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt FrmCpy

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt FrmCpy TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt FrmCpy tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt PortConfig (PrtCfg)

Groups	"GROUP Lp Fi Lt PrtCfg TestOp (Top)"
Scope	Device
Description	This component controls the emulator and hardware to ensure frames output from each will match in FrameCompare.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt PrtCfg

Impact	Passive
Description	*This verb is used to get and display operational parameters for the LanTest PortConfig component. This includes attributes set using the Set verb.*

VERB Tlist Lp Fi Lt PrtCfg

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt PrtCfg TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt PrtCfg tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)

Default	No default

COMPONENT Lp Fi Lt FrameBuild (Fb)

Groups	"GROUP Lp Fi Lt Fb TestOp (Top)"
Scope	Device
Description	LanTest Framebuild This component controls the building of all frames built and sent by the LanTest component. Each component under FrameBuild builds a portion of a packet or frame.
Mib	LanDrivers
Dyn. Subcomp.	"COMPONENT Lp Fi Lt Fb TransmitInfo (TxInfo)" "COMPONENT Lp Fi Lt Fb FddiMac (MacFddi)" "COMPONENT Lp Fi Lt Fb EthernetMac (MacEnet)" "COMPONENT Lp Fi Lt Fb TokenRingMac (MacTr)" "COMPONENT Lp Fi Lt Fb DataField (Data)" "COMPONENT Lp Fi Lt Fb IpHeader (IpH)" "COMPONENT Lp Fi Lt Fb LlcHeader (Llch)" "COMPONENT Lp Fi Lt Fb AppleHeader (AppleH)" "COMPONENT Lp Fi Lt Fb IpxHeader (IpxH)"
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameBuild component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb TransmitInfo (TxInfo)

Groups	"GROUP Lp Fi Lt Fb TxInfo TestOp (Top)"
Scope	Device
Description	LanTest TransmitInfo This component builds a transmit header which is attached to all frames transmitted on LAN interfaces.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb TxInfo

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TransmitInfo component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb TxInfo

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb TxInfo TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb TxInfo tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb FddiMac (MacFddi)

Groups	"GROUP Lp Fi Lt Fb MacFddi TestOp (Top)"
Scope	Device
Description	LanTest FddiMac This component builds an FDDI MAC header which is attached to all FDDI frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb MacFddi

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FddiMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb MacFddi

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb MacFddi TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb MacFddi tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb EthernetMac (MacEnet)

Groups	"GROUP Lp Fi Lt Fb MacEnet TestOp (Top)"
Scope	Device

Description	LanTest EthernetMac This component builds an Ethernet MAC header which is attached to all Ethernet frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb MacEnet

Impact	Passive
Description	This verb is used to get and display operational parameters LanTest EthernetMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb MacEnet

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb MacEnet TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb MacEnet tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb TokenRingMac (MacTr)

Groups	"GROUP Lp Fi Lt Fb MacTr TestOp (Top)"
Scope	Device
Description	LanTest TokenRingMac This component builds a Token Ring MAC header which is attached to all Token Ring frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb MacTr

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TokenRingMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb MacTr

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb MacTr TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb MacTr tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)

Default	No default

COMPONENT Lp Fi Lt Fb DataField (Data)

Groups	"GROUP Lp Fi Lt Fb Data TestOp (Top)"
Scope	Device
Description	This component adds a data field to frame.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb Data

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest DataField component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb Data

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb Data TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb Data tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)

Default	No default

COMPONENT Lp Fi Lt Fb IpHeader (IpH)

Groups	"GROUP Lp Fi Lt Fb IpH TestOp (Top)"
Scope	Device
Description	LanTest IpHeader This component adds an IP header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb IpH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest IpHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb IpH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb IpH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb IpH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers

Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb LlcHeader (Llch)

Groups	"GROUP Lp Fi Lt Fb Llch TestOp (Top)"
Scope	Device
Description	LanTest LlcHeader This component adds an LLC 802.2 or Ethernet header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb Llch

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest LlcHeader component. This includes attributes set using the SET verb.

VERB Tlist Lp Fi Lt Fb Llch

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb Llch TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb Llch tData (td)

Access	Read and write

Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb AppleHeader (AppleH)

Groups	"GROUP Lp Fi Lt Fb AppleH TestOp (Top)"
Scope	Device
Description	This component adds an AppleTalk header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb AppleH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest AppleHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb AppleH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb AppleH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb AppleH tData (td)

Access	Read and write

Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Fb IpxHeader (IpxH)

Groups	"GROUP Lp Fi Lt Fb IpxH TestOp (Top)"
Scope	Device
Description	This component adds an IPX header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Fb IpxH

Impact	Passive
Description	This verb is used to get and display operational parameters forLanTest IpxHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Fb IpxH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Fb IpxH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Fb IpxH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi Lt Control (Cntl)

Groups	"GROUP Lp Fi Lt Cntl TestOp (Top)"
Scope	Device
Description	LanTest Control This component controls the overall testing by telling the FrameBuild component to start and check the FrameCompare component to see if the test is complete.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Fi Lt Cntl

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest Control component. This includes attributes set using the Set verb.

VERB Tlist Lp Fi Lt Cntl

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Fi Lt Cntl TestOp (Top)

Properties	Operational

Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Fi Lt Cntl tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Fi PhysicalLayer (Phy)

Instance	a b
Groups	"GROUP Lp Fi Phy Provisionable (Prov)" "GROUP Lp Fi Phy Operational (Oper)"
Scope	Device
Description	*Lp/n Fddi/n Phy/x* This component defines an instance of a FDDI port attached to a ring. Two instances of this component must be provisioned for each hardware port. Each port must be provisioned prior to inserting into the ring.
Mib	LanDrivers
Common Verbs	Help List Display Add

GROUP Lp Fi Phy Provisionable (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Fddi *Phy* component.

Mib	LanDrivers

ATTRIBUTE Lp Fi Phy lerCutoff

Access	Read and write
Description	The *lerCutoff* attribute contains the link error rate estimate at which a link connection will be broken. The values will range from 10**-4 to 10**-15. Only the absolute value of the base 10 log is reported.
Mib	LanDrivers
Values	Decimal (4..15)
Default	7

ATTRIBUTE Lp Fi Phy lerAlarm

Access	Read and write
Description	The *lerAlarm* attribute contains the link error rate estimate at which a link connection will generate an alarm. The values will range from 10**-4 to 10**-15. Only the absolute value of the base 10 log is reported
Mib	LanDrivers
Values	Decimal (4..15)
Default	8

ATTRIBUTE Lp Fi Phy linkErrorMonitor

Access	Read and write
Description	The *linkErrorMonitor* attribute is used to select the state of the link error monitor for the associated *Phy* component. If ***enabled***, the link error monitor will send the correct test status to the neighboring station. If ***disabled***, the link error monitor will always send a test passed status to the neighboring station.
Mib	LanDrivers
Values	enabled disabled

Default	enabled

GROUP Lp Fi Phy Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the Fddi *Phy* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi Phy neighborType

Access	Read only
Description	This attribute indicates the neighbor type of the neighbor physical layer.
Mib	LanDrivers
Values	a b s m none
Default	No default

ATTRIBUTE Lp Fi Phy lctFailCounts

Access	Read only
Description	The *lctFailCounts* attribute contains the number of consecutive times the Link Confidence Test (LCT) has failed. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Fi Phy lerEstimate

Access	Read only

Description	The *lerEstimate* attribute contains a long term average link error rate. The values will range from 10**-4 to 10**-15. Only the absolute value of the base 10 log is reported
Mib	LanDrivers
Values	Decimal (4..15)
Default	No default

ATTRIBUTE Lp Fi Phy lemRejectCounts

Access	Read only
Description	The *lemRejectCounts* attribute contains the number of times that a link has been rejected. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Fi Phy lemCounts

Access	Read only
Description	The *lemCounts* attribute contains the aggregate link error monitor error count. This counter is set to zero only on station initialization. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Fi Phy pcmState

Access	Read only
Description	The *pcmState*, physical connection manager (PCM), state indicates the current state of the PCM state machine.
Mib	LanDrivers

Values	off break trace connect next signal join verify active maint
Default	No default

ATTRIBUTE Lp Fi Phy lerFlag

Access	Read only
Description	The *lerFlag* attribute indicates when the link error rate estimate is less than or equal to the link error rate alarm. If ***true***, the value of the link error rate estimate is less than or equal to the link error rate alarm. If ***false***, the value of the link error rate estimate is greater than the link error rate alarm.
Mib	LanDrivers
Values	true false
Default	No default

ATTRIBUTE Lp Fi Phy signalState

Access	Read only
Description	The *signalState* attribute contains the current physical connection manager (PCM) signal bit being transmitted, or was transmitted, during the PCM signal state.
Mib	LanDrivers
Values	escape phyTypeL phyTypeH accept lctLengthL

	lctLengthH macAvail lctResult macLoop macOnPhy signalingDone
Default	No default

ATTRIBUTE Lp Fi Phy signalBitsRcvd

Access	Read only
Description	The *signalBitsRcvd* attribute contains the current physical connection manager (PCM) signal bits received.
Mib	LanDrivers
Set of	escape phyTypeL phyTypeH accept lctLengthL lctLengthH macAvail lctResult macLoop macOnPhy
Default	No default

ATTRIBUTE Lp Fi Phy signalBitsTxmt

Access	Read only
Description	The *signalBitsTxmt* attribute contains the current physical connection manager (PCM) signal bits transmitted.

Mib	LanDrivers
Set of	escape phyTypeL phyTypeH accept lctLengthL lctLengthH macAvail lctResult macLoop macOnPhy
Default	No default

COMPONENT Lp Fi Test

Groups	"GROUP Lp Fi Test PortTestOp (PTO)" "GROUP Lp Fi Test Results (Results)"
Scope	Device
Description	*Lp/n Fddi/n Test*, or *Lp/n Ethernet/n Test*, or *Lp/n TokenRing/n Test, or* *Lp/n IlsForwarder/n Test* The Test component is used to do StartUp port test for LAN cards.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Start Lp Fi Test

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of Test.

VERB Stop Lp Fi Test

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp Fi Test

Impact	Service
Description	This verb is used to reset the Test component.

GROUP Lp Fi Test PortTestOp (PTO)

Properties	Operational
Description	This group contains the operational data for the *LanPortTest* component.
Mib	LanDrivers

ATTRIBUTE Lp Fi Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: card test sets up an internal loop on the board and runs a bit error rate test; manual test assumes the line is looped back externally and a bit error rate test is performed; localLoop test loops back the local modem and performs a bit error rate test; remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test; externalLoop test loops back the line to the far end; payloadLoop test only loops back the payload data received from the incoming line; Note that localLoop, remoteLoop and payloadLoop are not supported by all function processors.
Mib	LanDrivers
Values	onCard normal wrapA wrapB thruA thruB

	extWrapA extWrapB extThruA extThruB extWrapAB extWrapBA
Default	No default

ATTRIBUTE Lp Fi Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes.
Mib	LanDrivers
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp Fi Test duration (duration)

Access	Read and write
Description	This attribute specifies the duration of the test data transmission. In the case of an externalLoop, this is the time that the loop is in effect. Note that dataStartDelay does not apply to the externalLoop.
Mib	LanDrivers
Values	Decimal (1..30240)
Units	minutes
Default	1

GROUP Lp Fi Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the Test component.

Mib	LanDrivers

ATTRIBUTE Lp Fi Test elapsedTime

Access	Read only
Description	This attribute is the number of minutes elapsed since the test started for an externalLoop test. For a data test, this is the time since test data was first transmitted.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Fi Test timeRemaining

Access	Read only
Description	This attribute is the number of minutes remaining before the test is to be stopped according to the duration attribute.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Fi Test causeOfTermination

Access	Read only
Description	This attribute records the reason the test is terminated.
Mib	LanDrivers
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning

Default	neverStarted

ATTRIBUTE Lp Fi Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Fi Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. This counter is not expected to reach its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Fi Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Fi Test bitsRx

Access	Read only

Description	This attribute counts the bits received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Fi Test erroredFrmRx

Access	Read only
Description	This attribute counts the errored frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT Lp DS3

Instance	Decimal (0..11)
Groups	"GROUP Lp DS3 Provisioned (Prov)" "GROUP Lp DS3 CustomerIdentifierData (CidData)" "GROUP Lp DS3 AdminInfo (AdminInfo)" "GROUP Lp DS3 IfEntryProv (IfEntry)" "GROUP Lp DS3 OperationalStatus (OperStatus)" "GROUP Lp DS3 OsiState (State)" "GROUP Lp DS3 Operational (Oper)" "GROUP Lp DS3 Statistics (Stats)"
Scope	Application
Description	Lp/n DS3/n The *DS3* component controls a DS3 port on a DS3 Function Processor. For a 4pDS3 Frame Relay FP, the support of channelization is

	based on the provisioning of DS1Tribs. That is, if no DS1Trib is provisioned, the FP is considered not to be channelized; otherwise it is treated as a channelized FP. It should also be noted that a mixture of channelized and non-channelized configurations on the same 4pDS3 Frame Relay FP is not allowed.
Mib	LogicalProcessor
Opt. Subcomp.	"COMPONENT Lp DS3 AtmCell (Cell)" "COMPONENT Lp DS3 DS1" "COMPONENT Lp DS3 InverseMultiplexerAtm (Ima)"
Dyn. Subcomp.	"COMPONENT Lp DS3 Test (Test)" "COMPONENT Lp DS3 CBit" "COMPONENT Lp DS3 Plcp"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp DS3 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for a *DS3* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 cbitParity

Access	Read and write
Description	This attribute indicates if C-Bit parity has been turned ON or OFF. The *CBIT* component will appear under the *DS3* component when the *cbitParity* attribute is set to ***on***.
Mib	LogicalProcessor

Values	off on
Default	on

ATTRIBUTE Lp DS3 lineLength (length)

Access	Read and write
Description	This attribute defines the line length for equalization calculations for the DS3 line. The range is between 0 and 450 feet (1 metre = 3.28 feet). Note: There are currently only two ranges as far as the equalization calculation performed on the FP is concerned: 0 to 224ft and 225 to 450ft.
Mib	LogicalProcessor
Values	Decimal (0..450)
Units	feet
Default	1

ATTRIBUTE Lp DS3 clockingSource

Access	Read and write
Description	This attribute defines the type of clocking source used for synchronizing the DS3 transmit clock: ***local*** means direct use of the local clock oscillator at its centre frequency; ***line*** means use of a signal phase-locked to the incoming DS3 line rate; ***module*** means the use of a signal phase-locked to the CP reference clock. Note that the multi-port cell-based cards have one common clock source for all ports. For this reason, the following rules apply for the value of *clockingSource* across the board's three ports: All three *clockingSource* values must be "***local***" OR All three *clockingSource* values must be "***module***" OR One *clockingSource* value must be "***line***" and the other two must be "***otherPort***". If there is no *NS* component provisioned, the default value for this attribute will be ***local.*** If the *NS* component has been provisioned,

the default value is ***module***, except for the ***1pDS3C*** cards.

For the ***1pDS3C*** cards, the default and only valid value for this attribute is ***local***. The *clockingSource* of the DS1 sub-component becomes the effective clocking source for this attribute. All the DS1 sub-components have the same clocking source.

On the ***4pDS3ChAal1*** card, the only allowed values for this attribute are ***local*** and ***module***.

Mib	LogicalProcessor
Values	local line module otherPort
Default	No default

ATTRIBUTE Lp DS3 applicationFramerName (framer)

Access	Read and write
Description	This attribute defines the link to the software stack. It defines which application is running on top of the *DS3* component.
Mib	LogicalProcessor
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp DS3 mapping

Access	Read and write
Description	This attribute indicates if ATM cells will be mapped directly into the DS3 payload, or whether PLCP mapping will be used. The *PLCP* component will appear under the *DS3* component when this attribute is set to ***plcp***. This attribute will be ignored when set on frame-based cards. On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***direct***.

Mib	LogicalProcessor
Values	direct plcp
Default	direct

GROUP Lp DS3 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp DS3 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp DS3 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

GROUP Lp DS3 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 ifAdminStatus (ifState)

Access	Read and write

Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp DS3 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp DS3 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable

to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: LogicalProcessor

Values:
up
down
testing

Default: up

GROUP Lp DS3 OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: LogicalProcessor

ATTRIBUTE Lp DS3 adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To

enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp DS3 operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp DS3 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp DS3 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp DS3 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: LogicalProcessor

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp DS3 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

	The value ***suspended*** indicates that the service has been administratively suspended.
Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp DS3 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: LogicalProcessor

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp DS3 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: LogicalProcessor

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp DS3 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

GROUP Lp DS3 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the *DS3* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 losAlarm (los)

Access	Read only
Description	This attribute indicates whether a Loss Of Signal (LOS) alarm state has been entered. An LOS alarm state is entered when LOS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOS defect is detected at the DS3 line interface upon observing 175 +/- 75 continuous pulse

positions with no pulses of either positive or negative polarity. If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The *DS3* component goes into an operational state of *disabled* until the LOS alarm condition is cleared. The LOS alarm state is cleared after LOS defects have been absent for a period of 10 seconds +/- 0.5 seconds.

The *losAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values: on
off

Default: off

ATTRIBUTE Lp DS3 lofAlarm (lof)

Access: Read only

Description: This attribute indicates whether a Loss Of Frame (LOF) alarm state has been entered. An LOF alarm state is entered when Severely Errored Frame (SEF) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A SEF defect is detected when 3 (or more) out of 16 (or fewer) F-bits are in error, or one (or more) M-bits in two (or more) out of four (or fewer) consecutive M-frames are in error. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The *DS3* component goes into an operational state of *disabled* until the LOF alarm condition is cleared. The condition is cleared when framing has been achieved for a period of 10 seconds +/- 0.5 seconds. As long as SEF defects are detected, the node also transmits the far-end SEF/AIS defect indicator over the outgoing line. When not running in C-Bit Parity mode, the *txRai* attribute

is also set to ***on*** when transmitting the far-end SEF/AIS defect indicator on the outgoing line.

The *lofAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values: on
off

Default: off

ATTRIBUTE Lp DS3 rxAisAlarm (rxAis)

Access: Read only

Description: This attribute indicates whether an Alarm Indication Signal (AIS) alarm state has been entered. An AIS alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is the occurrence of AIS (valid DS3 frame with payload containing the 1010...sequence and with C-Bits set to zero) in contiguous M-frames for a time greater than 100 milliseconds. If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The *DS3* component goes into an operational state of *disabled* until the AIS alarm condition is cleared (after AIS has been no longer detected for a period of 10 seconds +/- 0.5 seconds). As long as AIS is detected, the node also transmits the far-end SEF/AIS defect indicator over the outgoing line. When not running in C-Bit Parity mode, the *txRai* attribute is also set to *on* when transmitting the far-end SEF/AIS defect indicator on the outgoing line.

The *rxAisAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values	on off
Default	off

ATTRIBUTE Lp DS3 rxRaiAlarm (rxRai)

Access	Read only
Description	This attribute indicates whether a Remote Alarm Indication (RAI) alarm state has been entered. When not running the C-Bit Parity mode, the RAI alarm state is entered when the far-end SEF/AIS defect indicator has been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds on the incoming DS3 line. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The *DS3* component goes into an operational state of *disabled* until the RAI alarm condition is cleared. The condition is cleared when the far-end SEF/AIS defect indicator has not been detected for 10 seconds +/- 0.5 seconds. When running the C-Bit Parity mode, the RAI alarm state is entered upon detection of a far-end alarm over the Far-End Alarm and Control (FEAC) channel. The RAI alarm state is exited as soon as no more far-end alarm is detected on the FEAC channel. The far-end alarms that can be detected on the FEAC channel and that cause the RAI alarm state to be entered are: equipment failure alarm (service affecting), LOS alarm, LOF alarm, idle and AIS alarm. The *rxRaiAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp DS3 rxIdle

Access	Read only
Description	This attribute indicates whether an Idle failure condition has been reported on the DS3 port. An Idle condition is reported when DS3 Idle defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The DS3 Idle defect is the occurrence of a valid DS3 frame with the information bits set to a 11001100.. sequence. If the DS3 Idle defects are intermittently occurring, the DS3 Idle defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200ms polling cycle. The *DS3* component goes into an operational state of *disabled* until the Idle failure condition is cleared. The failure condition is cleared when the DS3 idle pattern has not been detected for at least 10 seconds +/- 0.5 seconds. The *rxIdle* attribute is always set to ***off*** when the component has been *locked* and left *offline*. The idle pattern indicates that the far-end is physically connected but not put in service. For instance, DS3 idle is transmitted on the outgoing line when the *DS3* component is locked and not used for operational testing.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp DS3 txAis

Access	Read only
Description	This attribute indicates whether an Alarm Indication Signal (AIS) alarm is being transmitted on the DS3 line. Currently, AIS is never transmitted by a Nortel Networks Multiservice Switch DS3.
Mib	LogicalProcessor

Values	on off
Default	off

ATTRIBUTE Lp DS3 txRai

Access	Read only
Description	When not running C-Bit Parity mode, this attribute indicates whether the far-end SEF/AIS defect indicator is transmitted over the outgoing line when the *DS3* component has been unlocked or used in operational testing. When running in C-Bit Parity mode, this attribute displays whether a far-end alarm is sent over the Far-End Alarm and Control (FEAC) channel when the *DS3* component has been unlocked or used in operational testing. When the *DS3* component is locked and not used in operational testing, this attribute is always set to ***off***.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp DS3 txIdle

Access	Read only
Description	This attribute indicates whether the DS3 Idle signal is transmitted over the outgoing line. DS3 Idle is sent when the *DS3* component has been locked and not used in operational testing.
Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp DS3 Statistics (Stats)

Properties	Operational

Description	This group contains the specific DS3 common operational data for a *DS3* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 runningTime (time)

Access	Read only
Description	This attribute counts the seconds since the DS3 component has been activated and been in unlocked state or used for operational testing. All the other error counts that follow as well as each *DS3* subcomponent's error counts can be updated when this count is active. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Lp DS3 errorFreeSec (efs)

Access	Read only
Description	This attribute counts the cumulative seconds that the DS3 port has been in an error free state. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 lineCodeViolations (lcv)

Access	Read only

Description	This attribute counts the Line Code Violations (LCV) detected. A DS3 Line Code Violation is a B3Zs error. LCV counting is inhibited for second intervals where Line Severely Errored Second (LSES) is counted. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 lineErroredSec (les)

Access	Read only
Description	This attribute counts the Line Errored Seconds (LES). A LES is declared for second intervals containing one or more LCV or one or more Loss Of Signal (LOS) defects. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 lineSevErroredSec (lses)

Access	Read only
Description	This attribute counts the Line Severely Errored Seconds (LSES). A LSES is declared for second intervals containing more than 44 LCVs or one or more LOS defects. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 lineLosSec (loss)

Access	Read only
Description	This attribute counts the Line LOS Seconds (LOSS). A LOSS is declared for second intervals containing one or more LOS defects. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 lineFailures (lf)

Access	Read only
Description	This attribute counts the line failure (LOS failure) declarations. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 pathCodeViolations (pcv)

Access	Read only
Description	This attribute counts the Path Code Violations (PCVs) detected. Each PCV corresponds to a P-bit parity error, or possibly a frame error or a disagreement between P-bits or X-bits. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 pathErroredSec (pes)

Access	Read only
Description	This attribute counts the Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more Path Code Violations (PCV) or one or more Severely Errored Frame (SEF) or Alarm Indication Signal (AIS) defects. Counting of Path Errored Seconds is inhibited when Path Unavailable Seconds (PUAS) is counted over the monitored second. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 pathSevErroredSec (pses)

Access	Read only
Description	This attribute counts the Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than 44 PCVs or one or more SEF or AIS defects. Counting of PSESs is inhibited when Path Unavailable Seconds (PUAS) is counted over the monitored second. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 pathSefAisSec (psas)

Access	Read only

Description

This attribute counts the SEF/AIS seconds (PSASs). A PSAS is declared for second intervals containing one or more Severely Errored Frame (SEF) or Alarm Indication Signal (AIS) defects. Counting of PSAS is inhibited when Path Unavailable Seconds (PUAS) is counted over the monitored second.

The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 pathUnavailSec (puas)

Access Read only

Description

This attribute counts the one second intervals for which the DS3 path is unavailable. The DS3 path becomes unavailable at the onset of 10 consecutive Path Severely Errored Seconds (PSES). The 10 PSESs are included in the unavailable time. Once unavailable, the DS3 path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where PUAS is counted, counting of Path Coding Violations (PCV), Path Errored Seconds (PES), Path Severely Errored Seconds (PSES) and Path Sef/Ais Seconds (PSAS) is inhibited.

The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 pathFailures (pf)

Access Read only

Description

This attribute counts the path failure (LOF/AIS failure)

declarations.

The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 egressFrameDiscards

Access Read only

Description This attribute counts the frames discarded at the egress PQC.

The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp DS3 Test (Test)

Groups "GROUP Lp DS3 Test OsiState (State)"
"GROUP Lp DS3 Test Setup (Setup)"
"GROUP Lp DS3 Test Results (Results)"

Scope Application

Description

The *Test* component is configured to control a hardware facility test on a physical (*V*35, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.

Mib LogicalProcessor

Common Verbs

Help
List
Display

VERB START Lp DS3 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp DS3 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp DS3 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: LogicalProcessor

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp DS3 Test operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: LogicalProcessor

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp DS3 Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: LogicalProcessor

Values:
idle
active (activ)
busy

Default: idle

GROUP Lp DS3 Test Setup (Setup)

Properties: Operational

Description

This group contains all of the operational data for a *Test* component.

Mib: LogicalProcessor

ATTRIBUTE Lp DS3 Test purpose (purpose)

Access: Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib: LogicalProcessor

Values: String (0..40, ASCII)

Default: No default

ATTRIBUTE Lp DS3 Test type (type)

Access: Read and write

Description

This attribute is the type of test to be run. The available test types include the following:

card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default	card

ATTRIBUTE Lp DS3 Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	LogicalProcessor
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp DS3 Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	LogicalProcessor
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp DS3 Test customizedPattern (cp)

Access	Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib LogicalProcessor

Values Hex (H.0..H.ffffffff)

Units Hex

Default H.55555555

ATTRIBUTE Lp DS3 Test dataStartDelay (dsd)

Access Read and write

Description

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib LogicalProcessor

Values Decimal (0..1814400)

Units seconds

Default 0

ATTRIBUTE Lp DS3 Test displayInterval (di)

Access Read and write

Description

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp DS3 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp DS3 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started.

a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator

unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp DS3 Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 Test bitsRx

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 Test bytesRx

Access Read only

Description

This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 Test frmRx

Access Read only

Description This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.

Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib LogicalProcessor

Values String (5, ASCII)

Default No default

ATTRIBUTE Lp DS3 Test elapsedTime

Access Read only

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib LogicalProcessor

Values Decimal (0.00..30240.00)

Units minutes

Default 0.00

ATTRIBUTE Lp DS3 Test timeRemaining

Access Read only

Description

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib LogicalProcessor

Values Decimal (0.00..30240.00)

Units minutes

Default 0.00

COMPONENT Lp DS3 CBit

Groups "GROUP Lp DS3 CBit Operational"
"GROUP Lp DS3 CBit Statistics (Stats)"

Scope	Application
Description	*Lp/n DS3/n CBIT* The *CBIT* component is configured to display all DS3 C-Bit parity related operational and statistical data. It will appear under the *DS3* component when the *DS3 cbitParity* attribute is set to ***on***.
Mib	LogicalProcessor
Common Verbs	Help List Display

GROUP Lp DS3 CBit Operational

Properties	Operational
Description	This group contains the DS3 C-Bit Parity operational data for the *CBIT* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 CBit farEndAlarm

Access	Read only
Description	This attribute indicates the Far-End alarm signal that is currently received at the DS3 interface. This signal is carried over the Far-End Alarm and Control (FEAC) bits of DS3 frames. Five far-end alarm signals can be received: far-end equipment failure that is received when the far-end terminal has detected a local equipment failure; far-end Loss Of Signal (LOS) that is received when the far-end DS3 terminal has declared a LOS failure condition; far-end Loss of Frame (LOF) when the far-end DS3 terminal has declared a Loss Of Frame (LOF) failure condition; far-end Alarm Indication Signal (AIS) when the far-end has declared an AIS failure condition; far-end Idle when the far-end has declared an Idle signal condition.
Mib	LogicalProcessor

Values	equipmentFailure los sef ais idle none
Default	none

ATTRIBUTE Lp DS3 CBit loopedbackToFarEnd

Access	Read only
Description	This indicates whether or not the DS3 component is currently looping back the incoming DS3 signal or one of its DS1 tributaries to the far-end DS3 terminal. This is activated when the far-end DS3 equipment has ordered the local terminal to do so.
Mib	LogicalProcessor
Set of	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

18
19
20
21
22
23
24
25
26
27
28
ds3Line

Default No default

ATTRIBUTE Lp DS3 CBit loopbackAtFarEndRequested

Access Read only

Description

This attribute indicates which DS1 tributaries are being looped back, or if the DS3 line is being looped back. Each value listed indicates a loopback request has been made. When a loopback deactivation command has been sent to the far end, the corresponding value will be removed from the list.

Mib LogicalProcessor

Set of

1
2
3
4
5
6
7
8
9
10
11
12
13
14

15
16
17
18
19
20
21
22
23
24
25
26
27
28
ds3Line

Default No default

GROUP Lp DS3 CBit Statistics (Stats)

Properties Operational

Description

This group contains the DS3 C-Bit Parity statistical data for the *CBIT* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

ATTRIBUTE Lp DS3 CBit cbitErrorFreeSec (cefs)

Access Read only

Description

This attribute indicates the number of seconds that the DS3 port has not suffered any C-Bit errors.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 CBit cbitCodeViolations (ccv)

Access	Read only
Description	This attribute indicates the total count of C-Bit Parity Code Violations (CCV). A CCV is obtained when the parity calculated over the previous DS3 frame and the value of the CP-bits appearing in the current DS3 frame differ. The value of this attribute will wrap around to 0 if it does reach its maximum value. CCV counting is inhibited for second intervals where C-Bit Parity Severely Errored Seconds (CSES) are counted. It is also inhibited for second intervals where C-Bit Unavailable Seconds (CUAS) are counted. This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit cbitErroredSec (ces)

Access	Read only
Description	This attribute indicates the total number of C-Bit Parity Errored Seconds (CES). A CES second is declared for second intervals containing one or more CCVs or when one or more SEF (Severely Errored Frame) or AIS (Alarm Indication Signal) defects. CES counting is inhibited for second intervals where C-Bit Unavailable Seconds (CUAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit cbitSevErroredSec (cses)

Access	Read only
Description	This attribute indicates the total number of C-Bit Parity Severely Errored Seconds (CSES). A CSES is declared for second intervals containing more than 44 CCVs or one or more SEF or AIS defects. The occurrence of CSES in a one second interval causes the inhibition of CCV counting during that second interval. CSES counting is also inhibited for second intervals where C-Bit Unavailable Seconds (CUAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit cbitUnavailSec (cuas)

Access	Read only
Description	This attribute indicates the total number of one second intervals for which the DS3 path is unavailable. The DS3 path becomes unavailable at the onset of 10 consecutive C-Bit Severely Errored Seconds (CSES). The 10 CSESs are included in the unavailable time. Once unavailable, the DS3 path becomes available at the onset of 10 contiguous seconds with no CSES. The 10 seconds with no CSES are excluded from the unavailable time. For second intervals where CUAS is counted, counting of C-Bit Coding Violations (CCV), C-Bit Errored Seconds (CES) and C-Bit Severely Errored Seconds (CSES) is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit farEndErrorFreeSec (feefs)

Access	Read only

Description

This attribute indicates the number of seconds that the DS3 port has not suffered of any far-end errors.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 CBit farEndCodeViolations (fecv)

Access Read only

Description

This attribute indicates the total count of DS3 frames containing a Coding Violation on the Far-End (FECV), also known as a Far-End Block Error (FEBE). Each FEBE is reported over the FEBE bits each time the far-end DS3 terminal detects a C-BIT Parity error over a received DS3 frame. For second intervals where Far-End Unavailable Seconds (FEAUS) or Far-End Severely Errored Seconds (FESES) are counted, counting of FECVs is inhibited. This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 CBit farEndErroredSec (fees)

Access Read only

Description

This attribute indicates the total number of Far-End Errored Seconds (FEES). A FEES is declared for second intervals containing with one or more FECVs or one or more far-end SEF/AIS defects. A far-end SEF/AIS defect occurs when the X-Bits of the DS3 frame are received as being set to zero. For second intervals where Far-End Unavailable Seconds (FEUAS) are counted, counting of FEESs is inhibited.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit farEndSevErroredSec (feses)

Access	Read only
Description	This attribute indicates the total number of Far-End Severely Errored Seconds (FESES). A FESES is declared for second intervals containing more than 44 FECVs or one or more far-end SEF/AIS defects. For second intervals where a FESES is counted, counting of FECVs is inhibited. For second intervals where Far-End Unavailable Seconds (FEUAS) are counted, counting of FESESs is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit farEndSefAisSec (fesas)

Access	Read only
Description	This attribute indicates the total number of Far-End SEF/AIS Seconds (FESAS). A FESAS is declared for second intervals containing one or more far-end SEF/AIS defects.For second intervals where Far-End Unavailable Seconds (FEUAS) are counted, counting of FESASs is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 CBit farEndUnavailSec (feuas)

Access	Read only

Description

This attribute indicates the total number of one second intervals for which the DS3 far-end path is unavailable. The DS3 far-end path becomes unavailable at the onset of 10 consecutive Far-End Severely Errored Seconds (FESES). The 10 FESESs are included in the unavailable time. Once unavailable, the DS3 far-end path becomes available at the onset of 10 contiguous seconds with no FESES. The 10 seconds with no FESES are excluded from the unavailable time. For second intervals where FEUAS is counted, counting of Far-End Coding Violations (FECV), Far-End Errored Seconds (FEES), Far-End Severely Errored Seconds (FESES) and Far-End Sef/Ais Seconds (FESAS) is inhibited.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 CBit farEndFailures (fef)

Access Read only

Description

This attribute indicates the total number of times that a far-end path failure (i.e. a Far-End SEF/AIS defect) has been declared. This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp DS3 Plcp

Groups "GROUP Lp DS3 Plcp Operational"
"GROUP Lp DS3 Plcp Statistics (Stats)"

Scope Application

Description *LP/n DS3/n PLCP*
LP/n E3/n PLCP

The *PLCP* component is configured to display all DS3/E3 PLCP related operational and statistical data. It will appear under the *DS3* or *E3* components when the *mapping* attribute is set to ***plcp***.

Mib LogicalProcessor

Common Verbs

Help
List
Display

GROUP Lp DS3 Plcp Operational

Properties Operational

Description

This group contains the operational data for the *PLCP* component.

Mib LogicalProcessor

ATTRIBUTE Lp DS3 Plcp lofAlarm (lof)

Access Read only

Description

This attribute displays whether a PLCP Loss Of Frame (LOF) failure alarm state has been entered. An LOF failure is declared when a PLCP LOF defect persists for 2.5 s +/- 0.5 s. An LOF defect occurs when an OOF (Out of Frame) state persists for more than 1 ms. If the OOF events are intermittent, the LOF defect counter is decremented at a rate of 1/12 (for DS3 PLCP) or 1/9 (for G.751 E3 PLCP) of the incrementing rate, with all measurements based on a 200 ms polling cycle. An OOF event (also known as a PLCP SEF event) is declared when an error is detected in both the A1 and A2 octets, or when two consecutive POHIDs are found in error.
OOF is removed when two valid sets of framing octets and two valid and sequential POHID octets have been found. The LOF defect is removed when the defect counter reaches zero, i.e. when OOF events are absent for more than 12 ms (DS3 PLCP) or 9 ms (G.751 E3 PLCP). LOF failure alarm is cleared when LOF defect is absent for 10.0 s +/- 0.5 s
The *DS3* or *E3* component goes into an operational state of

disabled until the LOF failure alarm is cleared. The terminal declaring the LOF failure alarm will transmit a PLCP RAI signal to the far-end for the duration of the alarm.
The *lofAlarm* attribute is always set to *off* when the *DS3* or *E3* component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values: on
off

Default: off

ATTRIBUTE Lp DS3 Plcp rxRaiAlarm (rxrai)

Access: Read only

Description:

This attribute displays whether a PLCP Remote Alarm Indication (RAI) failure alarm state has been entered. An RAI failure alarm occurs when ten consecutive PLCP RAI bits (bit 5 in the G1 byte) are high on the incoming line. An RAI failure alarm is cleared when ten consecutive RAI bits are set to 0.
Note: Some standards call this alarm RFI.
The *rxRaiAlarm* attribute is always set to *off* when the *DS3* or *E3* component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values: on
off

Default: off

GROUP Lp DS3 Plcp Statistics (Stats)

Properties: Operational

Description:

This group contains the statistical data for the *PLCP* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib: LogicalProcessor

ATTRIBUTE Lp DS3 Plcp errorFreeSec (efs)

Access	Read only
Description	This attribute indicates the number of seconds during which the near-end PLCP path layer had no errors.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp codingViolations (cv)

Access	Read only
Description	This attribute indicates the total number of BIP-8 Errors, framing pattern octet errors, and path overhead identification errors detected in received PLCP frames. Counting of PLCP CV is inhibited for second intervals where PLCP Severely Errored Framing Seconds (SEFS) or PLCP Unavailable Seconds (UAS) are counted. This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp erroredSec (es)

Access	Read only
Description	This attribute indicates the number of seconds containing one or more PLCP Coding Violations (CV) or in which a PLCP Severely Errored Framing Second (SEFS) was counted. Counting of PLCP ES is inhibited during second intervals where PLCP Unavailable Seconds (UAS) are counted.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp sevErroredSec (ses)

Access	Read only
Description	This attribute indicates the number of seconds containing 5 or more PLCPCVs or in which a PLCPSEFS was counted (i.e. a PLCP OOF event occurred). Counting of PLCP SES is inhibited during second intervals where PLCP Unavailable Seconds (UAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp sevErroredFramingSec (sefs)

Access	Read only
Description	This attribute indicates the number of seconds containing one or more PLCP Severely Errored Frame (SEF) events. An SEF event is equivalent to a PLCP OOF (Out of Frame) event. Counting of PLCPP SEFSs is inhibited for second intervals where PLCP Unavailable Seconds (UAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp unavailSec (uas)

Access	Read only
Description	This attribute indicates the number of seconds when the near-end

PLCP layer is unavailable. The PLCP Path Layer becomes unavailable at the declaration of PLCP LOF (Loss of Frame) failure alarm state. The PLCP Path Layer becomes available again only after clearing this condition.
For second intervals where PLCP UAS are counted, counting of PLCP Severely Errored Framing Seconds (SEFS), PLCP Coding Violations (CV), PLCP Errored Seconds (ES), PLCP Severely Errored Seconds (SES) and PLCP Far-End Severely Errored Seconds (FESES) is inhibited.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 Plcp farEndErrorFreeSec (feefs)

Access Read only

Description

This attribute indicates the number of seconds during which the far-end PLCP path layer had no errors.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 Plcp farEndCodingViolations (fecv)

Access Read only

Description

This attribute indicates the total number of PLCP Far-End Block Errors (FEBE) reported by the far-end terminal.
Counting of FEBEs is inhibited for second intervals where PLCP Far-End Unavailable Seconds (FEUAS) are counted.
This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp farEndErroredSec (fees)

Access	Read only
Description	This attribute indicates the number of seconds containing one or more PLCP Far-End Coding Violations (FECV). Counting of PLCP FEES is inhibited during second intervals where PLCP Far-End Unavailable Seconds (FEUAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp farEndSevErroredSec (feses)

Access	Read only
Description	This attribute indicates the number of seconds containing 5 or more PLCP Far-End Coding Violations (FECV). Counting of PLCP FESES is inhibited for second intervals where PLCP Far-End Unavailable Seconds (FEUAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 Plcp farEndUnavailableSec (feuas)

Access	Read only
Description	This attribute indicates the number of seconds during which the PLCP far end is unavailable. The PLCP Path Layer becomes unavailable at the declaration of PLCP RAI (Remote Alarm Indication). Service becomes available again after this condition is cleared. For second intervals where PLCP FEUAS are counted,

counting of PLCP Far-End Coding Violations (FECV), PLCP Far-End Errored Seconds (FEES), and PLCP Far-End Severely Errored Seconds (FESES) is inhibited.

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Lp DS3 AtmCell (Cell)

Groups:
"GROUP Lp DS3 Cell Provisioned (Prov)"
"GROUP Lp DS3 Cell Operational (Oper)"
"GROUP Lp DS3 Cell Statistics (Stats)"

Scope: Device

Description:

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib: LogicalProcessor

Common Verbs:
Help
List
Display
Add
DELete

GROUP Lp DS3 Cell Provisioned (Prov)

Properties: Provisioned

Description:

This group contains the provisioning attributes for the *AtmCell* component.

Mib	LogicalProcessor

ATTRIBUTE Lp DS3 Cell alarmActDelay (act)

Access	Read and write
Description	This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.
Mib	LogicalProcessor
Values	Decimal (0..2000)
Units	msec
Default	No default

ATTRIBUTE Lp DS3 Cell scrambleCellPayload (scramble)

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	LogicalProcessor
Values	off on

Default No default

ATTRIBUTE Lp DS3 Cell correctSingleBitHeaderErrors

Access Read and write

Description

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib LogicalProcessor

Values off
on

Default off

ATTRIBUTE Lp DS3 Cell clearDelay (clear)

Access Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (0..60)

Units	minutes
Default	0

ATTRIBUTE Lp DS3 Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Lp DS3 Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit

established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..250000)

Default No default

ATTRIBUTE Lp DS3 Cell lcdStateDelay (delay)

Access Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..50)

Units msec

Default No default

ATTRIBUTE Lp DS3 Cell hecErrorIntervalLimit (hIntLimit)

Access Read and write

Description

This attribute counts the instances of the *hecSamplingInterval*

attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: LogicalProcessor

Values: Decimal (1..25)

Default: 1

GROUP Lp DS3 Cell Operational (Oper)

Properties: Operational

Description:

This group contains the common operational attributes for the *AtmCell* component.

Mib: LogicalProcessor

ATTRIBUTE Lp DS3 Cell lcdAlarm (lcd)

Access: Read only

Description:

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7

consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib LogicalProcessor

Values on
off

Default off

GROUP Lp DS3 Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

ATTRIBUTE Lp DS3 Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 Cell receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp DS3 Cell transmitCellUtilization (txutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp DS3 Cell correctableHeaderErrors (cErr)

Access	Read only

Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp DS3 DS1

Instance	Decimal (1..28)
Groups	"GROUP Lp DS3 DS1 Provisioned (Prov)" "GROUP Lp DS3 DS1 CustomerIdentifierData (CidData)" "GROUP Lp DS3 DS1 AdminInfo (AdminInfo)" "GROUP Lp DS3 DS1 IfEntryProv (IfEntry)" "GROUP Lp DS3 DS1 OperationalStatus (OperStatus)" "GROUP Lp DS3 DS1 OsiState (State)" "GROUP Lp DS3 DS1 Operational (Oper)" "GROUP Lp DS3 DS1 Statistics (Stats)"
Scope	Application
Description	*Lp/n DS3/n DS1/n* The *DS1* component controls and monitors a DS1 tributary of a

channelized DS3 port on a Function Processor that supports channelization of a DS3.

Mib	LogicalProcessor
Subcomponents	"COMPONENT Lp DS3 DS1 Channel (Chan)"
Dyn. Subcomp.	"COMPONENT Lp DS3 DS1 Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp DS3 DS1 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for a *DS1* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 lineType (lineType)

Access	Read and write
Description	This attribute defines the framing of the DS1 tributary. ***d4*** defines a framing pattern of 12 frames per multiframe. ***esf*** defines a framing pattern of 24 frames per multiframe. ***d4Cas*** defines a framing pattern of 12 frames per multiframe with channel associated signalling. ***esfCas*** defines a framing pattern of 24 frames per multiframe with channel associated signalling. ***unframed*** defines an unknown framing pattern for clear channels. For the ***4pDS3ChAtm*** card, only ***d4*** and ***esf*** framing patterns are permitted.

The ***4pDS3ChAal1*** card supports the ***d4*** and ***esf*** framing patterns, as well as ***unframed***.

Mib: LogicalProcessor

Values:
d4
esf
d4Cas
esfCas
unframed

Default: esf

ATTRIBUTE Lp DS3 DS1 zeroCoding (zeroCoding)

Access: Read and write

Criticality: Component

Description:

This attribute defines the zero encoding on the DS1 tributary.
bit7Stuffing sets bit 7 of every timeslot to a one to guarantee ones's density. This reduces the available bandwidth of the channel by 1/8.
none does no zero encoding, it does not change any value of the bits in the timeslot. The value ***none*** is compatible with any zero coding scheme which transports all 8 data bits in a timeslot (this would include both ***ami*** and ***b8zs*** values of the *DS1 zeroCoding* attribute).

Mib: LogicalProcessor

Values:
bit7Stuffing
none

Default: none

ATTRIBUTE Lp DS3 DS1 clockingSource (clockingSource)

Access: Read and write

Description:

This attribute specifies the source of the transmit clock for the DS1 tributary.

When the clocking source is ***local***, the crystal on the port generates the clocking for the DS1 tributary.
When the clocking source is ***line***, the port synchronizes to the clock from the DS1 tributary.
When the clocking source is ***module***, the port's clock synchronizes to the clock provided by the oscillator on the active CP.
When the clocking source is ***sameAsDs3***, the Ds1 port's clock synchronizes to the same clock source as that of its parent Ds3 port.

On a ***1pDS3C*** card, if the *NetworkSynchronization (NS)* component is present, the default value of this attribute will be ***module***; otherwise it will be ***line***.

On a ***2pDS3cAal*** card, the only valid values are ***local*** and ***module***. If the *NS* component is present, the default value of this attribute will be ***module***; otherwise it will be ***local***.

On the ***4pDS3Ch***, ***4pDS3ChAtm***, and ***4pDS3ChAal1*** cards, the only valid value is ***sameAsDs3***. This is because a DS1 must have the same clocking source as its parent DS3.

Mib	LogicalProcessor
Values	local line module sameAsDs3
Default	No default

GROUP Lp DS3 DS1 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp DS3 DS1 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor

Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp DS3 DS1 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

GROUP Lp DS3 DS1 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp DS3 DS1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp DS3 DS1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp DS3 DS1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each

attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib LogicalProcessor

ATTRIBUTE Lp DS3 DS1 adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib LogicalProcessor

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Lp DS3 DS1 operationalState (osiOper)

Access Read only

Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS3 DS1 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor

Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp DS3 DS1 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp DS3 DS1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp DS3 DS1 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp DS3 DS1 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp DS3 DS1 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: LogicalProcessor

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp DS3 DS1 unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: LogicalProcessor

Values	false true
Default	false

GROUP Lp DS3 DS1 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for a component in a digital hierarchy interface.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 rxAisAlarm (rxAisAlarm)

Access	Read only
Description	This attribute indicates whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period. If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** for the duration of an AIS alarm state. The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp DS3 DS1 lofAlarm (lofAlarm)

Access	Read only

Description

This attribute indicates whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (2 out of 5 framing bits in error) have been detected for 3 seconds +/- 0.5 seconds. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state
The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib LogicalProcessor

Values on
off

Default off

ATTRIBUTE Lp DS3 DS1 rxRaiAlarm (rxRaiAlarm)

Access Read only

Description

This attribute indicates whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds. The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

Mib LogicalProcessor

Values on
off

Default	off

ATTRIBUTE Lp DS3 DS1 txAisAlarm (txAisAlarm)

Access	Read only
Description	This attribute indicates whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the tributary is in a locked state.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp DS3 DS1 txRaiAlarm (txRaiAlarm)

Access	Read only
Description	This attribute indicates whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the tributary detects a LOF alarm condition.
Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp DS3 DS1 Statistics (Stats)

Properties	Operational
Description	This group contains the common statistical data for a component in a digital hierarchy interface.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 runningTime (runningTime)

Access	Read only

Description

This attribute counts the number of seconds since the tributary was activated.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 DS1 errorFreeSec (efs)

Access Read only

Description

This attribute counts the number of seconds that the tributary has been in an error free state.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 DS1 erroredSec (es)

Access Read only

Description

This attribute counts the number of errored seconds the tributary has counted since it was activated. An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 DS1 sevErroredSec (ses)

Access Read only

Description

This attribute counts the number of severely errored seconds the tributary has counted since it was activated. A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 DS1 sevErroredFrmSec (sefs)

Access Read only

Description

This attribute counts the number of severely errored framing seconds the tributary has counted since it was activated A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 DS1 unavailSec

Access Read only

Description

This attribute counts the total number of seconds that the tributary has been in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 DS1 crcErrors (crcErrors)

Access	Read only
Description	This attribute counts the total number of CRC-6 errors. These will only be counted when the *lineType* is ***esf***.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 DS1 frmErrors (frmErrors)

Access	Read only
Description	This attribute counts the total number of frame errors. A frame error is an error in the framing bits.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 DS1 slipErrors (slipErrors)

Access	Read only
Description	The total number of times that the line experienced a controlled frame slip.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp DS3 DS1 Channel (Chan)

Instance	Decimal (0..23)
Groups	"GROUP Lp DS3 DS1 Chan Provisioned (Prov)" "GROUP Lp DS3 DS1 Chan CustomerIdentifierData (CidData)" "GROUP Lp DS3 DS1 Chan IfEntryProv (IfEntry)"

	"GROUP Lp DS3 DS1 Chan OperationalStatus (OperStatus)" "GROUP Lp DS3 DS1 Chan OsiState (State)" "GROUP Lp DS3 DS1 Chan Operational (Oper)" "GROUP Lp DS3 DS1 Chan AdminInfo (AdminInfo)"
Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port. Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots. Similarly, the ***1pDS3C*** card type only allows one channel per port, and this is automatically provisioned with all available timeslots.
Mib	LogicalProcessor
Opt. Subcomp.	"COMPONENT Lp DS3 DS1 Chan AtmCell (Cell)" "COMPONENT Lp DS3 DS1 Chan TrunkConditioning (Tc)"
Dyn. Subcomp.	"COMPONENT Lp DS3 DS1 Chan Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp DS3 DS1 Chan Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisional data for a *Channel* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan timeslots (ts)

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component. For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.
Mib	LogicalProcessor
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

20
21
22
23
24
25
26
27
28
29
30
31

Default No default

ATTRIBUTE Lp DS3 DS1 Chan timeslotDataRate (dataRate)

Access Read and write

Criticality Component

Description

This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute.

When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s.

When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s.

On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card.

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***.

One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.

Mib: LogicalProcessor

Values: 56k
doNotOverride

Default: doNotOverride

ATTRIBUTE Lp DS3 DS1 Chan applicationFramerName

Access: Read and write

Description:

This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.

Mib: LogicalProcessor

Values: Link (Service, interfaceName)

Default: No default

GROUP Lp DS3 DS1 Chan CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan customerIdentifier (cid)

Access: Read and write

Description: This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute;

otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp DS3 DS1 Chan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp DS3 DS1 Chan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp DS3 DS1 Chan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp DS3 DS1 Chan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each

attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib LogicalProcessor

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Lp DS3 DS1 Chan operationalState (osiOper)

Access Read only

Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS3 DS1 Chan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor

Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp DS3 DS1 Chan availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan controlStatus (osiCntrl)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the

attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: LogicalProcessor

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp DS3 DS1 Chan standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is

present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: LogicalProcessor

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp DS3 DS1 Chan unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: LogicalProcessor

Values:
false
true

Default	false

GROUP Lp DS3 DS1 Chan Operational (Oper)

Properties	Operational
Description	This group contains all of the operational data for a *Channel* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan actualChannelSpeed

Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Lp DS3 DS1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)

Default	No default

ATTRIBUTE Lp DS3 DS1 Chan commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

COMPONENT Lp DS3 DS1 Chan Test (Test)

Groups	"GROUP Lp DS3 DS1 Chan Test OsiState (State)" "GROUP Lp DS3 DS1 Chan Test Setup (Setup)" "GROUP Lp DS3 DS1 Chan Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V*35, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp DS3 DS1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp DS3 DS1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp DS3 DS1 Chan Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp DS3 DS1 Chan Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS3 DS1 Chan Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor

Values	idle active (activ) busy
Default	idle

GROUP Lp DS3 DS1 Chan Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end.

payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp DS3 DS1 Chan Test frmSize (size)

Access: Read and write

Description

This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also

ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib LogicalProcessor

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Lp DS3 DS1 Chan Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib LogicalProcessor

Values ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default ccitt32kBitPattern

ATTRIBUTE Lp DS3 DS1 Chan Test customizedPattern (cp)

Access Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib LogicalProcessor

Values Hex (H.0..H.ffffffff)

Units Hex

Default	H.55555555

ATTRIBUTE Lp DS3 DS1 Chan Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp DS3 DS1 Chan Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp DS3 DS1 Chan Test duration

Access	Read and write

Description

This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.

Mib LogicalProcessor

Values Decimal (0.00..30240.00)

Units minutes

Default 1.00

GROUP Lp DS3 DS1 Chan Test Results (Results)

Properties Operational

Description

This group contains all the statistics related attributes of the *Test* component.

Mib LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Test causeOfTermination

Access Read only

Description This attribute indicates either the status of the test or the cause of the test's termination:

a value of ***neverStarted*** indicates that the test has not yet been started.

a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a

loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp DS3 DS1 Chan Test bitsTx

Access	Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 DS1 Chan Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 DS1 Chan Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 DS1 Chan Test bitsRx

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 DS1 Chan Test bytesRx

Access Read only

Description

This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 DS1 Chan Test frmRx

Access Read only

Description This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 DS1 Chan Test erroredFrmRx

Access Read only

Description This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame.

For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 DS1 Chan Test bitErrorRate

Access Read only

Description

This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib LogicalProcessor

Values String (5, ASCII)

Default No default

ATTRIBUTE Lp DS3 DS1 Chan Test elapsedTime

Access Read only

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib LogicalProcessor

Values Decimal (0.00..30240.00)

Units minutes

Default 0.00

ATTRIBUTE Lp DS3 DS1 Chan Test timeRemaining

Access Read only

Description

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib LogicalProcessor

Values Decimal (0.00..30240.00)

Units minutes

Default 0.00

COMPONENT Lp DS3 DS1 Chan AtmCell (Cell)

Groups "GROUP Lp DS3 DS1 Chan Cell Provisioned (Prov)"
"GROUP Lp DS3 DS1 Chan Cell Operational (Oper)"
"GROUP Lp DS3 DS1 Chan Cell Statistics (Stats)"

Scope Device

Description

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell*

component appears under all port components running on ATM cards.

Mib LogicalProcessor

Common Verbs
Help
List
Display
Add
DELete

GROUP Lp DS3 DS1 Chan Cell Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib LogicalProcessor

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Lp DS3 DS1 Chan Cell scrambleCellPayload (scramble)

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	LogicalProcessor
Values	off on
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	LogicalProcessor
Values	off on
Default	off

ATTRIBUTE Lp DS3 DS1 Chan Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Lp DS3 DS1 Chan Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor

Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Lp DS3 DS1 Chan Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Cell lcdStateDelay (delay)

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.

This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: LogicalProcessor

Values: Decimal (1..50)

Units: msec

Default: No default

ATTRIBUTE Lp DS3 DS1 Chan Cell hecErrorIntervalLimit (hIntLimit)

Access: Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: LogicalProcessor

Values: Decimal (1..25)

Default: 1

GROUP Lp DS3 DS1 Chan Cell Operational (Oper)

Properties: Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Cell lcdAlarm (lcd)

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib LogicalProcessor

Values on
off

Default off

GROUP Lp DS3 DS1 Chan Cell Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access	Read only
Description	This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS3 DS1 Chan Cell sevErroredSec (ses)

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3*

component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS3 DS1 Chan Cell receiveCellUtilization (rxutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp DS3 DS1 Chan Cell transmitCellUtilization (txutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen

when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp DS3 DS1 Chan Cell correctableHeaderErrors (cErr)

Access Read only

Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp DS3 DS1 Chan TrunkConditioning (Tc)

Groups "GROUP Lp DS3 DS1 Chan Tc Provisioned (Prov)"
"GROUP Lp DS3 DS1 Chan Tc Operational (Op)"

Scope Device

Description *Lp/n Ds1/n Chan/n Tc*
Lp/n E1/n Chan/n Tc
Lp/n Ds3/n Ds1/n Chan/n Tc
Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc
Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc
Laps/n Vc4/n Vc12/k,l,m E1 Chan/n T*c*
Laps/n Sts/n Vt1dot5/l,m Ds1 Chan/n T*c*

The *Tc* component is used to provision and monitor trunk

conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service.

Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined.

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib: LogicalProcessor

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Lp DS3 DS1 Chan Tc Provisioned (Prov)

Properties	Provisioned
Description	This group contains all specific provisioning data for a *Tc* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Tc replacementData (data)

Access	Read and write
Description	This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions. The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values: DS1 MUX Out Of Service Code = 0x1A E1 MUX Out Of Service Code = 0xFF On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***. On the ***4pOC3ChSmIr*** and ***2pOC3ChSmIrVsp3*** cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.
Mib	LogicalProcessor
Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Lp DS3 DS1 Chan Tc signalOneDuration (duration)

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits.

If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions.

The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.

Mib	LogicalProcessor
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Lp DS3 DS1 Chan Tc noServiceResponse (resp)

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.
Mib	LogicalProcessor
Values	autoConfigure tc ais noResponse
Default	autoConfigure

ATTRIBUTE Lp DS3 DS1 Chan Tc signalOne (sigOne)

Access	Read and write

Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	LogicalProcessor
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Lp DS3 DS1 Chan Tc signalTwo (sigTwo)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	LogicalProcessor
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Lp DS3 DS1 Chan Tc Operational (Op)

Properties	Operational
Description	This group contains all specific operational data for a *Tc* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Chan Tc ingressConditioning (inCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI)
Mib	LogicalProcessor
Values	off on
Default	off

ATTRIBUTE Lp DS3 DS1 Chan Tc egressConditioning (egCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the PDH line.

When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.***

When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***.

Trunk conditioning is transmitted towards the PDH line under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

Mib LogicalProcessor

Values off
on

Default off

COMPONENT Lp DS3 DS1 Test (Test)

Groups "GROUP Lp DS3 DS1 Test OsiState (State)"
"GROUP Lp DS3 DS1 Test Setup (Setup)"
"GROUP Lp DS3 DS1 Test Results (Results)"

Scope Application

Description

The *Test* component is configured to control a hardware facility test on a physical (*V*35, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib LogicalProcessor

Common Verbs
Help
List
Display

VERB START Lp DS3 DS1 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp DS3 DS1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp DS3 DS1 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

	is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp DS3 DS1 Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS3 DS1 Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib LogicalProcessor

Values idle
active (activ)
busy

Default idle

GROUP Lp DS3 DS1 Test Setup (Setup)

Properties Operational

Description

This group contains all of the operational data for a *Test* component.

Mib LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Test purpose (purpose)

Access Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib LogicalProcessor

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Lp DS3 DS1 Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:

card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default card

ATTRIBUTE Lp DS3 DS1 Test frmSize (size)

Access Read and write

Description

This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib LogicalProcessor

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Lp DS3 DS1 Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib LogicalProcessor

Values ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default ccitt32kBitPattern

ATTRIBUTE Lp DS3 DS1 Test customizedPattern (cp)

Access Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for

use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib LogicalProcessor

Values Hex (H.0..H.ffffffff)

Units Hex

Default H.55555555

ATTRIBUTE Lp DS3 DS1 Test dataStartDelay (dsd)

Access Read and write

Description

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib LogicalProcessor

Values Decimal (0..1814400)

Units seconds

Default 0

ATTRIBUTE Lp DS3 DS1 Test displayInterval (di)

Access Read and write

Description

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib LogicalProcessor

Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp DS3 DS1 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp DS3 DS1 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS3 DS1 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator unknown neverStarted

testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp DS3 DS1 Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 DS1 Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS3 DS1 Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer

Default	No default

ATTRIBUTE Lp DS3 DS1 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 DS1 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp DS3 DS1 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp DS3 DS1 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp DS3 InverseMultiplexerAtm (Ima)

Instance	Decimal (0..13)
Groups	"GROUP Lp DS3 Ima Provisioned (Prov)" "GROUP Lp DS3 Ima Operational (Oper)" "GROUP Lp DS3 Ima Statistics (Stats)"

"GROUP Lp DS3 Ima CustomerIdentifierData (CidData)"
"GROUP Lp DS3 Ima OsiState (State)"

Scope

Device

Description

Lp/n InverseMultiplexerAtm/n
Lp/n Ds3/n InverseMultiplexerAtm/n

This component is used to define an inverse multiplexing for ATM (IMA) group. IMA provides a data rate greater than DS1 E1 in increments of DS1 E1. To use IMA on an 8pDS1E1, MSA32, or 2pSTM1eCh function processor, add an *Lp/n InverseMultiplexerAtm/n* component. To use IMA on a 4pDS3ChAtm function processor, add an *Lp/n Ds3/n InverseMultiplexerAtm/n* component.

The instance range 0..7 applies to 8pDS1Atm and 8pE1Atm cards. The instance range 0..13 applies to 4pDS3ChAtm cards. The instance range 0..29 applies to MSA32 cards. The instance range 0..113 applies to 2pStm1eCh cards.

The instance number of an *IMA* group must not be the same as the instance number of a *DS1*/*E1* “ATM UNI port” under the same *Lp*. An “ATM UNI port” is a *DS1* or *E1* component with a single *Chan* whose *applicationFramer* attribute is linked to an *AtmIf* component. On an MSA32 card, ports that are used as IMA links have two immiscible sub-ranges: 0..15 and 16..31. The instance number of an *IMA* group must be in the same sub-range as all of its ports. IMA sub-ranges also exist on a 2pStm1eCh

card, instances 0..56 are allowed on port SDH 0, and instances 57..113 are allowed on port SDH 1.

Mib	Ima
Opt. Subcomp.	"COMPONENT Lp DS3 Ima Link (Lk)"
Dyn. Subcomp.	"COMPONENT Lp DS3 Ima Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp DS3 Ima Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Ima* component. The default values of *linkSelectionCriterion* and *linkRetryTimeout* depend on card type.
Mib	Ima

ATTRIBUTE Lp DS3 Ima linkSelectionCriterion (select)

Access	Read and write
Description	This attribute specifies the method to be used by the IMA group when selecting links to be activated. This comes into effect only when the configured links do not respect the maximum differential delay (otherwise all links are accepted). If ***leastDelay*** is chosen, first the link having the smallest delay is selected as the reference link. The IMA group includes all links which respect the maximum differential delay relative to the reference link. If ***maxBandwidth*** is chosen, the IMA group selects the maximum

possible number of links, with each selected link respecting the maximum differential delay relative to every other selected link. When more than one possibility exists, the combination which offers the least delay is selected.

The default value for Multi-Service Access cards is ***leastDelay***, and for all other cards is ***maxBandwidth***. On Multi-Service Access cards ***leastDelay*** is the only acceptable provisionable value.

Mib	Ima
Values	leastDelay maxBandwidth
Default	No default

ATTRIBUTE Lp DS3 Ima maxDiffDelay (delay)

Access	Read and write
Description	This attribute specifies the maximum differential delay between links acceptable in the IMA group. If a link violates that maximum differential delay, it will not be active in the IMA group and an alarm will be generated. For the 4pDS3ChAtm card, the value must not exceed 70.
Mib	Ima
Values	Decimal (1..100)
Units	msec
Default	25

ATTRIBUTE Lp DS3 Ima linkRetryTimeout (retry)

Access	Read and write
Description	This attribute specifies the amount of time before reactivation of a link is attempted after it recovers from a failure condition. The default value for Multi-Service Access cards is ***1***, and for all

	other cards is ***10***. On Multi-Service Access cards ***1*** is the only acceptable provisionable value.
Mib	Ima
Values	Decimal (0..1000)
Units	seconds
Default	No default

ATTRIBUTE Lp DS3 Ima applicationFramerName (framer)

Access	Read and write
Description	This attribute defines the link to the *AtmIf* component using the *Ima*. An example is *AtmIf/31*.
Mib	Ima
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp DS3 Ima transmitClockMode (clock)

Access	Read and write
Description	This attribute specifies the transmit clocking mode. If ***itc*** (Independent Transmit Clock) is chosen, the physical ports used by the IMA group may have different clocking sources. If ***ctc*** (Common Transmit Clock) is chosen, it is recommended that the physical ports used by the IMA group have the same clocking source. However, if the physical ports have different clocking sources, the operator should ensure that all the clocking sources have the same rate.
Mib	Ima
Values	itc ctc
Default	itc

ATTRIBUTE Lp DS3 Ima protocol (prot)

Access	Read and write
Criticality	Component
Description	This attribute specifies which IMA protocol the component should run. If ***atmForum10*** is chosen, the ATM Forum's IMA protocol (version 1.0) will be used and signalled in outgoing IMA Control Protocol (ICP) cells.The IMA group will come up only if the far end IMA also uses the ATM Forum's IMA protocol 1.0. Feature ***imaAtmForum*** must be provisioned on the LP for this protocol to be used. If ***atmForum11*** is chosen, the ATM Forum's IMA protocol (version 1.1) will be used and signalled in outgoing IMA Control Protocol (ICP) cells.The IMA group will come up only if the far end IMA uses the ATM Forum's IMA protocol 1.0 or 1.1. Feature ***imaAtmForum*** must be provisioned on the LP for this protocol to be used. If the far end is 1.0, then the near end downgrades to 1.0. After the downgrade, this attribute continues to specify the provisioned protocol version, while the *activeProtocol* operational attribute of the IMA component specifies the protocol version effectively running. If ***proprietary*** is chosen, Nortel’s proprietary IMA protocol will be used. The IMA group will come up only if the far end IMA also uses Nortel’s proprietary IMA protocol. This IMA group will not inter-operate with IMA implementations from other vendors. Feature ***ima*** must be provisioned on the LP for this protocol to be used. The DEFAULT on 2pStm1eCh function processor is atmForum11.
Mib	Ima
Values	atmForum10 proprietary atmForum11
Default	No default

GROUP Lp DS3 Ima Operational (Oper)

Properties	Operational

Description	This group contains the operational attributes for the *Ima* component.
Mib	Ima

ATTRIBUTE Lp DS3 Ima failureCause (cause)

Access	Read only
Description	This attribute indicates the cause of the current local end failure experienced by the IMA group. The failure may have occurred during a start-up procedure or during normal operation. Possible values are: ***noFailure***: no local end failure. ***noGoodLinksInStartup***: no good links were available during IMA start-up. ***badGidInStartup***: during start-up, different group identifiers (GIDs) were received on the links. ***badLidInStartup***: during start-up, duplicate link identifiers (LIDs) were received on the links. ***unsupportedFrameLengthInStartup***: during start-up, an unsupported frame length was received. ***timeoutInStartup***: a time-out has occurred during start-up. ***noGoodLinks***: no good links are available in the IMA group. ***remoteFailure***: the far end is down. ***unsupportedSymmetryInStartup***: the symmetry proposed by the far end is not supported on the near-end. This value will occur when the IMA group is running the ATM Forum protocol and the far end is proposing a group symmetry other than “symmetric configuration and operation”. ***unsupportedVersionInStartup***: the ima version proposed by the far end is not supported on the near-end.
Mib	Ima
Values	noFailure noGoodLinksInStartup badGidInStartup badLidInStartup unsupportedFrameLengthInStartup timeoutInStartup noGoodLinks remoteFailure

unsupportedSymmetryInStartup
unsupportedVersionInStartup

Default — No default

ATTRIBUTE Lp DS3 Ima remoteDefect (remDef)

Access — Read only

Description — This attribute indicates the cause of the current far end defect experienced by the IMA group.
For the ATM Forum IMA protocol, possible values are:
noDefect: no defect.
unsupportedFrameLengthInStartup: during the far end's start-up, an unsupported frame length was received.
unsupportedSymmetryInStartup: during the far end's start-up, an unsupported symmetry configuration was received.
otherAbortStartup: the far end has aborted its start-up for another reason. This could be because different Gids were received on the links or if duplicate link identifiers (LIDs) were received.
insufficientLinks: the far end does not have sufficient links active. This value will be displayed if the far end IMA group is locked.
blocked: the far end IMA group is blocked.

For the proprietary IMA protocol, possible values are:
noDefect: no defect.
noGoodLinksInStartup: no good links were available during the far end’s start-up.
badGidInStartup: during the far end’s start-up, different GIDs were received on the links.
badLidInStartup: during the far end’s start-up, duplicate link identifiers (LIDs) were received on the links.
unsupportedFrameLengthInStartup: during the far end’s start-up, an unsupported frame length was received.
timeoutInStartup: a time out has occurred during the far end’s start-up.
noGoodLinks: no good links are available in the far end IMA group.
blocked: the far end IMA group is locked.
unsupportedVersionInStartup: the ima version proposed by the far end is not supported on the near-end.

Mib	Ima
Values	noDefect noGoodLinksInStartup badGidInStartup badLidInStartup unsupportedFrameLengthInStartup timeoutInStartup noGoodLinks locked unsupportedSymmetryInStartup otherAbortStartup insufficientLinks blocked unsupportedVersionInStartup
Default	No default

ATTRIBUTE Lp DS3 Ima remoteLidsConfig (remConf)

Access	Read only
Description	This attribute indicates all the links which have been configured in the remote IMA group. For example, if links 1, 3 and 5 have been configured in the remote IMA group, this attribute would contain ***1 3 5***.
Mib	Ima
Set of	Decimal (0..31)
Default	No default

ATTRIBUTE Lp DS3 Ima remoteLidsActive (remAct)

Access	Read only
Description	This attribute indicates all the links which are active in the remote IMA group. For example, if links 1 and 5 are active in the remote IMA, this attribute would contain ***1 5***.
Mib	Ima
Set of	Decimal (0..31)

Default	No default

ATTRIBUTE Lp DS3 Ima cellCapacity (cap)

Access	Read only
Description	This attribute indicates the total cell capacity (in cells per second) which is provided to the ATM layer. This cell capacity takes into account the physical and IMA level overheads.
Mib	Ima
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE Lp DS3 Ima remoteGid (remGid)

Access	Read only
Description	This attribute indicates the IMA group identifier (GID) used by the remote IMA. A value of 0 will be displayed if the group is not receiving IMA Control Protocol (ICP) cells. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Lp DS3 Ima clockingModeMismatch (mismatch)

Access	Read only
Description	This attribute indicates whether or not both ends of the IMA group are using the same transmit clocking mode (***itc***/***ctc***). Its value will be ***yes*** if both ends are not using the same transmit clocking mode. A clocking mode mismatch does not prevent an IMA group from coming up and can be corrected by using the same clocking mode at both ends. This attribute will always have a value of ***no*** if the *protocol* for the IMA group is ***proprietary***.

Mib	Ima
Values	no yes
Default	No default

ATTRIBUTE Lp DS3 Ima activeProtocol (activeProt)

Access	Read only
Description	This attribute indicates which IMA protocol the *Ima* component is effectively running. This attribute is supported on the 8pDs1Atm, 8pE1Atm, 4pDS3ChAtm, and 2pStm1eCh cards. This attribute is not supported on the MSA32 cards. The value of this attribute is the same as the provisioned *protocol* attribute if the IMA is operating at the provisioned protocol version. The value of this attribute indicates the dongraded protocol version if the IMA has gone through a protocol version downgrade upon IMA 1.1 to IMA 1.0 interworking.
Mib	Ima
Values	atmForum10 proprietary atmForum11
Default	No default

GROUP Lp DS3 Ima Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Ima* component.
Mib	Ima

ATTRIBUTE Lp DS3 Ima runningTime (running)

Access	Read only
Description	This attribute indicates the length of time (in seconds) for which the *Ima* component has been in the unlocked state or has been used for operational testing.

Mib	Ima
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp DS3 Ima unavailSec (unavail)

Access	Read only
Description	This attribute indicates the number of one second intervals during which the *Ima* component has been unlocked and out of service.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima failures (fail)

Access	Read only
Description	This attribute indicates the number of complete failures, during start-up or normal operation, that the *Ima* component has experienced since being added. It must be noted that a service degradation, such as 1 of the 3 links in an IMA group being down, is not counted as a failure. If an *Ima* component is in a failure loop and does not come up, this count will only increase by 1.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute indicates the ratio of the number of valid, assigned user cells received on the IMA group to the IMA cell capacity (based on the number of active links). The utilization is calculated over a one minute period.

	This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp DS3 Ima transmitCellUtilization (txutil)

Access	Read only
Description	This attribute indicates the ratio of the number of user cells transmitted on the IMA group to the IMA cell capacity (based on the number of active links). The utilization is calculated over a one minute period. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..100)
Units	%
Default	No default

GROUP Lp DS3 Ima CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Ima

ATTRIBUTE Lp DS3 Ima customerIdentifier (cid)

Access	Read and write

Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Ima
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp DS3 Ima OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ima

ATTRIBUTE Lp DS3 Ima adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Ima
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp DS3 Ima operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

	The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS3 Ima usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp DS3 Ima availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The

operationalState is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: Ima

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp DS3 Ima proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it

can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Ima

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp DS3 Ima controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	Ima
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp DS3 Ima alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Ima

Set of: underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp DS3 Ima standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization

activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Ima

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp DS3 Ima unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Ima

Values:
false
true

Default: false

COMPONENT Lp DS3 Ima Test (Test)

Groups:
"GROUP Lp DS3 Ima Test OsiState (State)"
"GROUP Lp DS3 Ima Test Setup (Setup)"
"GROUP Lp DS3 Ima Test Results (Results)"

Scope: Application

Description:

The *Test* component is configured to control a hardware facility

test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.

Mib: Ima

Common Verbs:
- Help
- List
- Display

VERB START Lp DS3 Ima Test

Impact: Service

Description:

This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp DS3 Ima Test

Impact: Service

Description:

This command stops a test running on the hardware component.

GROUP Lp DS3 Ima Test OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Ima

ATTRIBUTE Lp DS3 Ima Test adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ima

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp DS3 Ima Test operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ima

Values:
enabled (ena)
disabled (dis)

Default	disabled

ATTRIBUTE Lp DS3 Ima Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ima
Values	idle active (activ) busy
Default	idle

GROUP Lp DS3 Ima Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Ima

ATTRIBUTE Lp DS3 Ima Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Ima
Values	String (0..40, ASCII)

Default No default

ATTRIBUTE Lp DS3 Ima Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib Ima

Values
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop

remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default card

ATTRIBUTE Lp DS3 Ima Test frmSize (size)

Access Read and write

Description

This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib Ima

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Lp DS3 Ima Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib Ima

Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp DS3 Ima Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Ima
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp DS3 Ima Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Ima
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp DS3 Ima Test displayInterval (di)

Access	Read and write

Description

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib: Ima

Values: Decimal (0..30240)

Units: minutes

Default: 5

ATTRIBUTE Lp DS3 Ima Test duration

Access: Read and write

Description

This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.

Mib: Ima

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 1.00

GROUP Lp DS3 Ima Test Results (Results)

Properties: Operational

Description

This group contains all the statistics related attributes of the *Test* component.

Mib: Ima

ATTRIBUTE Lp DS3 Ima Test causeOfTermination

Access: Read only

Description

This attribute indicates either the status of the test or the cause of the test's termination:

a value of ***neverStarted*** indicates that the test has not yet been started.

a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these

values.

Mib	Ima
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp DS3 Ima Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Ima Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Ima Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Ima Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Ima Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Ima Test frmRx

Access	Read only

Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Ima Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Ima
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS3 Ima Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is

identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib: Ima

Values: String (5, ASCII)

Default: No default

ATTRIBUTE Lp DS3 Ima Test elapsedTime

Access: Read only

Description:

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib: Ima

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 0.00

ATTRIBUTE Lp DS3 Ima Test timeRemaining

Access: Read only

Description:

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib: Ima

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 0.00

COMPONENT Lp DS3 Ima Link (Lk)

Instance	Decimal (0..31)
Groups	"GROUP Lp DS3 Ima Lk Provisioned (Prov)" "GROUP Lp DS3 Ima Lk Operational (Oper)" "GROUP Lp DS3 Ima Lk Statistics (Stats)" "GROUP Lp DS3 Ima Lk OsiState (State)"
Scope	Device
Description	*Lp/n Ima/n Link/n* *Lp/n Ds3/n Ima/n Link/n* This component is used to define a DS1/E1 link belonging to an IMA group. The instance number of the *Link* subcomponent corresponds to the link identifier (LID) used by the link in IMA Control Protocol (ICP) cells. To use Ima on an 8pDS1E1 function processor, add *Lp/n Ima/n Link/n*. To use Ima on a 4pDS3ChAtm function processor, add *Lp/n Ds3/n Ima/n Link/n*.
Mib	Ima
Common Verbs	Help List Display Add DELete

GROUP Lp DS3 Ima Lk Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Link* subcomponent.
Mib	Ima

ATTRIBUTE Lp DS3 Ima Lk interfaceName

Access	Read and write
Criticality	Component

Description	This attribute associates the *Link* subcomponent with a specific interface on a function processor, for example *Lp/5 E1/3 Chan/0*. If IMA groups and independent links coexist on a card running IMA and per-VC queueing is enabled, plan the selection of DS1 or E1 ports to be used by the IMA group carefully. For a 4pDS3ChAtm function processor there is no per-VC queueing.
Mib	Ima
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Lp DS3 Ima Lk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Link* subcomponent.
Mib	Ima

ATTRIBUTE Lp DS3 Ima Lk failureCause (cause)

Access	Read only
Description	This attribute indicates the failure cause on this link. Possible values are: ***noFailure***: there is no failure on this link. ***interfaceDown***: the physical port used by the link is down. ***lif***: the link is in loss of IMA frame (LIF) state. ***lods***: the link is in loss of delay synchronization (LODS) state; that is, it has exhibited a differential delay which is greater than the maximum differential delay tolerated by the IMA group. It must be noted that hysteresis is used for the LODS condition. ***protocolError***: the link is down because of a time-out or because bad values are being received in IMA Control Protocol (ICP) cells. ***remoteFailure***: the far end link is down. ***misconnected***: the link is down because the IMA group has declared, after using its transmit test pattern procedure, that this link is not properly connected. This value can occur only if the *protocol for the IMA group is* ***atmForum10.*** ***unsupportedFrameLength***: the link is down because it is

receiving from the far end a frame length which is not supported by the local IMA group. This value can occur only if the *protocol for the IMA group is* ***atmForum10.***
unsupportedSymmetry: the link is down because it is receiving from the far end a group symmetry which is not supported by the local IMA group. This value can occur only if the *protocol for the IMA group is* ***atmForum10.***
noIcp: the link is down because it is not receiving IMA Control Protocol (ICP) cells. This value can occur only if the *protocol* for the IMA group is ***atmForum10***.
unsupportedVersion: the link is down because it is receiving from the far end a group version that is not supported by the local IMA group.

Mib: Ima

Values:
noFailure
interfaceDown
lif
lods
protocolError
remoteFailure
misconnected
unsupportedFrameLength
unsupportedSymmetry
unsupportedVersion
noIcp

Default: No default

ATTRIBUTE Lp DS3 Ima Lk remoteDefect (remDef)

Access: Read only

Description: This attribute indicates the IMA remote defect indicator (RDI) currently being received on this link. Possible values are:
noDefect: no defect.
physicalLayerDefect: the interface used by the remote link has a physical layer defect. This value can occur only if the *protocol for the IMA group is* ***atmForum10.***
interfaceDown: the physical interface used by the remote link is down.This value can occur only if the *protocol for the IMA group is* ***proprietary.***

	lif: the remote link has a loss of IMA frame (LIF) defect. ***lods***: the remote link has a loss of delay synchronization (LODS) defect; that is, it has exhibited a differential delay which is greater than the maximum differential delay tolerated by the IMA group.
Mib	Ima
Values	noDefect interfaceDown lif lods physicalLayerDefect
Default	No default

ATTRIBUTE Lp DS3 Ima Lk remoteLid (remLid)

Access	Read only
Description	This attribute indicates the link identifier (LID) used by the remote IMA group on the physical link. A value of 0 will be displayed if the link is not receiving IMA Control Protocol (ICP) cells or if the physical layer is down.
Mib	Ima
Values	Decimal (0..31)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk relativeDelay (rel)

Access	Read only
Description	This attribute indicates the latest measured differential delay (rounded up in milliseconds) between this link and the link, in the same IMA group, having the least delay. A value of 4294967295 indicates that the relative delay could not be measured. This can be due to physical layer problems or to no IMA Control Protocol (ICP) cells being received on the link.
Mib	Ima
Values	Decimal (0..4294967295)

Units	msec
Default	No default

ATTRIBUTE Lp DS3 Ima Lk lastOifCause (oif)

Access	Read only
Description	This attribute indicates the cause of the last out of IMA frame (OIF) anomaly on the link. It will always have a value of ***noOif*** if the *protocol* for the IMA group is ***proprietary***. Possible values are: ***noOif***: no OIF was detected. ***badFrameLength***: an IMA Control Protocol (ICP) cell with an unexpected frame length was received. ***badGid***: an ICP cell with an unexpected group identifier (GID) was received. ***badLid***: an ICP cell with an unexpected link identifier (LID) was received. ***badOffset***: an ICP cell with an unexpected cell offset was received. ***badSequenceNumber***: an ICP cell with an unexpected frame sequence number was received. ***stuffError***: an illegal stuffing sequence was received. ***missingIcp***: an expected ICP cell was not received. ***unexpectedIcp***: an unexpected ICP cell was received. ***erroredIcp***: two consecutive errored ICP cells were received. ***noCells***: no cells are being received on the link. ***idleCell***: an idle cell was received on the link. ***badOamLabel***: an ICP cell with an unexpected oam label was received.
Mib	Ima
Values	noOif badFrameLength badGid badLid badOffset badSequenceNumber stuffError missingIcp unexpectedIcp

	erroredIcp noCells idleCell badOamLabel
Default	No default

GROUP Lp DS3 Ima Lk Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Link* subcomponent.
Mib	Ima

ATTRIBUTE Lp DS3 Ima Lk runningTime (running)

Access	Read only
Description	This attribute counts the length of time (in seconds) for which the *Link* component has been running.
Mib	Ima
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp DS3 Ima Lk unavailSec (unavail)

Access	Read only
Description	For an IMA group whose *protocol* is ***atmForum10***, this attribute counts the number of unavailable seconds. Unavailability begins at the start of 10 contiguous severely errored seconds (SES) and ends at the start of 10 contiguous seconds with no SES. For an IMA group whose *protocol* is ***proprietary***, this attribute counts the number of one second intervals during which the *Link* component has been out of service.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk failures (fail)

Access	Read only
Description	This attribute counts the number of failures, during link addition or normal operation, that the link has experienced.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk unusableSec (uus)

Access	Read only
Description	This attribute counts the number of one second intervals during which the near end has been in an unusable state. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk sevErroredSec (ses)

Access	Read only
Description	This attribute counts the number of one second intervals in which at least 30 percent of the IMA Control Protocol (ICP) cells were counted as ICP violations or at least one link defect (physical layer, LIF and LODS defects) was detected. This attribute will not increment during UAS (Unavailable Second) conditions. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk farEndUnusableSec (feUus)

Access	Read only
Description	This attribute counts the number of one second intervals during which the “Tx/Rx Unusable” condition has been received from the far end. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk farEndSevErroredSec (feSes)

Access	Read only
Description	This attribute counts the number of one second intervals containing one or more RDI defects. This attribute will not increment during FEUAS (Far-End Unavailable Second) conditions. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk farEndUnavailSec (feUnavail)

Access	Read only
Description	This attribute counts the number of unavailable seconds at the far end. Unavailability begins at the start of 10 contiguous severely errored seconds (SES) at the far end and ends at the start of 10 contiguous seconds at the far end with no SES. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Lp DS3 Ima Lk icpViolations (iv)

Access	Read only
Description	This attribute counts the number of errored, invalid or missing IMA Control Protocol (ICP) cells during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk txStuffEvents (txStuff)

Access	Read only
Description	This attribute counts the number of Stuff events transmitted during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp DS3 Ima Lk rxStuffEvents (rxStuff)

Access	Read only
Description	This attribute counts the number of Stuff events received during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Lp DS3 Ima Lk idleCellSec (idle)

Access	Read only
Description	This attributes counts the number of one second intervals during which one or more idle cells was received. The reception of idle cells is an abnormal condition which could be caused by the remote IMA using the Common Transmit Clock mode with ports whose clock sources are not synchronized. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

GROUP Lp DS3 Ima Lk OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ima

ATTRIBUTE Lp DS3 Ima Lk adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Ima

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp DS3 Ima Lk operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Ima

Values: enabled (ena)
disabled (dis)

Default	disabled

ATTRIBUTE Lp DS3 Ima Lk usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp DS3 Ima Lk availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is

reservedForTest. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Ima
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp DS3 Ima Lk proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some

processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Ima

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp DS3 Ima Lk controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Ima

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp DS3 Ima Lk alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Ima

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp DS3 Ima Lk standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Ima

Values:
hotStandby (hot)
coldStandby (cold)

	providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp DS3 Ima Lk unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Ima
Values	false true
Default	false

COMPONENT Lp E3

Instance	Decimal (0..11)
Groups	"GROUP Lp E3 Provisioned (Prov)" "GROUP Lp E3 CustomerIdentifierData (CidData)" "GROUP Lp E3 AdminInfo (AdminInfo)" "GROUP Lp E3 IfEntryProv (IfEntry)" "GROUP Lp E3 OperationalStatus (OperStatus)" "GROUP Lp E3 OsiState (State)" "GROUP Lp E3 Operational (Oper)" "GROUP Lp E3 Statistics (Stats)"
Scope	Application

Description	*LP/n E3/n* The *E3* component controls an E3 port on an E3 Function Processor.
Mib	LogicalProcessor
Opt. Subcomp.	"COMPONENT Lp E3 G832" "COMPONENT Lp E3 AtmCell (Cell)"
Dyn. Subcomp.	"COMPONENT Lp E3 Test (Test)" "COMPONENT Lp E3 Plcp"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp E3 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for a *E3* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 lineLength (length)

Access	Read and write
Description	This attribute defines the line length for equalization calculations for the E3 line. The line length range is between 0 and 300 metres (1 metres = 3.28 feet).
Mib	LogicalProcessor
Values	Decimal (0..300)
Units	metres

Default 1

ATTRIBUTE Lp E3 clockingSource

Access Read and write

Description

This attribute defines the type of clocking source used for synchronizing the E3 transmit clock: ***local*** means direct use of the local clock oscillator at its centre frequency; ***line*** means use of a signal phase-locked to the incoming E3 line rate; ***module*** means the use of a signal phase-locked to the CP reference clock. Note that the multiport cell-based cards have one common clock source for each of the three ports. For this reason, the following rules apply for the value of *clockingSource* across the board's three ports:
All three *clockingSource* values must be "***local***" OR
All three *clockingSource* values must be "***module***" OR
One *clockingSource* value must be "***line***" and the other two must be "***otherPort***".
The default value for this attribute will be ***module*** if a CP clock is available, and ***local*** otherwise.

Mib LogicalProcessor

Values
local
line
module
otherPort

Default No default

ATTRIBUTE Lp E3 applicationFramerName (framer)

Access Read and write

Description

This attribute defines the link to the software stack. It defines which application is running on top of the *E3* component.

Mib LogicalProcessor

Values Link (Service, interfaceName)

Default No default

ATTRIBUTE Lp E3 mapping

Access	Read and write
Description	This attribute indicates if ATM cells will be mapped directly into the E3 payload, or whether PLCP mapping will be used. The *PLCP* component will appear under the *E3* component when this attribute is set to ***plcp***. This attribute will be ignored when set on frame-based cards.
Mib	LogicalProcessor
Values	direct plcp
Default	direct

ATTRIBUTE Lp E3 framing

Access	Read and write
Description	This attribute indicates if the framing mode will be in accordance with the CCITT G.751 or G.832 specification. The *G832* component will appear under the *E3* component when this attribute is set to ***g832***. This attribute may only be set on cell-based card types. Note also that this attribute may only be set to ***g751*** if the *mapping* attribute is set to ***plcp***. The default value of this attribute will be ***g751*** for frame-based cards, and ***g832*** for cell-based cards. Note: when *E3 framing* is changed from ***g832*** to ***g751***, the *G832* component must be deleted.
Mib	LogicalProcessor
Values	g751 g832
Default	No default

ATTRIBUTE Lp E3 linkAlarmActivationThreshold

Access	Read and write

Description	This attribute specifies the time interval between the detection of a sustained link failure and the activation of an alarm. It is provisionable for E3 cards.
Mib	LogicalProcessor
Values	Decimal (100..2600)
Units	msec
Default	2200

ATTRIBUTE Lp E3 linkAlarmScanInterval

Access	Read and write
Description	This attribute specifies the alarm scan timer polling interval. It determines how frequently the status of the link is monitored after a first link error interrupt. It is provisionable for E3 cards.
Mib	LogicalProcessor
Values	Decimal (50..250)
Units	msec
Default	200

GROUP Lp E3 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute,

the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp E3 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp E3 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

GROUP Lp E3 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp E3 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.

Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp E3 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp E3 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp E3 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp E3 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp E3 availabilityStatus (osiAvail)

Access: Read only

Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is

one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: LogicalProcessor

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp E3 proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required

before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp E3 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: LogicalProcessor

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp E3 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: LogicalProcessor

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp E3 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and

containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: LogicalProcessor

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp E3 unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: LogicalProcessor

Values:
false
true

Default: false

GROUP Lp E3 Operational (Oper)

Properties: Operational

Description

This group contains the common operational data for *E3* component.

Mib LogicalProcessor

ATTRIBUTE Lp E3 losAlarm (los)

Access Read only

Description

This attribute displays whether a Loss Of Signal (LOS) alarm state has been entered. An LOS alarm state is entered when LOS defects has been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOS defect is detected at the E3 line interface upon observing N continuous pulse positions with no pulses of either positive or negative polarity, where N is between 10 and 255. If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *E3* component goes into an operational state of *disabled* until the LOS alarm condition is cleared. The LOS alarm state is cleared when the LOS defects are absent for a period of 10 seconds +/- 0.5 seconds.
The *losAlarm* attribute is always set to *off* when the component has been *locked* and left *offline*.

Mib LogicalProcessor

Values on
off

Default off

ATTRIBUTE Lp E3 lofAlarm (lof)

Access Read only

Description

This attribute displays whether a Loss Of Frame (LOF) alarm state has been entered. An LOF alarm state is entered when Severely Errored Frame (SEF) defects have been detected and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An E3

SEF defect is reported after detecting Frame Alignment Signal (FAS) errors on 4 consecutive E3 frames received on the incoming line. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *E3* component goes into an operational state of *disabled* until the LOF alarm condition is cleared. The condition is cleared when E3 framing has been achieved for a period of 10 seconds +/- 0.5 seconds. As long as SEF defects are detected, the node also transmits the far-end SEF/AIS (in G.751 E3) or FERF (in G.832) defect indicator over the outgoing line. The *txRai* attribute is set to *on* when transmitting the far-end SEF/AIS defect indicator on the outgoing line.
The *lofAlarm* attribute is always set to *off* when the component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values: on
off

Default: off

ATTRIBUTE Lp E3 rxAisAlarm (rxAis)

Access: Read only

Description

This attribute displays whether an Alarm Indication Signal (AIS) alarm when state has been entered. An AIS alarm state is entered when AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds on the incoming E3 line. An AIS defect is the occurrence of the AIS (unframed signal with a density of zeros below a certain threshold such as defined by ITU Recommendation G.775). If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *E3* component goes into an operational state of *disabled* until the AIS alarm condition is cleared (after AIS has been no longer detected for a period of 10 seconds +/- 0.5 seconds). As long as

AIS is detected on the incoming line, the node also transmits the far-end SEF/AIS (in G.751 E3) or FERF (in G.832) defect indicator over the outgoing line. The *txRai* attribute is set to *on* when transmitting the far-end SEF/AIS defect indicator on the outgoing line.
The *rxAisAlarm* attribute is always set to *off* when the component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values: on
off

Default: off

ATTRIBUTE Lp E3 rxRaiAlarm (rxRai)

Access: Read only

Description

This attribute displays whether a Remote Alarm Indication (RAI) alarm state has been entered. A RAI alarm state is entered when far-end SEF/AIS defects (or Far-End Receive Failure (FERF) defects in G.832 E3 Framing mode) have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds on the E3 incoming line. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *E3* component goes into an operational state of *disabled* until the RAI alarm condition is cleared. The condition is cleared when the far-end defect indicator has not been detected for 10 seconds +/- 0.5 seconds. The declaration of a RAI Alarm is usually a signal that the far end facility is unable to gain synchronization.
The *rxRaiAlarm* attribute is always set to *off* when the component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values: on
off

Default: off

ATTRIBUTE Lp E3 txAis

Access	Read only
Description	This attribute displays whether an AIS alarm is being transmitted on the E3 line. AIS is transmitted on the outgoing line when the *E3* component is locked and not used for operational testing.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp E3 txRai

Access	Read only
Description	This attribute displays whether the far-end SEF/AIS defect indicator is transmitted over the outgoing line when the *E3* component has been unlocked or used in operational testing. When the *E3* component is locked and not used in operational testing, this attribute is always set to *off*. The far-end SEF/AIS defect indicator is transmitted over the outgoing line when SEF/AIS defects are detected on the incoming line. In G.832 E3 Framing mode, the FERF bit is set to ‘1’ to transmit the SEF/AIS defect indicator.
Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp E3 Statistics (Stats)

Properties	Operational
Description	This group contains the common operational data for *E3* component. Each attribute type is a non-negative integer which

monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

ATTRIBUTE Lp E3 runningTime (time)

Access Read only

Description

This attribute indicates the total number of seconds since the *E3* component has been activated and been in unlocked state or used for operational testing. All the other error counts that follow as well as each E3 subcomponent's error counts can be updated when this count is active.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Units seconds

Default 0

ATTRIBUTE Lp E3 errorFreeSec (efs)

Access Read only

Description

This attribute indicates the number of seconds that the E3 port has been in an error free state.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 lineCodeViolations (lcv)

Access Read only

Description

This attribute indicates the total number of Line Code Violations (LCV) detected. An E3 Line Code Violation is an HDB3 coded

signal error. LCV counting is inhibited for second intervals where a Line Severely Errored Second (LSES) is counted.
This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 lineErroredSec (les)

Access Read only

Description

This attribute indicates the total number of Line Errored Seconds (LES) that have been counted. A LES is declared for interval seconds containing one or more Line Code Violations (LCV) or one or more Loss Of Signal (LOS) defects.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 lineSevErroredSec (lses)

Access Read only

Description

This attribute indicates the total number of Line Severely Errored Seconds (LSES) that have been counted. A LSES is declared for second intervals containing more than 34 Line Code Violations (LCV) or one or more Loss of Signal (LOS) defects.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 lineLosSec (loss)

Access	Read only
Description	This attribute indicates the total number of Line LOS Seconds (LOSS) that have been counted. A LOSS is declared for second intervals containing one or more Loss of Signal (LOS) defects.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 lineFailures (lf)

Access	Read only
Description	This attribute indicates the total number of times that a line failure (LOS failure) has been declared. This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 pathCodeViolations (pcv)

Access	Read only
Description	This attribute indicates the total number of Path Code Violations (PCV) detected. An E3 PCV is an error in the Frame Alignment (FA) signal, or, in G.832 Framing Mode, an error in the Frame Alignment signal or a BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. This attribute is a non-negative integer which monotonically

increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 pathErroredSec (pes)

Access Read only

Description

This attribute indicates the total number of Path Errored Seconds (PES) that have been counted. A PES is declared for second intervals containing one or more Path Code Violations (PCV) or one or more Severely Errored Frame (SEF) or Alarm Indication Signal (AIS) defects. Counting of Path Errored Seconds is inhibited when a Path Unavailable Second (PUAS) is counted over the monitored second.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 pathSevErroredSec (pses)

Access Read only

Description

This attribute indicates the total number of Path Severely Errored Seconds (PSES) that have been counted. A PSES is declared for second intervals containing more than 22 (G.751 E3) or 34 (G.832 E3) Path Code Violations (PCV) or one or more Severely Errored Frame (SEF) or Alarm Indication Signal (AIS) defects. Counting of PSESs is inhibited when a Path Unavailable Second (PUAS) is counted over the monitored second.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 pathSefAisSec (psas)

Access	Read only
Description	This attribute indicates the total number of Path SEF/AIS Seconds (PSAS). A PSAS is declared for second intervals containing one or more Severely Errored Frame (SEF) or Alarm Indication Signal (AIS) defects. Counting of PSAS is inhibited when Path Unavailable Seconds (PUAS) is counted over the monitored second.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 pathUnavailSec (puas)

Access	Read only
Description	This attribute indicates the total number of one second intervals for which the E3 path is unavailable. The E3 path becomes unavailable at the onset of 10 consecutive Path Severely Errored Seconds (PSES). The 10 PSESs are included in the unavailable time. Once unavailable, the E3 path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where PUAS is counted, counting of Path Code Violations (PCV), Path Errored Seconds (PES), Path Severely Errored Seconds (PSES) and Path SefAis Seconds (PSAS) is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 pathFailures (pf)

Access	Read only

Description

This attribute indicates the total number of times that a path failure (LOF/AIS failure) has been declared.
This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp E3 Test (Test)

Groups "GROUP Lp E3 Test OsiState (State)"
"GROUP Lp E3 Test Setup (Setup)"
"GROUP Lp E3 Test Results (Results)"

Scope Application

Description

The *Test* component is configured to control a hardware facility test on a physical (*V*35, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib LogicalProcessor

Common Verbs

Help
List
Display

VERB START Lp E3 Test

Impact Service

Description

This command invokes a test on the hardware component.
Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp E3 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp E3 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp E3 Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp E3 Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp E3 Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp E3 Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and

performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp E3 Test frmSize (size)

Access: Read and write

Description

This attribute defines the size of the test data frames in number of

bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: LogicalProcessor

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp E3 Test frmPatternType (fpt)

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: LogicalProcessor

Values:
ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default: ccitt32kBitPattern

ATTRIBUTE Lp E3 Test customizedPattern (cp)

Access: Read and write

Description:
This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: LogicalProcessor

Values: Hex (H.0..H.ffffffff)

Units	Hex
Default	H.55555555

ATTRIBUTE Lp E3 Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp E3 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp E3 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp E3 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed

to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp E3 Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E3 Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E3 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E3 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E3 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E3 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E3 Test erroredFrmRx

Access	Read only

Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E3 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp E3 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp E3 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp E3 G832

Groups	"GROUP Lp E3 G832 Provisioned" "GROUP Lp E3 G832 Operational" "GROUP Lp E3 G832 Statistics (Stats)"
Scope	Application
Description	G832 The *G832* component is configured to display all E3 G832 related operational and statistical data. It will appear under the *E3* components when the *E3 framing* attribute is set to ***g832***.

Note: when *E3 framing* is changed from ***g832*** to ***g751***, the *G832* component must be deleted.

Mib LogicalProcessor

Common Verbs

Help
List
Display
Add
DELete

GROUP Lp E3 G832 Provisioned

Properties Provisioned

Description

This group contains the provisionable data for the G832 component.

Mib LogicalProcessor

ATTRIBUTE Lp E3 G832 trailTraceTransmitted

Access Read and write

Description

This attribute indicates the E.164 address which is to be encoded in the trail access point identifier, which is transmitted using the Trail Trace (TR) field of the transmitted E3 Frame.
Both the expected trail access point identifier and the transmitted trail access point identifier are provisionable attributes of the *G832* component.
The 16 byte Trail Trace frame is composed of one byte containing a frame start marker and a CRC-7 calculation over the previous frame, and 15 bytes for transporting an E.164 address. If less than the full 15 bytes are used, the address is padded with NULL characters.

Mib LogicalProcessor

Values String (0..15, ASCII)

Default ""

ATTRIBUTE Lp E3 G832 trailTraceExpected

Access	Read and write
Description	This attribute indicates the E.164 address which is expected in the trail access point identifier, which is transmitted using the Trail Trace (TR) field of the transmitted E3 Frame. Both the expected trail access point identifier and the transmitted trail access point identifier are provisionable attributes of the *G832* component. The 16 byte Trail Trace frame is composed of one byte containing a frame start marker and a CRC-7 calculation over the previous frame, and 15 bytes for transporting an E.164 address. If less than the full 15 bytes are used, the address is padded with NULL characters.
Mib	LogicalProcessor
Values	String (0..15, ASCII)
Default	""

GROUP Lp E3 G832 Operational

Properties	Operational
Description	This group contains the operational data for the G832 component.
Mib	LogicalProcessor

ATTRIBUTE Lp E3 G832 unexpectedPayloadType (upt)

Access	Read only
Description	This attribute displays whether the Unexpected Payload Type (UPT) alarm state has been entered. The UPT alarm state is entered when UPT defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The UPT defect is reported when a received frame fails to agree with the expected Payload Type. If the UPT defects are intermittently occurring, the UPT defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all

measurements based on a 200 ms polling cycle..
The UPT alarm is cleared when the Payload Type in the received frame agrees with the expected Payload Type for a period of 10 seconds +/- 0.5 seconds.
The *unexpectedPayloadType* attribute is always set to *off* when the *E3* component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values:
on
off

Default: No default

ATTRIBUTE Lp E3 G832 trailTraceMismatch (ttm)

Access: Read only

Description:

This attribute displays whether the Trail Trace Mismatch (TTM) alarm state has been entered. The TTM alarm state is entered when TTM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TTM defect is reported when the trail access point identifier contained in the Trail Trace (TR) field in the received frame fails to agree with the expected identifier. If the TTM defects are intermittently occurring, the TTM defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The TTM alarm is cleared when the trail access point identifier in the received frame agrees with the expected identifier for a period of 10 seconds +/- 0.5 seconds.
The *trailTraceMismatch* attribute is always set to *off* when the *E3* component has been *locked* and left *offline*.
Both the expected trail access identifier and the transmitted trail access identifier are provisionable attributes of the G832 component.

Mib: LogicalProcessor

Values:
on
off

Default: No default

ATTRIBUTE Lp E3 G832 timingMarker

Access	Read only
Description	Indicates whether or not the timing source at the far-end node is traceable to a Primary Reference Clock. The *timingMarker* indication is controlled by the timing marker bit in the G832 MA byte. If the received timing marker bit is 1 for five consecutive frames, and five consecutive 0s are not received for two seconds, the *timingMarker* indication will be set to ***not traceable***. If the received timing marker bit is 0 for five consecutive frames and five consecutive 1s are not received for two seconds, the *timingMarker* indication will be set to ***traceable***.
Mib	LogicalProcessor
Values	not traceable traceable
Default	No default

ATTRIBUTE Lp E3 G832 trailTraceReceived

Access	Read only
Description	This attribute indicates the 15 byte E.164 address which is currently being received in the trail trace (TR) field of the E3 G832 frame. If this attribute differs from the provisioned trailTraceTransmitted string a trail trace mismatch (TTM) defect is reported, possibly resulting in a TTM alarm, as described for operational attribute *trailTraceMismatch*.
Mib	LogicalProcessor
Values	String (0..15, ASCII)
Default	No default

GROUP Lp E3 G832 Statistics (Stats)

Properties	Operational

Description

This group contains the statistical data for the G832 component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

ATTRIBUTE Lp E3 G832 farEndErrorFreeSec (feefs)

Access Read only

Description

This attribute indicates the number of seconds that the E3 line has not suffered any G832 errors.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 G832 farEndCodeViolations (fecv)

Access Read only

Description A count of E3 frames containing a Far-End Block Error (FEBE). A FEBE is reported over the FEBE bit each time the far-end terminal detects a BIP-8 error in a received E3 frame. For second intervals where Far End Unavailable Seconds (FEUAS) or Far End Severely Errored Seconds (FESES) are counted, counting of FECVs is inhibited.
This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 G832 farEndErroredSec (fees)

Access Read only

Description

This attribute indicates the total number of Far-End Errored Seconds (FEES). A FEES is declared for second intervals containing with one or more Far-End Coding Violations (FECV) or one or more Far-End Receive Failure (FERF) defects. A FERF defect occurs when the FERF bit in the received frame is set to one. For second intervals where Far End Unavailable Seconds (FEUAS) are counted, counting of FEESs is inhibited.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 G832 farEndSevErroredSec (feses)

Access Read only

Description

This attribute indicates the total number of Far-End Severely Errored Seconds (FESESs). A FESES is declared for second intervals containing more than 34 Far-End Coding Violations (FECV) or one or more Far-End Receive Failure (FERF) defects. For second intervals where a Far-End Severely Errored Seconds (FESES) is counted, counting of FECVs is inhibited. For second intervals where Far End Unavailable Seconds (FEUAS) are counted, counting of FESESs is inhibited.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 G832 farEndSefAisSec (fesas)

Access Read only

Description

This attribute indicates the total number of Far-End SEF/AIS Seconds (FESAS). A FESAS is declared for second intervals containing one or more Far-End Receive Failure (FERF) defects. For second intervals where Far End Unavailable Seconds (FEUAS) are counted, counting of FESAS is inhibited.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 G832 farEndUnavailSec (feuas)

Access	Read only
Description	This attribute indicates the total number of one second intervals for which the E3 far-end path is unavailable. The E3 far-end path becomes unavailable at the onset of 10 consecutive Far End Severely Errored Seconds (FESES). It comes available at the onset of 10 contiguous seconds with no FESES. The unavailable time includes the initial 10 seconds to enter the unavailable state but not the 10 seconds to exit the state For second intervals where FEUAS is counted, counting of Far End Coding Violations (FECV), Far-End Errored Seconds (FEES), Far-End Severely Errored Seconds (FESES) and Far-End SefAis Seconds (FESAS) are inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp E3 Plcp

Groups	"GROUP Lp E3 Plcp Operational" "GROUP Lp E3 Plcp Statistics (Stats)"
Scope	Application
Description	*LP/n DS3/n PLCP* *LP/n E3/n PLCP* The *PLCP* component is configured to display all DS3/E3 PLCP

related operational and statistical data. It will appear under the *DS3* or *E3* components when the *mapping* attribute is set to ***plcp***.

Mib LogicalProcessor

Common Verbs
Help
List
Display

GROUP Lp E3 Plcp Operational

Properties Operational

Description

This group contains the operational data for the *PLCP* component.

Mib LogicalProcessor

ATTRIBUTE Lp E3 Plcp lofAlarm (lof)

Access Read only

Description

This attribute displays whether a PLCP Loss Of Frame (LOF) failure alarm state has been entered. An LOF failure is declared when a PLCP LOF defect persists for 2.5 s +/- 0.5 s. An LOF defect occurs when an OOF (Out of Frame) state persists for more than 1 ms. If the OOF events are intermittent, the LOF defect counter is decremented at a rate of 1/12 (for DS3 PLCP) or 1/9 (for G.751 E3 PLCP) of the incrementing rate, with all measurements based on a 200 ms polling cycle. An OOF event (also known as a PLCP SEF event) is declared when an error is detected in both the A1 and A2 octets, or when two consecutive POHIDs are found in error.
OOF is removed when two valid sets of framing octets and two valid and sequential POHID octets have been found. The LOF defect is removed when the defect counter reaches zero, i.e. when OOF events are absent for more than 12 ms (DS3 PLCP) or 9 ms (G.751 E3 PLCP). LOF failure alarm is cleared when LOF defect is absent for 10.0 s +/- 0.5 s
The *DS3* or *E3* component goes into an operational state of *disabled* until the LOF failure alarm is cleared. The terminal

declaring the LOF failure alarm will transmit a PLCP RAI signal to the far-end for the duration of the alarm.
The *lofAlarm* attribute is always set to *off* when the *DS3* or *E3* component has been *locked* and left *offline*.

Mib LogicalProcessor

Values on
off

Default off

ATTRIBUTE Lp E3 Plcp rxRaiAlarm (rxrai)

Access Read only

Description

This attribute displays whether a PLCP Remote Alarm Indication (RAI) failure alarm state has been entered. An RAI failure alarm occurs when ten consecutive PLCP RAI bits (bit 5 in the G1 byte) are high on the incoming line. An RAI failure alarm is cleared when ten consecutive RAI bits are set to 0.
Note: Some standards call this alarm RFI.
The *rxRaiAlarm* attribute is always set to *off* when the *DS3* or *E3* component has been *locked* and left *offline*.

Mib LogicalProcessor

Values on
off

Default off

GROUP Lp E3 Plcp Statistics (Stats)

Properties Operational

Description

This group contains the statistical data for the *PLCP* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

ATTRIBUTE Lp E3 Plcp errorFreeSec (efs)

Access	Read only
Description	This attribute indicates the number of seconds during which the near-end PLCP path layer had no errors.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp codingViolations (cv)

Access	Read only
Description	This attribute indicates the total number of BIP-8 Errors, framing pattern octet errors, and path overhead identification errors detected in received PLCP frames. Counting of PLCP CV is inhibited for second intervals where PLCP Severely Errored Framing Seconds (SEFS) or PLCP Unavailable Seconds (UAS) are counted. This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp erroredSec (es)

Access	Read only
Description	This attribute indicates the number of seconds containing one or more PLCP Coding Violations (CV) or in which a PLCP Severely Errored Framing Second (SEFS) was counted. Counting of PLCP ES is inhibited during second intervals where PLCP Unavailable Seconds (UAS) are counted.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp sevErroredSec (ses)

Access	Read only
Description	This attribute indicates the number of seconds containing 5 or more PLCPCVs or in which a PLCPSEFS was counted (i.e. a PLCP OOF event occurred). Counting of PLCP SES is inhibited during second intervals where PLCP Unavailable Seconds (UAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp sevErroredFramingSec (sefs)

Access	Read only
Description	This attribute indicates the number of seconds containing one or more PLCP Severely Errored Frame (SEF) events. An SEF event is equivalent to a PLCP OOF (Out of Frame) event. Counting of PLCPP SEFSs is inhibited for second intervals where PLCP Unavailable Seconds (UAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp unavailSec (uas)

Access	Read only
Description	This attribute indicates the number of seconds when the near-end

PLCP layer is unavailable. The PLCP Path Layer becomes unavailable at the declaration of PLCP LOF (Loss of Frame) failure alarm state. The PLCP Path Layer becomes available again only after clearing this condition.
For second intervals where PLCP UAS are counted, counting of PLCP Severely Errored Framing Seconds (SEFS), PLCP Coding Violations (CV), PLCP Errored Seconds (ES), PLCP Severely Errored Seconds (SES) and PLCP Far-End Severely Errored Seconds (FESES) is inhibited.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 Plcp farEndErrorFreeSec (feefs)

Access Read only

Description

This attribute indicates the number of seconds during which the far-end PLCP path layer had no errors.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 Plcp farEndCodingViolations (fecv)

Access Read only

Description

This attribute indicates the total number of PLCP Far-End Block Errors (FEBE) reported by the far-end terminal.
Counting of FEBEs is inhibited for second intervals where PLCP Far-End Unavailable Seconds (FEUAS) are counted.
This attribute is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp farEndErroredSec (fees)

Access	Read only
Description	This attribute indicates the number of seconds containing one or more PLCP Far-End Coding Violations (FECV). Counting of PLCP FEES is inhibited during second intervals where PLCP Far-End Unavailable Seconds (FEUAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp farEndSevErroredSec (feses)

Access	Read only
Description	This attribute indicates the number of seconds containing 5 or more PLCP Far-End Coding Violations (FECV). Counting of PLCP FESES is inhibited for second intervals where PLCP Far-End Unavailable Seconds (FEUAS) are counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E3 Plcp farEndUnavailableSec (feuas)

Access	Read only
Description	This attribute indicates the number of seconds during which the PLCP far end is unavailable. The PLCP Path Layer becomes unavailable at the declaration of PLCP RAI (Remote Alarm Indication). Service becomes available again after this condition is cleared. For second intervals where PLCP FEUAS are counted,

counting of PLCP Far-End Coding Violations (FECV), PLCP Far-End Errored Seconds (FEES), and PLCP Far-End Severely Errored Seconds (FESES) is inhibited.

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Lp E3 AtmCell (Cell)

Groups:
"GROUP Lp E3 Cell Provisioned (Prov)"
"GROUP Lp E3 Cell Operational (Oper)"
"GROUP Lp E3 Cell Statistics (Stats)"

Scope: Device

Description:

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib: LogicalProcessor

Common Verbs:
Help
List
Display
Add
DELete

GROUP Lp E3 Cell Provisioned (Prov)

Properties: Provisioned

Description:

This group contains the provisioning attributes for the *AtmCell* component.

Mib	LogicalProcessor

ATTRIBUTE Lp E3 Cell alarmActDelay (act)

Access	Read and write
Description	This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.
Mib	LogicalProcessor
Values	Decimal (0..2000)
Units	msec
Default	No default

ATTRIBUTE Lp E3 Cell scrambleCellPayload (scramble)

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	LogicalProcessor
Values	off on

Default No default

ATTRIBUTE Lp E3 Cell correctSingleBitHeaderErrors

Access Read and write

Description

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib LogicalProcessor

Values off
on

Default off

ATTRIBUTE Lp E3 Cell clearDelay (clear)

Access Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (0..60)

Units	minutes
Default	0

ATTRIBUTE Lp E3 Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Lp E3 Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit

established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..250000)

Default No default

ATTRIBUTE Lp E3 Cell lcdStateDelay (delay)

Access Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..50)

Units msec

Default No default

ATTRIBUTE Lp E3 Cell hecErrorIntervalLimit (hIntLimit)

Access Read and write

Description

This attribute counts the instances of the *hecSamplingInterval*

attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: LogicalProcessor

Values: Decimal (1..25)

Default: 1

GROUP Lp E3 Cell Operational (Oper)

Properties: Operational

Description:

This group contains the common operational attributes for the *AtmCell* component.

Mib: LogicalProcessor

ATTRIBUTE Lp E3 Cell lcdAlarm (lcd)

Access: Read only

Description:

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7

consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib LogicalProcessor

Values on
off

Default off

GROUP Lp E3 Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

ATTRIBUTE Lp E3 Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E3 Cell receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp E3 Cell transmitCellUtilization (txutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp E3 Cell correctableHeaderErrors (cErr)

Access	Read only

Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp DS1

Instance	Decimal (0..31)
Groups	"GROUP Lp DS1 Provisioned (Prov)" "GROUP Lp DS1 CustomerIdentifierData (CidData)" "GROUP Lp DS1 AdminInfo (AdminInfo)" "GROUP Lp DS1 IfEntryProv (IfEntry)" "GROUP Lp DS1 OperationalStatus (OperStatus)" "GROUP Lp DS1 OsiState (State)" "GROUP Lp DS1 Operational (Oper)" "GROUP Lp DS1 Statistics (Stats)"
Scope	Application
Description	*Lp/n DS1/n* The *DS1* component controls and monitors a DS1 port on a Function Processor. The number of ports supported depends on the type of card, and is usually encoded in the *Shelf Card/n cardType*, for example 4pDS1Aal1: 4 port. The lowest instance value is always ***0***. Multi-Service cards have an instance range 0..31, except that instance values 30 and 31 are not available for an “ATM UNI port”. (A DS1 “ATM UNI port” is a *DS1* component with a single *Chan* whose *applicationFramerName* attribute is linked to an *AtmIf* component.)

The instance number of a *DS1* “ATM UNI port” must not be the same as the instance number of an *IMA* group under the same *Lp*.

Mib LogicalProcessor

Subcomponents "COMPONENT Lp DS1 Channel (Chan)"

Dyn. Subcomp. "COMPONENT Lp DS1 Test (Test)"
"COMPONENT Lp DS1 Dsp"
"COMPONENT Lp DS1 Audio"

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp DS1 Provisioned (Prov)

Properties Provisioned

Description

This group contains all of the provisioning data for a DS1 component.

Mib LogicalProcessor

ATTRIBUTE Lp DS1 lineType (lineType)

Access Read and write

Description

This attribute defines the framing of the DS1 line.
d4 defines a framing pattern of 12 frames per multiframe.
esf defines a framing pattern of 24 frames per multiframe.
d4Cas defines a framing pattern of 12 frames per multiframe with channel associated signalling.
esfCas defines a framing pattern of 24 frames per multiframe with channel associated signalling.
unframed defines an unknown framing pattern for clear channels.

For cell-based cards only the default option ***esf*** is permitted.

Mib LogicalProcessor

Values
d4
esf
d4Cas
esfCas
unframed

Default esf

ATTRIBUTE Lp DS1 zeroCoding (zeroCoding)

Access Read and write

Criticality Component

Description

This attribute defines the zero encoding on the DS1 line.
bit7Stuffing sets bit 7 of every timeslot to a one to guarantee ones's density. This reduces the available bandwidth of the channel by 1/8.
b8zs substitutes a pattern of bipolar violations if more than 7 zeros in a row are to be transported.
ami specifies Alternate Mark Inversion, in which successive marks (ones) alternate between positive and negative polarity voltage signals, and spaces (zeros) are sent as a zero amplitude signal.
When *zeroCoding* is set to ***ami*** and l*ineType* is set to ***d4***, it is recommended that *raiAlarmType* be set to ***SBit*** in order to avoid possible mimic RAI alarm.

For cell-based cards, only the default value ***b8zs*** is permitted.

The value *ami* should be used with caution. If the ones density of the traffic is not sufficiently high, the DS1 will lose clock synchronization.

Mib LogicalProcessor

Values
bit7Stuffing
b8zs
ami

Default
b8zs

ATTRIBUTE Lp DS1 clockingSource (clockingSource)

Access
Read and write

Description

This attribute defines the source of the transmit clock for the DS1 line.

When ***local*** is selected, the crystal on the port generates the clocking for the line.

When ***line*** is selected, the port synchronizes to the clock from the facility.

When ***module*** is selected, the ports clock synchronizes to the clock provided by the oscillator on the active CP.

When ***otherPort*** is selected, the port synchronizes to the port with a clocking source of ***line***.

When ***srtsMode*** is selected, the port transmit frequency depends on the SRTS (Synchronous Residual Time-Stamp) received over the ATM network. SRTS information is also generated sent over the ATM network.

When ***adaptiveMode*** is selected, the port transmit frequency continually adapts to match the egress data received from the ATM network.

A port with ***srtsMode*** or ***adaptiveMode*** must have a single *Chan* which may be linked only to an *Aal1Ces*.service with serviceType ***unstructured***

If the *NetworkSynchronization* component is present, the default value of this attribute is ***module***, otherwise it defaults to ***line***, except for the ***3pDS1Atm*** card, which it defaults to ***local***.

On a ***3pDS1Atm*** card all ports must have the same value, and be either ***local*** or ***module***.

otherPort is valid only on AAL1 cards. ***srtsMode*** is valid only on AAL1 and Multi-Service Access cards. ***adaptiveMode*** is valid only on Multi-Service Access cards.
On ***4DS1Aal1*** cards either:

all four ports' *clockingSource* values must be ***local*** OR
all four ports' *clockingSource* values must be ***module*** OR
one port's *clockingSource* value must be ***line*** and the other three must be ***otherPort***. A port can only have ***srtsMode*** selected if the other ports are ***module*** or ***srtsMode***.

Mib: LogicalProcessor

Values:
local
line
module
otherPort
srtsMode
adaptiveMode

Default: No default

ATTRIBUTE Lp DS1 raiAlarmType (raiType)

Access: Read and write

Description

This attribute defines the method of sending a RAI (Remote Alarm Indication) alarm on a DS1 line.
When ***SBit*** is selected, RAI alarm is sent by setting the S bit in frame 12.
When ***Bit2*** is selected, RAI alarm is sent by setting bit 2 in all timeslots to 0.
When ***fdl*** is selected, RAI alarm is sent by a repeating pattern of 00 hex and FF hex on the FDL link.
Note that for *lineType* of ***d4***, only the SBit and the Bit2 methods are applicable. Whereas for *lineType* of ***esf***, only the Bit2 and the ***fdl*** methods are applicable.
SBit method is recommended if *lineType* is set to ***d4*** and

zeroCoding is set to ***ami***. This will help to avoid potential mimic RAI alarm when 1's density is too low in the data transmitted. For cell-based cards, only the default value ***fdl*** is permitted.

Mib: LogicalProcessor

Values: sBit
bit2
fdl

Default: fdl

ATTRIBUTE Lp DS1 lineLength (lineLength)

Access: Read and write

Description:

This attribute defines the line length (in feet) for equalization calculations for the DS1 line. The value ranges between 0-655. For ***8pDS1Atm*** cards the actual value used for equalization is rounded up to the nearest 110 feet; for all other card types the actual value used is rounded to the nearest 50 feet.

Mib: LogicalProcessor

Values: Decimal (0..655)

Default: 0

GROUP Lp DS1 CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: LogicalProcessor

ATTRIBUTE Lp DS1 customerIdentifier (cid)

Access: Read and write

Description: This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute,

the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp DS1 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp DS1 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

GROUP Lp DS1 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp DS1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.

Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp DS1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp DS1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp DS1 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp DS1 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp DS1 availabilityStatus (osiAvail)

Access: Read only

Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is

one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: LogicalProcessor

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp DS1 proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn’t initialize autonomously) that initialization is required

before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp DS1 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: LogicalProcessor

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp DS1 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: LogicalProcessor

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp DS1 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and

containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: LogicalProcessor

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp DS1 unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: LogicalProcessor

Values:
false
true

Default: false

GROUP Lp DS1 Operational (Oper)

Properties: Operational

Description

This group contains the common operational data for a component in a digital hierarchy interface.

Mib LogicalProcessor

ATTRIBUTE Lp DS1 losAlarm (losAlarm)

Access Read only

Description

This attribute displays whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS defects have been observed and accumulated for a period of 2 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). A LOS defect is detected upon observing all zeros for 150 ms (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: upon observing 175 +/- 75 pulse positions with no pulses of either positive or negative polarity). If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOS alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOS alarm state.
The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 seconds.

Mib LogicalProcessor

Values on
off

Default off

ATTRIBUTE Lp DS1 rxAisAlarm (rxAisAlarm)

Access Read only

Description

This attribute displays whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5

seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period (for **8pDS1Atm** cards: when both an Out Of Frame condition exists and a 1's density of at least 99.9% is present for a time T, where 3 ms ≤ T ≤ 75 ms; for **8pE1Atm** cards: when both an Out Of Frame condition exists and fewer than three 0's have been received in 512 bit periods). If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state.
The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.

Mib: LogicalProcessor

Values: on
off

Default: off

ATTRIBUTE Lp DS1 lofAlarm (lofAlarm)

Access: Read only

Description

This attribute displays whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state
The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp DS1 rxRaiAlarm (rxRaiAlarm)

Access	Read only
Description	This attribute displays whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. For **3pDS1Atm**, and **8pDS1Atm** cards: alarm is declared immediately upon observing the defect is present, with no integration time. For **3pE1Atm**, and **8pE1Atm** cards: alarm state is entered when the RAI defect indicator has been observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds (for **3pDS1Atm**, and **8pDS1Atm** cards: alarm is cleared immediately upon observing the defect is absent, with no integration time). The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp DS1 txAisAlarm (txAisAlarm)

Access	Read only
Description	This attribute displays whether an AIS (Alarm Indication Signal)

alarm is being transmitted on the line. An AIS alarm is transmitted when the port is in a locked state.

Mib LogicalProcessor

Values on
off

Default off

ATTRIBUTE Lp DS1 txRaiAlarm (txRaiAlarm)

Access Read only

Description

This attribute displays whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the port detects a LOF alarm condition (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: RAI is transmitted when the port detects a LOS, LOF, or AIS condition).

Mib LogicalProcessor

Values on
off

Default off

GROUP Lp DS1 Statistics (Stats)

Properties Operational

Description

This group contains the common statistical data for a component in a digital hierarchy interface.

Mib LogicalProcessor

ATTRIBUTE Lp DS1 runningTime (runningTime)

Access Read only

Description

The number of seconds since the port component was activated.

Mib LogicalProcessor

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 errorFreeSec (efs)

Access	Read only
Description	The number of seconds that the port has been in an error free state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 erroredSec (es)

Access	Read only
Description	An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 sevErroredSec (ses)

Access	Read only
Description	A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Lp DS1 sevErroredFrmSec (sefs)

Access	Read only
Description	A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 unavailSec

Access	Read only
Description	The total number of seconds that the interface is in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 bpvErrors (bpvErrors)

Access	Read only
Description	The current count of Bipolar Violations. A bipolar violation is an error in the alternate mark inversion pattern (AMI) on the line.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 crcErrors (crcErrors)

Access	Read only
Description	If the interface is a DS1 line, it is the current count of CRC-6 errors. These will only be counted when the lineType is ESF. If the interface is an E1 line, it is the total number of CRC-4 errors. These will only be counted when crc4Mode is on.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 frmErrors (frmErrors)

Access	Read only
Description	The current count of frame errors. A frame error is an error in the framing bits
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 losStateChanges (losChanges)

Access	Read only
Description	The total number of times that the line lost signal.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp DS1 slipErrors (slipErrors)

Access	Read only

Description	The total number of times that the line experienced a controlled frame slip. This attribute is incremented for ports on the voice cards (for example the 1pDS1V and the 1pE1V function processors) only.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp DS1 Channel (Chan)

Instance	Decimal (0..24)
Groups	"GROUP Lp DS1 Chan Provisioned (Prov)" "GROUP Lp DS1 Chan CustomerIdentifierData (CidData)" "GROUP Lp DS1 Chan IfEntryProv (IfEntry)" "GROUP Lp DS1 Chan OperationalStatus (OperStatus)" "GROUP Lp DS1 Chan OsiState (State)" "GROUP Lp DS1 Chan Operational (Oper)" "GROUP Lp DS1 Chan AdminInfo (AdminInfo)"
Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port. Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots. Similarly,

the ***1pDS3C*** card type only allows one channel per port, and this is automatically provisioned with all available timeslots.

Mib	LogicalProcessor
Opt. Subcomp.	"COMPONENT Lp DS1 Chan AtmCell (Cell)" "COMPONENT Lp DS1 Chan TrunkConditioning (Tc)"
Dyn. Subcomp.	"COMPONENT Lp DS1 Chan Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp DS1 Chan Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisional data for a *Channel* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan timeslots (ts)

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component. For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.

Mib	LogicalProcessor
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Default	No default

ATTRIBUTE Lp DS1 Chan timeslotDataRate (dataRate)

Access	Read and write
Criticality	Component

Description

This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute.

When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s.

When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s.

On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card.

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***.

One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.

Mib LogicalProcessor

Values 56k
doNotOverride

Default doNotOverride

ATTRIBUTE Lp DS1 Chan applicationFramerName

Access Read and write

Description

This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.

Mib	LogicalProcessor
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp DS1 Chan CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp DS1 Chan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp DS1 Chan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp DS1 Chan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp DS1 Chan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp DS1 Chan operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS1 Chan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp DS1 Chan availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: LogicalProcessor

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp DS1 Chan proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been

initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: LogicalProcessor

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp DS1 Chan controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: LogicalProcessor

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp DS1 Chan alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: LogicalProcessor

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp DS1 Chan standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp DS1 Chan unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

GROUP Lp DS1 Chan Operational (Oper)

Properties	Operational
Description	This group contains all of the operational data for a *Channel* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan actualChannelSpeed

Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Lp DS1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp DS1 Chan commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

COMPONENT Lp DS1 Chan Test (Test)

Groups	"GROUP Lp DS1 Chan Test OsiState (State)" "GROUP Lp DS1 Chan Test Setup (Setup)" "GROUP Lp DS1 Chan Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp DS1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp DS1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp DS1 Chan Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib LogicalProcessor

ATTRIBUTE Lp DS1 Chan Test adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib LogicalProcessor

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Lp DS1 Chan Test operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: LogicalProcessor

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp DS1 Chan Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: LogicalProcessor

Values: idle
active (activ)
busy

Default: idle

GROUP Lp DS1 Chan Test Setup (Setup)

Properties: Operational

Description:

This group contains all of the operational data for a *Test* component.

Mib: LogicalProcessor

ATTRIBUTE Lp DS1 Chan Test purpose (purpose)

Access Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib LogicalProcessor

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Lp DS1 Chan Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).

Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp DS1 Chan Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: LogicalProcessor

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp DS1 Chan Test frmPatternType (fpt)

Access: Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: LogicalProcessor

Values: ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default: ccitt32kBitPattern

ATTRIBUTE Lp DS1 Chan Test customizedPattern (cp)

Access: Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: LogicalProcessor

Values: Hex (H.0..H.ffffffff)

Units: Hex

Default: H.55555555

ATTRIBUTE Lp DS1 Chan Test dataStartDelay (dsd)

Access: Read and write

Description

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp DS1 Chan Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp DS1 Chan Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp DS1 Chan Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib LogicalProcessor

Values
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp DS1 Chan Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS1 Chan Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS1 Chan Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS1 Chan Test bitsRx

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp DS1 Chan Test bytesRx

Access Read only

Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Chan Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Chan Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Chan Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp DS1 Chan Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp DS1 Chan Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp DS1 Chan AtmCell (Cell)

Groups	"GROUP Lp DS1 Chan Cell Provisioned (Prov)" "GROUP Lp DS1 Chan Cell Operational (Oper)" "GROUP Lp DS1 Chan Cell Statistics (Stats)"
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.
Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete

GROUP Lp DS1 Chan Cell Provisioned (Prov)

Properties	Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib LogicalProcessor

ATTRIBUTE Lp DS1 Chan Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib LogicalProcessor

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Lp DS1 Chan Cell scrambleCellPayload (scramble)

Access Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib	LogicalProcessor
Values	off on
Default	No default

ATTRIBUTE Lp DS1 Chan Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	LogicalProcessor
Values	off on
Default	off

ATTRIBUTE Lp DS1 Chan Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	LogicalProcessor
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Lp DS1 Chan Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Lp DS1 Chan Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval*

attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..250000)

Default No default

ATTRIBUTE Lp DS1 Chan Cell lcdStateDelay (delay)

Access Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..50)

Units msec

Default No default

ATTRIBUTE Lp DS1 Chan Cell hecErrorIntervalLimit (hIntLimit)

Access Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..25)

Default 1

GROUP Lp DS1 Chan Cell Operational (Oper)

Properties Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib LogicalProcessor

ATTRIBUTE Lp DS1 Chan Cell lcdAlarm (lcd)

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x*

milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib: LogicalProcessor

Values: on
off

Default: off

GROUP Lp DS1 Chan Cell Statistics (Stats)

Properties: Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib: LogicalProcessor

ATTRIBUTE Lp DS1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS1 Chan Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp DS1 Chan Cell receiveCellUtilization (rxutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp DS1 Chan Cell transmitCellUtilization (txutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp DS1 Chan Cell correctableHeaderErrors (cErr)

Access Read only

Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp DS1 Chan TrunkConditioning (Tc)

Groups "GROUP Lp DS1 Chan Tc Provisioned (Prov)"
"GROUP Lp DS1 Chan Tc Operational (Op)"

Scope Device

Description *Lp/n Ds1/n Chan/n Tc*
Lp/n E1/n Chan/n Tc
Lp/n Ds3/n Ds1/n Chan/n Tc
Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc
Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc
Laps/n Vc4/n Vc12/k,l,m E1 Chan/n T*c*
Laps/n Sts/n Vt1dot5/l,m Ds1 Chan/n T*c*

The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service.

Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined.

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the

following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete

GROUP Lp DS1 Chan Tc Provisioned (Prov)

Properties	Provisioned
Description	This group contains all specific provisioning data for a *Tc* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan Tc replacementData (data)

Access	Read and write
Description	This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component

under fault conditions.

The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values:
DS1 MUX Out Of Service Code = 0x1A
E1 MUX Out Of Service Code = 0xFF

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***.

On the ***4pOC3ChSmIr*** and ***2pOC3ChSmIrVsp3*** cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.

Mib	LogicalProcessor
Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Lp DS1 Chan Tc signalOneDuration (duration)

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits. If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions. The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.
Mib	LogicalProcessor
Values	Decimal (0..60)
Units	seconds

Default	0

ATTRIBUTE Lp DS1 Chan Tc noServiceResponse (resp)

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.
Mib	LogicalProcessor
Values	autoConfigure tc ais noResponse
Default	autoConfigure

ATTRIBUTE Lp DS1 Chan Tc signalOne (sigOne)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.

Mib	LogicalProcessor
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Lp DS1 Chan Tc signalTwo (sigTwo)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	LogicalProcessor
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Lp DS1 Chan Tc Operational (Op)

Properties	Operational
Description	This group contains all specific operational data for a *Tc* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Chan Tc ingressConditioning (inCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI)
Mib	LogicalProcessor
Values	off on
Default	off

ATTRIBUTE Lp DS1 Chan Tc egressConditioning (egCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the PDH line. When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***.

Trunk conditioning is transmitted towards the PDH line under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

Mib: LogicalProcessor

Values: off
on

Default: off

COMPONENT Lp DS1 Test (Test)

Groups: "GROUP Lp DS1 Test OsiState (State)"
"GROUP Lp DS1 Test Setup (Setup)"
"GROUP Lp DS1 Test Results (Results)"

Scope: Application

Description

The *Test* component is configured to control a hardware facility test on a physical (*V*35, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.

Mib: LogicalProcessor

Common Verbs: Help
List
Display

VERB START Lp DS1 Test

Impact: Service

Description

This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp DS1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp DS1 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp DS1 Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp DS1 Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp DS1 Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp DS1 Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and

performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp DS1 Test frmSize (size)

Access: Read and write

Description

This attribute defines the size of the test data frames in number of

bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: LogicalProcessor

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp DS1 Test frmPatternType (fpt)

Access: Read and write

Description:
This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: LogicalProcessor

Values:
ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default: ccitt32kBitPattern

ATTRIBUTE Lp DS1 Test customizedPattern (cp)

Access: Read and write

Description:
This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: LogicalProcessor

Values: Hex (H.0..H.ffffffff)

Units	Hex
Default	H.55555555

ATTRIBUTE Lp DS1 Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp DS1 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp DS1 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp DS1 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp DS1 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed

to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp DS1 Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test erroredFrmRx

Access	Read only

Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp DS1 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp DS1 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp DS1 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp DS1 Dsp

Scope	Device
Description	*LogicalProcessor/n Ds1/0 Dsp* The *Dsp* component presents the status of the Digital Signal Processors (DSPs) present on a voice card. A voice card's *Dsp* component is created automatically whenever the parent DS1 component becomes active, and remains in

existence as long as the card remains operational. *Dsp* components cannot be added or deleted.

Mib LogicalProcessor

Common Verbs
Help
List
Display

COMPONENT Lp DS1 Audio

Scope Device

Description *LogicalProcessor/n Ds1/0 Audio*
The Audio component presents the audio status of all timeslots on a given DS1.
A voice card's *Audio* component is created automatically whenever the parent DS1 component becomes active, and remains in existence as long as the card remains operational. *Audio* components cannot be added or deleted.

Mib LogicalProcessor

Common Verbs
Help
List
Display

COMPONENT Lp E1

Instance Decimal (0..32)

Groups
"GROUP Lp E1 Provisioned (Prov)"
"GROUP Lp E1 CustomerIdentifierData (CidData)"
"GROUP Lp E1 AdminInfo (AdminInfo)"
"GROUP Lp E1 IfEntryProv (IfEntry)"
"GROUP Lp E1 OperationalStatus (OperStatus)"
"GROUP Lp E1 OsiState (State)"
"GROUP Lp E1 Operational (Oper)"
"GROUP Lp E1 E1Operational (E1Oper)"
"GROUP Lp E1 Statistics (Stats)"

Scope Device

Description

Lp/n E1/n
Lp/n Sdh/i Vc4/j Vc12/k,l,m E1
The *E1* component controls and monitors an E1 port or tributary on a Function Processor. The number of ports supported depends on the type of card, and is usually encoded in the *Shelf Card/n cardType*, for example 4pE1Aal1: 4 port. The lowest instance value is usually ***0***, except for the ***32pE1Aal*** card when it is ***1***.
No instance value is used when the E1 is a STM tributary.
Multi-Service cards have an instance range 0..31, except that instance values 30 and 31 are not available for an “ATM UNI port”. (An E1 “ATM UNI port” is an *E1* component with a single *Chan* whose *applicationFramerName* attribute is linked to an *AtmIf* component.)
The instance number of an *E1* “ATM UNI port” must not be the same as the instance number of an *IMA* group under the same *Lp*.

Mib

LogicalProcessor

Subcomponents

"COMPONENT Lp E1 Channel (Chan)"

Dyn. Subcomp.

"COMPONENT Lp E1 Test (Test)"
"COMPONENT Lp E1 Dsp"
"COMPONENT Lp E1 Audio"

Common Verbs

Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp E1 Provisioned (Prov)

Properties

Provisioned

Description

This group contains all of the provisioning data for an E1 component.

Mib

LogicalProcessor

ATTRIBUTE Lp E1 lineType (lineType)

Access	Read and write
Description	This attribute specifies the framing of the E1 line. When ***cas*** (channel associated signalling) is selected, timeslot 16 is reserved for multiframe signalling and only 30 timeslots are available for data. The signalling bits are not interpreted. When ***ccs*** (common channel signalling) is selected, timeslot 16 is not reserved for multiframe signalling and 31 timeslots are available for data. The signalling bits are not interpreted. When ***unframed*** is selected, a clear channel is defined whereby data from all timeslots including the framing data (in timeslot 0) and timeslot 16 are passed transparently. This value is valid only for AAL1 cards. For cell-based cards the ATM Forum specifies that timeslot 16 be reserved, leaving 30 timeslots available for data. The ***8pE1Atm*** and ***1pStm1ChSmIr*** cards support the ***ccs*** value only. The ***4pOC3ChSmIr*** card only supports the ***ccs*** and ***unframed*** values. For both these cards, the default value is ***ccs***. For all other cards, the default value is ***cas***.
Mib	LogicalProcessor
Values	ccs cas unframed
Default	No default

ATTRIBUTE Lp E1 clockingSource (clockingSource)

Access	Read and write
Description	This attribute defines the source of the transmit clock for the E1 line. When ***local*** is selected, the crystal on the port generates the clocking for the line. When ***line*** is selected, the port synchronizes to the clock from the

facility.

When ***module*** is selected, the ports clock synchronizes to the clock provided by the oscillator on the active CP.

When ***otherPort*** is selected, the port synchronizes to the port with a clocking source of ***line***.

When ***srtsMode*** is selected, the port transmit frequency depends on the SRTS (Synchronous Residual Time-Stamp) received over the ATM network. SRTS information is also generated sent over the ATM network.

When ***adaptiveMode*** is selected, the port transmit frequency continually adapts to match the egress data received from the ATM network.

A port with ***srtsMode*** or ***adaptiveMode*** must have a single *Chan* which may be linked only to an *Aal1Ces*.service with serviceType ***unstructured***

If the *NetworkSynchronization* component is present, the default value of this attribute is ***module***, otherwise it defaults to ***line***, except for the ***3pE1Atm*** card, which it defaults to ***local***.
On a ***3pE1Atm*** card all ports must have the same value, and be either ***local*** or ***module***.

otherPort is valid only on AAL1 cards. ***srtsMode*** is valid only on AAL1 and Multi-Service Access cards. ***adaptiveMode*** is valid only on Multi-Service Access cards.

On ***4E1Aal1*** cards either:

all four ports' *clockingSource* values must be ***local*** OR
all four ports' *clockingSource* values must be ***module*** OR
one port's *clockingSource* value must be ***line*** and the other three must be ***otherPort***. A port can only have ***srtsMode*** selected if the other ports are ***module*** or ***srtsMode***.

Mib LogicalProcessor

Values	local line module otherPort srtsMode adaptiveMode
Default	No default

ATTRIBUTE Lp E1 crc4Mode

Access	Read and write
Description	This attribute defines whether the CRC-4 checking and generation on the E1 line is enabled or disabled. The default CRC-4 mode is ***off*** except for the cell-based cards which default to ***on*** as per the ATM Forum.
Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp E1 sendRaiOnAis

Access	Read and write
Description	This attribute defines whether the Remote Alarm Indicator (RAI) will be sent when receiving an AIS alarm. The value is ***yes*** by default; it can be changed to ***no*** only for ports on J2MV cards.
Mib	LogicalProcessor
Values	no yes
Default	yes

ATTRIBUTE Lp E1 raiDeclareAlarmTime

Access	Read and write

Description

This attribute specifies the period of time that a Remote Alarm Indicator (RAI) must be present before declaring an RAI alarm. The value of ***auto*** sets the RAI declare time to the default value for E1 and E1C card types which do not have hardware support for RAI response. On E1C card types with hardware support, if the value of ***auto*** is set, RAI response is done according to the standards. If ***auto*** is set, the value of the *raiClearAlarmTime* attribute is ignored and ***auto*** is used. This attribute is for E1 and E1C card types only. For all other card types, the default value must be used.

Mib: LogicalProcessor

Values: Decimal (1..20000)
auto

Units: msec

Default: 100

ATTRIBUTE Lp E1 raiClearAlarmTime

Access: Read and write

Description

This attribute specifies the period of time that a Remote Alarm Indicator (RAI) has been absent before clearing an RAI alarm. The value of ***auto*** sets the RAI clear time to the default value for E1 and E1C card types which do not have hardware support for RAI response. On E1C card types with hardware support, if the value of ***auto*** is set, RAI response is done according to the standards. If ***auto*** is set, the value of the *raiDeclareAlarmTime* attribute is ignored and ***auto*** is used. This attribute is for E1 and E1C card types only. For all other card types, the default value must be used.

Mib: LogicalProcessor

Values: Decimal (1..20000)
auto

Units: msec

Default	100

ATTRIBUTE Lp E1 ssmE1SaNumber

Access	Read and write
Description	This attribute specifies which of the five available Sa bits (Sa4 to Sa8) recommended in ITU G.704 is to be used for Synchronization Status Messages (SSM). If set to ***none***, the transmission of SSM is disabled on this port.
Mib	LogicalProcessor
Values	Decimal (4..8) none
Default	none

GROUP Lp E1 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.

Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp E1 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp E1 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

GROUP Lp E1 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp E1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp E1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib	LogicalProcessor

ATTRIBUTE Lp E1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp E1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp E1 operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp E1 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp E1 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: LogicalProcessor

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp E1 proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been

initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: LogicalProcessor

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp E1 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: LogicalProcessor

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp E1 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: LogicalProcessor

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp E1 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp E1 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

GROUP Lp E1 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for a component in a digital hierarchy interface.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 losAlarm (losAlarm)

Access	Read only
Description	This attribute displays whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS

defects have been observed and accumulated for a period of 2 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). A LOS defect is detected upon observing all zeros for 150 ms (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: upon observing 175 +/- 75 pulse positions with no pulses of either positive or negative polarity). If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOS alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOS alarm state.
The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 seconds.

Mib: LogicalProcessor

Values: on
off

Default: off

ATTRIBUTE Lp E1 rxAisAlarm (rxAisAlarm)

Access: Read only

Description

This attribute displays whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period (for **8pDS1Atm** cards: when both an Out Of Frame condition exists and a 1's density of at least 99.9% is present for a time T, where 3 ms ≤ T ≤ 75 ms; for **8pE1Atm** cards: when both an Out Of Frame condition exists and fewer than three 0's have been received in 512 bit periods). If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state.

The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.

Mib LogicalProcessor

Values
on
off

Default off

ATTRIBUTE Lp E1 lofAlarm (lofAlarm)

Access Read only

Description

This attribute displays whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state
The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib LogicalProcessor

Values
on
off

Default off

ATTRIBUTE Lp E1 rxRaiAlarm (rxRaiAlarm)

Access Read only

Description

This attribute displays whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is

entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. For **3pDS1Atm**, and **8pDS1Atm** cards: alarm is declared immediately upon observing the defect is present, with no integration time. For **3pE1Atm**, and **8pE1Atm** cards: alarm state is entered when the RAI defect indicator has been observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds (for **3pDS1Atm**, and **8pDS1Atm** cards: alarm is cleared immediately upon observing the defect is absent, with no integration time).
The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

Mib: LogicalProcessor

Values: on
off

Default: off

ATTRIBUTE Lp E1 txAisAlarm (txAisAlarm)

Access: Read only

Description:
This attribute displays whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the port is in a locked state.

Mib: LogicalProcessor

Values: on
off

Default: off

ATTRIBUTE Lp E1 txRaiAlarm (txRaiAlarm)

Access: Read only

Description

This attribute displays whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the port detects a LOF alarm condition (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: RAI is transmitted when the port detects a LOS, LOF, or AIS condition).

Mib LogicalProcessor

Values on
off

Default off

GROUP Lp E1 E1Operational (E1Oper)

Properties Operational

Description

This group contains all of the operational data for a E1 component that are not defined in the DSCommonOp group.

Mib LogicalProcessor

ATTRIBUTE Lp E1 multifrmLofAlarm (multiLofAlarm)

Access Read only

Description

This attribute indicates whether a multiframe LOF (loss of frame) alarm state is entered. A multiframe LOF alarm state is entered when a multiframe LOF defect (2 consecutive errors in the multiframe alignment signal) has been detected and accumulated for 2.5 seconds +/- 0.5 seconds. If the multiframe LOF defects are intermittently occurring, the multiframe LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The alarm is cleared when the defect is not detected for 10 seconds +/- 0.5 seconds. When the multiframe LOF alarm is on, a multiframe RAI alarm indicator is transmitted on the line.

The ***8pE1Atm*** card does not support the multiframe LOF alarm.

Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp E1 rxMultifrmRaiAlarm (rxMultiRaiAlarm)

Access	Read only
Description	This attribute displays whether a multiframe RAI (remote alarm indicator) alarm state has been entered. A multiframe RAI alarm state is entered when a multiframe RAI alarm indicator (bit 6 of timeslot 16 in frame 0 is set to a one) is observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the multiframe RAI indicator is intermittently received, the multiframe RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The multiframe RAI alarm condition is cleared when the multiframe RAI alarm indication is not received for 10 seconds +/- 0.5 seconds. The multiframe RAI alarm is usually an indication that the far end facility is unable to gain multiframe synchronization. The ***8pE1Atm*** card does not support the multiframe RAI alarm.
Mib	LogicalProcessor
Values	on off
Default	off

ATTRIBUTE Lp E1 txMultifrmRaiAlarm (txMultiRaiAlarm)

Access	Read only
Description	This attribute displays whether a multiframe RAI (remote alarm indicator) alarm is being sent on the E1 line. This is transmitted when the E1 port detects a multiframe LOF condition.

The ***8pE1Atm*** card does not generate the multiframe RAI alarm.

Mib LogicalProcessor

Values on
off

Default off

ATTRIBUTE Lp E1 ssmE1Tx

Access Read only

Description

This attribute indicates the current Synchronization Status Message (SSM) transmitted on the E1 port within the Sa byte defined in ITU G.704.
This attribute is filtered when *ssmE1SaNumber* is set to ***none***.

Mib LogicalProcessor

Values Decimal (0..15)

Default No default

ATTRIBUTE Lp E1 multifrmCRC4LofAlarm (multiCRC4LofAlarm)

Access Read only

Description

This attribute indicates whether E1 CRC-4 multiframe LOF (loss of frame) alarm state is entered. A CRC-4 multiframe LOF alarm state is entered when a CRC-4 multiframe LOF defect (2 consecutive errors in the multiframe alignment signal) has been detected and accumulated for 2.5 seconds +/- 0.5 seconds. If the CRC-4 multiframe LOF defects are intermittently occurring, the CRC-4 multiframe LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The alarm is cleared when the defect is not detected for 10 seconds +/- 0.5 seconds.
The *multifrmCRC4LofAlarm* is not implemented for the ***E1***, ***1pE1V***, ***1pE1Mvp***, ***1pE1Mvpe***, ***4pE1Mvpe***, ***8pE1Atm***, ***E1C*** and ***4pE1Aal1*** cards.

Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp E1 Statistics (Stats)

Properties	Operational
Description	This group contains the common statistical data for a component in a digital hierarchy interface.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 runningTime (runningTime)

Access	Read only
Description	The number of seconds since the port component was activated.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E1 errorFreeSec (efs)

Access	Read only
Description	The number of seconds that the port has been in an error free state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E1 erroredSec (es)

Access	Read only

Description

An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E1 sevErroredSec (ses)

Access Read only

Description

A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E1 sevErroredFrmSec (sefs)

Access Read only

Description

A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E1 unavailSec

Access Read only

Description

The total number of seconds that the interface is in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E1 bpvErrors (bpvErrors)

Access Read only

Description

The current count of Bipolar Violations. A bipolar violation is an error in the alternate mark inversion pattern (AMI) on the line.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E1 crcErrors (crcErrors)

Access Read only

Description

If the interface is a DS1 line, it is the current count of CRC-6 errors. These will only be counted when the lineType is ESF. If the interface is an E1 line, it is the total number of CRC-4 errors. These will only be counted when crc4Mode is on.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E1 frmErrors (frmErrors)

Access Read only

Description	The current count of frame errors. A frame error is an error in the framing bits
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E1 losStateChanges (losChanges)

Access	Read only
Description	The total number of times that the line lost signal.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp E1 slipErrors (slipErrors)

Access	Read only
Description	The total number of times that the line experienced a controlled frame slip. This attribute is incremented for ports on the voice cards (for example the 1pDS1V and the 1pE1V function processors) only.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp E1 Channel (Chan)

Instance	Decimal (0..31)
Groups	"GROUP Lp E1 Chan Provisioned (Prov)" "GROUP Lp E1 Chan CustomerIdentifierData (CidData)" "GROUP Lp E1 Chan IfEntryProv (IfEntry)" "GROUP Lp E1 Chan OperationalStatus (OperStatus)"

	"GROUP Lp E1 Chan OsiState (State)" "GROUP Lp E1 Chan Operational (Oper)" "GROUP Lp E1 Chan AdminInfo (AdminInfo)"
Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port. Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots.
Mib	LogicalProcessor
Opt. Subcomp.	"COMPONENT Lp E1 Chan AtmCell (Cell)" "COMPONENT Lp E1 Chan TrunkConditioning (Tc)" "COMPONENT Lp E1 Chan FrameLinkMonitoring (Flm)"
Dyn. Subcomp.	"COMPONENT Lp E1 Chan Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp E1 Chan Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisional data for a *Channel* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan timeslots (ts)

Access	Read and write
Criticality	Component

Description

This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component.

For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.

Mib

LogicalProcessor

Set of

none
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

20
21
22
23
24
25
26
27
28
29
30
31

Default No default

ATTRIBUTE Lp E1 Chan timeslotDataRate (dataRate)

Access Read and write

Criticality Component

Description

This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute.

When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s.

When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s.

On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card.

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***.

One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.

Mib: LogicalProcessor

Values: 56k
doNotOverride

Default: doNotOverride

ATTRIBUTE Lp E1 Chan applicationFramerName

Access: Read and write

Description:

This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.

Mib: LogicalProcessor

Values: Link (Service, interfaceName)

Default: No default

GROUP Lp E1 Chan CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: LogicalProcessor

ATTRIBUTE Lp E1 Chan customerIdentifier (cid)

Access: Read and write

Description: This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute,

the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp E1 Chan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp E1 Chan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp E1 Chan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp E1 Chan OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp E1 Chan operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp E1 Chan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor

Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp E1 Chan availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp E1 Chan proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp E1 Chan controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp E1 Chan alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp E1 Chan standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: LogicalProcessor

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp E1 Chan unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: LogicalProcessor

Values	false true
Default	false

GROUP Lp E1 Chan Operational (Oper)

Properties	Operational
Description	This group contains all of the operational data for a *Channel* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan actualChannelSpeed

Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Lp E1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.

Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp E1 Chan commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

COMPONENT Lp E1 Chan Test (Test)

Groups	"GROUP Lp E1 Chan Test OsiState (State)" "GROUP Lp E1 Chan Test Setup (Setup)" "GROUP Lp E1 Chan Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp E1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp E1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp E1 Chan Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: LogicalProcessor

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp E1 Chan Test operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: LogicalProcessor

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp E1 Chan Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: LogicalProcessor

Values:
idle
active (activ)
busy

Default: idle

GROUP Lp E1 Chan Test Setup (Setup)

Properties: Operational

Description:

This group contains all of the operational data for a *Test* component.

Mib: LogicalProcessor

ATTRIBUTE Lp E1 Chan Test purpose (purpose)

Access: Read and write

Description:

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib: LogicalProcessor

Values: String (0..40, ASCII)

Default: No default

ATTRIBUTE Lp E1 Chan Test type (type)

Access: Read and write

Description:

This attribute is the type of test to be run. The available test types include the following:

card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default card

ATTRIBUTE Lp E1 Chan Test frmSize (size)

Access Read and write

Description

This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib LogicalProcessor

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Lp E1 Chan Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib LogicalProcessor

Values ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default ccitt32kBitPattern

ATTRIBUTE Lp E1 Chan Test customizedPattern (cp)

Access Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for

use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib LogicalProcessor

Values Hex (H.0..H.ffffffff)

Units Hex

Default H.55555555

ATTRIBUTE Lp E1 Chan Test dataStartDelay (dsd)

Access Read and write

Description

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib LogicalProcessor

Values Decimal (0..1814400)

Units seconds

Default 0

ATTRIBUTE Lp E1 Chan Test displayInterval (di)

Access Read and write

Description

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib LogicalProcessor

Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp E1 Chan Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp E1 Chan Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator unknown neverStarted

testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Lp E1 Chan Test bitsTx

Access: Read only

Description:

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: LogicalProcessor

Values: Long Integer

Default: No default

ATTRIBUTE Lp E1 Chan Test bytesTx

Access: Read only

Description:

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib: LogicalProcessor

Values: Long Integer

Default: No default

ATTRIBUTE Lp E1 Chan Test frmTx

Access: Read only

Description:

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Chan Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Chan Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Chan Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer

Default	No default

ATTRIBUTE Lp E1 Chan Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Chan Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp E1 Chan Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp E1 Chan Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp E1 Chan AtmCell (Cell)

Groups	"GROUP Lp E1 Chan Cell Provisioned (Prov)" "GROUP Lp E1 Chan Cell Operational (Oper)" "GROUP Lp E1 Chan Cell Statistics (Stats)"
Scope	Device

Description

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib LogicalProcessor

Common Verbs

Help
List
Display
Add
DELete

GROUP Lp E1 Chan Cell Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib LogicalProcessor

ATTRIBUTE Lp E1 Chan Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value

when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib LogicalProcessor

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Lp E1 Chan Cell scrambleCellPayload (scramble)

Access Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib LogicalProcessor

Values off
on

Default No default

ATTRIBUTE Lp E1 Chan Cell correctSingleBitHeaderErrors

Access Read and write

Description

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib: LogicalProcessor

Values: off
on

Default: off

ATTRIBUTE Lp E1 Chan Cell clearDelay (clear)

Access: Read and write

Description:

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: LogicalProcessor

Values: Decimal (0..60)

Units: minutes

Default: 0

ATTRIBUTE Lp E1 Chan Cell hecSampleInterval (hSample)

Access: Read and write

Description:

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of

consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (0..25)

Units seconds

Default 0

ATTRIBUTE Lp E1 Chan Cell hecErrorLimit (hLimit)

Access Read and write

Description

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..250000)

Default No default

ATTRIBUTE Lp E1 Chan Cell lcdStateDelay (delay)

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Lp E1 Chan Cell hecErrorIntervalLimit (hIntLimit)

Access	Read and write
Description	This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor

Values	Decimal (1..25)
Default	1

GROUP Lp E1 Chan Cell Operational (Oper)

Properties	Operational
Description	This group contains the common operational attributes for the *AtmCell* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan Cell lcdAlarm (lcd)

Access	Read only
Description	This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute. In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected. For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect. If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds. The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also

happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib LogicalProcessor

Values on
off

Default off

GROUP Lp E1 Chan Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib LogicalProcessor

ATTRIBUTE Lp E1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E1 Chan Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp E1 Chan Cell receiveCellUtilization (rxutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp E1 Chan Cell transmitCellUtilization (txutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp E1 Chan Cell correctableHeaderErrors (cErr)

Access Read only

Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp E1 Chan TrunkConditioning (Tc)

Groups "GROUP Lp E1 Chan Tc Provisioned (Prov)"
"GROUP Lp E1 Chan Tc Operational (Op)"

Scope	Device
Description	*Lp/n Ds1/n Chan/n Tc* *Lp/n E1/n Chan/n Tc* *Lp/n Ds3/n Ds1/n Chan/n Tc* *Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc* *Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc* *Laps/n* Vc4/n Vc12/k,l,m E1 Chan/n T*c* *Laps/n* Sts/n Vt1dot5/l,m Ds1 Chan/n T*c* The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service. Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined. When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI) When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions: bufferUnderflow (BU) AAL1 protocol errors. This component needs to be provisioned on 2pDs3cAal and

32pE1Aal FPs.

Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete

GROUP Lp E1 Chan Tc Provisioned (Prov)

Properties	Provisioned
Description	This group contains all specific provisioning data for a *Tc* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan Tc replacementData (data)

Access	Read and write
Description	This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions. The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values: DS1 MUX Out Of Service Code = 0x1A E1 MUX Out Of Service Code = 0xFF On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***. On the ***4pOC3ChSmIr*** and ***2pOC3ChSmIrVsp3*** cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.
Mib	LogicalProcessor
Values	Hex (H.0..H.ff)

Units	Hex
Default	No default

ATTRIBUTE Lp E1 Chan Tc signalOneDuration (duration)

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits. If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions. The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.
Mib	LogicalProcessor
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Lp E1 Chan Tc noServiceResponse (resp)

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.

Mib	LogicalProcessor
Values	autoConfigure tc ais noResponse
Default	autoConfigure

ATTRIBUTE Lp E1 Chan Tc signalOne (sigOne)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	LogicalProcessor
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Lp E1 Chan Tc signalTwo (sigTwo)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.

Mib	LogicalProcessor
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Lp E1 Chan Tc Operational (Op)

Properties	Operational
Description	This group contains all specific operational data for a *Tc* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan Tc ingressConditioning (inCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI)

Mib	LogicalProcessor
Values	off on
Default	off

ATTRIBUTE Lp E1 Chan Tc egressConditioning (egCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the PDH line. When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the PDH line under the following conditions: bufferUnderflow (BU) AAL1 protocol errors.
Mib	LogicalProcessor
Values	off on
Default	off

COMPONENT Lp E1 Chan FrameLinkMonitoring (Flm)

Groups	"GROUP Lp E1 Chan Flm Provisioned (Prov)" "GROUP Lp E1 Chan Flm Operational (Op)"
Scope	Device
Description	*Lp/n E1/n Chan/n FrameLinkMonitoring* This component provides a monitoring function specific to a

Frame Relay Channel on an E1 line. It combines the status of E1 channel-associated-signalling A-bits and HDLC frame defect.

Mib LogicalProcessor

Common Verbs
Help
List
Display
Add
DELete

GROUP Lp E1 Chan Flm Provisioned (Prov)

Properties Provisioned

Description

This group contains all specific provisioning data for an *Flm* component.

Mib LogicalProcessor

ATTRIBUTE Lp E1 Chan Flm aBitMonitoring (aBit)

Access Read and write

Description This attribute controls the monitoring of A-bit defects.

Mib LogicalProcessor

Values
disabled
enabled

Default enabled

ATTRIBUTE Lp E1 Chan Flm hdlcMonitoring (hdlc)

Access Read and write

Description This attribute controls the monitoring of HDLC defect.

Mib LogicalProcessor

Values
disabled
enabled

Default No default

GROUP Lp E1 Chan Flm Operational (Op)

Properties	Operational
Description	This group contains all specific operational data for an *Flm* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Chan Flm flmStatus (status)

Access	Read only
Description	This attribute indicates the status of a Frame Relay channel on an E1 line. By combining the E1 channel-associated-signalling (CAS) A-bits status, and HDLC defect, a single value indicates the likely cause of the failure. This mechanism assumes that the far end equipment loops back signaling A-bits for some or all of the timeslots in a channel. The A-bits in channel are transmitted as ‘0’. If they are all received as ‘0’, it is assumed that the E1 link is up in both directions. The presence of HDLC frames indicates that the service is connected. When A-bits and HDLC frames are correctly received, ***frameLinkUp*** is indicated. When neither are received, ***frameLinkDown*** is indicated. When HDLC frames are not receive but A-bits are not at fault, ***lossOfHdlc*** is indicated. When HDLC frames are received, but there is a fault in any of timeslot’s A-bits on a channel ***lossOfAbit*** is indicated.
Mib	LogicalProcessor
Values	notMonitoring frameLinkUp frameLinkDown lossOfHdlc lossOfAbit
Default	No default

COMPONENT Lp E1 Test (Test)

Groups	"GROUP Lp E1 Test OsiState (State)" "GROUP Lp E1 Test Setup (Setup)" "GROUP Lp E1 Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp E1 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp E1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp E1 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib LogicalProcessor

ATTRIBUTE Lp E1 Test adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib LogicalProcessor

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Lp E1 Test operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib LogicalProcessor

Values enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE Lp E1 Test usageState (osiUsage)

Access Read only

Description This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib LogicalProcessor

Values idle
active (activ)
busy

Default idle

GROUP Lp E1 Test Setup (Setup)

Properties Operational

Description

This group contains all of the operational data for a *Test* component.

Mib LogicalProcessor

ATTRIBUTE Lp E1 Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp E1 Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection

(bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp E1 Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: LogicalProcessor

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp E1 Test frmPatternType (fpt)

Access: Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: LogicalProcessor

Values: ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default: ccitt32kBitPattern

ATTRIBUTE Lp E1 Test customizedPattern (cp)

Access: Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: LogicalProcessor

Values: Hex (H.0..H.ffffffff)

Units: Hex

Default: H.55555555

ATTRIBUTE Lp E1 Test dataStartDelay (dsd)

Access: Read and write

Description

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp E1 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp E1 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp E1 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp E1 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test

pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib LogicalProcessor

Values testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp E1 Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp E1 Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Test bytesRx

Access	Read only

Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp E1 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp E1 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp E1 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp E1 Dsp

Scope	Device
Description	*LogicalProcessor/n E1/0 Dsp* The *Dsp* component presents the status of the Digital Signal Processors (DSPs) present on a voice card. A voice card's *Dsp* component is created automatically whenever the parent E1 component becomes active, and remains in existence as long as the E1 component exists. *Dsp* components cannot be added or deleted.
Mib	LogicalProcessor
Common Verbs	Help List Display

COMPONENT Lp E1 Audio

Scope	Device
Description	*LogicalProcessor/n E1/0 Audio* The *Audio* component presents the audio status of the channels on a voice card. A voice card's *Audio* component is created automatically whenever the parent E1 component becomes active, and remains

in existence as long as the E1 component exists. *Audio* components cannot be added or deleted.

Mib: LogicalProcessor

Common Verbs:
- Help
- List
- Display

COMPONENT Lp V35

Instance: Decimal (0..7)

Groups:
"GROUP Lp V35 Provisioned (Prov)"
"GROUP Lp V35 CustomerIdentifierData (CidData)"
"GROUP Lp V35 AdminInfo (AdminInfo)"
"GROUP Lp V35 IfEntryProv (IfEntry)"
"GROUP Lp V35 OperationalStatus (OperStatus)"
"GROUP Lp V35 OsiState (State)"
"GROUP Lp V35 Operational (Oper)"

Scope: Application

Description:

Lp/n V35/n

The *V35* component controls a V.35 interface.

Mib: LogicalProcessor

Dyn. Subcomp.: "COMPONENT Lp V35 Test (Test)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Lp V35 Provisioned (Prov)

Properties: Provisioned

Description

This group contains all specific provisioning data for a *V35* component.

Mib LogicalProcessor

ATTRIBUTE Lp V35 linkMode (mode)

Access Read and write

Description This attribute defines the intended gender of the V.35 interface. The actual gender of the interface is determined by the physical connection to the patch panel. If the hardware setup does not match this attribute, an alarm will be generated.

In ***dte*** mode, the RTS line signal is driven as specified by the attribute *readyLineState* when the interface passes its initial diagnostics. Then, the RTS line signal will be driven as specified in the attribute *dataTransferLineState* when the application is ready to transfer data. On the other hand, the input line signals (RFS, DSR, and DCD) are compared against those specified in the attributes *readyLineState* and *dataTransferLineState*. The application will be notified when the specified input line states are observed.

In ***dce*** mode, the *V35* component behaves similarly as when it is in ***dte*** mode. However, it will be driving the DCE line signals (RFS, DSR, and DCD) and monitoring the DTE line signal (RTS) as specified by the attributes *readyLineState* and *dataTransferLineState*.

Mib LogicalProcessor

Values dte
dce

Default dte

ATTRIBUTE Lp V35 readyLineState (rls)

Access Read and write

Description This attribute specifies the line signals originating from the V.35 interface that will always be turned on, provided the interface

	passes its diagnostics. This set of signals is generally required for maintaining the connection. Note that both DTE and DCE signals are specified in this attribute. The appropriate set of specified signals will be turned on or checked according to the *actualLinkMode*. See also *linkMode*.
Mib	LogicalProcessor
Set of	rfs dsr dcd rts
Default	(rfs, dsr, dcd, rts)

ATTRIBUTE Lp V35 dataTransferLineState (dtls)

Access	Read and write
Description	This attribute specifies the line signals required to indicate that the external equipment is in a good state (that is, data transfer can proceed). Note that both DTE and DCE signals are specified in this attribute. The appropriate set of specified signals will be turned on or checked according to the *actualLinkMode*. The value of this attribute must be a superset of that of the *readyLineState* attribute. See also *linkMode*.
Mib	LogicalProcessor
Set of	rfs dsr dcd rts
Default	(rfs, dsr, dcd, rts)

ATTRIBUTE Lp V35 lineStatusTimeOut (lsto)

Access	Read and write
Description	This attribute specifies the time that the line state must be stable (good or bad) before a line state change is declared.

Mib	LogicalProcessor
Values	Decimal (10..20000)
Units	msec
Default	1000

ATTRIBUTE Lp V35 lineSpeed (speed)

Access	Read and write
Description	This attribute specifies the speed of the line for source clocking. This attribute is ignored if the interface is not providing a clock. The clock rate is rounded up to the nearest available value. Note that the actual clock rates are available in the operational attributes *actualTxLineSpeed* and *actualRxLineSpeed*. The values allowed on a V.35 DCE interface are: 3840000, 2560000, 2048000, 1920000, 1536000, 1344000, 1280000, 1024000, 960000, 768000, 672000, 640000, 512000, 448000, 384000, 336000, 320000, 256000, 224000, 192000, 168000, 128000, 112000, 64000, 56000, 48000, 32000, 19200, 9600. Note that line speeds of 1024000 and 2048000 cannot be provisioned on cards that have ports provisioned at 3840000, 2560000, 1920000, 1280000, 960000, 640000 or 320000.
Mib	LogicalProcessor
Values	Decimal (9600..3840000)
Units	bit/s
Default	192000

ATTRIBUTE Lp V35 clockingSource (clockingSource)

Access	Read and write
Description	This attribute specifies the source of synchronization of the outgoing clocks. This attribute is only used when the *actualLinkMode* is ***dce***. If the value of the attribute is ***local***, the outgoing clocks are synchronized to a local oscillator on the FP.

If the value of the attribute is ***module***, the outgoing clocks are synchronized to the oscillator on the active CP.

Mib: LogicalProcessor

Values: local
module

Default: No default

ATTRIBUTE Lp V35 dteDataClockSource (rxClk)

Access: Read and write

Description: This attribute is only used when the *actualLinkMode* is ***dce***. It is specifies the clock to be used to recover the receive data. A DTE interface uses TSET(DCE) and RSET(DCE) for timing.

If the value of the attribute is ***fromDce***, the DCE uses the internally generated transmit clock to supply both TSET(DCE) and RSET(DCE).

If the value of the attribute is ***fromDte***, the DCE still uses the internally generated transmit clock to supply TSET(DCE), but the receive timing is derived from TSET(DTE) on the link.

The ***fromDte*** mode is recommended when the DTE is far away from the DCE interface. Note that TSET(DTE) is CCITT V.24 circuit 113; TSET(DCE) is CCITT V.24 circuit 114; and RSET(DCE) is CCITT V.24 circuit 115.

Mib: LogicalProcessor

Values: fromDce
fromDte

Default: fromDce

ATTRIBUTE Lp V35 applicationFramerName (framer)

Access: Read and write

Description: This attribute specifies the component name of a *Framer* which is associated with the *V35* component.

Mib	LogicalProcessor
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp V35 enableDynamicSpeed (dynamic)

Access	Read and write
Description	When set to ***yes***, this attribute specifies that the transmit link speed should be set to the calculated receiver link speed. This attribute can be set to ***yes*** only if the *linkMode* is ***dce*** and the *dteDataClockSource* is ***fromDte***.
Mib	LogicalProcessor
Values	yes no
Default	no

GROUP Lp V35 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the

operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.

Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp V35 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp V35 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)

Default	No default

GROUP Lp V35 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp V35 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp V35 OperationalStatus (OperStatus)

Properties	Operational

Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp V35 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp V35 operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp V35 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp V35 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: LogicalProcessor

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp V35 proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: LogicalProcessor

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp V35 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is

unlocked.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: LogicalProcessor

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp V35 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: LogicalProcessor

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp V35 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: LogicalProcessor

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp V35 unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: LogicalProcessor

Values:
false
true

Default: false

GROUP Lp V35 Operational (Oper)

Properties: Operational

Description:

This group contains all specific operational data for a *V35* component.

Mib: LogicalProcessor

ATTRIBUTE Lp V35 actualLinkMode

Access: Read only

Description	This attribute indicates the actual link mode defined by the hardware. Note that the hardware overrides the provisionable data. The interface behaves as a DCE or DTE according to the *actualLinkMode*.
Mib	LogicalProcessor
Values	dte dce
Default	No default

ATTRIBUTE Lp V35 lineState

Access	Read only
Description	This attribute indicates the current state of the interface signals.
Mib	LogicalProcessor
Set of	rfs dsr dcd rts
Default	No default

ATTRIBUTE Lp V35 actualTxLineSpeed

Access	Read only
Description	This attribute indicates the measured speed of the transmit clock.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Lp V35 actualRxLineSpeed

Access	Read only
Description	This attribute indicates the measured speed of the receive clock.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Lp V35 dataXferStateChanges

Access	Read only
Description	This attribute counts the line transitions from and to data transfer state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp V35 Test (Test)

Groups	"GROUP Lp V35 Test OsiState (State)" "GROUP Lp V35 Test Setup (Setup)" "GROUP Lp V35 Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp V35 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp V35 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp V35 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: LogicalProcessor

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp V35 Test operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: LogicalProcessor

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp V35 Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib LogicalProcessor

Values idle
active (activ)
busy

Default idle

GROUP Lp V35 Test Setup (Setup)

Properties Operational

Description

This group contains all of the operational data for a *Test* component.

Mib LogicalProcessor

ATTRIBUTE Lp V35 Test purpose (purpose)

Access Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib LogicalProcessor

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Lp V35 Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:

card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default	card

ATTRIBUTE Lp V35 Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	LogicalProcessor
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp V35 Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	LogicalProcessor
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp V35 Test customizedPattern (cp)

Access	Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib LogicalProcessor

Values Hex (H.0..H.ffffffff)

Units Hex

Default H.55555555

ATTRIBUTE Lp V35 Test dataStartDelay (dsd)

Access Read and write

Description

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib LogicalProcessor

Values Decimal (0..1814400)

Units seconds

Default 0

ATTRIBUTE Lp V35 Test displayInterval (di)

Access Read and write

Description

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp V35 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp V35 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp V35 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started.

a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator

unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp V35 Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp V35 Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp V35 Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

	This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp V35 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp V35 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp V35 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp V35 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp V35 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.

Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib LogicalProcessor

Values String (5, ASCII)

Default No default

ATTRIBUTE Lp V35 Test elapsedTime

Access Read only

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib LogicalProcessor

Values Decimal (0.00..30240.00)

Units minutes

Default 0.00

ATTRIBUTE Lp V35 Test timeRemaining

Access Read only

Description

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib LogicalProcessor

Values Decimal (0.00..30240.00)

Units minutes

Default 0.00

COMPONENT Lp X21

Instance Decimal (0..7)

Groups	"GROUP Lp X21 Provisioned (Prov)" "GROUP Lp X21 CustomerIdentifierData (CidData)" "GROUP Lp X21 AdminInfo (AdminInfo)" "GROUP Lp X21 IfEntryProv (IfEntry)" "GROUP Lp X21 OperationalStatus (OperStatus)" "GROUP Lp X21 OsiState (State)" "GROUP Lp X21 Operational (Oper)"
Scope	Application
Description	*Lp/n X21/n* The *X21* component controls a V.11 interface.
Mib	LogicalProcessor
Dyn. Subcomp.	"COMPONENT Lp X21 Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp X21 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all specific provisioning data for an *X21* component.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 linkMode (mode)

Access	Read and write
Description	This attribute specifies the intended gender of the *X21* component (V.11 interface). The actual gender of the interface is determined by the physical connection to the patch panel. If the hardware

setup does not match this attribute, an alarm will be generated.

In ***dte*** mode, the ***control*** line signal is driven as specified by the attribute *readyLineState* when the interface passes its initial diagnostics. Then, the ***control*** line signal will be driven as specified in the attribute *dataTransferLineState* when the application is ready to transfer data. On the other hand, the input line signal (***indication***) is compared against those specified in the attributes *readyLineState* and *dataTransferLineState*. The application will be notified when the specified line states are observed.

In ***dce*** mode, the *X21* component behaves similarly as when it is in ***dte*** mode. However, it will be driving the DCE line signal (***indication***) and monitoring the DTE line signal (***control***) as specified by the attributes *readyLineState* and *dataTransferLineState*.

Mib: LogicalProcessor

Values: dte
dce

Default: dte

ATTRIBUTE Lp X21 readyLineState (rls)

Access: Read and write

Description: This attribute specifies the line signals originating from the V.11 interface that will always be turned on, provided the interface passes its diagnostics. This set of signals is generally required to maintain the connection. Note that both DTE and DCE signals are specified in this attribute. The appropriate set of specified signals will be turned on or checked according to the *actualLinkMode*.

See also *linkMode*.

Mib: LogicalProcessor

Set of: indication
control

Default	(indication, control)

ATTRIBUTE Lp X21 dataTransferLineState (dtls)

Access	Read and write
Description	This attribute specifies the state of the line signals required to indicate that the external equipment is in a good state (that is, data transfer can proceed). Note that both DTE and DCE signals are specified in this attribute. The appropriate set of specified signals will be turned on or checked according to the *actualLinkMode*. The value of this attribute must be a superset of that of the *readyLineState* attribute . See also *linkMode*.
Mib	LogicalProcessor
Set of	indication control
Default	(indication, control)

ATTRIBUTE Lp X21 lineStatusTimeOut (lsto)

Access	Read and write
Description	This attribute specifies the duration for the line state to be stable (good or bad) before a state change is declared.
Mib	LogicalProcessor
Values	Decimal (10..20000)
Units	msec
Default	1000

ATTRIBUTE Lp X21 lineSpeed (speed)

Access	Read and write
Description	This attribute specifies the speed of the line for source clocking. This attribute is ignored if the interface is not providing a clock.

	The clock rate is rounded up to the nearest available value. Note that the actual clock rates are available in the operational attributes *actualTxLineSpeed* and *actualRxLineSpeed*. The allowed values on a V.11 DCE interface are: 7680000, 3840000, 2560000, 2048000, 1920000, 1536000, 1344000, 1280000, 1024000, 960000, 768000, 672000, 640000, 512000, 448000, 384000, 336000, 320000, 256000, 224000, 192000, 168000, 128000, 112000, 64000, 56000, 48000, 32000, 19200, 9600. Note that line speeds of 1024000 and 2048000 cannot be provisioned on cards that have ports provisioned at 3840000, 2560000, 1920000, 1280000, 960000, 640000 or 320000.
Mib	LogicalProcessor
Values	Decimal (9600..7680000)
Units	bit/s
Default	192000

ATTRIBUTE Lp X21 clockingSource (clockingSource)

Access	Read and write
Description	This attribute specifies the source of synchronization of the outgoing clocks. This attribute is only used when the *actualLinkMode* is ***dce***. If the value of the attribute is *local*, the outgoing clocks are synchronized to a local oscillator on the FP. If the value of the attribute is *module*, the outgoing clocks are synchronized to the oscillator on the active CP.
Mib	LogicalProcessor
Values	local module
Default	No default

ATTRIBUTE Lp X21 dteDataClockSource (rxClk)

Access	Read and write

Description	This attribute is only used when the *actualLinkMode* is ***dce***. It specifies the clock to be used to recover the receive data. Note that a V.11 DTE interface uses the S clock (see X.21 standard) for both receive data and transmit data timing. The DTE interface always loops the received S clock back to the DCE as the X clock (see X.21 standard). If the value of the attribute is ***fromDce***, the DCE V.11 interface uses the internally generated transmit clock as the S clock and for both receive and transmit data timing. The X clock is ignored. If the value of the attribute is ***fromDte***, the DCE still uses the internally generated transmit clock as the S clock and for transmit data timing, but the receive data timing is derived from the X clock. The ***fromDte*** mode is recommended when the DTE is far away from the DCE interface.
Mib	LogicalProcessor
Values	fromDce fromDte
Default	fromDce

ATTRIBUTE Lp X21 lineTerminationRequired (ltr)

Access	Read and write
Description	This attribute specifies whether termination is required for this interface. If the hardware setup does not match this attribute, an alarm is generated.
Mib	LogicalProcessor
Values	yes no
Default	yes

ATTRIBUTE Lp X21 applicationFramerName (framer)

Access	Read and write
Description	This attribute specifies the component name of a *Framer* which is associated with the *X21* component.
Mib	LogicalProcessor
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp X21 enableDynamicSpeed (dynamic)

Access	Read and write
Description	When set to ***yes***, this attribute specifies that the transmit link speed should be set to the calculated receiver link speed. This attribute can be set to ***yes*** only if the *linkMode* is ***dce*** and the *dteDataClockSource* is ***fromDte***.
Mib	LogicalProcessor
Values	yes no
Default	no

GROUP Lp X21 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute;

otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp X21 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp X21 commentText

Access	Read and write

Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

GROUP Lp X21 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp X21 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)

Default	No default

GROUP Lp X21 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp X21 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp X21 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

	The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp X21 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp X21 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: LogicalProcessor

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp X21 proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does

initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: LogicalProcessor

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp X21 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: LogicalProcessor

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp X21 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: LogicalProcessor

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp X21 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the

	role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp X21 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

GROUP Lp X21 Operational (Oper)

Properties	Operational
Description	This group contains all specific operational data for an *X21* component.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 actualLinkMode

Access	Read only
Description	This attribute indicates the actual link mode defined by the hardware. Note that the hardware overrides the provisionable data. The interface behaves as a DCE or DTE according to the *actualLinkMode*.
Mib	LogicalProcessor
Values	dte dce
Default	No default

ATTRIBUTE Lp X21 lineState

Access	Read only
Description	This attribute indicates the current state of the interface signals.
Mib	LogicalProcessor
Set of	indication control
Default	No default

ATTRIBUTE Lp X21 actualTxLineSpeed

Access	Read only
Description	This attribute indicates the measured speed of the transmit clock.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Lp X21 actualRxLineSpeed

Access	Read only
Description	This attribute indicates the measured speed of the receive clock.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Lp X21 dataXferStateChanges

Access	Read only
Description	This attribute counts the line transitions from and to data transfer state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp X21 Test (Test)

Groups	"GROUP Lp X21 Test OsiState (State)" "GROUP Lp X21 Test Setup (Setup)" "GROUP Lp X21 Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility

test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.

Mib LogicalProcessor

Common Verbs

Help
List
Display

VERB START Lp X21 Test

Impact Service

Description

This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp X21 Test

Impact Service

Description

This command stops a test running on the hardware component.

GROUP Lp X21 Test OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib LogicalProcessor

ATTRIBUTE Lp X21 Test adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp X21 Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)

Default	disabled

ATTRIBUTE Lp X21 Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp X21 Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)

Default No default

ATTRIBUTE Lp X21 Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib LogicalProcessor

Values
card
manual
localLoop
remoteLoop
externalLoop

payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default card

ATTRIBUTE Lp X21 Test frmSize (size)

Access Read and write

Description

This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib LogicalProcessor

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Lp X21 Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib LogicalProcessor

Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp X21 Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp X21 Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp X21 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp X21 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp X21 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp X21 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost***

are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib LogicalProcessor

Values
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp X21 Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp X21 Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib LogicalProcessor

Values	Long Integer
Default	No default

ATTRIBUTE Lp X21 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp X21 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp X21 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer

Default	No default

ATTRIBUTE Lp X21 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp X21 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp X21 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib LogicalProcessor

Values String (5, ASCII)

Default No default

ATTRIBUTE Lp X21 Test elapsedTime

Access Read only

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib LogicalProcessor

Values Decimal (0.00..30240.00)

Units minutes

Default 0.00

ATTRIBUTE Lp X21 Test timeRemaining

Access Read only

Description

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp TokenRing (Tr)

Instance	Decimal (0..5)
Groups	"GROUP Lp Tr CustomerIdentifierData (CidData)" "GROUP Lp Tr IfEntryProv (IfEntry)" "GROUP Lp Tr Provisioned (Prov)" "GROUP Lp Tr AdminInfo (AdminInfo)" "GROUP Lp Tr OsiState (State)" "GROUP Lp Tr OperationalStatus (OperStatus)" "GROUP Lp Tr Operational (Oper)" "GROUP Lp Tr Statistics (Stats)" "GROUP Lp Tr NcMacOperational (NcMacOper)"
Scope	Device
Description	Lp/n TokenRing/n This component defines an instance of a Token Ring interface attached to a ring. One instance of this component must be created for each hardware interface. Each interface must be provisioned prior to inserting into the ring.
Mib	LanDrivers
Subcomponents	"COMPONENT Lp Tr LanTest (Lt)" "COMPONENT Lp Tr Test"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Tr CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LanDrivers

ATTRIBUTE Lp Tr customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LanDrivers
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Tr IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LanDrivers

ATTRIBUTE Lp Tr ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

ATTRIBUTE Lp Tr ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LanDrivers
Values	Decimal (1..65535)
Default	No default

GROUP Lp Tr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Token Ring port.
Mib	LanDrivers

ATTRIBUTE Lp Tr ringSpeed (rspd)

Access	Read and write
Criticality	Process
Description	This attribute indicates the ring speed at the next insertion into the ring. Note that all the interfaces on a ring must operate at the same speed.
Mib	LanDrivers
Values	fourMegabit sixteenMegabit
Default	sixteenMegabit

ATTRIBUTE Lp Tr monitorParticipate (mntr)

Access	Read and write
Criticality	Process
Description	This attribute determines whether the interface will participate in the active monitor selection process.
Mib	LanDrivers
Values	true false
Default	false

ATTRIBUTE Lp Tr functionalAddress

Access	Read and write
Criticality	Process
Description	This attribute contains a bit mask of all token ring functional addresses for which this interface will accept frames. The address is displayed in canonical form.
Mib	LanDrivers

Values	String (6, Dashed Hex)
Default	03-00-fe-ff-8f-01

ATTRIBUTE Lp Tr nodeAddress (nAddr)

Access	Read and write
Criticality	Process
Description	This attribute identifies the primary, node specific address recognized by this interface. If an operator does not provision a MAC address, the interface will use a predefined, permanently assigned address. A valid node address must not be any of the following: a broadcast address, a group address, a functional address or a null address. A node address should be entered in the canonical form.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Lp Tr groupAddress (gAddr)

Access	Read and write
Criticality	Process
Description	This attribute identifies the group address for which this interface will accept frames. The address is displayed in canonical form. For a valid group address, the least significant bit of the first octet should be set to 1. Currently, only one group address can be provisioned for one interface.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	03-00-01-00-00-00

ATTRIBUTE Lp Tr productId

Access	Read and write
Criticality	Process
Description	This attribute is used to identify the host system attached to this interface. This information is transmitted in response to Request Station Attachment MAC frames.
Mib	LanDrivers
Values	String (0..18, ASCII)
Default	"LAN Token Ring"

ATTRIBUTE Lp Tr applicationFramerName (framer)

Access	Read and write
Criticality	Process
Description	This attribute contains the component name of a Framer which is associated with the *Tr* component.
Mib	LanDrivers
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp Tr AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LanDrivers

ATTRIBUTE Lp Tr vendor

Access	Read and write

Description	This is the name of the vendor supplying the facility.
Mib	LanDrivers
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Tr commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LanDrivers
Values	String (0..60, ASCII)
Default	No default

GROUP Lp Tr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LanDrivers

ATTRIBUTE Lp Tr adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: LanDrivers

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Tr operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: LanDrivers

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Tr usageState (osiUsage)

Access: Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LanDrivers
Values	idle active (activ) busy
Default	idle

GROUP Lp Tr OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LanDrivers

ATTRIBUTE Lp Tr snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

GROUP Lp Tr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the Token Ring component.
Mib	LanDrivers

ATTRIBUTE Lp Tr macAddress

Access	Read only
Description	This attribute contains the actual MAC address. The value is assigned by the system if *nodeAddress* is not provisioned. This address is displayed in canonical form. The non-canonical version of this address is indicated in *ncMacAddress*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Lp Tr ringState

Access	Read only
Description	This attribute contains the value of the current interface state with respect to entering or leaving the ring.
Mib	LanDrivers
Values	opened closed opening closing openFailure ringFailure
Default	ringFailure

ATTRIBUTE Lp Tr ringStatus

Access: Read only

Description:

This attribute contains the value of the current interface status after the station has entered the ring. The value is a sum of values, one for each currently applicable condition. Before the station attempts an open this attribute has the value of ***noStatus***.
noProblems = 0,
ringRecovery = 32,
singleStation = 64,
removeReceived = 256,
reserved = 512,
autoRemovalError = 1024,
lobeWireFault = 2048,
transmitBeacon = 4096,
softError = 8192,
hardError = 16384,
signalLoss = 32768,
noStatus = 131072

Mib: LanDrivers

Set of:
noProblems
ringRecovery
singleStation
removeReceived
reserved
autoRemovalError
lobeWireFault
transmitBeacon
softError
hardError
signalLoss
noStatus

Default: (noStatus)

ATTRIBUTE Lp Tr ringOpenStatus

Access: Read only

Description

This attribute indicates what happened the last time the station attempted to enter into the ring.

Mib LanDrivers

Values
noOpen
badParam
lobeFailed
signalLoss
insertionTimeout
ringFailed
beaconing
duplicateMac
requestFailed
removeReceived
open

Default noOpen

ATTRIBUTE Lp Tr upStream

Access Read only

Description

This attribute is the MAC address of the station's up-stream neighbor. This address is displayed in canonical form. The non-canonical version of this address is indicated in *ncUpStream.*

Mib LanDrivers

Values String (6, Dashed Hex)

Default 00-00-00-00-00-00

ATTRIBUTE Lp Tr chipSet

Access Read only

Description

This attribute identifies the hardware chip set in use by an interface.

Mib LanDrivers

Values	ibm16 titms380 titms380c16 titms380c26
Default	titms380c16

ATTRIBUTE Lp Tr lastTimeBeaconSent

Access	Read only
Description	This attribute indicates the time at which a Beacon frame was last transmitted on this interface.
Mib	LanDrivers
Values	Time (DHMS)
Default	No default

GROUP Lp Tr Statistics (Stats)

Properties	Operational
Description	This group contains statistical information for the Token Ring port.
Mib	LanDrivers

ATTRIBUTE Lp Tr lineErrors

Access	Read only
Description	This attribute contains the number of frames or tokens copied or repeated by a station where there is a non-data bit or a FCS error. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr burstErrors

Access	Read only
Description	This attribute contains the number of times the station detects the absence of transitions for five consecutive half-bit times. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr acErrors

Access	Read only
Description	This attribute contains the number of times that a station can not set the AC bits properly. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr abortTransErrors

Access	Read only
Description	This attribute contains the number of aborted frames. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr internalErrors

Access	Read only

Description

This attribute contains the number of internal errors. When the value of the counter soars up quickly, it indicates a potential hardware problem. This counter wraps around when the maximum value is reached.

Mib LanDrivers

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Tr lostFrameErrors

Access Read only

Description

This attribute contains the number of times a station is transmitting and its TRR timer expires. This counter wraps around when the maximum value is reached.

Mib LanDrivers

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Tr receiveCongestions

Access Read only

Description

This attribute contains the number of times a station is supposed to receive a frame but cannot due to lack of buffer space. This counter wraps around when the maximum value is reached.

Mib LanDrivers

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Tr frameCopiedErrors

Access Read only

Description

This attribute contains the number of times a station receives a frame addressed to its specific address and detects that the A bit is set. This counter wraps around when the maximum value is reached.

Mib LanDrivers

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Tr tokenErrors

Access Read only

Description

This attribute contains the number of times a station acting as the active monitor recognizes an error condition that needs a token transmission. This counter wraps around when the maximum value is reached.

Mib LanDrivers

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Tr softErrors

Access Read only

Description

This attribute contains the number of soft errors or the number of Report Error Mac frames the station has transmitted. This counter wraps around when the maximum value is reached.

Mib LanDrivers

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Tr hardErrors

Access Read only

Description

This attribute contains the number of times this interface has detected an immediately recoverable fatal error. This counter wraps around when the maximum value is reached.

Mib LanDrivers

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Tr signalLoss

Access Read only

Description

This attribute contains the number of times signal condition has been lost. This counter wraps around when the maximum value is reached.

Mib LanDrivers

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Tr transmitBeacons

Access Read only

Description

This attribute contains the number of beacon frames transmitted. This counter wraps around when the maximum value is reached.

Mib LanDrivers

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Tr ringRecoverys

Access Read only

Description

This attribute contains the number of times the ring has been

purged. This counter wraps around when the maximum value is reached.

Mib LanDrivers

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Tr lobeWires

Access Read only

Description

This attribute contains the number of times the interface has detected a short circuit in the lobe data path. This counter wraps around when the maximum value is reached.

Mib LanDrivers

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Tr removeRings

Access Read only

Description

This attribute contains the number of Remove Ring Station Mac frames received. This counter wraps around when the maximum value is reached.

Mib LanDrivers

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Tr singleStation

Access Read only

Description

This attribute contains the number of times the station has determined it is the only one on the ring. This is not necessarily

	an error. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Tr freqErrors

Access	Read only
Description	This attribute contains the number of signal frequency errors detected. This counter wraps around when the maximum value is reached.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	0

GROUP Lp Tr NcMacOperational (NcMacOper)

Properties	Operational
Description	This group contains the operational attributes of the *TokenRing* port component related to non-canonical MAC addresses.
Mib	LanDrivers

ATTRIBUTE Lp Tr ncMacAddress

Access	Read only
Description	This attribute contains the actual MAC address. The value is assigned by the system if *nodeAddress* is not provisioned. This address is displayed in non-canonical form. The canonical version of this address is indicated in *macAddress*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Tr ncUpStream

Access	Read only
Description	This attribute is the MAC address of the station's up-stream neighbor. This address is displayed in non-canonical form. The canonical version of this address is indicated in *upStream*.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

COMPONENT Lp Tr LanTest (Lt)

Groups	"GROUP Lp Tr Lt TestOp (Top)"
Scope	Device
Description	*Lp/n Fddi/n LanTest*, or *Lp/n Ethernet/n LanTest*, or *Lp/n TokenRing/n LanTest, or* *Lp/n IlsForwarder/n LanTest* The LanTest component is used to control testing on LAN interfaces. This includes LLC layer loopback, on-card loopback, SNMP required tests, and any testing to be done in the lab or manufacturing.
Mib	LanDrivers
Dyn. Subcomp.	"COMPONENT Lp Tr Lt FrameCompare (FrmCmp)" "COMPONENT Lp Tr Lt FrameCopy (FrmCpy)" "COMPONENT Lp Tr Lt PortConfig (PrtCfg)" "COMPONENT Lp Tr Lt FrameBuild (Fb)" "COMPONENT Lp Tr Lt Control (Cntl)"
Common Verbs	Help List Display

VERB Start Lp Tr Lt

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of LanTest.

VERB Stop Lp Tr Lt

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp Tr Lt

Impact	Service
Description	This verb is used to reset the LanTest component.

VERB Get Lp Tr Lt

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt

Impact	Passive
Description	This verb is used to display the list of arguments to an attribute.

GROUP Lp Tr Lt TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.

Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt FrameCompare (FrmCmp)

Groups	"GROUP Lp Tr Lt FrmCmp TestOp (Top)"
Scope	Device
Description	This component compares frames received from the hardware and emulator during testing.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt FrmCmp

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCompare component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt FrmCmp

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt FrmCmp TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt FrmCmp tData (td)

Access	Read and write

Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt FrameCopy (FrmCpy)

Groups	"GROUP Lp Tr Lt FrmCpy TestOp (Top)"
Scope	Device
Description	This component receives its input from FrameBuild and places it upon the hardware which sends it to the appropriate emulator.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt FrmCpy

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCopy component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt FrmCpy

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt FrmCpy TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt FrmCpy tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt PortConfig (PrtCfg)

Groups	"GROUP Lp Tr Lt PrtCfg TestOp (Top)"
Scope	Device
Description	This component controls the emulator and hardware to ensure frames output from each will match in FrameCompare.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt PrtCfg

Impact	Passive
Description	*This verb is used to get and display operational parameters for the LanTest PortConfig component. This includes attributes set using the Set verb.*

VERB Tlist Lp Tr Lt PrtCfg

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt PrtCfg TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.

Mib	LanDrivers

ATTRIBUTE Lp Tr Lt PrtCfg tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt FrameBuild (Fb)

Groups	"GROUP Lp Tr Lt Fb TestOp (Top)"
Scope	Device
Description	LanTest Framebuild This component controls the building of all frames built and sent by the LanTest component. Each component under FrameBuild builds a portion of a packet or frame.
Mib	LanDrivers
Dyn. Subcomp.	"COMPONENT Lp Tr Lt Fb TransmitInfo (TxInfo)" "COMPONENT Lp Tr Lt Fb FddiMac (MacFddi)" "COMPONENT Lp Tr Lt Fb EthernetMac (MacEnet)" "COMPONENT Lp Tr Lt Fb TokenRingMac (MacTr)" "COMPONENT Lp Tr Lt Fb DataField (Data)" "COMPONENT Lp Tr Lt Fb IpHeader (IpH)" "COMPONENT Lp Tr Lt Fb LlcHeader (Llch)" "COMPONENT Lp Tr Lt Fb AppleHeader (AppleH)" "COMPONENT Lp Tr Lt Fb IpxHeader (IpxH)"
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameBuild component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb TransmitInfo (TxInfo)

Groups	"GROUP Lp Tr Lt Fb TxInfo TestOp (Top)"
Scope	Device

Description	LanTest TransmitInfo This component builds a transmit header which is attached to all frames transmitted on LAN interfaces.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb TxInfo

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TransmitInfo component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb TxInfo

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb TxInfo TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb TxInfo tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb FddiMac (MacFddi)

Groups	"GROUP Lp Tr Lt Fb MacFddi TestOp (Top)"
Scope	Device
Description	LanTest FddiMac This component builds an FDDI MAC header which is attached to all FDDI frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb MacFddi

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FddiMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb MacFddi

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb MacFddi TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb MacFddi tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)

Default	No default

COMPONENT Lp Tr Lt Fb EthernetMac (MacEnet)

Groups	"GROUP Lp Tr Lt Fb MacEnet TestOp (Top)"
Scope	Device
Description	LanTest EthernetMac This component builds an Ethernet MAC header which is attached to all Ethernet frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb MacEnet

Impact	Passive
Description	This verb is used to get and display operational parameters LanTest EthernetMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb MacEnet

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb MacEnet TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb MacEnet tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.

Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb TokenRingMac (MacTr)

Groups	"GROUP Lp Tr Lt Fb MacTr TestOp (Top)"
Scope	Device
Description	LanTest TokenRingMac This component builds a Token Ring MAC header which is attached to all Token Ring frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb MacTr

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TokenRingMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb MacTr

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb MacTr TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb MacTr tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb DataField (Data)

Groups	"GROUP Lp Tr Lt Fb Data TestOp (Top)"
Scope	Device
Description	This component adds a data field to frame.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb Data

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest DataField component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb Data

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb Data TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb Data tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb IpHeader (IpH)

Groups	"GROUP Lp Tr Lt Fb IpH TestOp (Top)"
Scope	Device
Description	LanTest IpHeader This component adds an IP header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb IpH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest IpHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb IpH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb IpH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.

Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb IpH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb LlcHeader (Llch)

Groups	"GROUP Lp Tr Lt Fb Llch TestOp (Top)"
Scope	Device
Description	LanTest LlcHeader This component adds an LLC 802.2 or Ethernet header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb Llch

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest LlcHeader component. This includes attributes set using the SET verb.

VERB Tlist Lp Tr Lt Fb Llch

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb Llch TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb Llch tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb AppleHeader (AppleH)

Groups	"GROUP Lp Tr Lt Fb AppleH TestOp (Top)"
Scope	Device
Description	This component adds an AppleTalk header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb AppleH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest AppleHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb AppleH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb AppleH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb AppleH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Fb IpxHeader (IpxH)

Groups	"GROUP Lp Tr Lt Fb IpxH TestOp (Top)"
Scope	Device
Description	This component adds an IPX header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Fb IpxH

Impact	Passive
Description	This verb is used to get and display operational parameters forLanTest IpxHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Fb IpxH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Fb IpxH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Fb IpxH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Lt Control (Cntl)

Groups	"GROUP Lp Tr Lt Cntl TestOp (Top)"
Scope	Device
Description	LanTest Control This component controls the overall testing by telling the FrameBuild component to start and check the FrameCompare component to see if the test is complete.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Tr Lt Cntl

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest Control component. This includes attributes set using the Set verb.

VERB Tlist Lp Tr Lt Cntl

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Tr Lt Cntl TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Tr Lt Cntl tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Tr Test

Groups	"GROUP Lp Tr Test PortTestOp (PTO)" "GROUP Lp Tr Test Results (Results)"
Scope	Device
Description	*Lp/n Fddi/n Test*, or *Lp/n Ethernet/n Test*, or *Lp/n TokenRing/n Test, or* *Lp/n IlsForwarder/n Test*

	The Test component is used to do StartUp port test for LAN cards.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Start Lp Tr Test

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of Test.

VERB Stop Lp Tr Test

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp Tr Test

Impact	Service
Description	This verb is used to reset the Test component.

GROUP Lp Tr Test PortTestOp (PTO)

Properties	Operational
Description	This group contains the operational data for the *LanPortTest* component.
Mib	LanDrivers

ATTRIBUTE Lp Tr Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: card test sets up an internal loop on the board and runs a bit error rate test; manual test assumes the line is looped back externally and a bit error rate test is performed; localLoop test loops back the local modem and performs a bit

	error rate test; remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test; externalLoop test loops back the line to the far end; payloadLoop test only loops back the payload data received from the incoming line; Note that localLoop, remoteLoop and payloadLoop are not supported by all function processors.
Mib	LanDrivers
Values	onCard normal wrapA wrapB thruA thruB extWrapA extWrapB extThruA extThruB extWrapAB extWrapBA
Default	No default

ATTRIBUTE Lp Tr Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes.
Mib	LanDrivers
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp Tr Test duration (duration)

Access	Read and write
Description	This attribute specifies the duration of the test data transmission. In the case of an externalLoop, this is the time that the loop is in

	effect. Note that dataStartDelay does not apply to the externalLoop.
Mib	LanDrivers
Values	Decimal (1..30240)
Units	minutes
Default	1

GROUP Lp Tr Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the Test component.
Mib	LanDrivers

ATTRIBUTE Lp Tr Test elapsedTime

Access	Read only
Description	This attribute is the number of minutes elapsed since the test started for an externalLoop test. For a data test, this is the time since test data was first transmitted.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Tr Test timeRemaining

Access	Read only
Description	This attribute is the number of minutes remaining before the test is to be stopped according to the duration attribute.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes

Default	0

ATTRIBUTE Lp Tr Test causeOfTermination

Access	Read only
Description	This attribute records the reason the test is terminated.
Mib	LanDrivers
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning
Default	neverStarted

ATTRIBUTE Lp Tr Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Tr Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. This counter is not expected to reach its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Tr Test frmRx

Access	Read only

Description	This attribute counts the frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Tr Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Tr Test erroredFrmRx

Access	Read only
Description	This attribute counts the errored frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT Lp Sonet

Instance	Decimal (0..15)
Groups	"GROUP Lp Sonet Provisioned (Prov)" "GROUP Lp Sonet CustomerIdentifierData (CidData)" "GROUP Lp Sonet AdminInfo (AdminInfo)" "GROUP Lp Sonet IfEntryProv (IfEntry)"

	"GROUP Lp Sonet OperationalStatus (OperStatus)" "GROUP Lp Sonet OsiState (State)" "GROUP Lp Sonet Operational (Oper)" "GROUP Lp Sonet Statistics (Stats)"
Scope	Device
Description	*Lp/n Sonet/n* This component controls a port using the SONET hierarchy. In particular, it deals with SONET medium, section, and line layers. On a Nortel Networks Multiservice Switch 7400, a *Path* component can sometimes be automatically created under the *Sonet* component.
Mib	LogicalProcessor
Opt. Subcomp.	"COMPONENT Lp Sonet Path" "COMPONENT Lp Sonet Sts" "COMPONENT Lp Sonet OpticalModule (Om)"
Dyn. Subcomp.	"COMPONENT Lp Sonet Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Sonet Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for a *Sonet* or *Sdh* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet clockingSource

Access	Read and write

Description

This attribute defines the type of clocking source used for synchronizing the transmit clock: ***local*** means direct use of the local clock oscillator at its centre frequency; ***line*** means the use of a signal phase-locked to the incoming line rate; ***module*** means the use of a signal phase-locked to the CP reference clock.

When adding a *Sonet* or *Sdh* component, the *clockingSource* attribute is set to ***module*** if the *NetworkSynchronization* component has been added and is set to ***local*** otherwise.

Note that the multiport cell-based cards have one common clock source for each of the three ports when either the clocking source ***local*** or ***module*** is selected. For this reason, it is not allowed to have at the same time the *clockingSource* attribute set to ***local*** on one port and ***module*** on another port. Furthermore, the *clockingSource* attribute cannot be set to ***module*** if the *NetworkSynchronization* component has not been added.

Mib LogicalProcessor

Values
local
line
module

Default No default

ATTRIBUTE Lp Sonet lineAutomaticProtectionSwitch (laps)

Access Read and write

Criticality Process

Description

This attribute specifies the name of the *Laps* component. In the case of intra-card configurations, the specified *Laps* component is used to provide sparing of lines which use this port and its mate; in the case of inter-card configurations, the specified *Laps* component is used to provide sparing of lines only.

Mib LogicalProcessor

Values Link

Default No default

ATTRIBUTE Lp Sonet txSectionTrace

Access Read and write

Description

This attribute specifies the section identifier. The string must be constructed with 7-bit characters only. The section identifier is prefixed by a CRC byte and padded with null characters if necessary to form the 16-octet section trace message transmitted in byte J0 of 16 outgoing frames. At the remote end, the section trace is reassembled, the CRC is checked and the message is compared to the *expectedRxSectionTrace* attribute. If a mismatch is detected, an alarm is issued.

Usage guidelines for the section trace are found in clause 3 of the ITU G.831 standard which defines the Access Point Identifier format.

The functionality supported by this attribute is not available.

Mib LogicalProcessor

Values String (0..15, Extended ASCII)

Default ""

ATTRIBUTE Lp Sonet expectedRxSectionTrace

Access Read and write

Description

This attribute specifies the expected section trace identifier which is used to identify the fiber connected to the associated port. This attribute must match the corresponding *txSectionTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued.

The functionality supported by this attribute is not available.

Mib LogicalProcessor

Values String (0..15, Extended ASCII)

Default	""

ATTRIBUTE Lp Sonet s1RxDefault

Access	Read and write
Description	This attribute specifies the default S1 byte reported by the port when the received S1 byte is 0 (quality unknown). No default is applied when this attribute is set to ***none***.
Mib	LogicalProcessor
Values	Decimal (0..15) none
Default	none

ATTRIBUTE Lp Sonet s1TxOverride

Access	Read and write
Description	This attribute specifies the S1 byte transmitted on the port regardless of the Synchronization Status Message (SSM) value provided by the *NetworkSynchronization* component. Changes in SSM value from the *NetworkSynchronization* component are ignored when this attribute is set to a value other than ***none***.
Mib	LogicalProcessor
Values	Decimal (0..15) none
Default	none

ATTRIBUTE Lp Sonet s1RxOverride

Access	Read and write
Description	This attribute specifies the S1 byte value reported by the port regardless of the received value. Changes in S1 byte on the port are ignored when this attribute is set to a value other than ***none***.
Mib	LogicalProcessor

Values	Decimal (0..15) none
Default	none

ATTRIBUTE Lp Sonet lapsProtocol

Access	Read: Illegal Write: All
Description	This attribute stores the value of the *protocol* attribute provisioned under the *Laps* component. This hidden attribute is updated automatically via a check escape on *Laps* component.
Mib	LogicalProcessor
Values	Decimal (0..10) none
Default	none

ATTRIBUTE Lp Sonet sonetSdhOmType

Access	Read: Illegal Write: All
Description	This attribute stores the value of the *type* attribute provisioned under the *OpticalModule* component.This hidden attribute is updated automatically via the *OpticalModule* component check escape.
Mib	LogicalProcessor
Values	Decimal (1..256) none
Default	none

GROUP Lp Sonet CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib	LogicalProcessor

ATTRIBUTE Lp Sonet customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sonet AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet vendor

Access	Read and write

Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Sonet commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

GROUP Lp Sonet IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp Sonet ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sonet OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp Sonet OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sonet operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sonet usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Sonet availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to

place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Sonet proceduralStatus (osiProc)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sonet controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sonet alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Sonet standbyStatus (osiStby)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sonet unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib LogicalProcessor

Values false
true

Default false

GROUP Lp Sonet Operational (Oper)

Properties Operational

Description

This group contains the common operational data for a *Sonet* or *Sdh* component.

Mib LogicalProcessor

ATTRIBUTE Lp Sonet losAlarm (los)

Access Read only

Description

This attribute indicates whether a Loss Of Signal (LOS) alarm state has been entered. An LOS alarm state is entered when LOS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds, or if an LOS defect is present when the criteria for LOF failure declaration have been met. An LOS defect is declared when 20+/-3 us of all-zeros pattern is detected. The LOS defect is cleared when two valid framing words are detected and no Loss of Signal condition is detected during an interval of 20+/-3 us. If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *Sonet/Sdh* component goes into an operational state of *disabled* until the LOS alarm condition is cleared. The LOS alarm state is cleared after LOS defects have been absent for a period of 10 seconds +/- 0.5 seconds.
The *losAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Sonet lofAlarm (lof)

Access	Read only
Description	This attribute displays whether a Loss Of Frame (LOF) alarm state has been entered. An LOF alarm state is entered when LOF defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds, except when an LOS defect or failure is present. An LOF defect is detected when getting contiguous errored frame alignment for at least 3 msec. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The *Sonet/Sdh* component goes into an operational state of *disabled* until the LOF alarm condition is cleared. The condition is cleared when framing has been achieved for a period of 10 seconds +/- 0.5 seconds. The *lofAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.
Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Sonet rxAisAlarm (ais)

Access	Read only
Description	This attribute displays whether a Line Alarm Indication Signal (L-AIS) alarm state has been entered. An L-AIS alarm state is entered when L-AIS defects have been observed and accumulated

for a period of 2.5 seconds +/- 0.5 seconds. The L-AIS defect is the occurrence of the L-AIS signal in five contiguous STS (STM) frames (111 pattern in bits 6,7, and 8 of the K2 bytes). If the L-AIS defects are intermittently occurring, the L-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *Sonet/Sdh* component goes into an operational state of *disabled* until the L-AIS alarm condition is cleared. The condition is cleared after not detecting the L-AIS signal for a period of 10 seconds +/- 0.5 seconds.
The *rxAisAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib LogicalProcessor

Values on
off

Default No default

ATTRIBUTE Lp Sonet rxRfiAlarm (rfi)

Access Read only

Description

This attribute displays whether a Line Remote Failure Indication (LRFI) alarm state has been entered. An L-RFI alarm state is entered when Line Remote Failure Indication (L-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The L-RDI defect is the occurrence of the L-RDI signal in five contiguous valid STS (STM) frame (110 pattern in bits 6,7, and 8 of the K2 bytes). If the L-RDI defects are intermittently occurring, the L-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *Sonet/Sdh* component goes into an operational state of *disabled* until the L-RFI alarm condition is cleared. The condition is cleared after not detecting the L-RDI signal for a period of 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Sonet txAis

Access	Read only
Description	This attribute displays whether the Line Alarm Indication Signal (L-AIS) signal is being transmitted on the outgoing line. This signal is transmitted when the *Sonet/Sdh* is *locked* and left *offline*.
Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Sonet txRdi

Access	Read only
Description	This attribute displays whether the Line Remote Defect Indicator (L-RDI) signal is being transmitted over the OC-3 line. The L-RDI signal is transmitted upon the detection of the LOS, LOF or L-AIS defect. This attribute is always set to ***off*** when the component has been *locked* and left *offline*.
Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Sonet unusableTxClockRefAlarm (utcr)

Access	Read only

Description

This attribute displays whether an Unusable Transmit Clock Reference (UTCR) alarm state has been entered. A UTCR alarm state is entered when a Sonet/Sdh port provisioned to act as a transmit clock reference has received the code “do not use for synchronization” in the S1 byte (in the SONET/ SDH line overhead) for 2.5 +/- 0.5 seconds.
The condition is cleared after not detecting the “do not use for synchronization” code for a period of 10 +/- 0.5 seconds or when the port is no longer provisioned to act as a transmit clock reference.
A port is acting as a transmit clock reference if it is provisioned with a) a *clockingSource* of *line*, or b) it has been provisioned as a primaryReference, secondaryReference or tertiaryReference in the NetworkSynchronization component.
The *unusableTxClockRefAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values: on
off

Default: No default

ATTRIBUTE Lp Sonet s1Rx (s1R)

Access: Read only

Description

This attribute indicates the current S1 byte received on the port.

Mib: LogicalProcessor

Values: Decimal (0..15)

Default: No default

ATTRIBUTE Lp Sonet s1Tx (s1T)

Access: Read only

Description

This attribute indicates the current S1 byte transmitted on the port.

Mib	LogicalProcessor
Values	Decimal (0..15)
Default	No default

GROUP Lp Sonet Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for a *Sonet* or *Sdh* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet runningTime (time)

Access	Read only
Description	This attribute indicates the total number of seconds since the *Sonet/Sdh* component has been activated and been in unlocked state. All the other error counts that follow can be updated when this count is active.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet errorFreeSec (efs)

Access	Read only
Description	This attribute indicates the number of seconds that the *Sonet/Sdh* component has been in a near-end error free state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet sectCodeViolations (scv)

Access Read only

Description

This attribute indicates the total number of Section Code Violations (SCVs) detected. A SCV corresponds to section BIP-8 error. SCV counting is inhibited for second intervals where a Section Severely Errored Second (SSES) is counted. The count wraps at its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet sectErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of Section Errored Seconds (SESs) that have been counted. A SES is declared for second intervals containing one or more SCVs or one or more Loss Of Signal (LOS) or Severely Errored Frame (SEF) defects. A SEF defect is the occurrence of 4 contiguous errored STS or STM frame alignment words.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet sectSevErroredSec (sses)

Access Read only

Description

This attribute indicates the total number of Section Severely Errored Seconds (SSESs) that have been counted. A SSES is declared for second intervals containing more than *x* SCVs or one

or more LOS or SEF defects. The value of *x* is 16 for 155 Mbit/s interface.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet sectLosSec (sloss)

Access Read only

Description

This attribute indicates the total number of Section LOS Seconds (SLOSSs) that have been counted. A SLOSS is declared for second intervals containing one or more LOS defects.

Mib LogicalProcessor

Values Decimal (0..429496729)

Default 0

ATTRIBUTE Lp Sonet sectSevErroredFrmSec (ssefs)

Access Read only

Description

This attribute indicates the total number of Section Severely Errored Frame Seconds (SSEFSs) that have been counted. A SSEFS is declared for second intervals containing one or more SEF defects.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet sectFailures (sf)

Access Read only

Description

This attribute indicates the total number of times that a section failure (LOS or LOF failure) has been declared.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet lineCodeViolations (lcv)

Access	Read only
Description	This attribute indicates the total number of Line Code Violations (LCVs) detected. A LCV corresponds to a line BIP-24 errors. LCV counting is inhibited for second intervals where a Line Severely Errored Second (LSES) is counted. Counting of LCVs is also inhibited over second intervals where a Line Unavailable Second (LUAS) is counted. The count wraps when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet lineErroredSec (les)

Access	Read only
Description	This attribute indicates the total number of Line Errored Seconds (LESs) that have been counted. A LES is declared for second intervals containing one or more LCVs or one or more line AIS defects. Counting of LES is inhibited over second intervals where a LUAS is counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet lineSevErroredSec (lses)

Access	Read only

Description

This attribute indicates the total number of Line Severely Errored Seconds (LSESs) that have been counted. A LSES is declared for second intervals containing more than *x* LCVs or one or more L-AIS defects. The value of *x* is 32 for 155 Mbits/sec interface. Counting of LSES is inhibited over second intervals where a LUAS is counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet lineAisSec (laiss)

Access Read only

Description

This attribute indicates the total number of Line AIS Seconds (LAISSs) that have been counted. A LAISS is declared for second intervals containing one or more L-AIS defects. Counting of LAISS is inhibited over second intervals where a LUAS is counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet lineUnavailSec (luas)

Access Read only

Description

This attribute indicates the total number of one second intervals for which the STS line is unavailable. The STS line becomes unavailable at the onset of 10 consecutive LSESs. The 10 LSESs are included in the unavailable time. Once unavailable, the STS line becomes available at the onset of 10 contiguous seconds with no LSES. The 10 seconds with no LSES are excluded from the unavailable time. For second intervals where a Line Unavailable Second (LUAS) is counted, counting of LCV, LES, LSES and LAISS is inhibited.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet lineFailures (lf)

Access	Read only
Description	This attribute indicates the total number of times that a line failure (L-AIS failure) has been declared.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet farEndLineErrorFreeSec (felefs)

Access	Read only
Description	This attribute indicates the number of seconds that the *Sonet* or *Sdh* component has been in a far-end error free state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Lp Sonet farEndLineCodeViolations (felcv)

Access	Read only
Description	This attribute indicates the total number of line FEBE detected from the incoming line. The counting of line FEBE is inhibited for second intervals where a Far-End Line Severely Errored Second (FELSES) is counted. Counting of FELCVs is also inhibited over second intervals where a Far-End Line Unavailable

Second (FELUAS) is counted. The count wraps at its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet farEndLineErroredSec (feles)

Access Read only

Description

This attribute indicates the total number of Far-End Line Errored Seconds (FELESs) that have been counted. A FELES is declared for second intervals containing one or more Far-End Line CVs (FELCVs) or one or more L-RDI defects. Counting of FELES is inhibited over second intervals where a FELUAS is counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet farEndLineSevErroredSec (felses)

Access Read only

Description

This attribute indicates the total number of Far-End Line Severely Errored Seconds (FELSESs) that have been counted. A FELSES is declared for second intervals containing more than *x* FELCVs or one or more L-RDI defects. The value of *x* is 32 for 155 Mbit/s interface. Counting of FELSES is inhibited over second intervals where a FELUAS is counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet farEndLineAisSec (felaiss)

Access	Read only
Description	This attribute indicates the total number of Far-End Line AIS Seconds (FELAISSs) that have been counted. A FELAISS is declared for second intervals one or more L-RDI defects. Counting of FELAISS is inhibited over second intervals where a FELUAS is counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet farEndLineUnavailSec (feluas)

Access	Read only
Description	This attribute indicates the total number of one second intervals for which the STS far-end line is unavailable. The STS far-end line becomes unavailable at the onset of 10 consecutive FELSESs. The 10 FELSESs are included in the unavailable time. Once unavailable, the STS far-end line becomes available at the onset of 10 contiguous seconds with no FELSES. The 10 seconds with no FELSES are excluded from the unavailable time. For second intervals where a Far-End Line Unavailable Second (FELUAS) is counted, counting of FELCV, FELES, FELSES and FELAISS is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet farEndLineFailures (felf)

Access	Read only

Description	This attribute indicates the total number of times that a far-end line failure (L-RFI failure) has been declared.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sonet Path

Instance	Decimal (0..0)
Groups	"GROUP Lp Sonet Path Provisioned (Prov)" "GROUP Lp Sonet Path CustomerIdentifierData (CidData)" "GROUP Lp Sonet Path OsiState (State)" "GROUP Lp Sonet Path IfEntryProv (IfEntry)" "GROUP Lp Sonet Path OperationalStatus (OperStatus)" "GROUP Lp Sonet Path Operational (Oper)" "GROUP Lp Sonet Path Statistics (Stats)"
Scope	Device
Description	*Lp/n Sonet/n Path/0* *Lp/n Sdh/n Path/0* This component controls a path signal that is carried within a SONET or SDH signal. The *Path* component can only be added under a *Sonet* or *Sdh* component on a Nortel Networks Multiservice Switch 7400. The *Path* component exists only on the Nortel Networks Multiservice Switch 7400. The equivalent components on the Nortel Networks Multiservice Switch 15000 and 20000 are the *Sts* component under a *Sonet* component and the *Vc4* component under an *Sdh* component.

On the Nortel Networks Multiservice Switch 15000 and 20000 a *Path* component is not allowed under a *Sonet* or *Sdh* component.

Mib: LogicalProcessor

Subcomponents: "COMPONENT Lp Sonet Path AtmCell (Cell)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Lp Sonet Path Provisioned (Prov)

Properties: Provisioned

Description:

This group contains all of the provisioning data for the component.

Mib: LogicalProcessor

ATTRIBUTE Lp Sonet Path applicationFramerName (framer)

Access: Read only

Description:

This attribute defines which application is running on the path.

Mib: LogicalProcessor

Values: Link

Default: No default

GROUP Lp Sonet Path CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Path customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sonet Path OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Path adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sonet Path operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Sonet Path usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Sonet Path availabilityStatus (osiAvail)

Access: Read only

Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is

one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: LogicalProcessor

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp Sonet Path proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required

before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sonet Path controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: LogicalProcessor

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp Sonet Path alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: LogicalProcessor

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp Sonet Path standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and

containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: LogicalProcessor

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp Sonet Path unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: LogicalProcessor

Values:
false
true

Default: false

GROUP Lp Sonet Path IfEntryProv (IfEntry)

Properties: Provisioned

Description: This group contains the provisionable attributes for the ifEntry.

Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Path ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp Sonet Path ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sonet Path OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Path snmpOperStatus

Access	Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp Sonet Path Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Path lopAlarm (lop)

Access	Read only
Description	This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds.

The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: LogicalProcessor

Values: on
off

Default: No default

ATTRIBUTE Lp Sonet Path rxAisAlarm (ais)

Access: Read only

Description

This attribute displays whether a Path Alarm Indication Signal (P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: LogicalProcessor

Values: on
off

Default: No default

ATTRIBUTE Lp Sonet Path rxRfiAlarm (rfi)

Access Read only

Description

This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or STM frames (bit 5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib LogicalProcessor

Values on
off

Default No default

ATTRIBUTE Lp Sonet Path signalLabelMismatch (slm)

Access Read only

Description

This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have been entered.

A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/-

0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds.

A P-UNEQ failure condition is entered when P-UNEQ defects have been observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds.

The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: LogicalProcessor

Values: on
off

Default: No default

ATTRIBUTE Lp Sonet Path txAis

Access: Read only

Description

This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left

offline by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib LogicalProcessor

Values
on
off

Default No default

ATTRIBUTE Lp Sonet Path txRdi

Access Read only

Description

This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib LogicalProcessor

Values
on
off

Default No default

GROUP Lp Sonet Path Statistics (Stats)

Properties Operational

Description

This group contains the statistics data for the component.

Mib LogicalProcessor

ATTRIBUTE Lp Sonet Path pathErrorFreeSec (pefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a near-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path pathCodeViolations (pcv)

Access Read only

Description

This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path pathErroredSec (pes)

Access Read only

Description

This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path pathSevErroredSec (pses)

Access Read only

Description

This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than *x* PCVs or one or more LOP or path AIS defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path pathAisLopSec (pals)

Access Read only

Description

This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path pathUnavailSec (puas)

Access Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in

the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Path pathFailures (pf)

Access: Read only

Description

This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Path farEndPathErrorFreeSec (fepefs)

Access: Read only

Description

This attribute counts the one second intervals that the component has been in a far-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Path farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Path farEndPathErroredSec (fepes)

Access	Read only
Description	This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Path farEndPathSevErroredSec (fepses)

Access	Read only
Description	This attribute counts the Far-End Path Severely Errored Seconds

(FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than *x* FEPCVs or one or more P-RDI defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Path farEndPathAisLopSec (fepals)

Access: Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Path farEndPathUnavailSec (fepuas)

Access: Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared,

counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Path farEndPathFailures (fepf)

Access: Read only

Description

This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Lp Sonet Path AtmCell (Cell)

Groups: "GROUP Lp Sonet Path Cell Provisioned (Prov)"
"GROUP Lp Sonet Path Cell Operational (Oper)"
"GROUP Lp Sonet Path Cell Statistics (Stats)"

Scope: Device

Description

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell*

component appears under all port components running on ATM cards.

Mib LogicalProcessor

Common Verbs
Help
List
Display

GROUP Lp Sonet Path Cell Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib LogicalProcessor

ATTRIBUTE Lp Sonet Path Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib LogicalProcessor

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Lp Sonet Path Cell scrambleCellPayload (scramble)

Access Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib LogicalProcessor

Values off
on

Default No default

ATTRIBUTE Lp Sonet Path Cell correctSingleBitHeaderErrors

Access Read and write

Description

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib LogicalProcessor

Values off
on

Default off

ATTRIBUTE Lp Sonet Path Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Lp Sonet Path Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..25)

Units	seconds
Default	0

ATTRIBUTE Lp Sonet Path Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Lp Sonet Path Cell lcdStateDelay (delay)

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component. This attribute is supported only on 3pDS1Atm, 8pDS1Atm,

3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..50)

Units msec

Default No default

ATTRIBUTE Lp Sonet Path Cell hecErrorIntervalLimit (hIntLimit)

Access Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..25)

Default 1

GROUP Lp Sonet Path Cell Operational (Oper)

Properties Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib LogicalProcessor

ATTRIBUTE Lp Sonet Path Cell lcdAlarm (lcd)

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib LogicalProcessor

Values on
off

Default off

GROUP Lp Sonet Path Cell Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Path Cell uncorrectableHeaderErrors (ucErr)

Access	Read only
Description	This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Path Cell sevErroredSec (ses)

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3*

component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Path Cell receiveCellUtilization (rxutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp Sonet Path Cell transmitCellUtilization (txutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen

when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib: LogicalProcessor

Values: Decimal (0..100)

Units: %

Default: 0

ATTRIBUTE Lp Sonet Path Cell correctableHeaderErrors (cErr)

Access: Read only

Description:

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Lp Sonet Test (Test)

Groups:
"GROUP Lp Sonet Test OsiState (State)"
"GROUP Lp Sonet Test Setup (Setup)"
"GROUP Lp Sonet Test Results (Results)"

Scope: Application

Description:

The *Test* component is configured to control a hardware facility

test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.

Mib LogicalProcessor

Common Verbs
Help
List
Display

VERB START Lp Sonet Test

Impact Service

Description

This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Sonet Test

Impact Service

Description

This command stops a test running on the hardware component.

GROUP Lp Sonet Test OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib LogicalProcessor

ATTRIBUTE Lp Sonet Test adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: LogicalProcessor

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Sonet Test operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: LogicalProcessor

Values:
enabled (ena)
disabled (dis)

Default	disabled

ATTRIBUTE Lp Sonet Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp Sonet Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)

Default No default

ATTRIBUTE Lp Sonet Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib LogicalProcessor

Values
card
manual
localLoop
remoteLoop
externalLoop

payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default card

ATTRIBUTE Lp Sonet Test frmSize (size)

Access Read and write

Description

This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib LogicalProcessor

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Lp Sonet Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib LogicalProcessor

Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Sonet Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Sonet Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Sonet Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Sonet Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Sonet Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sonet Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost***

are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib LogicalProcessor

Values
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp Sonet Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib LogicalProcessor

Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer

Default	No default

ATTRIBUTE Lp Sonet Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib: LogicalProcessor

Values: String (5, ASCII)

Default: No default

ATTRIBUTE Lp Sonet Test elapsedTime

Access: Read only

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib: LogicalProcessor

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 0.00

ATTRIBUTE Lp Sonet Test timeRemaining

Access: Read only

Description

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp Sonet Sts

Instance	Decimal (0..11)
Groups	"GROUP Lp Sonet Sts Provisioned (Prov)" "GROUP Lp Sonet Sts CustomerIdentifierData (CidData)" "GROUP Lp Sonet Sts OsiState (State)" "GROUP Lp Sonet Sts IfEntryProv (IfEntry)" "GROUP Lp Sonet Sts OperationalStatus (OperStatus)" "GROUP Lp Sonet Sts Operational (Oper)" "GROUP Lp Sonet Sts Statistics (Stats)" "GROUP Lp Sonet Sts Provisioned (Prov)"
Scope	Device
Description	*Lp/n Sonet/n Sts/n* *Laps/n Sts/n* *Pbg/n Sts/n* This component controls a path signal that is carried within a SONET signal. The instance number of the *Sts* component must be 0 for components on cards that do not support channelization.

On FPs supporting channelization. the Sts index indicates the sub-channel within the main optical payload.

Mib: SonetSdh

Opt. Subcomp.: "COMPONENT Lp Sonet Sts AtmCell (Cell)"
"COMPONENT Lp Sonet Sts Vt1dot5"

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp Sonet Sts Provisioned (Prov)

Properties: Provisioned

Description:
This group contains all of the provisioning data for the component.

Mib: SonetSdh

ATTRIBUTE Lp Sonet Sts applicationFramerName (framer)

Access: Read and write

Description:
This attribute defines which application is running on the path.

Mib: SonetSdh

Values: Link

Default: No default

GROUP Lp Sonet Sts CustomerIdentifierData (CidData)

Properties: Provisioned

Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	SonetSdh
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sonet Sts OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific

	information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sonet Sts operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Sonet Sts usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Sonet Sts availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: SonetSdh

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp Sonet Sts proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	SonetSdh
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sonet Sts controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: SonetSdh

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp Sonet Sts alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently

being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: SonetSdh

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp Sonet Sts standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	SonetSdh
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sonet Sts unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	SonetSdh
Values	false true
Default	false

GROUP Lp Sonet Sts IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

ATTRIBUTE Lp Sonet Sts ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sonet Sts OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sonet Sts Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts lopAlarm (lop)

Access	Read only
Description	This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds.

The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: SonetSdh

Values: on
off

Default: No default

ATTRIBUTE Lp Sonet Sts rxAisAlarm (ais)

Access: Read only

Description

This attribute displays whether a Path Alarm Indication Signal (P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: SonetSdh

Values
on
off

Default
No default

ATTRIBUTE Lp Sonet Sts rxRfiAlarm (rfi)

Access
Read only

Description

This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or STM frames (bit 5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib
SonetSdh

Values
on
off

Default
No default

ATTRIBUTE Lp Sonet Sts signalLabelMismatch (slm)

Access
Read only

Description

This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have

been entered.

A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds.

A P-UNEQ failure condition is entered when P-UNEQ defects have been observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds.

The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib	SonetSdh
Values	on off
Default	No default

ATTRIBUTE Lp Sonet Sts txAis

Access	Read only

Description

This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sonet Sts txRdi

Access Read only

Description

This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib SonetSdh

Values on
off

Default No default

GROUP Lp Sonet Sts Statistics (Stats)

Properties Operational

Description

This group contains the statistics data for the component.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts pathErrorFreeSec (pefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a near-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts pathCodeViolations (pcv)

Access Read only

Description

This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts pathErroredSec (pes)

Access Read only

Description

This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts pathSevErroredSec (pses)

Access	Read only
Description	This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than *x* PCVs or one or more LOP or path AIS defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts pathAisLopSec (pals)

Access	Read only
Description	This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts pathUnavailSec (puas)

Access	Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Sts pathFailures (pf)

Access: Read only

Description

This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Sts farEndPathErrorFreeSec (fepefs)

Access: Read only

Description

This attribute counts the one second intervals that the component has been in a far-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts farEndPathErroredSec (fepes)

Access	Read only
Description	This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts farEndPathSevErroredSec (fepses)

Access	Read only
Description	This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than *x* FEPCVs or one or more P-RDI defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts farEndPathAisLopSec (fepals)

Access	Read only
Description	This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts farEndPathUnavailSec (fepuas)

Access	Read only
Description	This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable,

the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts farEndPathFailures (fepf)

Access	Read only
Description	This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

GROUP Lp Sonet Sts Provisioned (ChProv)

Properties	Provisioned
Description	This group contains the provisioning data for *Sts* components provisioned under *Sonet* components that support channelization..
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts txPathTrace

Access	Read and write
Description	This attribute specifies the high order path identifier. The string must be constructed with 7-bit characters only. The path identifier is padded by null characters if necessary to form a 64-octet path

trace message transmitted in byte J1 of 64 outgoing SONET frames. At the remote end, the path trace is reassembled, and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected, an alarm is issued.

The functionality supported by this attribute is not available.

Mib	SonetSdh
Values	String (0..64, ASCII)
Default	""

ATTRIBUTE Lp Sonet Sts expectedRxPathTrace

Access	Read and write
Description	This attribute specifies the expected path trace identifier which is used to identify the high order path. This attribute must match the corresponding *txPathTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. The functionality supported by this attribute is not available.
Mib	SonetSdh
Values	String (0..64, ASCII)
Default	""

ATTRIBUTE Lp Sonet Sts concatNumber

Access	Read and write
Criticality	Process
Description	This attribute specifies the STS concatenation level for the *Sts* component on channelized cards. It must be set to a concatenation level supported by the FP upon which the *Sts* is defined, except for non-channelized cards, in which case it must be set to 0. For example, a value of 1 in this attribute would represent STS-1 concatenation, while a value of 3 would represent STS-3c, a value of 12 would represent STS-12c, and so forth. *Sts* channelization to the tributary level is supported only if this attribute is set to 1.

Mib	SonetSdh
Values	Decimal (0; 1; 3; 12; 48)
Default	No default

COMPONENT Lp Sonet Sts AtmCell (Cell)

Groups	"GROUP Lp Sonet Sts Cell Provisioned (Prov)" "GROUP Lp Sonet Sts Cell Operational (Oper)" "GROUP Lp Sonet Sts Cell Statistics (Stats)"
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.
Mib	SonetSdh
Common Verbs	Help List Display Add DELete

GROUP Lp Sonet Sts Cell Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the *AtmCell* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Cell alarmActDelay (act)

Access	Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib: SonetSdh

Values: Decimal (0..2000)

Units: msec

Default: No default

ATTRIBUTE Lp Sonet Sts Cell scrambleCellPayload (scramble)

Access: Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib: SonetSdh

Values: off
on

Default: No default

ATTRIBUTE Lp Sonet Sts Cell correctSingleBitHeaderErrors

Access: Read and write

Description

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib: SonetSdh

Values: off
on

Default: off

ATTRIBUTE Lp Sonet Sts Cell clearDelay (clear)

Access: Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (0..60)

Units: minutes

Default: 0

ATTRIBUTE Lp Sonet Sts Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	SonetSdh
Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Lp Sonet Sts Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm,

3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Lp Sonet Sts Cell lcdStateDelay (delay)

Access: Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (1..50)

Units: msec

Default: No default

ATTRIBUTE Lp Sonet Sts Cell hecErrorIntervalLimit (hIntLimit)

Access: Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row

(the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (1..25)

Default: 1

GROUP Lp Sonet Sts Cell Operational (Oper)

Properties: Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib: SonetSdh

ATTRIBUTE Lp Sonet Sts Cell lcdAlarm (lcd)

Access: Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.

If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib SonetSdh

Values on
off

Default off

GROUP Lp Sonet Sts Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An

OCD defect terminates when six consecutive correct HECs have been detected.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Sts Cell sevErroredSec (ses)

Access: Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Sts Cell receiveCellUtilization (rxutil)

Access: Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization

is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib SonetSdh

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp Sonet Sts Cell transmitCellUtilization (txutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib SonetSdh

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp Sonet Sts Cell correctableHeaderErrors (cErr)

Access Read only

Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An

	OCD defect terminates when six consecutive correct HECs have been detected
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sonet Sts Vt1dot5

Instance	l [Decimal (1..7)] m [Decimal (1..4)]
Groups	"GROUP Lp Sonet Sts Vt1dot5 CustomerIdentifierData (CidData)" "GROUP Lp Sonet Sts Vt1dot5 OsiState (State)" "GROUP Lp Sonet Sts Vt1dot5 IfEntryProv (IfEntry)" "GROUP Lp Sonet Sts Vt1dot5 OperationalStatus (OperStatus)" "GROUP Lp Sonet Sts Vt1dot5 Operational (Oper)" "GROUP Lp Sonet Sts Vt1dot5 Statistics (Stats)"
Scope	Device
Description	*Lp/n Sonet/n Sts/k Vt1dot5/l,m* *Laps/n Sts/k Vt1dot5/l,m* This component represents the *Vt1.5* low order path signal that is carried within a SONET signal.
Mib	SonetSdh
Opt. Subcomp.	"COMPONENT Lp Sonet Sts Vt1dot5 DS1"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Sonet Sts Vt1dot5 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	SonetSdh
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sonet Sts Vt1dot5 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific

information and the valid state combinations, refer to the appropriate NTP.

Mib: SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Sonet Sts Vt1dot5 operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Sonet Sts Vt1dot5 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Sonet Sts Vt1dot5 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***. The value ***degraded*** indicates the service provided by the

component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: SonetSdh

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	SonetSdh
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: SonetSdh

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: SonetSdh

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: SonetSdh

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp Sonet Sts Vt1dot5 unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: SonetSdh

Values:
false
true

Default: false

GROUP Lp Sonet Sts Vt1dot5 IfEntryProv (IfEntry)

Properties: Provisioned

Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

ATTRIBUTE Lp Sonet Sts Vt1dot5 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sonet Sts Vt1dot5 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sonet Sts Vt1dot5 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 rxAisAlarm

Access	Read only
Description	This attribute indicates whether a Tributary Unit Alarm Indication Signal (TU-AIS) alarm state has been entered. A TU-AIS alarm state is entered when TU-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-AIS defect occurs when three consecutive TU pointers are in the all 1's state. This alarm is cleared after no TU-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
Mib	SonetSdh
Values	on off
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 rxRdiAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Remote Defect Indicator (LP-RDI) alarm state has been entered. An LP-RDI alarm state is entered when LP-RDI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RDI defect occurs when RDI conditions are detected in five consecutive frames. This alarm is cleared after no LP-RDI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 rxRfiAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Remote Failure Indicator (LP-RFI) alarm state has been entered. An LP-RFI alarm state is entered when LP-RFI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RFI defect occurs when a RFI condition is detected. This alarm is cleared after no LP-RFI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 unequippedAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Unequipped

(LP-UNEQ) alarm state has been entered. An LP-UNEQ alarm state is entered when LP-UNEQ defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-UNEQ defect occurs when an unequipped condition is detected for five consecutive multi frames. This alarm is cleared after no LP-UNEQ defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: SonetSdh

Values: on
off

Default: No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 traceIdMismatchAlarm

Access: Read only

Description:

This attribute indicates whether a Low Order Path Trace Identification Mismatch (LP-TIM) alarm state has been entered. An LP-TIM alarm state is entered when LP-TIM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-TIM defect occurs when a TIM condition is detected. This alarm is cleared after no LP-TIM defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: SonetSdh

Values: on
off

Default: No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 lopAlarm

Access: Read only

Description:

This attribute indicates whether a Tributary Unit Loss of Pointer (TU-LOP) alarm state has been entered. An TU-LOP alarm state is entered when TU-LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-LOP defect occurs when eight consecutive invalid pointer values

or eight consecutive New Data Flag (NDF) pointers are detected. This alarm is cleared after no TU-LOP defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: SonetSdh

Values: on
off

Default: No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 txAis

Access: Read only

Description:

This attribute indicates whether the Low order Path Alarm Indication Signal (LP-AIS) is being transmitted on the low order path. The LP-AIS signal is transmitted when the component *adminState* is *locked* or *operationalState* is *disabled* and *availabilityStatus* is *dependency.*

Mib: SonetSdh

Values: on
off

Default: No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 txRdi

Access: Read only

Description:

This attribute indicates whether the Low Order Path Remote Defect Indication (LP-RDI) is being transmitted on the low order path. The LP-RDI signal is transmitted upon detection of TU-LOP, TU-AIS, LP-TIM or LP-UNEQ. The value is *off* when the component *adminState* is *locked* or *operationalState* is *disabled* and *availabilityStatus* is *dependency.*

Mib: SonetSdh

Values: on
off

Default	No default

GROUP Lp Sonet Sts Vt1dot5 Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 pathErrorFreeSec (pefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a near-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 pathCodeViolations (pcv)

Access	Read only
Description	This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 pathErroredSec (pes)

Access: Read only

Description:

This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 pathSevErroredSec (pses)

Access: Read only

Description:

This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than *x* PCVs or one or more LOP or path AIS defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 pathAisLopSec (pals)

Access: Read only

Description:

This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 pathUnavailSec (puas)

Access Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 pathFailures (pf)

Access Read only

Description

This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 farEndPathErrorFreeSec (fepefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a far-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 farEndPathCodeViolations (fepcv)

Access Read only

Description

This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 farEndPathErroredSec (fepes)

Access Read only

Description

This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more

path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than *x* FEPCVs or one or more P-RDI defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 farEndPathUnavailSec (fepuas)

Access Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 farEndPathFailures (fepf)

Access Read only

Description

This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp Sonet Sts Vt1dot5 DS1

Groups "GROUP Lp Sonet Sts Vt1dot5 DS1 Provisioned (Prov)"
"GROUP Lp Sonet Sts Vt1dot5 DS1 CustomerIdentifierData (CidData)"

"GROUP Lp Sonet Sts Vt1dot5 DS1 AdminInfo (AdminInfo)"
"GROUP Lp Sonet Sts Vt1dot5 DS1 IfEntryProv (IfEntry)"
"GROUP Lp Sonet Sts Vt1dot5 DS1 OperationalStatus (OperStatus)"
"GROUP Lp Sonet Sts Vt1dot5 DS1 OsiState (State)"
"GROUP Lp Sonet Sts Vt1dot5 DS1 Operational (Oper)"
"GROUP Lp Sonet Sts Vt1dot5 DS1 Statistics (Stats)"

Scope: Application

Description: *Lp/n DS3/n DS1/n*
The *DS1* component controls and monitors a DS1 tributary of a channelized DS3 port on a Function Processor that supports channelization of a DS3.

Mib: SonetSdh

Subcomponents: "COMPONENT Lp Sonet Sts Vt1dot5 DS1 Channel (Chan)"

Dyn. Subcomp.: "COMPONENT Lp Sonet Sts Vt1dot5 DS1 Test (Test)"

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp Sonet Sts Vt1dot5 DS1 Provisioned (Prov)

Properties: Provisioned

Description:
This group contains all of the provisioning data for a *DS1* component.

Mib: SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 lineType (lineType)

Access: Read and write

Description:
This attribute defines the framing of the DS1 tributary.

d4 defines a framing pattern of 12 frames per multiframe.
esf defines a framing pattern of 24 frames per multiframe.
d4Cas defines a framing pattern of 12 frames per multiframe with channel associated signalling.
esfCas defines a framing pattern of 24 frames per multiframe with channel associated signalling.
unframed defines an unknown framing pattern for clear channels.

For the ***4pDS3ChAtm*** card, only ***d4*** and ***esf*** framing patterns are permitted.

The ***4pDS3ChAal1*** card supports the ***d4*** and ***esf*** framing patterns, as well as ***unframed***.

Mib: SonetSdh

Values:
d4
esf
d4Cas
esfCas
unframed

Default: esf

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 zeroCoding (zeroCoding)

Access: Read and write

Criticality: Component

Description

This attribute defines the zero encoding on the DS1 tributary.
bit7Stuffing sets bit 7 of every timeslot to a one to guarantee ones's density. This reduces the available bandwidth of the channel by 1/8.
none does no zero encoding, it does not change any value of the bits in the timeslot. The value ***none*** is compatible with any zero coding scheme which transports all 8 data bits in a timeslot (this would include both ***ami*** and ***b8zs*** values of the *DS1 zeroCoding* attribute).

Mib: SonetSdh

Values
bit7Stuffing
none

Default
none

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 clockingSource (clockingSource)

Access
Read and write

Description

This attribute specifies the source of the transmit clock for the DS1 tributary.
When the clocking source is ***local***, the crystal on the port generates the clocking for the DS1 tributary.
When the clocking source is ***line***, the port synchronizes to the clock from the DS1 tributary.
When the clocking source is ***module***, the port's clock synchronizes to the clock provided by the oscillator on the active CP.
When the clocking source is ***sameAsDs3***, the Ds1 port's clock synchronizes to the same clock source as that of its parent Ds3 port.

On a ***1pDS3C*** card, if the *NetworkSynchronization (NS)* component is present, the default value of this attribute will be ***module***; otherwise it will be ***line***.

On a ***2pDS3cAal*** card, the only valid values are ***local*** and ***module***. If the *NS* component is present, the default value of this attribute will be ***module***; otherwise it will be ***local***.

On the ***4pDS3Ch***, ***4pDS3ChAtm***, and ***4pDS3ChAal1*** cards, the only valid value is ***sameAsDs3***. This is because a DS1 must have the same clocking source as its parent DS3.

Mib
SonetSdh

Values
local
line
module
sameAsDs3

Default
No default

GROUP Lp Sonet Sts Vt1dot5 DS1 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	SonetSdh
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sonet Sts Vt1dot5 DS1 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.

Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	SonetSdh
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	SonetSdh
Values	String (0..60, ASCII)
Default	No default

GROUP Lp Sonet Sts Vt1dot5 DS1 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh

Values	up down testing
Default	up

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sonet Sts Vt1dot5 DS1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sonet Sts Vt1dot5 DS1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	SonetSdh
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	SonetSdh
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)

Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	SonetSdh
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 alarmStatus (osiAlarm)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	SonetSdh
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 standbyStatus (osiStby)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	SonetSdh
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib SonetSdh

Values false
true

Default false

GROUP Lp Sonet Sts Vt1dot5 DS1 Operational (Oper)

Properties Operational

Description

This group contains the common operational data for a component in a digital hierarchy interface.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 rxAisAlarm (rxAisAlarm)

Access Read only

Description

This attribute indicates whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds
+/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period. If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** for the duration of an AIS alarm state.
The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default off

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 lofAlarm (lofAlarm)

Access Read only

Description

This attribute indicates whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (2 out of 5 framing bits in error) have been detected for 3 seconds +/- 0.5 seconds. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state
The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default off

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 rxRaiAlarm (rxRaiAlarm)

Access Read only

Description

This attribute indicates whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds. The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

Mib SonetSdh

Values
on
off

Default
off

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 txAisAlarm (txAisAlarm)

Access
Read only

Description
This attribute indicates whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the tributary is in a locked state.

Mib
SonetSdh

Values
on
off

Default
off

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 txRaiAlarm (txRaiAlarm)

Access
Read only

Description
This attribute indicates whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the tributary detects a LOF alarm condition.

Mib
SonetSdh

Values
on
off

Default
off

GROUP Lp Sonet Sts Vt1dot5 DS1 Statistics (Stats)

Properties
Operational

Description
This group contains the common statistical data for a component in a digital hierarchy interface.

Mib
SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 runningTime (runningTime)

Access	Read only
Description	This attribute counts the number of seconds since the tributary was activated.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 errorFreeSec (efs)

Access	Read only
Description	This attribute counts the number of seconds that the tributary has been in an error free state.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 erroredSec (es)

Access	Read only
Description	This attribute counts the number of errored seconds the tributary has counted since it was activated. An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 sevErroredSec (ses)

Access	Read only

Description

This attribute counts the number of severely errored seconds the tributary has counted since it was activated. A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 sevErroredFrmSec (sefs)

Access Read only

Description

This attribute counts the number of severely errored framing seconds the tributary has counted since it was activated A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 unavailSec

Access Read only

Description

This attribute counts the total number of seconds that the tributary has been in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 crcErrors (crcErrors)

Access	Read only
Description	This attribute counts the total number of CRC-6 errors. These will only be counted when the *lineType* is ***esf***.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 frmErrors (frmErrors)

Access	Read only
Description	This attribute counts the total number of frame errors. A frame error is an error in the framing bits.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 slipErrors (slipErrors)

Access	Read only
Description	The total number of times that the line experienced a controlled frame slip.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sonet Sts Vt1dot5 DS1 Channel (Chan)

Instance	Decimal (0..23)
Groups	"GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Provisioned (Prov)" "GROUP Lp Sonet Sts Vt1dot5 DS1 Chan CustomerIdentifierData (CidData)" "GROUP Lp Sonet Sts Vt1dot5 DS1 Chan IfEntryProv (IfEntry)"

	"GROUP Lp Sonet Sts Vt1dot5 DS1 Chan OperationalStatus (OperStatus)" "GROUP Lp Sonet Sts Vt1dot5 DS1 Chan OsiState (State)" "GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Operational (Oper)" "GROUP Lp Sonet Sts Vt1dot5 DS1 Chan AdminInfo (AdminInfo)"
Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port. Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots. Similarly, the ***1pDS3C*** card type only allows one channel per port, and this is automatically provisioned with all available timeslots.
Mib	SonetSdh
Opt. Subcomp.	"COMPONENT Lp Sonet Sts Vt1dot5 DS1 Chan AtmCell (Cell)" "COMPONENT Lp Sonet Sts Vt1dot5 DS1 Chan TrunkConditioning (Tc)"
Dyn. Subcomp.	"COMPONENT Lp Sonet Sts Vt1dot5 DS1 Chan Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisional data for a *Channel* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan timeslots (ts)

Access	Read and write
Criticality	Component
Description	This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component. For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.
Mib	SonetSdh
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

20
21
22
23
24
25
26
27
28
29
30
31

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan timeslotDataRate (dataRate)

Access Read and write

Criticality Component

Description

This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute.

When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s.

When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s.

On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card.

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***.

One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.

Mib: SonetSdh

Values: 56k
doNotOverride

Default: doNotOverride

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan applicationFramerName

Access: Read and write

Description:

This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.

Mib: SonetSdh

Values: Link (Service, interfaceName)

Default: No default

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan customerIdentifier (cid)

Access: Read and write

Description: This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-

level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	SonetSdh
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values

and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib SonetSdh

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan operationalState (osiOper)

Access Read only

Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh

Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	SonetSdh
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	SonetSdh
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan controlStatus (osiCntrl)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	SonetSdh
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the

attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: SonetSdh

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is

present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	SonetSdh
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	SonetSdh
Values	false true

Default	false

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Operational (Oper)

Properties	Operational
Description	This group contains all of the operational data for a *Channel* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan actualChannelSpeed

Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	SonetSdh
Values	String (0..20, ASCII)

Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	SonetSdh
Values	String (0..60, ASCII)
Default	No default

COMPONENT Lp Sonet Sts Vt1dot5 DS1 Chan Test (Test)

Groups	"GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Test OsiState (State)" "GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Test Setup (Setup)" "GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V*35, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	SonetSdh
Common Verbs	Help List Display

VERB START Lp Sonet Sts Vt1dot5 DS1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Sonet Sts Vt1dot5 DS1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	SonetSdh

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	SonetSdh
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	SonetSdh

Values
idle
active (activ)
busy

Default
idle

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Test Setup (Setup)

Properties
Operational

Description
This group contains all of the operational data for a *Test* component.

Mib
SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test purpose (purpose)

Access
Read and write

Description
This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib
SonetSdh

Values
String (0..40, ASCII)

Default
No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test type (type)

Access
Read and write

Description
This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.

payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: SonetSdh

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test frmSize (size)

Access: Read and write

Description

This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also

ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib SonetSdh

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib SonetSdh

Values ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default ccitt32kBitPattern

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test customizedPattern (cp)

Access Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib SonetSdh

Values Hex (H.0..H.ffffffff)

Units Hex

Default	H.55555555

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	SonetSdh
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	SonetSdh
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test duration

Access	Read and write

Description

This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.

Mib SonetSdh

Values Decimal (0.00..30240.00)

Units minutes

Default 1.00

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Test Results (Results)

Properties Operational

Description

This group contains all the statistics related attributes of the *Test* component.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test causeOfTermination

Access Read only

Description This attribute indicates either the status of the test or the cause of the test's termination:

a value of ***neverStarted*** indicates that the test has not yet been started.

a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a

loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	SonetSdh
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test bitsTx

Access	Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test bitsRx

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test bytesRx

Access Read only

Description

This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test frmRx

Access Read only

Description This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test erroredFrmRx

Access Read only

Description This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame.

For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test bitErrorRate

Access Read only

Description

This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib SonetSdh

Values String (5, ASCII)

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test elapsedTime

Access Read only

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib SonetSdh

Values Decimal (0.00..30240.00)

Units minutes

Default 0.00

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Test timeRemaining

Access Read only

Description

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib SonetSdh

Values Decimal (0.00..30240.00)

Units minutes

Default 0.00

COMPONENT Lp Sonet Sts Vt1dot5 DS1 Chan AtmCell (Cell)

Groups "GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Cell Provisioned (Prov)"
"GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Cell Operational (Oper)"
"GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Cell Statistics (Stats)"

Scope Device

Description

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell*

component appears under all port components running on ATM cards.

Mib SonetSdh

Common Verbs

Help
List
Display
Add
DELete

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Cell Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib SonetSdh

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell scrambleCellPayload (scramble)

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	SonetSdh
Values	off on
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	SonetSdh
Values	off on
Default	off

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	SonetSdh
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	SonetSdh

Values	Decimal (0..25)
Units	seconds
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	SonetSdh
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell lcdStateDelay (delay)

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.

This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (1..50)

Units: msec

Default: No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell hecErrorIntervalLimit (hIntLimit)

Access: Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (1..25)

Default: 1

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Cell Operational (Oper)

Properties: Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell lcdAlarm (lcd)

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib SonetSdh

Values on
off

Default off

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3*

component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell receiveCellUtilization (rxutil)

Access: Read only

Description:

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib: SonetSdh

Values: Decimal (0..100)

Units: %

Default: 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell transmitCellUtilization (txutil)

Access: Read only

Description:

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen

when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib: SonetSdh

Values: Decimal (0..100)

Units: %

Default: 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Cell correctableHeaderErrors (cErr)

Access: Read only

Description:

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Lp Sonet Sts Vt1dot5 DS1 Chan TrunkConditioning (Tc)

Groups: "GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Tc Provisioned (Prov)"
"GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Tc Operational (Op)"

Scope: Device

Description:

Lp/n Ds1/n Chan/n Tc
Lp/n E1/n Chan/n Tc
Lp/n Ds3/n Ds1/n Chan/n Tc
Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc
Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc
Laps/n Vc4/n Vc12/k,l,m E1 Chan/n T*c*
Laps/n Sts/n Vt1dot5/l,m Ds1 Chan/n T*c*

The *Tc* component is used to provision and monitor trunk

conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service.

Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined.

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib	SonetSdh
Common Verbs	Help List Display Add DELete

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Tc Provisioned (Prov)

Properties	Provisioned
Description	This group contains all specific provisioning data for a *Tc* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc replacementData (data)

Access	Read and write
Description	This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions. The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values: DS1 MUX Out Of Service Code = 0x1A E1 MUX Out Of Service Code = 0xFF On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***. On the ***4pOC3ChSmIr*** and ***2pOC3ChSmIrVsp3*** cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.
Mib	SonetSdh
Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc signalOneDuration (duration)

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits.

If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions.

The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.

Mib	SonetSdh
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc noServiceResponse (resp)

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction. A value of ***autoConfigure*** will result in TC being transmitted for all card types.
Mib	SonetSdh
Values	autoConfigure tc ais noResponse
Default	autoConfigure

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc signalOne (sigOne)

Access	Read and write

Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	SonetSdh
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc signalTwo (sigTwo)

Access	Read and write
Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	SonetSdh
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Lp Sonet Sts Vt1dot5 DS1 Chan Tc Operational (Op)

Properties	Operational
Description	This group contains all specific operational data for a *Tc* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc ingressConditioning (inCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI)
Mib	SonetSdh
Values	off on
Default	off

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Chan Tc egressConditioning (egCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the PDH line.

When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.***

When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***.

Trunk conditioning is transmitted towards the PDH line under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

Mib: SonetSdh

Values: off
on

Default: off

COMPONENT Lp Sonet Sts Vt1dot5 DS1 Test (Test)

Groups: "GROUP Lp Sonet Sts Vt1dot5 DS1 Test OsiState (State)"
"GROUP Lp Sonet Sts Vt1dot5 DS1 Test Setup (Setup)"
"GROUP Lp Sonet Sts Vt1dot5 DS1 Test Results (Results)"

Scope: Application

Description

The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.

Mib: SonetSdh

Common Verbs:
Help
List
Display

VERB START Lp Sonet Sts Vt1dot5 DS1 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Sonet Sts Vt1dot5 DS1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp Sonet Sts Vt1dot5 DS1 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: SonetSdh

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: SonetSdh

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: SonetSdh

Values: idle
active (activ)
busy

Default: idle

GROUP Lp Sonet Sts Vt1dot5 DS1 Test Setup (Setup)

Properties: Operational

Description

This group contains all of the operational data for a *Test* component.

Mib: SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test purpose (purpose)

Access: Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib: SonetSdh

Values: String (0..40, ASCII)

Default: No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test type (type)

Access: Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.

manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: SonetSdh

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	SonetSdh
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	SonetSdh
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the

attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: SonetSdh

Values: Hex (H.0..H.ffffffff)

Units: Hex

Default: H.55555555

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test dataStartDelay (dsd)

Access: Read and write

Description:

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib: SonetSdh

Values: Decimal (0..1814400)

Units: seconds

Default: 0

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test displayInterval (di)

Access: Read and write

Description:

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib: SonetSdh

Values: Decimal (0..30240)

Units	minutes
Default	5

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Sonet Sts Vt1dot5 DS1 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	SonetSdh
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured

	loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	SonetSdh

Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	SonetSdh

Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Sonet Sts Vt1dot5 DS1 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp Sonet OpticalModule (Om)

Groups	"GROUP Lp Sonet Om Provisioned (Prov)" "GROUP Lp Sonet Om OsiState (State)" "GROUP Lp Sonet Om Operational (Oper)"
Scope	Device
Description	*Lp/n Ethernet/n OpticalModule* This component represents the optical module device of the port.

The optical module is used to identify the type of connection for a port.

Mib: SonetSdh

Common Verbs:
Help
List
Display
Add
DELete

GROUP Lp Sonet Om Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioning data for the *OpticalModule* component.

Mib: SonetSdh

ATTRIBUTE Lp Sonet Om type

Access: Read and write

Description: This attribute specifies the expected optical module type. The values for the *type* and *insertedType* attributes must match; otherwise, an alarm is raised and the *OpticalModule* component is disabled.

none: This value indicates that no optical module type is specified.

LX: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 1310nm, Media = Single-Mode.

SX: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 850nm, Media = Multi-Mode.

OC3SmLr: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength =1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC3SmIr: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

OC3MmSr: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Multi-Mode, Reach = 2Km (Short Reach).

OC12SmLr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC12SmIr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

OC48SmLr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmLr2: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1550 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmIr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

Mib

SonetSdh

Values

none
LX
SX
OC3SmLr
OC3SmIr
OC3MmSr
OC12SmLr
OC12SmIr
OC48SmLr

	OC48SmLr2 OC48SmIr
Default	none

GROUP Lp Sonet Om OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Om adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	SonetSdh
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE Lp Sonet Om operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	SonetSdh
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sonet Om usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	SonetSdh

Values	idle active (activ) busy
Default	idle

GROUP Lp Sonet Om Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *OpticalModule* component.
Mib	SonetSdh

ATTRIBUTE Lp Sonet Om insertedType

Access	Read only
Description	This attribute indicates the inserted optical module type. ***none***: This value indicates that there is no optical module inserted in the card. ***LX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 1310nm, Media = Single-Mode. ***SX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 850nm, Media = Multi-Mode. ***OC3SmLr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength =1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC3SmIr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach). ***OC3MmSr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Multi-Mode, Reach = 2Km (Short Reach).

OC12SmLr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC12SmIr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

OC48SmLr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmLr2: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1550 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmIr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

Mib: SonetSdh

Values:
none
LX
SX
OC3SmLr
OC3SmIr
OC3MmSr
OC12SmLr
OC12SmIr
OC48SmLr
OC48SmLr2
OC48SmIr

Default: none

ATTRIBUTE Lp Sonet Om serialNumber

Access: Read only

Description: This attribute indicates the serial number of the inserted optical module.

Mib	SonetSdh
Values	String (0..64, Extended ASCII)
Default	""

ATTRIBUTE Lp Sonet Om failureCause

Access	Read only
Description	This attribute indicates the cause for the optical module's failure. The possible values are: ***typeMismatch***: This error indicates a mismatch between the *type* and *insertedType* attributes. ***internalError***: This error indicates an internal diagnostic failure of the optical module. ***unsupportedOm:*** This error indicates that the inserted optical module is not supported on this card. ***absentOm***: This error indicates that no optical module are currently present on this port. ***noFailure***: There is no failure.
Mib	SonetSdh
Values	typeMismatch internalError unsupportedOm absentOm noFailure
Default	noFailure

COMPONENT Lp Sdh

Instance	Decimal (0..15)
Groups	"GROUP Lp Sdh Provisioned (Prov)" "GROUP Lp Sdh CustomerIdentifierData (CidData)" "GROUP Lp Sdh AdminInfo (AdminInfo)"

"GROUP Lp Sdh IfEntryProv (IfEntry)"
"GROUP Lp Sdh OperationalStatus (OperStatus)"
"GROUP Lp Sdh OsiState (State)"
"GROUP Lp Sdh Operational (Oper)"
"GROUP Lp Sdh Statistics (Stats)"

Scope: Device

Description: *Lp/n Sdh/n*
This component controls a port using the SDH hierachy. In particular, it deals with SDH medium, section and line layers.

A *Path* component may be automatically created when an *Sdh* component is added on a some Nortel Networks Multiservice Switch 7400 FPs. The *Path* component is used only on FPs that do not support Virtual Container (VC).

Mib: LogicalProcessor

Opt. Subcomp.:
"COMPONENT Lp Sdh Path"
"COMPONENT Lp Sdh Vc4"
"COMPONENT Lp Sdh OpticalModule (Om)"

Dyn. Subcomp.: "COMPONENT Lp Sdh Test (Test)"

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp Sdh Provisioned (Prov)

Properties: Provisioned

Description:
This group contains the provisioning data for a *Sonet* or *Sdh* component.

Mib: LogicalProcessor

ATTRIBUTE Lp Sdh clockingSource

Access: Read and write

Description

This attribute defines the type of clocking source used for synchronizing the transmit clock: ***local*** means direct use of the local clock oscillator at its centre frequency; ***line*** means the use of a signal phase-locked to the incoming line rate; ***module*** means the use of a signal phase-locked to the CP reference clock.

When adding a *Sonet* or *Sdh* component, the *clockingSource* attribute is set to ***module*** if the *NetworkSynchronization* component has been added and is set to ***local*** otherwise.

Note that the multiport cell-based cards have one common clock source for each of the three ports when either the clocking source ***local*** or ***module*** is selected. For this reason, it is not allowed to have at the same time the *clockingSource* attribute set to ***local*** on one port and ***module*** on another port. Furthermore, the *clockingSource* attribute cannot be set to ***module*** if the *NetworkSynchronization* component has not been added.

Mib: LogicalProcessor

Values:
local
line
module

Default: No default

ATTRIBUTE Lp Sdh lineAutomaticProtectionSwitch (laps)

Access: Read and write

Criticality: Process

Description

This attribute specifies the name of the *Laps* component. In the case of intra-card configurations, the specified *Laps* component is used to provide sparing of lines which use this port and its mate; in the case of inter-card configurations, the specified *Laps* component is used to provide sparing of lines only.

Mib	LogicalProcessor
Values	Link
Default	No default

ATTRIBUTE Lp Sdh txSectionTrace

Access	Read and write
Description	This attribute specifies the section identifier. The string must be constructed with 7-bit characters only. The section identifier is prefixed by a CRC byte and padded with null characters if necessary to form the 16-octet section trace message transmitted in byte J0 of 16 outgoing frames. At the remote end, the section trace is reassembled, the CRC is checked and the message is compared to the *expectedRxSectionTrace* attribute. If a mismatch is detected, an alarm is issued. Usage guidelines for the section trace are found in clause 3 of the ITU G.831 standard which defines the Access Point Identifier format. The functionality supported by this attribute is not available.
Mib	LogicalProcessor
Values	String (0..15, Extended ASCII)
Default	""

ATTRIBUTE Lp Sdh expectedRxSectionTrace

Access	Read and write
Description	This attribute specifies the expected section trace identifier which is used to identify the fiber connected to the associated port. This attribute must match the corresponding *txSectionTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. The functionality supported by this attribute is not available.

Mib	LogicalProcessor
Values	String (0..15, Extended ASCII)
Default	""

ATTRIBUTE Lp Sdh s1RxDefault

Access	Read and write
Description	This attribute specifies the default S1 byte reported by the port when the received S1 byte is 0 (quality unknown). No default is applied when this attribute is set to ***none***.
Mib	LogicalProcessor
Values	Decimal (0..15) none
Default	none

ATTRIBUTE Lp Sdh s1TxOverride

Access	Read and write
Description	This attribute specifies the S1 byte transmitted on the port regardless of the Synchronization Status Message (SSM) value provided by the *NetworkSynchronization* component. Changes in SSM value from the *NetworkSynchronization* component are ignored when this attribute is set to a value other than ***none***.
Mib	LogicalProcessor
Values	Decimal (0..15) none
Default	none

ATTRIBUTE Lp Sdh s1RxOverride

Access	Read and write
Description	This attribute specifies the S1 byte value reported by the port

regardless of the received value. Changes in S1 byte on the port are ignored when this attribute is set to a value other than ***none***.

Mib: LogicalProcessor

Values: Decimal (0..15)
none

Default: none

ATTRIBUTE Lp Sdh lapsProtocol

Access: Read: Illegal
Write: All

Description: This attribute stores the value of the *protocol* attribute provisioned under the *Laps* component. This hidden attribute is updated automatically via a check escape on *Laps* component.

Mib: LogicalProcessor

Values: Decimal (0..10)
none

Default: none

ATTRIBUTE Lp Sdh sonetSdhOmType

Access: Read: Illegal
Write: All

Description:
This attribute stores the value of the *type* attribute provisioned under the *OpticalModule* component.This hidden attribute is updated automatically via the *OpticalModule* component check escape.

Mib: LogicalProcessor

Values: Decimal (1..256)
none

Default: none

GROUP Lp Sdh CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sdh AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.

Mib	LogicalProcessor

ATTRIBUTE Lp Sdh vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Sdh commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

GROUP Lp Sdh IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor

Values	up down testing
Default	up

ATTRIBUTE Lp Sdh ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sdh OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing

Default	up

GROUP Lp Sdh OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sdh operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sdh usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Sdh availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be

applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: LogicalProcessor

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default No default

ATTRIBUTE Lp Sdh proceduralStatus (osiProc)

Access Read only

Description If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sdh controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.

Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sdh alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Sdh standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)

Default	notSet

ATTRIBUTE Lp Sdh unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	LogicalProcessor
Values	false true
Default	false

GROUP Lp Sdh Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for a *Sonet* or *Sdh* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh losAlarm (los)

Access	Read only
Description	This attribute indicates whether a Loss Of Signal (LOS) alarm state has been entered. An LOS alarm state is entered when LOS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds, or if an LOS defect is present when the criteria for LOF failure declaration have been met. An LOS defect is declared when 20+/-3 us of all-zeros pattern is detected. The LOS defect is cleared when two valid framing words are detected and no Loss of Signal condition is detected during an

interval of 20+/-3 us. If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *Sonet/Sdh* component goes into an operational state of *disabled* until the LOS alarm condition is cleared. The LOS alarm state is cleared after LOS defects have been absent for a period of 10 seconds +/- 0.5 seconds.
The *losAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib LogicalProcessor

Values
on
off

Default No default

ATTRIBUTE Lp Sdh lofAlarm (lof)

Access Read only

Description

This attribute displays whether a Loss Of Frame (LOF) alarm state has been entered. An LOF alarm state is entered when LOF defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds, except when an LOS defect or failure is present. An LOF defect is detected when getting contiguous errored frame alignment for at least 3 msec. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *Sonet/Sdh* component goes into an operational state of *disabled* until the LOF alarm condition is cleared. The condition is cleared when framing has been achieved for a period of 10 seconds +/- 0.5 seconds.
The *lofAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib LogicalProcessor

Values
on
off

Default
No default

ATTRIBUTE Lp Sdh rxAisAlarm (ais)

Access
Read only

Description
This attribute displays whether a Line Alarm Indication Signal (L-AIS) alarm state has been entered. An L-AIS alarm state is entered when L-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The L-AIS defect is the occurrence of the L-AIS signal in five contiguous STS (STM) frames (111 pattern in bits 6,7, and 8 of the K2 bytes). If the L-AIS defects are intermittently occurring, the L-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *Sonet/Sdh* component goes into an operational state of *disabled* until the L-AIS alarm condition is cleared. The condition is cleared after not detecting the L-AIS signal for a period of 10 seconds +/- 0.5 seconds.
The *rxAisAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib
LogicalProcessor

Values
on
off

Default
No default

ATTRIBUTE Lp Sdh rxRfiAlarm (rfi)

Access
Read only

Description
This attribute displays whether a Line Remote Failure Indication (LRFI) alarm state has been entered. An L-RFI alarm state is entered when Line Remote Failure Indication (L-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The L-RDI defect is the occurrence of the L-RDI

signal in five contiguous valid STS (STM) frame (110 pattern in bits 6,7, and 8 of the K2 bytes). If the L-RDI defects are intermittently occurring, the L-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The *Sonet/Sdh* component goes into an operational state of *disabled* until the L-RFI alarm condition is cleared. The condition is cleared after not detecting the L-RDI signal for a period of 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib: LogicalProcessor

Values: on
off

Default: No default

ATTRIBUTE Lp Sdh txAis

Access: Read only

Description:

This attribute displays whether the Line Alarm Indication Signal (L-AIS) signal is being transmitted on the outgoing line. This signal is transmitted when the *Sonet/Sdh* is *locked* and left *offline*.

Mib: LogicalProcessor

Values: on
off

Default: No default

ATTRIBUTE Lp Sdh txRdi

Access: Read only

Description:

This attribute displays whether the Line Remote Defect Indicator (L-RDI) signal is being transmitted over the OC-3 line. The L-RDI signal is transmitted upon the detection of the LOS, LOF or

L-AIS defect. This attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib LogicalProcessor

Values
on
off

Default No default

ATTRIBUTE Lp Sdh unusableTxClockRefAlarm (utcr)

Access Read only

Description

This attribute displays whether an Unusable Transmit Clock Reference (UTCR) alarm state has been entered. A UTCR alarm state is entered when a Sonet/Sdh port provisioned to act as a transmit clock reference has received the code “do not use for synchronization” in the S1 byte (in the SONET/ SDH line overhead) for 2.5 +/- 0.5 seconds.
The condition is cleared after not detecting the “do not use for synchronization” code for a period of 10 +/- 0.5 seconds or when the port is no longer provisioned to act as a transmit clock reference.
A port is acting as a transmit clock reference if it is provisioned with a) a *clockingSource* of *line*, or b) it has been provisioned as a primaryReference, secondaryReference or tertiaryReference in the NetworkSynchronization component.
The *unusableTxClockRefAlarm* attribute is always set to ***off*** when the component has been *locked* and left *offline*.

Mib LogicalProcessor

Values
on
off

Default No default

ATTRIBUTE Lp Sdh s1Rx (s1R)

Access Read only

Description

This attribute indicates the current S1 byte received on the port.

Mib	LogicalProcessor
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Lp Sdh s1Tx (s1T)

Access	Read only
Description	This attribute indicates the current S1 byte transmitted on the port.
Mib	LogicalProcessor
Values	Decimal (0..15)
Default	No default

GROUP Lp Sdh Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for a *Sonet* or *Sdh* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh runningTime (time)

Access	Read only
Description	This attribute indicates the total number of seconds since the *Sonet/Sdh* component has been activated and been in unlocked state. All the other error counts that follow can be updated when this count is active.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh errorFreeSec (efs)

Access Read only

Description

This attribute indicates the number of seconds that the *Sonet/Sdh* component has been in a near-end error free state.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh sectCodeViolations (scv)

Access Read only

Description

This attribute indicates the total number of Section Code Violations (SCVs) detected. A SCV corresponds to section BIP-8 error. SCV counting is inhibited for second intervals where a Section Severely Errored Second (SSES) is counted. The count wraps at its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh sectErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of Section Errored Seconds (SESs) that have been counted. A SES is declared for second intervals containing one or more SCVs or one or more Loss Of Signal (LOS) or Severely Errored Frame (SEF) defects. A SEF defect is the occurrence of 4 contiguous errored STS or STM frame alignment words.

Mib LogicalProcessor

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh sectSevErroredSec (sses)

Access	Read only
Description	This attribute indicates the total number of Section Severely Errored Seconds (SSESs) that have been counted. A SSES is declared for second intervals containing more than *x* SCVs or one or more LOS or SEF defects. The value of *x* is 16 for 155 Mbit/s interface.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh sectLosSec (sloss)

Access	Read only
Description	This attribute indicates the total number of Section LOS Seconds (SLOSSs) that have been counted. A SLOSS is declared for second intervals containing one or more LOS defects.
Mib	LogicalProcessor
Values	Decimal (0..429496729)
Default	0

ATTRIBUTE Lp Sdh sectSevErroredFrmSec (ssefs)

Access	Read only
Description	This attribute indicates the total number of Section Severely Errored Frame Seconds (SSEFSs) that have been counted. A SSEFS is declared for second intervals containing one or more SEF defects.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh sectFailures (sf)

Access	Read only
Description	This attribute indicates the total number of times that a section failure (LOS or LOF failure) has been declared.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh lineCodeViolations (lcv)

Access	Read only
Description	This attribute indicates the total number of Line Code Violations (LCVs) detected. A LCV corresponds to a line BIP-24 errors. LCV counting is inhibited for second intervals where a Line Severely Errored Second (LSES) is counted. Counting of LCVs is also inhibited over second intervals where a Line Unavailable Second (LUAS) is counted. The count wraps when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh lineErroredSec (les)

Access	Read only
Description	This attribute indicates the total number of Line Errored Seconds (LESs) that have been counted. A LES is declared for second

intervals containing one or more LCVs or one or more line AIS defects. Counting of LES is inhibited over second intervals where a LUAS is counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh lineSevErroredSec (lses)

Access Read only

Description

This attribute indicates the total number of Line Severely Errored Seconds (LSESs) that have been counted. A LSES is declared for second intervals containing more than *x* LCVs or one or more L-AIS defects. The value of *x* is 32 for 155 Mbits/sec interface. Counting of LSES is inhibited over second intervals where a LUAS is counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh lineAisSec (laiss)

Access Read only

Description

This attribute indicates the total number of Line AIS Seconds (LAISSs) that have been counted. A LAISS is declared for second intervals containing one or more L-AIS defects. Counting of LAISS is inhibited over second intervals where a LUAS is counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh lineUnavailSec (luas)

Access	Read only
Description	This attribute indicates the total number of one second intervals for which the STS line is unavailable. The STS line becomes unavailable at the onset of 10 consecutive LSESs. The 10 LSESs are included in the unavailable time. Once unavailable, the STS line becomes available at the onset of 10 contiguous seconds with no LSES. The 10 seconds with no LSES are excluded from the unavailable time. For second intervals where a Line Unavailable Second (LUAS) is counted, counting of LCV, LES, LSES and LAISS is inhibited.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh lineFailures (lf)

Access	Read only
Description	This attribute indicates the total number of times that a line failure (L-AIS failure) has been declared.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh farEndLineErrorFreeSec (felefs)

Access	Read only
Description	This attribute indicates the number of seconds that the *Sonet* or *Sdh* component has been in a far-end error free state.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)

Units	seconds
Default	0

ATTRIBUTE Lp Sdh farEndLineCodeViolations (felcv)

Access	Read only
Description	This attribute indicates the total number of line FEBE detected from the incoming line. The counting of line FEBE is inhibited for second intervals where a Far-End Line Severely Errored Second (FELSES) is counted. Counting of FELCVs is also inhibited over second intervals where a Far-End Line Unavailable Second (FELUAS) is counted. The count wraps at its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh farEndLineErroredSec (feles)

Access	Read only
Description	This attribute indicates the total number of Far-End Line Errored Seconds (FELESs) that have been counted. A FELES is declared for second intervals containing one or more Far-End Line CVs (FELCVs) or one or more L-RDI defects. Counting of FELES is inhibited over second intervals where a FELUAS is counted.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh farEndLineSevErroredSec (felses)

Access	Read only
Description	This attribute indicates the total number of Far-End Line Severely

Errored Seconds (FELSESs) that have been counted. A FELSES is declared for second intervals containing more than *x* FELCVs or one or more L-RDI defects. The value of *x* is 32 for 155 Mbit/s interface. Counting of FELSES is inhibited over second intervals where a FELUAS is counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh farEndLineAisSec (felaiss)

Access Read only

Description

This attribute indicates the total number of Far-End Line AIS Seconds (FELAISSs) that have been counted. A FELAISS is declared for second intervals one or more L-RDI defects. Counting of FELAISS is inhibited over second intervals where a FELUAS is counted.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh farEndLineUnavailSec (feluas)

Access Read only

Description

This attribute indicates the total number of one second intervals for which the STS far-end line is unavailable. The STS far-end line becomes unavailable at the onset of 10 consecutive FELSESs. The 10 FELSESs are included in the unavailable time. Once unavailable, the STS far-end line becomes available at the onset of 10 contiguous seconds with no FELSES. The 10 seconds with no FELSES are excluded from the unavailable time. For second intervals where a Far-End Line Unavailable Second (FELUAS) is counted, counting of FELCV, FELES, FELSES and FELAISS is inhibited.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh farEndLineFailures (felf)

Access	Read only
Description	This attribute indicates the total number of times that a far-end line failure (L-RFI failure) has been declared.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sdh Path

Instance	Decimal (0..0)
Groups	"GROUP Lp Sdh Path Provisioned (Prov)" "GROUP Lp Sdh Path CustomerIdentifierData (CidData)" "GROUP Lp Sdh Path OsiState (State)" "GROUP Lp Sdh Path IfEntryProv (IfEntry)" "GROUP Lp Sdh Path OperationalStatus (OperStatus)" "GROUP Lp Sdh Path Operational (Oper)" "GROUP Lp Sdh Path Statistics (Stats)"
Scope	Device
Description	*Lp/n Sonet/n Path/0* *Lp/n Sdh/n Path/0* This component controls a path signal that is carried within a SONET or SDH signal. The *Path* component can only be added under a *Sonet* or *Sdh* component on a Nortel Networks Multiservice Switch 7400. The *Path* component exists only on the Nortel Networks Multiservice Switch 7400.

The equivalent components on the Nortel Networks Multiservice Switch 15000 and 20000 are the *Sts* component under a *Sonet* component and the *Vc4* component under an *Sdh* component.

On the Nortel Networks Multiservice Switch 15000 and 20000 a *Path* component is not allowed under a *Sonet* or *Sdh* component.

Mib	LogicalProcessor
Subcomponents	"COMPONENT Lp Sdh Path AtmCell (Cell)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Sdh Path Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for the component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Path applicationFramerName (framer)

Access	Read only
Description	This attribute defines which application is running on the path.
Mib	LogicalProcessor
Values	Link
Default	No default

GROUP Lp Sdh Path CustomerIdentifierData (CidData)

Properties	Provisioned

Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Path customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sdh Path OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific

	information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Path adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sdh Path operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Sdh Path usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: LogicalProcessor

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Sdh Path availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: LogicalProcessor

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp Sdh Path proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sdh Path controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sdh Path alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently

being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: LogicalProcessor

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp Sdh Path standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: LogicalProcessor

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp Sdh Path unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: LogicalProcessor

Values:
false
true

Default: false

GROUP Lp Sdh Path IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Path ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp Sdh Path ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sdh Path OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Path snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp Sdh Path Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Path lopAlarm (lop)

Access	Read only
Description	This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds.

The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib LogicalProcessor

Values on
off

Default No default

ATTRIBUTE Lp Sdh Path rxAisAlarm (ais)

Access Read only

Description

This attribute displays whether a Path Alarm Indication Signal (P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib LogicalProcessor

Values
on
off

Default
No default

ATTRIBUTE Lp Sdh Path rxRfiAlarm (rfi)

Access
Read only

Description

This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or STM frames (bit 5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib
LogicalProcessor

Values
on
off

Default
No default

ATTRIBUTE Lp Sdh Path signalLabelMismatch (slm)

Access
Read only

Description

This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have

been entered.

A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds.

A P-UNEQ failure condition is entered when P-UNEQ defects have been observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds.

The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Sdh Path txAis

Access	Read only

Description

This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib LogicalProcessor

Values
on
off

Default No default

ATTRIBUTE Lp Sdh Path txRdi

Access Read only

Description

This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib LogicalProcessor

Values
on
off

Default No default

GROUP Lp Sdh Path Statistics (Stats)

Properties Operational

Description

This group contains the statistics data for the component.

Mib LogicalProcessor

ATTRIBUTE Lp Sdh Path pathErrorFreeSec (pefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a near-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path pathCodeViolations (pcv)

Access Read only

Description

This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path pathErroredSec (pes)

Access Read only

Description

This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Path pathSevErroredSec (pses)

Access	Read only
Description	This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than *x* PCVs or one or more LOP or path AIS defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Path pathAisLopSec (pals)

Access	Read only
Description	This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Path pathUnavailSec (puas)

Access	Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path pathFailures (pf)

Access Read only

Description

This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path farEndPathErrorFreeSec (fepefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a far-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Path farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared. The counter wraps to 0 when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Path farEndPathErroredSec (fepes)

Access	Read only
Description	This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Path farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than *x* FEPCVs or one or more P-RDI defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Path farEndPathUnavailSec (fepuas)

Access Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable,

the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sdh Path farEndPathFailures (fepf)

Access: Read only

Description

This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Lp Sdh Path AtmCell (Cell)

Groups: "GROUP Lp Sdh Path Cell Provisioned (Prov)"
"GROUP Lp Sdh Path Cell Operational (Oper)"
"GROUP Lp Sdh Path Cell Statistics (Stats)"

Scope: Device

Description

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell*

component appears under all port components running on ATM cards.

Mib LogicalProcessor

Common Verbs
Help
List
Display

GROUP Lp Sdh Path Cell Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib LogicalProcessor

ATTRIBUTE Lp Sdh Path Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib LogicalProcessor

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Lp Sdh Path Cell scrambleCellPayload (scramble)

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	LogicalProcessor
Values	off on
Default	No default

ATTRIBUTE Lp Sdh Path Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	LogicalProcessor
Values	off on
Default	off

ATTRIBUTE Lp Sdh Path Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Lp Sdh Path Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (0..25)

Units	seconds
Default	0

ATTRIBUTE Lp Sdh Path Cell hecErrorLimit (hLimit)

Access	Read and write
Description	This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.) This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	LogicalProcessor
Values	Decimal (1..250000)
Default	No default

ATTRIBUTE Lp Sdh Path Cell lcdStateDelay (delay)

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component. This attribute is supported only on 3pDS1Atm, 8pDS1Atm,

3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..50)

Units msec

Default No default

ATTRIBUTE Lp Sdh Path Cell hecErrorIntervalLimit (hIntLimit)

Access Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib LogicalProcessor

Values Decimal (1..25)

Default 1

GROUP Lp Sdh Path Cell Operational (Oper)

Properties Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Path Cell lcdAlarm (lcd)

Access	Read only
Description	This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute. In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected. For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect. If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds. The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.
Mib	LogicalProcessor
Values	on off
Default	off

GROUP Lp Sdh Path Cell Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Path Cell uncorrectableHeaderErrors (ucErr)

Access	Read only
Description	This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Path Cell sevErroredSec (ses)

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3*

component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib: LogicalProcessor

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sdh Path Cell receiveCellUtilization (rxutil)

Access: Read only

Description:

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib: LogicalProcessor

Values: Decimal (0..100)

Units: %

Default: 0

ATTRIBUTE Lp Sdh Path Cell transmitCellUtilization (txutil)

Access: Read only

Description:

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen

when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib LogicalProcessor

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp Sdh Path Cell correctableHeaderErrors (cErr)

Access Read only

Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp Sdh Test (Test)

Groups "GROUP Lp Sdh Test OsiState (State)"
"GROUP Lp Sdh Test Setup (Setup)"
"GROUP Lp Sdh Test Results (Results)"

Scope Application

Description

The *Test* component is configured to control a hardware facility

test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.

Mib: LogicalProcessor

Common Verbs:
- Help
- List
- Display

VERB START Lp Sdh Test

Impact: Service

Description:

This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Sdh Test

Impact: Service

Description:

This command stops a test running on the hardware component.

GROUP Lp Sdh Test OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: LogicalProcessor

ATTRIBUTE Lp Sdh Test adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sdh Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)

Default	disabled

ATTRIBUTE Lp Sdh Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp Sdh Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)

Default No default

ATTRIBUTE Lp Sdh Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib LogicalProcessor

Values
card
manual
localLoop
remoteLoop
externalLoop

payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default card

ATTRIBUTE Lp Sdh Test frmSize (size)

Access Read and write

Description

This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib LogicalProcessor

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Lp Sdh Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib LogicalProcessor

Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Sdh Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Sdh Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Sdh Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Sdh Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Sdh Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Sdh Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost***

are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib LogicalProcessor

Values
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Lp Sdh Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp Sdh Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib LogicalProcessor

Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer

Default	No default

ATTRIBUTE Lp Sdh Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib: LogicalProcessor

Values: String (5, ASCII)

Default: No default

ATTRIBUTE Lp Sdh Test elapsedTime

Access: Read only

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib: LogicalProcessor

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 0.00

ATTRIBUTE Lp Sdh Test timeRemaining

Access: Read only

Description

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp Sdh Vc4

Instance	Decimal (0..3)
Groups	"GROUP Lp Sdh Vc4 Provisioned (Prov)" "GROUP Lp Sdh Vc4 CustomerIdentifierData (CidData)" "GROUP Lp Sdh Vc4 OsiState (State)" "GROUP Lp Sdh Vc4 IfEntryProv (IfEntry)" "GROUP Lp Sdh Vc4 OperationalStatus (OperStatus)" "GROUP Lp Sdh Vc4 Operational (Oper)" "GROUP Lp Sdh Vc4 Statistics (Stats)"
Scope	Device
Description	*Lp/n Sdh/n Vc4/n* *Laps/n Vc4/n* This component controls a VC4 path signal that is carried within an SDH signal. The instance number of the *Vc4* component is 0.

The *Vc4* component may only be defined on Nortel Networks Multiservice Switch FPs that support STM.

Mib: SonetSdh

Opt. Subcomp.: "COMPONENT Lp Sdh Vc4 AtmCell (Cell)"
"COMPONENT Lp Sdh Vc4 Vc12"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Lp Sdh Vc4 Provisioned (Prov)

Properties: Provisioned

Description

This group contains all of the provisioning data for the component.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Vc4 applicationFramerName (framer)

Access: Read and write

Description

This attribute defines which application is running on the path.

Mib: SonetSdh

Values: Link

Default: No default

ATTRIBUTE Lp Sdh Vc4 pathTraceLength

Access: Read and write

Description

This attribute specifies the transmitted path trace message length.

The *pathTraceLength* attribute at transmitting and receiving end must match.

Mib: SonetSdh

Values: 16
64

Default: 16

ATTRIBUTE Lp Sdh Vc4 txPathTrace

Access: Read and write

Description: This attribute specifies the high order path identifier. The string must be constructed with 7-bit characters only. If *pathTraceLength* is 16, the path identifier is prefixed with a CRC byte and padded by null characters if necessary to form a 16-octet path trace message transmitted in byte J1 of 16 outgoing SDH frames. If *pathTraceLength* is 64, the path identifier is padded by null characters if necessary to form a 64-octet path trace message transmitted in byte J1 of 64 outgoing SDH frames. At the remote end, the path trace is reassembled, the CRC is checked if necessary and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected, an alarm is issued.

Usage guidelines for path trace message are found in clause 3 of the ITU G.831 standard which defines the Access Point Identifier format.

The functionality supported by this attribute is not available.

Mib: SonetSdh

Values: String (0..64, Extended ASCII)

Default: ""

ATTRIBUTE Lp Sdh Vc4 expectedRxPathTrace

Access: Read and write

Description: This attribute specifies the expected path trace identifier which is used to identify the high order path. This attribute must match the

corresponding *txPathTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued.

The functionality supported by this attribute is not available.

Mib: SonetSdh

Values: String (0..64, Extended ASCII)

Default: ""

ATTRIBUTE Lp Sdh Vc4 concatNumber

Access: Read and write

Criticality: Process

Description

This attribute specifies the number of contiguous Administration Unit 4 (AU-4) concatenated together. AU-4s can be concatenated together to form an AU-4-4c or AU-4-16c (4 or 16 concatenated AU-4s) which can transport payloads requiring greater capacity than one Container-4 capacity.

Only *Vc4/0* can have *concatNumber* set to 16 and only *Vc4/0*, *Vc4/4*, *Vc4/8* or *Vc4/12* can have *concatNumber* set to 4.

When a *Vc4* uses concatenation, the other concatenated *Vc4* instance number cannot be used. For example, if *Vc4/0 concatNumber* is 4, the next provisionable *Vc4* is *Vc4/4*.

Vc4 channelization, indicated by provisioning subcomponents such as *Vc12*, is allowed only if this attribute is set to 1. This value must be set to 0 for card types which do not support the use of this attribute.

Mib: SonetSdh

Values:
0
1
4
16

Default: No default

GROUP Lp Sdh Vc4 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	SonetSdh
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sdh Vc4 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values

and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib SonetSdh

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Lp Sdh Vc4 operationalState (osiOper)

Access Read only

Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sdh Vc4 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh

Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Sdh Vc4 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	SonetSdh
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Sdh Vc4 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	SonetSdh
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sdh Vc4 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	SonetSdh
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sdh Vc4 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	SonetSdh
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Sdh Vc4 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: SonetSdh

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp Sdh Vc4 unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: SonetSdh

Values	false true
Default	false

GROUP Lp Sdh Vc4 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

ATTRIBUTE Lp Sdh Vc4 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sdh Vc4 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sdh Vc4 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for the component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 lopAlarm (lop)

Access	Read only
Description	This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid

SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds.

The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: SonetSdh

Values: on
off

Default: No default

ATTRIBUTE Lp Sdh Vc4 rxAisAlarm (ais)

Access: Read only

Description

This attribute displays whether a Path Alarm Indication Signal (P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect has been detected for 10 seconds +/- 0.5 seconds.

The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: SonetSdh

Values: on
off

Default: No default

ATTRIBUTE Lp Sdh Vc4 rxRfiAlarm (rfi)

Access: Read only

Description

This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or STM frames (bit 5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: SonetSdh

Values: on
off

Default: No default

ATTRIBUTE Lp Sdh Vc4 signalLabelMismatch (slm)

Access
Read only

Description

This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have been entered.

A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds.

A P-UNEQ failure condition is entered when P-UNEQ defects have been observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds.

The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib
SonetSdh

Values
on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 txAis

Access Read only

Description

This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 txRdi

Access Read only

Description

This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib SonetSdh

Values on
off

Default No default

GROUP Lp Sdh Vc4 Statistics (Stats)

Properties Operational

Description

This group contains the statistics data for the component.

Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 pathErrorFreeSec (pefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a near-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 pathCodeViolations (pcv)

Access	Read only
Description	This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 pathErroredSec (pes)

Access	Read only
Description	This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES

is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sdh Vc4 pathSevErroredSec (pses)

Access: Read only

Description:

This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than *x* PCVs or one or more LOP or path AIS defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sdh Vc4 pathAisLopSec (pals)

Access: Read only

Description:

This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sdh Vc4 pathUnavailSec (puas)

Access	Read only
Description	This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 pathFailures (pf)

Access	Read only
Description	This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 farEndPathErrorFreeSec (fepefs)

Access	Read only
Description	This attribute counts the one second intervals that the component

has been in a far-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 farEndPathCodeViolations (fepcv)

Access Read only

Description

This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 farEndPathErroredSec (fepes)

Access Read only

Description

This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 farEndPathSevErroredSec (fepses)

Access	Read only
Description	This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than *x* FEPCVs or one or more P-RDI defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 farEndPathAisLopSec (fepals)

Access	Read only
Description	This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 farEndPathUnavailSec (fepuas)

Access	Read only

Description

This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sdh Vc4 farEndPathFailures (fepf)

Access: Read only

Description

This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Lp Sdh Vc4 AtmCell (Cell)

Groups: "GROUP Lp Sdh Vc4 Cell Provisioned (Prov)"
"GROUP Lp Sdh Vc4 Cell Operational (Oper)"
"GROUP Lp Sdh Vc4 Cell Statistics (Stats)"

Scope: Device

Description

The *AtmCell* component contains provisioning and operational

attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib: SonetSdh

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Lp Sdh Vc4 Cell Provisioned (Prov)

Properties: Provisioned

Description:

This group contains the provisioning attributes for the *AtmCell* component.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Vc4 Cell alarmActDelay (act)

Access: Read and write

Description:

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib	SonetSdh
Values	Decimal (0..2000)
Units	msec
Default	No default

ATTRIBUTE Lp Sdh Vc4 Cell scrambleCellPayload (scramble)

Access	Read and write
Description	Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled. It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces. Note that this setting must be the same at both ends of the link.
Mib	SonetSdh
Values	off on
Default	No default

ATTRIBUTE Lp Sdh Vc4 Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib	SonetSdh
Values	off on
Default	off

ATTRIBUTE Lp Sdh Vc4 Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	SonetSdh
Values	Decimal (0..60)
Units	minutes
Default	0

ATTRIBUTE Lp Sdh Vc4 Cell hecSampleInterval (hSample)

Access	Read and write
Description	This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot

be used to bring down the port.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (0..25)

Units: seconds

Default: 0

ATTRIBUTE Lp Sdh Vc4 Cell hecErrorLimit (hLimit)

Access: Read and write

Description:

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Lp Sdh Vc4 Cell lcdStateDelay (delay)

Access: Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (1..50)

Units: msec

Default: No default

ATTRIBUTE Lp Sdh Vc4 Cell hecErrorIntervalLimit (hIntLimit)

Access: Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (1..25)

Default 1

GROUP Lp Sdh Vc4 Cell Operational (Oper)

Properties Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Cell lcdAlarm (lcd)

Access Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also

happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib SonetSdh

Values on
off

Default off

GROUP Lp Sdh Vc4 Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sdh Vc4 Cell receiveCellUtilization (rxutil)

Access: Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib: SonetSdh

Values: Decimal (0..100)

Units: %

Default 0

ATTRIBUTE Lp Sdh Vc4 Cell transmitCellUtilization (txutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib SonetSdh

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Lp Sdh Vc4 Cell correctableHeaderErrors (cErr)

Access Read only

Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp Sdh Vc4 Vc12

Instance	k [Decimal (1..3)] l [Decimal (1..7)] m [Decimal (1..3)]
Groups	"GROUP Lp Sdh Vc4 Vc12 Provisioned (Prov)" "GROUP Lp Sdh Vc4 Vc12 CustomerIdentifierData (CidData)" "GROUP Lp Sdh Vc4 Vc12 OsiState (State)" "GROUP Lp Sdh Vc4 Vc12 IfEntryProv (IfEntry)" "GROUP Lp Sdh Vc4 Vc12 OperationalStatus (OperStatus)" "GROUP Lp Sdh Vc4 Vc12 Operational (Oper)" "GROUP Lp Sdh Vc4 Vc12 Statistics (Stats)"
Scope	Device
Description	*Lp/n Sdh/n Vc4/n Vc12/k,l,m* *Laps/n Vc4/n Vc12/k,l,m* This component controls the VC12 low order path signal that is carried within an SDH signal. The *Vc12* component may only be provisioned on Nortel Networks Multiservice Switch FPs that support STM and channelization.
Mib	SonetSdh
Opt. Subcomp.	"COMPONENT Lp Sdh Vc4 Vc12 E1"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Sdh Vc4 Vc12 Provisioned (Prov)

Properties	Provisioned

Description

This group contains all of the provisioning data for the component.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 txPathTrace

Access Read and write

Description This attribute specifies the low order path identifier. The string must be constructed with 7-bit characters only. The path identifier is prefixed with a CRC byte and padded by null characters if necessary to form a 16-octet path trace message transmitted in byte J2 of 16 outgoing SDH frames. At the remote end, the path trace is reassembled, the CRC is checked and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected and the *expectedRxPathTrace* attribute is not an empty string (default value), an alarm is issued.

Usage guidelines for path trace message are found in clause 3 of the ITU G.831 standard which defines the Access Point Identifier format.

The functionality supported by this attribute is available on the *4pOC3Ch* functional processor.

Mib SonetSdh

Values String (0..15, Extended ASCII)

Default ""

ATTRIBUTE Lp Sdh Vc4 Vc12 expectedRxPathTrace

Access Read and write

Description This attribute specifies the expected path trace identifier which is used to identify the low order path. This attribute must match the corresponding *txPathTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. If an empty string (default value) is provisioned, the Low Order Path Trace Identification Mismatch (LP-TIM) defect is ignored.

	The functionality supported by this attribute is available on the *4pOC3Ch* functional processor.
Mib	SonetSdh
Values	String (0..15, Extended ASCII)
Default	""

GROUP Lp Sdh Vc4 Vc12 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	SonetSdh
Values	Decimal (0; 1..8191)

Default	0

GROUP Lp Sdh Vc4 Vc12 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sdh Vc4 Vc12 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sdh Vc4 Vc12 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Sdh Vc4 Vc12 availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be

applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib

SonetSdh

Set of

inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 proceduralStatus (osiProc)

Access Read only

Description If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	SonetSdh
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.

Mib	SonetSdh
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	SonetSdh
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	SonetSdh
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)

Default	notSet

ATTRIBUTE Lp Sdh Vc4 Vc12 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	SonetSdh
Values	false true
Default	false

GROUP Lp Sdh Vc4 Vc12 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

ATTRIBUTE Lp Sdh Vc4 Vc12 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sdh Vc4 Vc12 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sdh Vc4 Vc12 Operational (Oper)

Properties	Operational

Description

This group contains the common operational data for the component.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 rxAisAlarm

Access Read only

Description

This attribute indicates whether a Tributary Unit Alarm Indication Signal (TU-AIS) alarm state has been entered. A TU-AIS alarm state is entered when TU-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-AIS defect occurs when three consecutive TU pointers are in the all 1's state. This alarm is cleared after no TU-AIS defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 rxRdiAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Remote Defect Indicator (LP-RDI) alarm state has been entered. An LP-RDI alarm state is entered when LP-RDI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RDI defect occurs when RDI conditions are detected in five consecutive frames. This alarm is cleared after no LP-RDI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 rxRfiAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Remote Failure Indicator (LP-RFI) alarm state has been entered. An LP-RFI alarm state is entered when LP-RFI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RFI defect occurs when a RFI condition is detected. This alarm is cleared after no LP-RFI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 rxReiAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Remote Error Indicator (LP-REI) alarm state has been entered. An LP-REI alarm state is entered when LP-REI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-REI defect occurs when a REI condition is detected. This alarm is cleared after no LP-REI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 bip2Alarm

Access Read only

Description

This attribute indicates whether a Low Order Path Error

Monitoring (BIP-2) alarm state has been entered. An BIP-2 alarm state is entered when BIP-2 defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The BIP-2 defect occurs when a mismatch between the calculated and received BIP-2 is detected. This alarm is cleared after no BIP-2 defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: SonetSdh

Values: on
off

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 unequippedAlarm

Access: Read only

Description

This attribute indicates whether a Low Order Path Unequipped (LP-UNEQ) alarm state has been entered. An LP-UNEQ alarm state is entered when LP-UNEQ defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-UNEQ defect occurs when an unequipped condition is detected for five consecutive multi frames. This alarm is cleared after no LP-UNEQ defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: SonetSdh

Values: on
off

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 traceIdMismatchAlarm

Access: Read only

Description

This attribute indicates whether a Low Order Path Trace Identification Mismatch (LP-TIM) alarm state has been entered. An LP-TIM alarm state is entered when LP-TIM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-TIM defect occurs when a TIM condition is

detected. This alarm is cleared after no LP-TIM defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: SonetSdh

Values: on
off

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 lopAlarm

Access: Read only

Description

This attribute indicates whether a Tributary Unit Loss of Pointer (TU-LOP) alarm state has been entered. An TU-LOP alarm state is entered when TU-LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-LOP defect occurs when eight consecutive invalid pointer values or eight consecutive New Data Flag (NDF) pointers are detected. This alarm is cleared after no TU-LOP defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: SonetSdh

Values: on
off

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 txAis

Access: Read only

Description

This attribute indicates whether the Low order Path Alarm Indication Signal (LP-AIS) is being transmitted on the low order path. The LP-AIS signal is transmitted when the component *adminState* is ***locked*** or *operationalState* is ***disabled*** and *availabilityStatus* is *dependency.*

Mib: SonetSdh

Values: on
off

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 txRdi

Access Read only

Description

This attribute indicates whether the Low Order Path Remote Defect Indication (LP-RDI) is being transmitted on the low order path. The LP-RDI signal is transmitted upon detection of TU-LOP, TU-AIS, LP-TIM or LP-UNEQ. The value is ***off*** when the component *adminState* is ***locked*** or *operationalState* is ***disabled*** and *availabilityStatus* is ***dependency***.

Mib SonetSdh

Values on
off

Default No default

GROUP Lp Sdh Vc4 Vc12 Statistics (Stats)

Properties Operational

Description

This group contains the statistics data for the component.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 pathErrorFreeSec (pefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a near-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 pathCodeViolations (pcv)

Access Read only

Description

This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 pathErroredSec (pes)

Access Read only

Description

This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 pathSevErroredSec (pses)

Access Read only

Description

This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than *x* PCVs or one or more LOP or path AIS defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of PSES is

inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 pathAisLopSec (pals)

Access Read only

Description

This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 pathUnavailSec (puas)

Access Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 pathFailures (pf)

Access	Read only
Description	This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathErrorFreeSec (fepefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a far-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of

PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathErroredSec (fepes)

Access Read only

Description

This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than *x* FEPCVs or one or more P-RDI defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib SonetSdh

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathAisLopSec (fepals)

Access	Read only
Description	This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathUnavailSec (fepuas)

Access	Read only
Description	This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 farEndPathFailures (fepf)

Access	Read only
Description	This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sdh Vc4 Vc12 E1

Groups	"GROUP Lp Sdh Vc4 Vc12 E1 Provisioned (Prov)" "GROUP Lp Sdh Vc4 Vc12 E1 CustomerIdentifierData (CidData)" "GROUP Lp Sdh Vc4 Vc12 E1 AdminInfo (AdminInfo)" "GROUP Lp Sdh Vc4 Vc12 E1 IfEntryProv (IfEntry)" "GROUP Lp Sdh Vc4 Vc12 E1 OperationalStatus (OperStatus)" "GROUP Lp Sdh Vc4 Vc12 E1 OsiState (State)" "GROUP Lp Sdh Vc4 Vc12 E1 Operational (Oper)" "GROUP Lp Sdh Vc4 Vc12 E1 E1Operational (E1Oper)" "GROUP Lp Sdh Vc4 Vc12 E1 Statistics (Stats)"
Scope	Device
Description	*Lp/n E1/n* *Lp/n Sdh/i Vc4/j Vc12/k,l,m E1* The *E1* component controls and monitors an E1 port or tributary on a Function Processor. The number of ports supported depends on the type of card, and is usually encoded in the *Shelf Card/n cardType*, for example 4pE1Aal1: 4 port. The lowest instance value is usually ***0***, except for the ***32pE1Aal*** card when it is ***1***. No instance value is used when the E1 is a STM tributary. Multi-Service cards have an instance range 0..31, except that instance values 30 and 31 are not available for an “ATM UNI port”. (An E1 “ATM UNI port” is an *E1* component with a single *Chan* whose *applicationFramerName* attribute is linked to an *AtmIf* component.)

The instance number of an *E1* “ATM UNI port” must not be the same as the instance number of an *IMA* group under the same *Lp*.

Mib: SonetSdh

Subcomponents: "COMPONENT Lp Sdh Vc4 Vc12 E1 Channel (Chan)"

Dyn. Subcomp.: "COMPONENT Lp Sdh Vc4 Vc12 E1 Test (Test)"
"COMPONENT Lp Sdh Vc4 Vc12 E1 Dsp"
"COMPONENT Lp Sdh Vc4 Vc12 E1 Audio"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Lp Sdh Vc4 Vc12 E1 Provisioned (Prov)

Properties: Provisioned

Description

This group contains all of the provisioning data for an E1 component.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 lineType (lineType)

Access: Read and write

Description

This attribute specifies the framing of the E1 line.
When ***cas*** (channel associated signalling) is selected, timeslot 16 is reserved for multiframe signalling and only 30 timeslots are available for data. The signalling bits are not interpreted.
When ***ccs*** (common channel signalling) is selected, timeslot 16 is not reserved for multiframe signalling and 31 timeslots are available for data. The signalling bits are not interpreted.
When ***unframed*** is selected, a clear channel is defined whereby data from all timeslots including the framing data (in timeslot 0) and timeslot 16 are passed transparently. This value is valid only

for AAL1 cards.

For cell-based cards the ATM Forum specifies that timeslot 16 be reserved, leaving 30 timeslots available for data.
The ***8pE1Atm*** and ***1pStm1ChSmIr*** cards support the ***ccs*** value only. The ***4pOC3ChSmIr*** card only supports the ***ccs*** and ***unframed*** values. For both these cards, the default value is ***ccs***. For all other cards, the default value is ***cas***.

Mib: SonetSdh

Values:
ccs
cas
unframed

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 clockingSource (clockingSource)

Access: Read and write

Description: This attribute defines the source of the transmit clock for the E1 line.

When ***local*** is selected, the crystal on the port generates the clocking for the line.

When ***line*** is selected, the port synchronizes to the clock from the facility.

When ***module*** is selected, the ports clock synchronizes to the clock provided by the oscillator on the active CP.

When ***otherPort*** is selected, the port synchronizes to the port with a clocking source of ***line***.

When ***srtsMode*** is selected, the port transmit frequency depends on the SRTS (Synchronous Residual Time-Stamp) received over the ATM network. SRTS information is also generated sent over the ATM network.

When ***adaptiveMode*** is selected, the port transmit frequency continually adapts to match the egress data received from the

ATM network.

A port with ***srtsMode*** or ***adaptiveMode*** must have a single *Chan* which may be linked only to an *Aal1Ces*.service with serviceType ***unstructured***

If the *NetworkSynchronization* component is present, the default value of this attribute is ***module***, otherwise it defaults to ***line***, except for the ***3pE1Atm*** card, which it defaults to ***local***.
On a ***3pE1Atm*** card all ports must have the same value, and be either ***local*** or ***module***.

otherPort is valid only on AAL1 cards. ***srtsMode*** is valid only on AAL1 and Multi-Service Access cards. ***adaptiveMode*** is valid only on Multi-Service Access cards.

On ***4E1Aal1*** cards either:

all four ports' *clockingSource* values must be ***local*** OR
all four ports' *clockingSource* values must be ***module*** OR
one port's *clockingSource* value must be ***line*** and the other three must be ***otherPort***. A port can only have ***srtsMode*** selected if the other ports are ***module*** or ***srtsMode***.

Mib: SonetSdh

Values:
local
line
module
otherPort
srtsMode
adaptiveMode

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 crc4Mode

Access: Read and write

Description

This attribute defines whether the CRC-4 checking and generation on the E1 line is enabled or disabled.

The default CRC-4 mode is ***off*** except for the cell-based cards which default to ***on*** as per the ATM Forum.

Mib: SonetSdh

Values: on
off

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 sendRaiOnAis

Access: Read and write

Description:

This attribute defines whether the Remote Alarm Indicator (RAI) will be sent when receiving an AIS alarm. The value is ***yes*** by default; it can be changed to ***no*** only for ports on J2MV cards.

Mib: SonetSdh

Values: no
yes

Default: yes

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 raiDeclareAlarmTime

Access: Read and write

Description:

This attribute specifies the period of time that a Remote Alarm Indicator (RAI) must be present before declaring an RAI alarm. The value of ***auto*** sets the RAI declare time to the default value for E1 and E1C card types which do not have hardware support for RAI response. On E1C card types with hardware support, if the value of ***auto*** is set, RAI response is done according to the standards. If ***auto*** is set, the value of the *raiClearAlarmTime* attribute is ignored and ***auto*** is used. This attribute is for E1 and E1C card types only. For all other card types, the default value must be used.

Mib: SonetSdh

Values: Decimal (1..20000)
auto

Units	msec
Default	100

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 raiClearAlarmTime

Access	Read and write
Description	This attribute specifies the period of time that a Remote Alarm Indicator (RAI) has been absent before clearing an RAI alarm. The value of ***auto*** sets the RAI clear time to the default value for E1 and E1C card types which do not have hardware support for RAI response. On E1C card types with hardware support, if the value of ***auto*** is set, RAI response is done according to the standards. If ***auto*** is set, the value of the *raiDeclareAlarmTime* attribute is ignored and ***auto*** is used. This attribute is for E1 and E1C card types only. For all other card types, the default value must be used.
Mib	SonetSdh
Values	Decimal (1..20000) auto
Units	msec
Default	100

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 ssmE1SaNumber

Access	Read and write
Description	This attribute specifies which of the five available Sa bits (Sa4 to Sa8) recommended in ITU G.704 is to be used for Synchronization Status Messages (SSM). If set to ***none***, the transmission of SSM is disabled on this port.
Mib	SonetSdh
Values	Decimal (4..8) none
Default	none

GROUP Lp Sdh Vc4 Vc12 E1 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	SonetSdh
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Sdh Vc4 Vc12 E1 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.

Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	SonetSdh
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	SonetSdh
Values	String (0..60, ASCII)
Default	No default

GROUP Lp Sdh Vc4 Vc12 E1 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh

Values	up down testing
Default	up

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sdh Vc4 Vc12 E1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sdh Vc4 Vc12 E1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	SonetSdh
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	SonetSdh
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)

Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	SonetSdh
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 alarmStatus (osiAlarm)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	SonetSdh
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 standbyStatus (osiStby)

Access	Read only

Description

If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib

SonetSdh

Values

hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default

notSet

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 unknownStatus (osiUnknw)

Access

Read only

Description

This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib SonetSdh

Values false
true

Default false

GROUP Lp Sdh Vc4 Vc12 E1 Operational (Oper)

Properties Operational

Description

This group contains the common operational data for a component in a digital hierarchy interface.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 losAlarm (losAlarm)

Access Read only

Description

This attribute displays whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS defects have been observed and accumulated for a period of 2 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). A LOS defect is detected upon observing all zeros for 150 ms (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: upon observing 175 +/- 75 pulse positions with no pulses of either positive or negative polarity). If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOS alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOS alarm state.
The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 seconds.

Mib SonetSdh

Values
on
off

Default
off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 rxAisAlarm (rxAisAlarm)

Access
Read only

Description

This attribute displays whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period (for **8pDS1Atm** cards: when both an Out Of Frame condition exists and a 1's density of at least 99.9% is present for a time T, where 3 ms ≤ T ≤ 75 ms; for **8pE1Atm** cards: when both an Out Of Frame condition exists and fewer than three 0's have been received in 512 bit periods). If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state.
The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.

Mib
SonetSdh

Values
on
off

Default
off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 lofAlarm (lofAlarm)

Access
Read only

Description

This attribute displays whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 seconds (for **3pDS1Atm**, **3pE1Atm**,

8pDS1Atm, and **8pE1Atm** cards: 2.5 seconds +/- 0.5 seconds). If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state
The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib: SonetSdh

Values: on
off

Default: off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 rxRaiAlarm (rxRaiAlarm)

Access: Read only

Description

This attribute displays whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. For **3pDS1Atm**, and **8pDS1Atm** cards: alarm is declared immediately upon observing the defect is present, with no integration time. For **3pE1Atm**, and **8pE1Atm** cards: alarm state is entered when the RAI defect indicator has been observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds (for **3pDS1Atm**, and **8pDS1Atm** cards: alarm is cleared immediately upon observing the defect is absent, with no integration time).
The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

Mib: SonetSdh

Values
on
off

Default
off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 txAisAlarm (txAisAlarm)

Access
Read only

Description
This attribute displays whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the port is in a locked state.

Mib
SonetSdh

Values
on
off

Default
off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 txRaiAlarm (txRaiAlarm)

Access
Read only

Description
This attribute displays whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the port detects a LOF alarm condition (for **3pDS1Atm**, **3pE1Atm**, **8pDS1Atm**, and **8pE1Atm** cards: RAI is transmitted when the port detects a LOS, LOF, or AIS condition).

Mib
SonetSdh

Values
on
off

Default
off

GROUP Lp Sdh Vc4 Vc12 E1 E1Operational (E1Oper)

Properties
Operational

Description
This group contains all of the operational data for a E1 component that are not defined in the DSCommonOp group.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 multifrmLofAlarm (multiLofAlarm)

Access Read only

Description

This attribute indicates whether a multiframe LOF (loss of frame) alarm state is entered. A multiframe LOF alarm state is entered when a multiframe LOF defect (2 consecutive errors in the multiframe alignment signal) has been detected and accumulated for 2.5 seconds +/- 0.5 seconds. If the multiframe LOF defects are intermittently occurring, the multiframe LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The alarm is cleared when the defect is not detected for 10 seconds +/- 0.5 seconds. When the multiframe LOF alarm is on, a multiframe RAI alarm indicator is transmitted on the line.

The ***8pE1Atm*** card does not support the multiframe LOF alarm.

Mib SonetSdh

Values on
off

Default off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 rxMultifrmRaiAlarm (rxMultiRaiAlarm)

Access Read only

Description

This attribute displays whether a multiframe RAI (remote alarm indicator) alarm state has been entered. A multiframe RAI alarm state is entered when a multiframe RAI alarm indicator (bit 6 of timeslot 16 in frame 0 is set to a one) is observed and accumulated for 2.5 seconds +/- 0.5 seconds. If the multiframe RAI indicator is intermittently received, the multiframe RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The multiframe RAI alarm condition is cleared when the

multiframe RAI alarm indication is not received for 10 seconds +/- 0.5 seconds. The multiframe RAI alarm is usually an indication that the far end facility is unable to gain multiframe synchronization.

The ***8pE1Atm*** card does not support the multiframe RAI alarm.

Mib: SonetSdh

Values: on
off

Default: off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 txMultifrmRaiAlarm (txMultiRaiAlarm)

Access: Read only

Description

This attribute displays whether a multiframe RAI (remote alarm indicator) alarm is being sent on the E1 line. This is transmitted when the E1 port detects a multiframe LOF condition.

The ***8pE1Atm*** card does not generate the multiframe RAI alarm.

Mib: SonetSdh

Values: on
off

Default: off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 ssmE1Tx

Access: Read only

Description

This attribute indicates the current Synchronization Status Message (SSM) transmitted on the E1 port within the Sa byte defined in ITU G.704.
This attribute is filtered when *ssmE1SaNumber* is set to ***none***.

Mib: SonetSdh

Values: Decimal (0..15)

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 multifrmCRC4LofAlarm (multiCRC4LofAlarm)

Access Read only

Description

This attribute indicates whether E1 CRC-4 multiframe LOF (loss of frame) alarm state is entered. A CRC-4 multiframe LOF alarm state is entered when a CRC-4 multiframe LOF defect (2 consecutive errors in the multiframe alignment signal) has been detected and accumulated for 2.5 seconds +/- 0.5 seconds. If the CRC-4 multiframe LOF defects are intermittently occurring, the CRC-4 multiframe LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The alarm is cleared when the defect is not detected for 10 seconds +/- 0.5 seconds.
The *multifrmCRC4LofAlarm* is not implemented for the ***E1***, ***1pE1V***, ***1pE1Mvp***, ***1pE1Mvpe***, ***4pE1Mvpe***, ***8pE1Atm***, ***E1C*** and ***4pE1Aal1*** cards.

Mib SonetSdh

Values on
off

Default off

GROUP Lp Sdh Vc4 Vc12 E1 Statistics (Stats)

Properties Operational

Description

This group contains the common statistical data for a component in a digital hierarchy interface.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 runningTime (runningTime)

Access Read only

Description

The number of seconds since the port component was activated.

Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 errorFreeSec (efs)

Access	Read only
Description	The number of seconds that the port has been in an error free state.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 erroredSec (es)

Access	Read only
Description	An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 sevErroredSec (ses)

Access	Read only
Description	A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.
Mib	SonetSdh

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 sevErroredFrmSec (sefs)

Access	Read only
Description	A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 unavailSec

Access	Read only
Description	The total number of seconds that the interface is in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 bpvErrors (bpvErrors)

Access	Read only
Description	The current count of Bipolar Violations. A bipolar violation is an error in the alternate mark inversion pattern (AMI) on the line.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 crcErrors (crcErrors)

Access Read only

Description

If the interface is a DS1 line, it is the current count of CRC-6 errors. These will only be counted when the lineType is ESF. If the interface is an E1 line, it is the total number of CRC-4 errors. These will only be counted when crc4Mode is on.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 frmErrors (frmErrors)

Access Read only

Description

The current count of frame errors. A frame error is an error in the framing bits

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 losStateChanges (losChanges)

Access Read only

Description

The total number of times that the line lost signal.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 slipErrors (slipErrors)

Access Read only

Description

The total number of times that the line experienced a controlled

	frame slip. This attribute is incremented for ports on the voice cards (for example the 1pDS1V and the 1pE1V function processors) only.
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sdh Vc4 Vc12 E1 Channel (Chan)

Instance	Decimal (0..31)
Groups	"GROUP Lp Sdh Vc4 Vc12 E1 Chan Provisioned (Prov)" "GROUP Lp Sdh Vc4 Vc12 E1 Chan CustomerIdentifierData (CidData)" "GROUP Lp Sdh Vc4 Vc12 E1 Chan IfEntryProv (IfEntry)" "GROUP Lp Sdh Vc4 Vc12 E1 Chan OperationalStatus (OperStatus)" "GROUP Lp Sdh Vc4 Vc12 E1 Chan OsiState (State)" "GROUP Lp Sdh Vc4 Vc12 E1 Chan Operational (Oper)" "GROUP Lp Sdh Vc4 Vc12 E1 Chan AdminInfo (AdminInfo)"
Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port.

Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots.

Mib: SonetSdh

Opt. Subcomp.: "COMPONENT Lp Sdh Vc4 Vc12 E1 Chan AtmCell (Cell)"
"COMPONENT Lp Sdh Vc4 Vc12 E1 Chan TrunkConditioning (Tc)"
"COMPONENT Lp Sdh Vc4 Vc12 E1 Chan FrameLinkMonitoring (Flm)"

Dyn. Subcomp.: "COMPONENT Lp Sdh Vc4 Vc12 E1 Chan Test (Test)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Lp Sdh Vc4 Vc12 E1 Chan Provisioned (Prov)

Properties: Provisioned

Description

This group contains all of the provisional data for a *Channel* component.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan timeslots (ts)

Access: Read and write

Criticality: Component

Description

This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component.

For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be

	combined with other valid timeslot values. When ***none*** is selected, no timeslots are assigned and any service linked to the *Channel* does not function.
Mib	SonetSdh
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan timeslotDataRate (dataRate)

Access	Read and write
Criticality	Component
Description	This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute. When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s. When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s. On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card. On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***. One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.
Mib	SonetSdh
Values	56k doNotOverride
Default	doNotOverride

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan applicationFramerName

Access	Read and write

Description	This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.
Mib	SonetSdh
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp Sdh Vc4 Vc12 E1 Chan CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	SonetSdh
Values	Decimal (0; 1..8191)

Default	0

GROUP Lp Sdh Vc4 Vc12 E1 Chan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	SonetSdh
Values	Decimal (1..65535)
Default	No default

GROUP Lp Sdh Vc4 Vc12 E1 Chan OperationalStatus (OperStatus)

Properties	Operational

Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	SonetSdh
Values	up down testing
Default	up

GROUP Lp Sdh Vc4 Vc12 E1 Chan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or

Lock command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: SonetSdh

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	SonetSdh
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: SonetSdh

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been

initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: SonetSdh

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: SonetSdh

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: SonetSdh

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	SonetSdh
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	SonetSdh
Values	false true
Default	false

GROUP Lp Sdh Vc4 Vc12 E1 Chan Operational (Oper)

Properties	Operational
Description	This group contains all of the operational data for a *Channel* component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan actualChannelSpeed

Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.

Mib	SonetSdh
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Lp Sdh Vc4 Vc12 E1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	SonetSdh
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	SonetSdh
Values	String (0..60, ASCII)
Default	No default

COMPONENT Lp Sdh Vc4 Vc12 E1 Chan Test (Test)

Groups	"GROUP Lp Sdh Vc4 Vc12 E1 Chan Test OsiState (State)" "GROUP Lp Sdh Vc4 Vc12 E1 Chan Test Setup (Setup)" "GROUP Lp Sdh Vc4 Vc12 E1 Chan Test Results (Results)"

Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V*35, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.
Mib	SonetSdh
Common Verbs	Help List Display

VERB START Lp Sdh Vc4 Vc12 E1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Sdh Vc4 Vc12 E1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp Sdh Vc4 Vc12 E1 Chan Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	SonetSdh
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	SonetSdh

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	SonetSdh
Values	idle active (activ) busy
Default	idle

GROUP Lp Sdh Vc4 Vc12 E1 Chan Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	SonetSdh

Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.
Mib	SonetSdh
Values	card manual localLoop remoteLoop

externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test frmSize (size)

Access: Read and write

Description:

This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: SonetSdh

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test frmPatternType (fpt)

Access: Read and write

Description:

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: SonetSdh

Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	SonetSdh
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	SonetSdh
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test displayInterval (di)

Access	Read and write

Description

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib: SonetSdh

Values: Decimal (0..30240)

Units: minutes

Default: 5

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test duration

Access: Read and write

Description

This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.

Mib: SonetSdh

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 1.00

GROUP Lp Sdh Vc4 Vc12 E1 Chan Test Results (Results)

Properties: Operational

Description

This group contains all the statistics related attributes of the *Test* component.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test causeOfTermination

Access: Read only

Description

This attribute indicates either the status of the test or the cause of the test's termination:

a value of ***neverStarted*** indicates that the test has not yet been started.

a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these

values.

Mib	SonetSdh
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test frmRx

Access	Read only

Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is

identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib: SonetSdh

Values: String (5, ASCII)

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test elapsedTime

Access: Read only

Description:

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib: SonetSdh

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 0.00

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Test timeRemaining

Access: Read only

Description:

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib: SonetSdh

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 0.00

COMPONENT Lp Sdh Vc4 Vc12 E1 Chan AtmCell (Cell)

Groups
"GROUP Lp Sdh Vc4 Vc12 E1 Chan Cell Provisioned (Prov)"
"GROUP Lp Sdh Vc4 Vc12 E1 Chan Cell Operational (Oper)"
"GROUP Lp Sdh Vc4 Vc12 E1 Chan Cell Statistics (Stats)"

Scope
Device

Description
The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib
SonetSdh

Common Verbs
Help
List
Display
Add
DELete

GROUP Lp Sdh Vc4 Vc12 E1 Chan Cell Provisioned (Prov)

Properties
Provisioned

Description
This group contains the provisioning attributes for the *AtmCell* component.

Mib
SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell alarmActDelay (act)

Access
Read and write

Description
This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute

defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib: SonetSdh

Values: Decimal (0..2000)

Units: msec

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell scrambleCellPayload (scramble)

Access: Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib: SonetSdh

Values: off
on

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell correctSingleBitHeaderErrors

Access: Read and write

Description

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not

corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib: SonetSdh

Values: off
on

Default: off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell clearDelay (clear)

Access: Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (0..60)

Units: minutes

Default: 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell hecSampleInterval (hSample)

Access: Read and write

Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the

uncorrectableHeaderErrors attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (0..25)

Units: seconds

Default: 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell hecErrorLimit (hLimit)

Access: Read and write

Description:

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (1..250000)

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell lcdStateDelay (delay)

Access Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib SonetSdh

Values Decimal (1..50)

Units msec

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell hecErrorIntervalLimit (hIntLimit)

Access Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm,

3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: SonetSdh

Values: Decimal (1..25)

Default: 1

GROUP Lp Sdh Vc4 Vc12 E1 Chan Cell Operational (Oper)

Properties: Operational

Description

This group contains the common operational attributes for the *AtmCell* component.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell lcdAlarm (lcd)

Access: Read only

Description

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD

defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib: SonetSdh

Values: on
off

Default: off

GROUP Lp Sdh Vc4 Vc12 E1 Chan Cell Statistics (Stats)

Properties: Operational

Description:

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access: Read only

Description:

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib: SonetSdh

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib SonetSdh

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell receiveCellUtilization (rxutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib SonetSdh

Values Decimal (0..100)

Units	%
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell transmitCellUtilization (txutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	SonetSdh
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Cell correctableHeaderErrors (cErr)

Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	SonetSdh
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Sdh Vc4 Vc12 E1 Chan TrunkConditioning (Tc)

Groups	"GROUP Lp Sdh Vc4 Vc12 E1 Chan Tc Provisioned (Prov)" "GROUP Lp Sdh Vc4 Vc12 E1 Chan Tc Operational (Op)"
Scope	Device
Description	*Lp/n Ds1/n Chan/n Tc* *Lp/n E1/n Chan/n Tc* *Lp/n Ds3/n Ds1/n Chan/n Tc* *Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc* *Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc* *Laps/n* Vc4/n Vc12/k,l,m E1 Chan/n T*c* *Laps/n* Sts/n Vt1dot5/l,m Ds1 Chan/n T*c* The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service. Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined. When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI) When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the PDH network under the following conditions: bufferUnderflow (BU) AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib SonetSdh

Common Verbs

Help
List
Display
Add
DELete

GROUP Lp Sdh Vc4 Vc12 E1 Chan Tc Provisioned (Prov)

Properties Provisioned

Description This group contains all specific provisioning data for a *Tc* component.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc replacementData (data)

Access Read and write

Description This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions.

The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values:
DS1 MUX Out Of Service Code = 0x1A
E1 MUX Out Of Service Code = 0xFF

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***.

On the ***4pOC3ChSmIr*** and ***2pOC3ChSmIrVsp3*** cards, the default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.

Mib SonetSdh

Values	Hex (H.0..H.ff)
Units	Hex
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc signalOneDuration (duration)

Access	Read and write
Description	This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits. If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions. The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.
Mib	SonetSdh
Values	Decimal (0..60)
Units	seconds
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc noServiceResponse (resp)

Access	Read and write
Description	This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available: ***autoConfigure*** - automatically configure the channels response. ***tc*** - transmit trunk conditioning on all timeslots provisioned in the egress direction. ***ais*** - transmit AIS in the egress direction. ***noResponse*** - no response is sent in the egress direction.

A value of ***autoConfigure*** will result in TC being transmitted for all card types.

Mib: SonetSdh

Values:
autoConfigure
tc
ais
noResponse

Default: autoConfigure

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc signalOne (sigOne)

Access: Read and write

Description: This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined.

For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.

Mib: SonetSdh

Vector of: Decimal (0..1)

Index:
D
C
B
A

Default: (1, 1, 1, 1)

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc signalTwo (sigTwo)

Access: Read and write

Description: This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined.

For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.

Mib: SonetSdh

Vector of: Decimal (0..1)

Index:
D
C
B
A

Default: (1, 1, 1, 1)

GROUP Lp Sdh Vc4 Vc12 E1 Chan Tc Operational (Op)

Properties: Operational

Description: This group contains all specific operational data for a *Tc* component.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc ingressConditioning (inCon)

Access: Read only

Description: This attribute indicates the status of locally generated trunk conditioning towards the ATM network.

When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.***

When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***.

Trunk conditioning is transmitted towards the ATM network under the following conditions:
lossOfSignal (LOS)
lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)

receiveMultiframeRemoteAlarmIndication (RMRAI)

Mib: SonetSdh

Values: off
on

Default: off

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Tc egressConditioning (egCon)

Access: Read only

Description: This attribute indicates the status of locally generated trunk conditioning towards the PDH line.

When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.***

When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***.

Trunk conditioning is transmitted towards the PDH line under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

Mib: SonetSdh

Values: off
on

Default: off

COMPONENT Lp Sdh Vc4 Vc12 E1 Chan FrameLinkMonitoring (Flm)

Groups: "GROUP Lp Sdh Vc4 Vc12 E1 Chan Flm Provisioned (Prov)"
"GROUP Lp Sdh Vc4 Vc12 E1 Chan Flm Operational (Op)"

Scope: Device

Description: *Lp/n E1/n Chan/n FrameLinkMonitoring*

This component provides a monitoring function specific to a

Frame Relay Channel on an E1 line. It combines the status of E1 channel-associated-signalling A-bits and HDLC frame defect.

Mib: SonetSdh

Common Verbs:
Help
List
Display
Add
DELete

GROUP Lp Sdh Vc4 Vc12 E1 Chan Flm Provisioned (Prov)

Properties: Provisioned

Description:
This group contains all specific provisioning data for an *Flm* component.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Flm aBitMonitoring (aBit)

Access: Read and write

Description: This attribute controls the monitoring of A-bit defects.

Mib: SonetSdh

Values:
disabled
enabled

Default: enabled

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Flm hdlcMonitoring (hdlc)

Access: Read and write

Description: This attribute controls the monitoring of HDLC defect.

Mib: SonetSdh

Values:
disabled
enabled

Default: No default

GROUP Lp Sdh Vc4 Vc12 E1 Chan Flm Operational (Op)

Properties	Operational
Description	This group contains all specific operational data for an *Flm* component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Chan Flm flmStatus (status)

Access	Read only
Description	This attribute indicates the status of a Frame Relay channel on an E1 line. By combining the E1 channel-associated-signalling (CAS) A-bits status, and HDLC defect, a single value indicates the likely cause of the failure. This mechanism assumes that the far end equipment loops back signaling A-bits for some or all of the timeslots in a channel. The A-bits in channel are transmitted as ‘0’. If they are all received as ‘0’, it is assumed that the E1 link is up in both directions. The presence of HDLC frames indicates that the service is connected. When A-bits and HDLC frames are correctly received, ***frameLinkUp*** is indicated. When neither are received, ***frameLinkDown*** is indicated. When HDLC frames are not receive but A-bits are not at fault, ***lossOfHdlc*** is indicated. When HDLC frames are received, but there is a fault in any of timeslot’s A-bits on a channel ***lossOfAbit*** is indicated.
Mib	SonetSdh
Values	notMonitoring frameLinkUp frameLinkDown lossOfHdlc lossOfAbit
Default	No default

COMPONENT Lp Sdh Vc4 Vc12 E1 Test (Test)

Groups	"GROUP Lp Sdh Vc4 Vc12 E1 Test OsiState (State)" "GROUP Lp Sdh Vc4 Vc12 E1 Test Setup (Setup)" "GROUP Lp Sdh Vc4 Vc12 E1 Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V*35, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	SonetSdh
Common Verbs	Help List Display

VERB START Lp Sdh Vc4 Vc12 E1 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Sdh Vc4 Vc12 E1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp Sdh Vc4 Vc12 E1 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	SonetSdh
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: SonetSdh

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: SonetSdh

Values: idle
active (activ)
busy

Default: idle

GROUP Lp Sdh Vc4 Vc12 E1 Test Setup (Setup)

Properties: Operational

Description: This group contains all of the operational data for a *Test* component.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test purpose (purpose)

Access: Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib SonetSdh

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib	SonetSdh
Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	SonetSdh
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit.

ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: SonetSdh

Values: ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default: ccitt32kBitPattern

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test customizedPattern (cp)

Access: Read and write

Description:

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: SonetSdh

Values: Hex (H.0..H.ffffffff)

Units: Hex

Default: H.55555555

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test dataStartDelay (dsd)

Access: Read and write

Description:

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib: SonetSdh

Values: Decimal (0..1814400)

Units	seconds
Default	0

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	SonetSdh
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Sdh Vc4 Vc12 E1 Test Results (Results)

Properties	Operational

Description

This group contains all the statistics related attributes of the *Test* component.

Mib SonetSdh

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test causeOfTermination

Access Read only

Description This attribute indicates either the status of the test or the cause of the test's termination:

a value of ***neverStarted*** indicates that the test has not yet been started.

a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: SonetSdh

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test bitsTx

Access: Read only

Description:

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: SonetSdh

Values: Long Integer

Default: No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test bytesTx

Access: Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test bitsRx

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib SonetSdh

Values Long Integer

Default No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test bytesRx

Access Read only

Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	SonetSdh
Values	Long Integer
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	SonetSdh
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Sdh Vc4 Vc12 E1 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	SonetSdh
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp Sdh Vc4 Vc12 E1 Dsp

Scope	Device
Description	*LogicalProcessor/n E1/0 Dsp* The *Dsp* component presents the status of the Digital Signal Processors (DSPs) present on a voice card. A voice card's *Dsp* component is created automatically whenever the parent E1 component becomes active, and remains in existence as long as the E1 component exists. *Dsp* components cannot be added or deleted.
Mib	SonetSdh
Common Verbs	Help List Display

COMPONENT Lp Sdh Vc4 Vc12 E1 Audio

Scope	Device
Description	*LogicalProcessor/n E1/0 Audio* The *Audio* component presents the audio status of the channels on a voice card. A voice card's *Audio* component is created automatically whenever the parent E1 component becomes active, and remains

in existence as long as the E1 component exists. *Audio* components cannot be added or deleted.

Mib: SonetSdh

Common Verbs:
Help
List
Display

COMPONENT Lp Sdh OpticalModule (Om)

Groups: "GROUP Lp Sdh Om Provisioned (Prov)"
"GROUP Lp Sdh Om OsiState (State)"
"GROUP Lp Sdh Om Operational (Oper)"

Scope: Device

Description: *Lp/n Ethernet/n OpticalModule*
This component represents the optical module device of the port. The optical module is used to identify the type of connection for a port.

Mib: SonetSdh

Common Verbs:
Help
List
Display
Add
DELete

GROUP Lp Sdh Om Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioning data for the *OpticalModule* component.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Om type

Access: Read and write

Description

This attribute specifies the expected optical module type. The values for the *type* and *insertedType* attributes must match; otherwise, an alarm is raised and the *OpticalModule* component is disabled.

none: This value indicates that no optical module type is specified.

LX: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 1310nm, Media = Single-Mode.

SX: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 850nm, Media = Multi-Mode.

OC3SmLr: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength =1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC3SmIr: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

OC3MmSr: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Multi-Mode, Reach = 2Km (Short Reach).

OC12SmLr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC12SmIr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

OC48SmLr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmLr2: This value indicates that the optical module is an

OC48 type with the following specifications: Wavelength = 1550 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmIr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

Mib: SonetSdh

Values:
none
LX
SX
OC3SmLr
OC3SmIr
OC3MmSr
OC12SmLr
OC12SmIr
OC48SmLr
OC48SmLr2
OC48SmIr

Default: none

GROUP Lp Sdh Om OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: SonetSdh

ATTRIBUTE Lp Sdh Om adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively

prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: SonetSdh

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Sdh Om operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: SonetSdh

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Sdh Om usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	SonetSdh
Values	idle active (activ) busy
Default	idle

GROUP Lp Sdh Om Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *OpticalModule* component.
Mib	SonetSdh

ATTRIBUTE Lp Sdh Om insertedType

Access	Read only
Description	This attribute indicates the inserted optical module type. ***none***: This value indicates that there is no optical module inserted in the card. ***LX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 1310nm, Media = Single-Mode.

SX: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 850nm, Media = Multi-Mode.

OC3SmLr: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength =1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC3SmIr: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

OC3MmSr: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Multi-Mode, Reach = 2Km (Short Reach).

OC12SmLr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC12SmIr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

OC48SmLr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmLr2: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1550 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmIr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

Mib: SonetSdh

Values:
none
LX
SX

	OC3SmLr OC3SmIr OC3MmSr OC12SmLr OC12SmIr OC48SmLr OC48SmLr2 OC48SmIr
Default	none

ATTRIBUTE Lp Sdh Om serialNumber

Access	Read only
Description	This attribute indicates the serial number of the inserted optical module.
Mib	SonetSdh
Values	String (0..64, Extended ASCII)
Default	""

ATTRIBUTE Lp Sdh Om failureCause

Access	Read only
Description	This attribute indicates the cause for the optical module's failure. The possible values are: ***typeMismatch***: This error indicates a mismatch between the *type* and *insertedType* attributes. ***internalError***: This error indicates an internal diagnostic failure of the optical module. ***unsupportedOm:*** This error indicates that the inserted optical module is not supported on this card. ***absentOm***: This error indicates that no optical module are currently present on this port. ***noFailure***: There is no failure.

Mib	SonetSdh
Values	typeMismatch internalError unsupportedOm absentOm noFailure
Default	noFailure

COMPONENT Lp JT2

Instance	Decimal (0..1)
Groups	"GROUP Lp JT2 CustomerIdentifierData (CidData)" "GROUP Lp JT2 Provisioned (Prov)" "GROUP Lp JT2 IfEntryProv (IfEntry)" "GROUP Lp JT2 OperationalStatus (OperStatus)" "GROUP Lp JT2 OsiState (State)" "GROUP Lp JT2 Operational (Oper)" "GROUP Lp JT2 Statistics (Stats)" "GROUP Lp JT2 AdminInfo (AdminInfo)"
Scope	Device
Description	*Lp/n JT2/n* The *JT2* component controls and monitors a JT2 port on a 2pJ6MAtm Function Processor. Up to two ports may be provisioned on the 2pJ6MAtm interface card.
Mib	Jt2
Subcomponents	"COMPONENT Lp JT2 AtmCell (Cell)"
Dyn. Subcomp.	"COMPONENT Lp JT2 Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp JT2 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Jt2

ATTRIBUTE Lp JT2 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Jt2
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp JT2 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the JT2 specific provisioning data for a JT2 component.

Mib Jt2

ATTRIBUTE Lp JT2 clockingSource (clockingSource)

Access Read and write

Description

This attribute defines the source of the transmit clock for the JT2 line.
When the clocking source is selected from ***local***, the oscillator on the port generates the clocking for the line.
When the clocking source is selected from ***line***, the port synchronizes to the clock recovered from the incoming line signal.
When the clocking source is selected from ***module***, the port's clock synchronizes to the clock provided by the oscillator on the active CP.
Note:- that when one port is set to ***local***, the other port must also be set to ***local***, and when one port is set to ***module***, the other port must also be set to ***module***. If one of the ports is set to ***line***, the other port must be set to ***otherPort***.
Also, if a CP reference clock is available when the JT2 component is added, the clocking source defaults to ***module***, whereas if a CP reference clock is not available when the component is added, the clocking source defaults to ***local***.

Mib Jt2

Values
local
line
module
otherPort

Default No default

ATTRIBUTE Lp JT2 lineLength (length)

Access Read and write

Description

This attribute defines the line length for equalization calculations for the JT2 line. The range is between 0 and 480 feet (1 metre = 3.28 feet).

Mib	Jt2
Values	Decimal (0..480)
Units	feet
Default	0

ATTRIBUTE Lp JT2 applicationFramerName

Access	Read and write
Description	This attribute defines the link to the software stack. It defines which application is running on top of the *JT2* component.
Mib	Jt2
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp JT2 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Jt2

ATTRIBUTE Lp JT2 ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Jt2
Values	up down testing
Default	up

ATTRIBUTE Lp JT2 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Jt2
Values	Decimal (1..65535)
Default	No default

GROUP Lp JT2 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Jt2

ATTRIBUTE Lp JT2 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Jt2
Values	up down testing
Default	up

GROUP Lp JT2 OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Jt2

ATTRIBUTE Lp JT2 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Jt2
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp JT2 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Jt2
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp JT2 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Jt2
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp JT2 availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to

place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Jt2
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp JT2 proceduralStatus (osiProc)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	Jt2
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp JT2 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Jt2
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp JT2 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Jt2
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp JT2 standbyStatus (osiStby)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Jt2
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp JT2 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Jt2

Values: false
true

Default: false

GROUP Lp JT2 Operational (Oper)

Properties: Operational

Description

This group contains the JT2 specific operational data for a JT2 component in a digital hierarchy interface.

Mib: Jt2

ATTRIBUTE Lp JT2 losAlarm (los)

Access: Read only

Description

This attribute displays whether a LOS (Loss of Signal) alarm state is entered. An LOS alarm state is entered when LOS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOS defect is declared at the JT2 line interface when the input data is zero for 20 - 32 clock cycles. If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
An LOS failure alarm is cleared when the LOS defect is absent for a period of 10 seconds +/- 0.5 seconds. The JT2 port goes into an *operationalState* of ***disabled*** for the duration of the LOS alarm condition. While the port is in the LOS alarm state, the port also transmits the far-end RAI defect indicator on the out-going JT2 line.

Mib: Jt2

Values: on
off

Default off

ATTRIBUTE Lp JT2 lofAlarm (lof)

Access Read only

Description

This attribute indicates whether a LOF (Loss of Frame) alarm state is entered. A LOF alarm state is entered when LOF defects are observed and accumulated for 2.5 seconds +/- 0.5 seconds or more. A LOF defect occurs when seven or more consecutive incorrect frame alignment patterns (4 multiframes) are received. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The LOF alarm is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds. The port goes into an *operationalState* of ***disabled*** for the duration of the LOF alarm condition. While the port is in the LOF alarm state, the node also transmits the far-end RAI defect indicator on the out-going JT2 line.

Mib Jt2

Values on
off

Default off

ATTRIBUTE Lp JT2 rxAisPhysicalAlarm (rxAisPhys)

Access Read only

Description

This attribute indicates whether a Physical AIS alarm state is entered. A Physical AIS alarm state is entered when a Physical AIS defect is observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A Physical AIS defect is declared when the incoming signal has two or less zeros in a sequence of 3,156 bits (0.5 ms). If the physical AIS defects are intermittently occurring, the physical AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
A Physical AIS alarm is cleared when the Physical AIS defect is

absent for a period of 10 seconds +/- 0.5 seconds. The port goes into an *operationalState* of ***disabled*** until the AIS alarm condition is cleared. While the port is in the Physical AIS alarm state, the node also transmits the far-end RAI defect indicator on the out-going JT2 line.

Mib: Jt2

Values: on
off

Default: off

ATTRIBUTE Lp JT2 rxAisPayloadAlarm (rxAisPayld)

Access: Read only

Description

This attribute indicates whether a Payload AIS alarm state is entered. A Payload AIS alarm state is entered when a Payload AIS defect persists for a period of 2.5 seconds +/- 0.5 seconds. A Payload AIS defect is declared when the incoming signal of the 6312 kbit/s frame payload (TS1 - TS96) has two or less zeros in a sequence of 3,072 bits (0.5 ms). If the payload AIS defects are intermittently occurring, the payload AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
A Payload AIS failure alarm is cleared when the Payload AIS defect is absent for a period of 10 seconds +/- 0.5 seconds. The port goes into an *operationalState* of ***disabled*** until the AIS alarm condition is cleared. While the port is in the Payload AIS alarm state, the node also transmits the far-end RAI defect indicator on the out-going JT2 line.

Mib: Jt2

Values: on
off

Default: off

ATTRIBUTE Lp JT2 rxRaiAlarm (rxRai)

Access Read only

Description

This attribute indicates whether a Received RAI alarm state is entered. A received RAI alarm state is entered when the RAI signal is detected on the incoming JT2 Line (when 16 or more consecutive RAI patterns of 1111111100000000 are received on the 4 kbit/s data channel (m-bits) within the framing bits of the JT2 frame). The JT2 port goes into an *operationalState* of ***Disabled*** until the RAI alarm condition is cleared. The RAI alarm is cleared when four or more consecutive non-RAI patterns (anything other than 1111111100000000) are received.

Mib Jt2

Values on
off

Default off

ATTRIBUTE Lp JT2 txAisPhysicalAlarm (txAisPhys)

Access Read only

Description

This attribute indicates whether an AIS (Alarm Indication Signal) alarm is being transmitted on the outgoing JT2 line. Currently the JT2 port only transmits a Physical AIS (no Payload AIS) on the outgoing JT2 line.
Since there is no Idle signal defined for JT2, the AIS signal is transmitted when the JT2 port is in the *operationalState* of ***locked.*** The AIS signal may also be transmitted for diagnostic testing.

Mib Jt2

Values on
off

Default off

ATTRIBUTE Lp JT2 txRaiAlarm (txRai)

Access	Read only
Description	This attribute indicates whether an RAI defect indication pattern is being sent on the out-going JT2 line. The RAI alarm pattern is transmitted in the 4 kbit/s data channel (m-bits) when the port detects a LOS, AIS or LOF alarm condition.
Mib	Jt2
Values	on off
Default	off

GROUP Lp JT2 Statistics (Stats)

Properties	Operational
Description	This group contains the statistical data for a JT2 component in a digital hierarchy interface.
Mib	Jt2

ATTRIBUTE Lp JT2 runningTime (runningTime)

Access	Read only
Description	This attribute indicates the number of seconds since the JT2 component was activated and placed in an ***unlocked*** state or used for operational testing. All the other error counts that follow as well as each *JT2* subcomponent's error counts can be updated when this count is active.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 errorFreeSec (efs)

Access	Read only
Description	This attribute indicates the number of seconds that the JT2 port has been in an error free state.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 erroredSec (es)

Access	Read only
Description	This attribute indicates the total number of errored seconds for the JT2 port. An errored second is declared when a second with one or more Code Violation Error events, or one or more LOF or LOS defects occur. A code violation error may be a cyclic redundancy check (CRC) error or a bipolar violation (BPV) error.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 sevErroredSec (ses)

Access	Read only
Description	This attribute indicates the total number of severely errored seconds for the JT2 port. A severely errored second occurs when a second with 255 or more Code Violation Error events or one or more LOF or LOS defects occur.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 sevErroredFrmSec (sefs)

Access	Read only
Description	This attribute indicates the total number of severely errored framing seconds for the JT2 port. A severely errored framing second occurs when a second with one or more Framing Errors occur.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 unavailSec

Access	Read only
Description	This attribute indicates the total number of seconds that the interface has been in an unavailable state. An unavailable state occurs at the onset of 10 consecutive Severely Errored Seconds. When the unavailable state is entered, the 10 Severely Errored Seconds are immediately transfered to the count of unavailableSeconds by incrementing the count of unavailSec by 10 and decrementing the count of sevErroredSec by 10. Whilst in the unavailable state, an unavailableSecond is counted for each SES or SEFS that occurs, and the count of SES and SEFS are both inhibited. The unavailable state is cleared at the onset of 10 consecutive seconds which are not Severely Errored Seconds.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 bpvErrors (bpv)

Access	Read only
Description	This attribute indicates the total count of bipolar violations

(BPV). A bipolar violation is an error in the alternate mark inversion pattern (AMI) on the line. The value of this attribute will wrap to zero when it reaches its maximum value.

Mib: Jt2

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp JT2 crcErrors (crcErr)

Access: Read only

Description

This attribute indicates the total number of cyclic redundancy check (CRC-5) errors detected on the incoming JT2 line. The value of this attribute will wrap to 0 when its maximum value is reached.

Mib: Jt2

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp JT2 frameErrors (frmErr)

Access: Read only

Description

This attribute indicates the total number of Framing Errors that have occured on the JT2 port. A Framing Error is an error in the framing bits. The value of this attribute will wrap to 0 when its maximum value is reached.

Mib: Jt2

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Lp JT2 losStateChanges (losChanges)

Access: Read only

Description	This attribute indicates the total number of times that the incoming signal on the JT2 line has been lost. The value of this attribute will wrap to 0 when its maximum value is reached.
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

GROUP Lp JT2 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Jt2

ATTRIBUTE Lp JT2 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Jt2
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp JT2 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	Jt2
Values	String (0..60, ASCII)
Default	No default

COMPONENT Lp JT2 Test (Test)

Groups
"GROUP Lp JT2 Test OsiState (State)"
"GROUP Lp JT2 Test Setup (Setup)"
"GROUP Lp JT2 Test Results (Results)"

Scope
Application

Description
The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.

Mib
Jt2

Common Verbs
Help
List
Display

VERB START Lp JT2 Test

Impact
Service

Description
This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp JT2 Test

Impact
Service

Description
This command stops a test running on the hardware component.

GROUP Lp JT2 Test OsiState (State)

Properties
Operational

Description
This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Jt2

ATTRIBUTE Lp JT2 Test adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Jt2

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Lp JT2 Test operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Jt2

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp JT2 Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Jt2

Values: idle
active (activ)
busy

Default: idle

GROUP Lp JT2 Test Setup (Setup)

Properties: Operational

Description:

This group contains all of the operational data for a *Test* component.

Mib: Jt2

ATTRIBUTE Lp JT2 Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Jt2
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp JT2 Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection

(bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Jt2

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp JT2 Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: Jt2

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp JT2 Test frmPatternType (fpt)

Access: Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: Jt2

Values: ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default: ccitt32kBitPattern

ATTRIBUTE Lp JT2 Test customizedPattern (cp)

Access: Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: Jt2

Values: Hex (H.0..H.ffffffff)

Units: Hex

Default: H.55555555

ATTRIBUTE Lp JT2 Test dataStartDelay (dsd)

Access: Read and write

Description

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib	Jt2
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp JT2 Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Jt2
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp JT2 Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Jt2
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp JT2 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Jt2

ATTRIBUTE Lp JT2 Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test

pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	Jt2
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp JT2 Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	Jt2
Values	Long Integer
Default	No default

ATTRIBUTE Lp JT2 Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	Jt2
Values	Long Integer
Default	No default

ATTRIBUTE Lp JT2 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Jt2
Values	Long Integer
Default	No default

ATTRIBUTE Lp JT2 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Jt2
Values	Long Integer
Default	No default

ATTRIBUTE Lp JT2 Test bytesRx

Access	Read only

Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Jt2
Values	Long Integer
Default	No default

ATTRIBUTE Lp JT2 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Jt2
Values	Long Integer
Default	No default

ATTRIBUTE Lp JT2 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Jt2
Values	Long Integer
Default	No default

ATTRIBUTE Lp JT2 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Jt2
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp JT2 Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Jt2
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp JT2 Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Jt2
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp JT2 AtmCell (Cell)

Groups	"GROUP Lp JT2 Cell Provisioned (Prov)" "GROUP Lp JT2 Cell Operational (Oper)" "GROUP Lp JT2 Cell Statistics (Stats)"
Scope	Device
Description	The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.
Mib	Jt2
Common Verbs	Help List Display

GROUP Lp JT2 Cell Provisioned (Prov)

Properties	Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib Jt2

ATTRIBUTE Lp JT2 Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib Jt2

Values Decimal (0..2000)

Units msec

Default No default

ATTRIBUTE Lp JT2 Cell scrambleCellPayload (scramble)

Access Read and write

Description

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib	Jt2
Values	off on
Default	No default

ATTRIBUTE Lp JT2 Cell correctSingleBitHeaderErrors

Access	Read and write
Description	This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded. Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.
Mib	Jt2
Values	off on
Default	off

ATTRIBUTE Lp JT2 Cell clearDelay (clear)

Access	Read and write
Description	This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds. This attribute is supported only on 3pDS1Atm, 8pDS1Atm,

3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Jt2

Values: Decimal (0..60)

Units: minutes

Default: 0

ATTRIBUTE Lp JT2 Cell hecSampleInterval (hSample)

Access: Read and write

Description:

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Jt2

Values: Decimal (0..25)

Units: seconds

Default: 0

ATTRIBUTE Lp JT2 Cell hecErrorLimit (hLimit)

Access: Read and write

Description:

This attribute specifies the error threshold for a HEC error

sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Jt2

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Lp JT2 Cell lcdStateDelay (delay)

Access: Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: Jt2

Values: Decimal (1..50)

Units: msec

Default: No default

ATTRIBUTE Lp JT2 Cell hecErrorIntervalLimit (hIntLimit)

Access	Read and write
Description	This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	Jt2
Values	Decimal (1..25)
Default	1

GROUP Lp JT2 Cell Operational (Oper)

Properties	Operational
Description	This group contains the common operational attributes for the *AtmCell* component.
Mib	Jt2

ATTRIBUTE Lp JT2 Cell lcdAlarm (lcd)

Access	Read only
Description	This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a

period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib: Jt2

Values: on
off

Default: off

GROUP Lp JT2 Cell Statistics (Stats)

Properties: Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib Jt2

ATTRIBUTE Lp JT2 Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib Jt2

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Lp JT2 Cell sevErroredSec (ses)

Access Read only

Description

This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted.

In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects.

Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.

Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Lp JT2 Cell receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Jt2
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Lp JT2 Cell transmitCellUtilization (txutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	Jt2
Values	Decimal (0..100)
Units	%

Default	0

ATTRIBUTE Lp JT2 Cell correctableHeaderErrors (cErr)

Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	Jt2
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Hssi

Instance	Decimal (0..0)
Groups	"GROUP Lp Hssi Provisioned (Prov)" "GROUP Lp Hssi CustomerIdentifierData (CidData)" "GROUP Lp Hssi AdminInfo (AdminInfo)" "GROUP Lp Hssi IfEntryProv (IfEntry)" "GROUP Lp Hssi OperationalStatus (OperStatus)" "GROUP Lp Hssi OsiState (State)" "GROUP Lp Hssi Operational (Oper)"
Scope	Application
Description	*Lp/m Hssi/0*

The *Hssi* component controls an HSSI interface.

Mib LogicalProcessor

Dyn. Subcomp. "COMPONENT Lp Hssi Test (Test)"

Common Verbs

Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp Hssi Provisioned (Prov)

Properties Provisioned

Description

This group contains the specific provisioning data for an *Hssi* component.

Mib LogicalProcessor

ATTRIBUTE Lp Hssi linkMode (mode)

Access Read and write

Description

This attribute defines the intended gender of the HSSI port. The actual gender of the port is determined by the hardware setup.

In ***dte*** mode, the *ta* line signal is driven as specified by the attribute *readyLineState* when the HSSI port passes its diagnostics. The *ta* line signal is then driven as specified by the attribute *dataTransferLineState* when the application is ready to transfer data. On the other hand, the input line signal *ca* is compared against those specified in the attributes *readyLineState* and *dataTransferLineState*. The application will be notified when the specified input line states are observed.

In ***dce*** mode, the ***Hssi*** component behaves similarly as when it is

in ***dte*** mode. However, it will be driving the ***dce*** line signal ***(ca)*** and monitoring the ***dte*** line signal (*ta*) as specified by the attributes *readyLineState* and *dataTransferLineState*.

Mib: LogicalProcessor

Values: dte, dce

Default: dce

ATTRIBUTE Lp Hssi readyLineState (rls)

Access: Read and write

Description:

This attribute specifies the line signal originating from the HSSI interface that will always be turned on, provided the HSSI interface passes it diagnostics. This set of signal is generally required for maintaining the connection. Note that both *dte* and *dce* signals are specified in this attribute. The appropriate set of specified signals will be turned on or checked according to the operational attribute *actualLinkMode.* See also *linkMode*.

Mib: LogicalProcessor

Set of: ca, ta

Default: (ca, ta)

ATTRIBUTE Lp Hssi dataTransferLineState (dtls)

Access: Read and write

Description:

This attribute specifies the line signals required to indicate that the external equipment is in a good state (that is, data transfer can proceed). Note that both ***dte*** and ***dce*** signals are specified in this attribute. The appropriate set of specified signals will be turned on or checked according to the operational attribute *actualLinkMode*. The value of this attribute must be a superset of that of the *readyLineState* attribute.

See also *linkMode*.

Mib	LogicalProcessor
Set of	ca ta
Default	(ca, ta)

ATTRIBUTE Lp Hssi lineSpeed (speed)

Access	Read and write
Description	This attribute specifies the speed of the line for source clocking. This attribute is ignored if the interface is not providing a clock. Note that the actual clock rate are available in the operational attributes *actualTxLineSpeed* and *actualRxLineSpeed*.
Mib	LogicalProcessor
Values	Decimal (1000000..50000000)
Units	bit/s
Default	45000000

ATTRIBUTE Lp Hssi applicationFramerName (framer)

Access	Read and write
Description	This attribute specifies the component name of a *Framer* which is associated with the *Hssi* component.
Mib	LogicalProcessor
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp Hssi CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib	LogicalProcessor

ATTRIBUTE Lp Hssi customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LogicalProcessor
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Hssi AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LogicalProcessor

ATTRIBUTE Lp Hssi vendor

Access	Read and write

Description	This is the name of the vendor supplying the facility.
Mib	LogicalProcessor
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Hssi commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LogicalProcessor
Values	String (0..60, ASCII)
Default	No default

GROUP Lp Hssi IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LogicalProcessor

ATTRIBUTE Lp Hssi ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

ATTRIBUTE Lp Hssi ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LogicalProcessor
Values	Decimal (1..65535)
Default	No default

GROUP Lp Hssi OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	LogicalProcessor

ATTRIBUTE Lp Hssi snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LogicalProcessor
Values	up down testing
Default	up

GROUP Lp Hssi OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Hssi adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Hssi operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Hssi usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Hssi availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to

place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	LogicalProcessor
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Hssi proceduralStatus (osiProc)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	LogicalProcessor
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Hssi controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	LogicalProcessor
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Hssi alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	LogicalProcessor
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Hssi standbyStatus (osiStby)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	LogicalProcessor
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Hssi unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib LogicalProcessor

Values false
true

Default false

GROUP Lp Hssi Operational (Oper)

Properties Operational

Description

This group contains all specific operational data for a *Hssi* component.

Mib LogicalProcessor

ATTRIBUTE Lp Hssi actualLinkMode

Access Read only

Description

This attribute indicates the actual link mode defined by the hardware. Note that the hardware overrides the provisionable data. The port behaves as a ***dce*** or ***dte*** according to the *actualLinkMode*.

Mib LogicalProcessor

Values dte
dce

Default No default

ATTRIBUTE Lp Hssi lineState

Access Read only

Description

This attribute indicates the state of the interface signals.

Mib	LogicalProcessor
Set of	ca ta tm la lb
Default	No default

ATTRIBUTE Lp Hssi actualTxLineSpeed

Access	Read only
Description	This attribute indicates the measured speed of the transmit clock. Note the reported transmit speed is in an error of +/- 10000 bit/s
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Lp Hssi actualRxLineSpeed

Access	Read only
Description	This attribute indicates the measured speed of the receive clock. Note the reported receive speed is in an error of +/- 10000 bit/s
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Lp Hssi dataXferStateChanges

Access	Read only

Description

This attribute counts the line transitions from and to data transfer state.

Mib LogicalProcessor

Values Decimal (0..4294967295)

Default 0

COMPONENT Lp Hssi Test (Test)

Groups "GROUP Lp Hssi Test OsiState (State)"
"GROUP Lp Hssi Test Setup (Setup)"
"GROUP Lp Hssi Test Results (Results)"

Scope Application

Description

The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.

Mib LogicalProcessor

Common Verbs

Help
List
Display

VERB START Lp Hssi Test

Impact Service

Description

This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Hssi Test

Impact Service

Description

This command stops a test running on the hardware component.

GROUP Lp Hssi Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Hssi Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Hssi Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Hssi Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp Hssi Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Hssi Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	LogicalProcessor
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp Hssi Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test.

pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Hssi Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: LogicalProcessor

Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp Hssi Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	LogicalProcessor
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Hssi Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	LogicalProcessor
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Hssi Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	LogicalProcessor
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Hssi Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	LogicalProcessor
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Hssi Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that

the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.

Mib LogicalProcessor

Values Decimal (0.00..30240.00)

Units minutes

Default 1.00

GROUP Lp Hssi Test Results (Results)

Properties Operational

Description

This group contains all the statistics related attributes of the *Test* component.

Mib LogicalProcessor

ATTRIBUTE Lp Hssi Test causeOfTermination

Access Read only

Description This attribute indicates either the status of the test or the cause of the test's termination:

a value of ***neverStarted*** indicates that the test has not yet been started.

a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on

the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	LogicalProcessor
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp Hssi Test bitsTx

Access	Read only

Description	This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Hssi Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Hssi Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Hssi Test bitsRx

Access	Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp Hssi Test bytesRx

Access Read only

Description

This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp Hssi Test frmRx

Access Read only

Description This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp Hssi Test erroredFrmRx

Access Read only

Description This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate

any frame.

For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib LogicalProcessor

Values Long Integer

Default No default

ATTRIBUTE Lp Hssi Test bitErrorRate

Access Read only

Description

This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib LogicalProcessor

Values String (5, ASCII)

Default No default

ATTRIBUTE Lp Hssi Test elapsedTime

Access Read only

Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Hssi Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp IlsForwarder (IlsFwdr)

Instance	Decimal (0)
Groups	"GROUP Lp IlsFwdr Provisioned (Prov)" "GROUP Lp IlsFwdr IfEntryProv (IfEntry)" "GROUP Lp IlsFwdr OsiState (State)" "GROUP Lp IlsFwdr OperationalStatus (OperStatus)" "GROUP Lp IlsFwdr Statistics (Stats)"
Scope	Device
Description	*Lp/n IlsForwarder/0* This component defines an instance of a IlsForwarder. At least

	one instance of this component must be provisioned if there is any *AtmMpe* component provisioned.
Mib	LanDrivers
Subcomponents	"COMPONENT Lp IlsFwdr LanTest (Lt)" "COMPONENT Lp IlsFwdr Test"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp IlsFwdr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for *IlsForwarder* component.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr linkToTrafficSource

Access	Read only
Description	This attribute contains a list of components that are using this *IlsForwarder.*
Mib	LanDrivers
List of	Link (Service, ilsForwarder)
List Size	256
Default	No default

GROUP Lp IlsFwdr IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.

Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

ATTRIBUTE Lp IlsFwdr ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LanDrivers
Values	Decimal (1..65535)
Default	No default

GROUP Lp IlsFwdr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LanDrivers
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp IlsFwdr operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: LanDrivers

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp IlsFwdr usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: LanDrivers

Values: idle
active (activ)
busy

Default: idle

GROUP Lp IlsFwdr OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: LanDrivers

ATTRIBUTE Lp IlsFwdr snmpOperStatus

Access: Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

GROUP Lp IlsFwdr Statistics (Stats)

Properties	Operational
Description	This group contains the operational frame statistics related attributes of the *IlsForwarder* component.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr framesReceived

Access	Read only
Description	This attribute counts the total number of frames that have been received by this card. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp IlsFwdr processedCount

Access	Read only
Description	This attribute counts the number of frames successfully processed by this card. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers

Values	Long Integer
Default	No default

ATTRIBUTE Lp IlsFwdr errorCount

Access	Read only
Description	This attribute counts the number of internal errors detected in transferring frames from an ATM card to this card. A continuous increment of this count indicates that the hardware may probably be defective. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp IlsFwdr framesDiscarded

Access	Read only
Description	This attribute counts the number of frames which are discarded due to local buffer congestion. This counter will wrap around after it reaches its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT Lp IlsFwdr LanTest (Lt)

Groups	"GROUP Lp IlsFwdr Lt TestOp (Top)"
Scope	Device
Description	*Lp/n Fddi/n LanTest*, or *Lp/n Ethernet/n LanTest*, or *Lp/n TokenRing/n LanTest, or* *Lp/n IlsForwarder/n LanTest* The LanTest component is used to control testing on LAN interfaces. This includes LLC layer loopback, on-card loopback,

	SNMP required tests, and any testing to be done in the lab or manufacturing.
Mib	LanDrivers
Dyn. Subcomp.	"COMPONENT Lp IlsFwdr Lt FrameCompare (FrmCmp)" "COMPONENT Lp IlsFwdr Lt FrameCopy (FrmCpy)" "COMPONENT Lp IlsFwdr Lt PortConfig (PrtCfg)" "COMPONENT Lp IlsFwdr Lt FrameBuild (Fb)" "COMPONENT Lp IlsFwdr Lt Control (Cntl)"
Common Verbs	Help List Display

VERB Start Lp IlsFwdr Lt

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of LanTest.

VERB Stop Lp IlsFwdr Lt

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp IlsFwdr Lt

Impact	Service
Description	This verb is used to reset the LanTest component.

VERB Get Lp IlsFwdr Lt

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt

Impact	Passive
Description	This verb is used to display the list of arguments to an attribute.

GROUP Lp IlsFwdr Lt TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt FrameCompare (FrmCmp)

Groups	"GROUP Lp IlsFwdr Lt FrmCmp TestOp (Top)"
Scope	Device
Description	This component compares frames received from the hardware and emulator during testing.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt FrmCmp

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCompare component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt FrmCmp

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt FrmCmp TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt FrmCmp tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt FrameCopy (FrmCpy)

Groups	"GROUP Lp IlsFwdr Lt FrmCpy TestOp (Top)"
Scope	Device

Description	This component receives its input from FrameBuild and places it upon the hardware which sends it to the appropriate emulator.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt FrmCpy

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCopy component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt FrmCpy

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt FrmCpy TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt FrmCpy tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt PortConfig (PrtCfg)

Groups	"GROUP Lp IlsFwdr Lt PrtCfg TestOp (Top)"

Scope	Device
Description	This component controls the emulator and hardware to ensure frames output from each will match in FrameCompare.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt PrtCfg

Impact	Passive
Description	*This verb is used to get and display operational parameters for the LanTest PortConfig component. This includes attributes set using the Set verb.*

VERB Tlist Lp IlsFwdr Lt PrtCfg

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt PrtCfg TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt PrtCfg tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt FrameBuild (Fb)

Groups	"GROUP Lp IlsFwdr Lt Fb TestOp (Top)"
Scope	Device
Description	LanTest Framebuild This component controls the building of all frames built and sent by the LanTest component. Each component under FrameBuild builds a portion of a packet or frame.
Mib	LanDrivers
Dyn. Subcomp.	"COMPONENT Lp IlsFwdr Lt Fb TransmitInfo (TxInfo)" "COMPONENT Lp IlsFwdr Lt Fb FddiMac (MacFddi)" "COMPONENT Lp IlsFwdr Lt Fb EthernetMac (MacEnet)" "COMPONENT Lp IlsFwdr Lt Fb TokenRingMac (MacTr)" "COMPONENT Lp IlsFwdr Lt Fb DataField (Data)" "COMPONENT Lp IlsFwdr Lt Fb IpHeader (IpH)" "COMPONENT Lp IlsFwdr Lt Fb LlcHeader (Llch)" "COMPONENT Lp IlsFwdr Lt Fb AppleHeader (AppleH)" "COMPONENT Lp IlsFwdr Lt Fb IpxHeader (IpxH)"
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameBuild component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb TestOp (Top)

Properties	Operational

Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb TransmitInfo (TxInfo)

Groups	"GROUP Lp IlsFwdr Lt Fb TxInfo TestOp (Top)"
Scope	Device
Description	LanTest TransmitInfo This component builds a transmit header which is attached to all frames transmitted on LAN interfaces.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb TxInfo

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TransmitInfo component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb TxInfo

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb TxInfo TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb TxInfo tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb FddiMac (MacFddi)

Groups	"GROUP Lp IlsFwdr Lt Fb MacFddi TestOp (Top)"
Scope	Device
Description	LanTest FddiMac This component builds an FDDI MAC header which is attached to all FDDI frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb MacFddi

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FddiMac component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb MacFddi

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb MacFddi TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb MacFddi tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb EthernetMac (MacEnet)

Groups	"GROUP Lp IlsFwdr Lt Fb MacEnet TestOp (Top)"
Scope	Device
Description	LanTest EthernetMac This component builds an Ethernet MAC header which is attached to all Ethernet frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb MacEnet

Impact	Passive
Description	This verb is used to get and display operational parameters LanTest EthernetMac component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb MacEnet

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb MacEnet TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb MacEnet tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb TokenRingMac (MacTr)

Groups	"GROUP Lp IlsFwdr Lt Fb MacTr TestOp (Top)"
Scope	Device

Description	LanTest TokenRingMac This component builds a Token Ring MAC header which is attached to all Token Ring frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb MacTr

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TokenRingMac component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb MacTr

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb MacTr TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb MacTr tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb DataField (Data)

Groups	"GROUP Lp IlsFwdr Lt Fb Data TestOp (Top)"
Scope	Device
Description	This component adds a data field to frame.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb Data

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest DataField component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb Data

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb Data TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb Data tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb IpHeader (IpH)

Groups	"GROUP Lp IlsFwdr Lt Fb IpH TestOp (Top)"
Scope	Device
Description	LanTest IpHeader This component adds an IP header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb IpH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest IpHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb IpH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb IpH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb IpH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb LlcHeader (Llch)

Groups	"GROUP Lp IlsFwdr Lt Fb Llch TestOp (Top)"
Scope	Device
Description	LanTest LlcHeader This component adds an LLC 802.2 or Ethernet header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb Llch

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest LlcHeader component. This includes attributes set using the SET verb.

VERB Tlist Lp IlsFwdr Lt Fb Llch

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb Llch TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb Llch tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers

Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb AppleHeader (AppleH)

Groups	"GROUP Lp IlsFwdr Lt Fb AppleH TestOp (Top)"
Scope	Device
Description	This component adds an AppleTalk header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb AppleH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest AppleHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb AppleH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb AppleH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb AppleH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers

Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Fb IpxHeader (IpxH)

Groups	"GROUP Lp IlsFwdr Lt Fb IpxH TestOp (Top)"
Scope	Device
Description	This component adds an IPX header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Fb IpxH

Impact	Passive
Description	This verb is used to get and display operational parameters forLanTest IpxHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Fb IpxH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Fb IpxH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Fb IpxH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.

Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Lt Control (Cntl)

Groups	"GROUP Lp IlsFwdr Lt Cntl TestOp (Top)"
Scope	Device
Description	LanTest Control This component controls the overall testing by telling the FrameBuild component to start and check the FrameCompare component to see if the test is complete.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp IlsFwdr Lt Cntl

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest Control component. This includes attributes set using the Set verb.

VERB Tlist Lp IlsFwdr Lt Cntl

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp IlsFwdr Lt Cntl TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Lt Cntl tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp IlsFwdr Test

Groups	"GROUP Lp IlsFwdr Test PortTestOp (PTO)" "GROUP Lp IlsFwdr Test Results (Results)"
Scope	Device
Description	*Lp/n Fddi/n Test*, or *Lp/n Ethernet/n Test*, or *Lp/n TokenRing/n Test, or* *Lp/n IlsForwarder/n Test* The Test component is used to do StartUp port test for LAN cards.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Start Lp IlsFwdr Test

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of Test.

VERB Stop Lp IlsFwdr Test

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp IlsFwdr Test

Impact	Service
Description	This verb is used to reset the Test component.

GROUP Lp IlsFwdr Test PortTestOp (PTO)

Properties	Operational
Description	This group contains the operational data for the *LanPortTest* component.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: card test sets up an internal loop on the board and runs a bit error rate test; manual test assumes the line is looped back externally and a bit error rate test is performed; localLoop test loops back the local modem and performs a bit error rate test; remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test; externalLoop test loops back the line to the far end; payloadLoop test only loops back the payload data received from the incoming line; Note that localLoop, remoteLoop and payloadLoop are not supported by all function processors.
Mib	LanDrivers
Values	onCard normal wrapA wrapB thruA thruB extWrapA extWrapB extThruA extThruB

	extWrapAB extWrapBA
Default	No default

ATTRIBUTE Lp IlsFwdr Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes.
Mib	LanDrivers
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp IlsFwdr Test duration (duration)

Access	Read and write
Description	This attribute specifies the duration of the test data transmission. In the case of an externalLoop, this is the time that the loop is in effect. Note that dataStartDelay does not apply to the externalLoop.
Mib	LanDrivers
Values	Decimal (1..30240)
Units	minutes
Default	1

GROUP Lp IlsFwdr Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the Test component.
Mib	LanDrivers

ATTRIBUTE Lp IlsFwdr Test elapsedTime

Access	Read only
Description	This attribute is the number of minutes elapsed since the test started for an externalLoop test. For a data test, this is the time since test data was first transmitted.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp IlsFwdr Test timeRemaining

Access	Read only
Description	This attribute is the number of minutes remaining before the test is to be stopped according to the duration attribute.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp IlsFwdr Test causeOfTermination

Access	Read only
Description	This attribute records the reason the test is terminated.
Mib	LanDrivers
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning
Default	neverStarted

ATTRIBUTE Lp IlsFwdr Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp IlsFwdr Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. This counter is not expected to reach its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp IlsFwdr Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp IlsFwdr Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers

Values	Long Integer
Default	No default

ATTRIBUTE Lp IlsFwdr Test erroredFrmRx

Access	Read only
Description	This attribute counts the errored frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT Lp InverseMultiplexerAtm (Ima)

Instance	Decimal (0..113)
Groups	"GROUP Lp Ima Provisioned (Prov)" "GROUP Lp Ima Operational (Oper)" "GROUP Lp Ima Statistics (Stats)" "GROUP Lp Ima CustomerIdentifierData (CidData)" "GROUP Lp Ima OsiState (State)"
Scope	Device
Description	*Lp/n InverseMultiplexerAtm/n* *Lp/n Ds3/n InverseMultiplexerAtm/n* This component is used to define an inverse multiplexing for ATM (IMA) group. IMA provides a data rate greater than DS1 E1 in increments of DS1 E1. To use IMA on an 8pDS1E1, MSA32, or 2pSTM1eCh function processor, add an *Lp/n InverseMultiplexerAtm/n* component. To use IMA on a 4pDS3ChAtm function processor, add an *Lp/n Ds3/n InverseMultiplexerAtm/n* component. The instance range 0..7 applies to 8pDS1Atm and 8pE1Atm cards. The instance range 0..13 applies to 4pDS3ChAtm cards. The instance range 0..29 applies to MSA32 cards. The instance

range 0..113 applies to 2pStm1eCh cards.

The instance number of an *IMA* group must not be the same as the instance number of a *DS1*/*E1* “ATM UNI port” under the same *Lp*. An “ATM UNI port” is a *DS1* or *E1* component with a single *Chan* whose *applicationFramer* attribute is linked to an *AtmIf* component. On an MSA32 card, ports that are used as IMA links have two immiscible sub-ranges: 0..15 and 16..31. The instance number of an *IMA* group must be in the same sub-range as all of its ports. IMA sub-ranges also exist on a 2pStm1eCh card, instances 0..56 are allowed on port SDH 0, and instances 57..113 are allowed on port SDH 1.

Mib	Ima
Opt. Subcomp.	"COMPONENT Lp Ima Link (Lk)"
Dyn. Subcomp.	"COMPONENT Lp Ima Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Ima Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Ima* component. The default values of *linkSelectionCriterion* and *linkRetryTimeout* depend on card type.
Mib	Ima

ATTRIBUTE Lp Ima linkSelectionCriterion (select)

Access	Read and write

Description	This attribute specifies the method to be used by the IMA group when selecting links to be activated. This comes into effect only when the configured links do not respect the maximum differential delay (otherwise all links are accepted). If ***leastDelay*** is chosen, first the link having the smallest delay is selected as the reference link. The IMA group includes all links which respect the maximum differential delay relative to the reference link. If ***maxBandwidth*** is chosen, the IMA group selects the maximum possible number of links, with each selected link respecting the maximum differential delay relative to every other selected link. When more than one possibility exists, the combination which offers the least delay is selected. The default value for Multi-Service Access cards is ***leastDelay***, and for all other cards is ***maxBandwidth***. On Multi-Service Access cards ***leastDelay*** is the only acceptable provisionable value.
Mib	Ima
Values	leastDelay maxBandwidth
Default	No default

ATTRIBUTE Lp Ima maxDiffDelay (delay)

Access	Read and write
Description	This attribute specifies the maximum differential delay between links acceptable in the IMA group. If a link violates that maximum differential delay, it will not be active in the IMA group and an alarm will be generated. For the 4pDS3ChAtm card, the value must not exceed 70.
Mib	Ima
Values	Decimal (1..100)

Units	msec
Default	25

ATTRIBUTE Lp Ima linkRetryTimeout (retry)

Access	Read and write
Description	This attribute specifies the amount of time before reactivation of a link is attempted after it recovers from a failure condition. The default value for Multi-Service Access cards is ***1***, and for all other cards is ***10***. On Multi-Service Access cards ***1*** is the only acceptable provisionable value.
Mib	Ima
Values	Decimal (0..1000)
Units	seconds
Default	No default

ATTRIBUTE Lp Ima applicationFramerName (framer)

Access	Read and write
Description	This attribute defines the link to the *AtmIf* component using the *Ima*. An example is *AtmIf/31*.
Mib	Ima
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp Ima transmitClockMode (clock)

Access	Read and write
Description	This attribute specifies the transmit clocking mode. If ***itc*** (Independent Transmit Clock) is chosen, the physical ports used by the IMA group may have different clocking sources. If ***ctc*** (Common Transmit Clock) is chosen, it is recommended that the physical ports used by the IMA group have the same clocking source. However, if the physical ports have different

clocking sources, the operator should ensure that all the clocking sources have the same rate.

Mib	Ima
Values	itc ctc
Default	itc

ATTRIBUTE Lp Ima protocol (prot)

Access	Read and write
Criticality	Component
Description	This attribute specifies which IMA protocol the component should run. If ***atmForum10*** is chosen, the ATM Forum's IMA protocol (version 1.0) will be used and signalled in outgoing IMA Control Protocol (ICP) cells.The IMA group will come up only if the far end IMA also uses the ATM Forum's IMA protocol 1.0. Feature ***imaAtmForum*** must be provisioned on the LP for this protocol to be used. If ***atmForum11*** is chosen, the ATM Forum's IMA protocol (version 1.1) will be used and signalled in outgoing IMA Control Protocol (ICP) cells.The IMA group will come up only if the far end IMA uses the ATM Forum's IMA protocol 1.0 or 1.1. Feature ***imaAtmForum*** must be provisioned on the LP for this protocol to be used. If the far end is 1.0, then the near end downgrades to 1.0. After the downgrade, this attribute continues to specify the provisioned protocol version, while the *activeProtocol* operational attribute of the IMA component specifies the protocol version effectively running. If ***proprietary*** is chosen, Nortel’s proprietary IMA protocol will be used. The IMA group will come up only if the far end IMA also uses Nortel’s proprietary IMA protocol. This IMA group will not inter-operate with IMA implementations from other vendors. Feature ***ima*** must be provisioned on the LP for this protocol to be used. The DEFAULT on 2pStm1eCh function processor is atmForum11.

Mib	Ima
Values	atmForum10 proprietary atmForum11
Default	No default

GROUP Lp Ima Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Ima* component.
Mib	Ima

ATTRIBUTE Lp Ima failureCause (cause)

Access	Read only
Description	This attribute indicates the cause of the current local end failure experienced by the IMA group. The failure may have occurred during a start-up procedure or during normal operation. Possible values are: ***noFailure***: no local end failure. ***noGoodLinksInStartup***: no good links were available during IMA start-up. ***badGidInStartup***: during start-up, different group identifiers (GIDs) were received on the links. ***badLidInStartup***: during start-up, duplicate link identifiers (LIDs) were received on the links. ***unsupportedFrameLengthInStartup***: during start-up, an unsupported frame length was received. ***timeoutInStartup***: a time-out has occurred during start-up. ***noGoodLinks***: no good links are available in the IMA group. ***remoteFailure***: the far end is down. ***unsupportedSymmetryInStartup***: the symmetry proposed by the far end is not supported on the near-end. This value will occur when the IMA group is running the ATM Forum protocol and the far end is proposing a group symmetry other than “symmetric configuration and operation”. ***unsupportedVersionInStartup***: the ima version proposed by the far end is not supported on the near-end.

Mib	Ima
Values	noFailure noGoodLinksInStartup badGidInStartup badLidInStartup unsupportedFrameLengthInStartup timeoutInStartup noGoodLinks remoteFailure unsupportedSymmetryInStartup unsupportedVersionInStartup
Default	No default

ATTRIBUTE Lp Ima remoteDefect (remDef)

Access	Read only
Description	This attribute indicates the cause of the current far end defect experienced by the IMA group. For the ATM Forum IMA protocol, possible values are: ***noDefect***: no defect. ***unsupportedFrameLengthInStartup***: during the far end's start-up, an unsupported frame length was received. ***unsupportedSymmetryInStartup***: during the far end's start-up, an unsupported symmetry configuration was received. ***otherAbortStartup***: the far end has aborted its start-up for another reason. This could be because different Gids were received on the links or if duplicate link identifiers (LIDs) were received. ***insufficientLinks***: the far end does not have sufficient links active. This value will be displayed if the far end IMA group is locked. ***blocked***: the far end IMA group is blocked. For the proprietary IMA protocol, possible values are: ***noDefect***: no defect. ***noGoodLinksInStartup***: no good links were available during the far end’s start-up. ***badGidInStartup***: during the far end’s start-up, different GIDs were received on the links. ***badLidInStartup***: during the far end’s start-up, duplicate link

identifiers (LIDs) were received on the links.
unsupportedFrameLengthInStartup: during the far end's start-up, an unsupported frame length was received.
timeoutInStartup: a time out has occurred during the far end's start-up.
noGoodLinks: no good links are available in the far end IMA group.
blocked: the far end IMA group is locked.
unsupportedVersionInStartup: the ima version proposed by the far end is not supported on the near-end.

Mib: Ima

Values:
noDefect
noGoodLinksInStartup
badGidInStartup
badLidInStartup
unsupportedFrameLengthInStartup
timeoutInStartup
noGoodLinks
locked
unsupportedSymmetryInStartup
otherAbortStartup
insufficientLinks
blocked
unsupportedVersionInStartup

Default: No default

ATTRIBUTE Lp Ima remoteLidsConfig (remConf)

Access: Read only

Description: This attribute indicates all the links which have been configured in the remote IMA group. For example, if links 1, 3 and 5 have been configured in the remote IMA group, this attribute would contain ***1 3 5***.

Mib: Ima

Set of: Decimal (0..31)

Default: No default

ATTRIBUTE Lp Ima remoteLidsActive (remAct)

Access	Read only
Description	This attribute indicates all the links which are active in the remote IMA group. For example, if links 1 and 5 are active in the remote IMA, this attribute would contain ***1 5***.
Mib	Ima
Set of	Decimal (0..31)
Default	No default

ATTRIBUTE Lp Ima cellCapacity (cap)

Access	Read only
Description	This attribute indicates the total cell capacity (in cells per second) which is provided to the ATM layer. This cell capacity takes into account the physical and IMA level overheads.
Mib	Ima
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE Lp Ima remoteGid (remGid)

Access	Read only
Description	This attribute indicates the IMA group identifier (GID) used by the remote IMA. A value of 0 will be displayed if the group is not receiving IMA Control Protocol (ICP) cells. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Lp Ima clockingModeMismatch (mismatch)

Access	Read only
Description	This attribute indicates whether or not both ends of the IMA group are using the same transmit clocking mode (***itc***/***ctc***). Its value will be ***yes*** if both ends are not using the same transmit clocking mode. A clocking mode mismatch does not prevent an IMA group from coming up and can be corrected by using the same clocking mode at both ends. This attribute will always have a value of ***no*** if the *protocol* for the IMA group is ***proprietary***.
Mib	Ima
Values	no yes
Default	No default

ATTRIBUTE Lp Ima activeProtocol (activeProt)

Access	Read only
Description	This attribute indicates which IMA protocol the *Ima* component is effectively running. This attribute is supported on the 8pDs1Atm, 8pE1Atm, 4pDS3ChAtm, and 2pStm1eCh cards. This attribute is not supported on the MSA32 cards. The value of this attribute is the same as the provisioned *protocol* attribute if the IMA is operating at the provisioned protocol version. The value of this attribute indicates the dongraded protocol version if the IMA has gone through a protocol version downgrade upon IMA 1.1 to IMA 1.0 interworking.
Mib	Ima
Values	atmForum10 proprietary atmForum11
Default	No default

GROUP Lp Ima Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Ima* component.
Mib	Ima

ATTRIBUTE Lp Ima runningTime (running)

Access	Read only
Description	This attribute indicates the length of time (in seconds) for which the *Ima* component has been in the unlocked state or has been used for operational testing.
Mib	Ima
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp Ima unavailSec (unavail)

Access	Read only
Description	This attribute indicates the number of one second intervals during which the *Ima* component has been unlocked and out of service.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima failures (fail)

Access	Read only
Description	This attribute indicates the number of complete failures, during start-up or normal operation, that the *Ima* component has experienced since being added. It must be noted that a service degradation, such as 1 of the 3 links in an IMA group being down, is not counted as a failure. If an *Ima* component is in a

	failure loop and does not come up, this count will only increase by 1.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute indicates the ratio of the number of valid, assigned user cells received on the IMA group to the IMA cell capacity (based on the number of active links). The utilization is calculated over a one minute period. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Ima transmitCellUtilization (txutil)

Access	Read only
Description	This attribute indicates the ratio of the number of user cells transmitted on the IMA group to the IMA cell capacity (based on the number of active links). The utilization is calculated over a one minute period. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..100)
Units	%

Default	No default

GROUP Lp Ima CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Ima

ATTRIBUTE Lp Ima customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Ima
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Ima OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ima

ATTRIBUTE Lp Ima adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Ima operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Ima usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Ima
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Ima availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to

place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Ima
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Ima proceduralStatus (osiProc)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	Ima
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Ima controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Ima
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Ima alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Ima
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Ima standbyStatus (osiStby)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Ima
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Ima unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Ima

Values: false
true

Default: false

COMPONENT Lp Ima Test (Test)

Groups: "GROUP Lp Ima Test OsiState (State)"
"GROUP Lp Ima Test Setup (Setup)"
"GROUP Lp Ima Test Results (Results)"

Scope: Application

Description

The *Test* component is configured to control a hardware facility test on a physical (*V*35, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.

Mib: Ima

Common Verbs:
Help
List
Display

VERB START Lp Ima Test

Impact: Service

Description

This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Ima Test

Impact: Service

Description

This command stops a test running on the hardware component.

GROUP Lp Ima Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ima

ATTRIBUTE Lp Ima Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ima
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Ima Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ima
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Ima Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ima
Values	idle active (activ) busy
Default	idle

GROUP Lp Ima Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Ima

ATTRIBUTE Lp Ima Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.
Mib	Ima
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp Ima Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test.

pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Ima

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Ima Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: Ima

Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp Ima Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit. ***ccitt8MBitPattern*** is a pseudo-random sequence of 8Mbit. ***customizedPattern*** is the pattern defined in the ***customizedPattern*** attribute.
Mib	Ima
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Ima Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Ima
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Ima Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Ima
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Ima Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Ima
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Ima Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that

the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.

Mib: Ima

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 1.00

GROUP Lp Ima Test Results (Results)

Properties: Operational

Description

This group contains all the statistics related attributes of the *Test* component.

Mib: Ima

ATTRIBUTE Lp Ima Test causeOfTermination

Access: Read only

Description: This attribute indicates either the status of the test or the cause of the test's termination:

a value of ***neverStarted*** indicates that the test has not yet been started.

a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on

the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib	Ima
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning hardwareReconfigured loopCodeSyncFailed patternSyncFailed patternSyncLost
Default	neverStarted

ATTRIBUTE Lp Ima Test bitsTx

Access	Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib Ima

Values Long Integer

Default No default

ATTRIBUTE Lp Ima Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib Ima

Values Long Integer

Default No default

ATTRIBUTE Lp Ima Test frmTx

Access Read only

Description

This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Ima

Values Long Integer

Default No default

ATTRIBUTE Lp Ima Test bitsRx

Access Read only

Description

This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.

Mib Ima

Values Long Integer

Default No default

ATTRIBUTE Lp Ima Test bytesRx

Access Read only

Description

This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib Ima

Values Long Integer

Default No default

ATTRIBUTE Lp Ima Test frmRx

Access Read only

Description This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Mib Ima

Values Long Integer

Default No default

ATTRIBUTE Lp Ima Test erroredFrmRx

Access Read only

Description This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate

any frame.

For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.

Mib: Ima

Values: Long Integer

Default: No default

ATTRIBUTE Lp Ima Test bitErrorRate

Access: Read only

Description

This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib: Ima

Values: String (5, ASCII)

Default: No default

ATTRIBUTE Lp Ima Test elapsedTime

Access: Read only

Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Ima
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Ima Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Ima
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp Ima Link (Lk)

Instance	Decimal (0..31)
Groups	"GROUP Lp Ima Lk Provisioned (Prov)" "GROUP Lp Ima Lk Operational (Oper)" "GROUP Lp Ima Lk Statistics (Stats)" "GROUP Lp Ima Lk OsiState (State)"
Scope	Device
Description	*Lp/n Ima/n Link/n* *Lp/n Ds3/n Ima/n Link/n* This component is used to define a DS1/E1 link belonging to an IMA group. The instance number of the *Link* subcomponent corresponds to the link identifier (LID) used by the link in IMA

	Control Protocol (ICP) cells. To use Ima on an 8pDS1E1 function processor, add *Lp/n Ima/n Link/n*. To use Ima on a 4pDS3ChAtm function processor, add *Lp/n Ds3/n Ima/n Link/n*.
Mib	Ima
Common Verbs	Help List Display Add DELete

GROUP Lp Ima Lk Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Link* subcomponent.
Mib	Ima

ATTRIBUTE Lp Ima Lk interfaceName

Access	Read and write
Criticality	Component
Description	This attribute associates the *Link* subcomponent with a specific interface on a function processor, for example *Lp/5 E1/3 Chan/0*. If IMA groups and independent links coexist on a card running IMA and per-VC queueing is enabled, plan the selection of DS1 or E1 ports to be used by the IMA group carefully. For a 4pDS3ChAtm function processor there is no per-VC queueing.
Mib	Ima
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Lp Ima Lk Operational (Oper)

Properties	Operational

Description	This group contains the operational attributes for the *Link* subcomponent.
Mib	Ima

ATTRIBUTE Lp Ima Lk failureCause (cause)

Access	Read only
Description	This attribute indicates the failure cause on this link. Possible values are: ***noFailure***: there is no failure on this link. ***interfaceDown***: the physical port used by the link is down. ***lif***: the link is in loss of IMA frame (LIF) state. ***lods***: the link is in loss of delay synchronization (LODS) state; that is, it has exhibited a differential delay which is greater than the maximum differential delay tolerated by the IMA group. It must be noted that hysteresis is used for the LODS condition. ***protocolError***: the link is down because of a time-out or because bad values are being received in IMA Control Protocol (ICP) cells. ***remoteFailure***: the far end link is down. ***misconnected***: the link is down because the IMA group has declared, after using its transmit test pattern procedure, that this link is not properly connected. This value can occur only if the *protocol for the IMA group is* ***atmForum10.*** ***unsupportedFrameLength***: the link is down because it is receiving from the far end a frame length which is not supported by the local IMA group. This value can occur only if the *protocol for the IMA group is* ***atmForum10.*** ***unsupportedSymmetry***: the link is down because it is receiving from the far end a group symmetry which is not supported by the local IMA group. This value can occur only if the *protocol for the IMA group is* ***atmForum10.*** ***noIcp***: the link is down because it is not receiving IMA Control Protocol (ICP) cells. This value can occur only if the *protocol* for the IMA group is ***atmForum10***. ***unsupportedVersion***: the link is down because it is receiving from the far end a group version that is not supported by the local IMA group.
Mib	Ima

Values	noFailure interfaceDown lif lods protocolError remoteFailure misconnected unsupportedFrameLength unsupportedSymmetry unsupportedVersion noIcp
Default	No default

ATTRIBUTE Lp Ima Lk remoteDefect (remDef)

Access	Read only
Description	This attribute indicates the IMA remote defect indicator (RDI) currently being received on this link. Possible values are: ***noDefect***: no defect. ***physicalLayerDefect***: the interface used by the remote link has a physical layer defect. This value can occur only if the *protocol for the IMA group is* ***atmForum10.*** ***interfaceDown***: the physical interface used by the remote link is down.This value can occur only if the *protocol for the IMA group is* ***proprietary.*** ***lif***: the remote link has a loss of IMA frame (LIF) defect. ***lods***: the remote link has a loss of delay synchronization (LODS) defect; that is, it has exhibited a differential delay which is greater than the maximum differential delay tolerated by the IMA group.
Mib	Ima
Values	noDefect interfaceDown lif lods physicalLayerDefect
Default	No default

ATTRIBUTE Lp Ima Lk remoteLid (remLid)

Access	Read only
Description	This attribute indicates the link identifier (LID) used by the remote IMA group on the physical link. A value of 0 will be displayed if the link is not receiving IMA Control Protocol (ICP) cells or if the physical layer is down.
Mib	Ima
Values	Decimal (0..31)
Default	No default

ATTRIBUTE Lp Ima Lk relativeDelay (rel)

Access	Read only
Description	This attribute indicates the latest measured differential delay (rounded up in milliseconds) between this link and the link, in the same IMA group, having the least delay. A value of 4294967295 indicates that the relative delay could not be measured. This can be due to physical layer problems or to no IMA Control Protocol (ICP) cells being received on the link.
Mib	Ima
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Lp Ima Lk lastOifCause (oif)

Access	Read only
Description	This attribute indicates the cause of the last out of IMA frame (OIF) anomaly on the link. It will always have a value of ***noOif*** if the *protocol* for the IMA group is ***proprietary***. Possible values are: ***noOif***: no OIF was detected. ***badFrameLength***: an IMA Control Protocol (ICP) cell with an unexpected frame length was received. ***badGid***: an ICP cell with an unexpected group identifier (GID)

was received.
badLid: an ICP cell with an unexpected link identifier (LID) was received.
badOffset: an ICP cell with an unexpected cell offset was received.
badSequenceNumber: an ICP cell with an unexpected frame sequence number was received.
stuffError: an illegal stuffing sequence was received.
missingIcp: an expected ICP cell was not received.
unexpectedIcp: an unexpected ICP cell was received.
erroredIcp: two consecutive errored ICP cells were received.
noCells: no cells are being received on the link.
idleCell: an idle cell was received on the link.
badOamLabel: an ICP cell with an unexpected oam label was received.

Mib: Ima

Values:
noOif
badFrameLength
badGid
badLid
badOffset
badSequenceNumber
stuffError
missingIcp
unexpectedIcp
erroredIcp
noCells
idleCell
badOamLabel

Default: No default

GROUP Lp Ima Lk Statistics (Stats)

Properties: Operational

Description: This group contains the statistics data for the *Link* subcomponent.

Mib: Ima

ATTRIBUTE Lp Ima Lk runningTime (running)

Access	Read only
Description	This attribute counts the length of time (in seconds) for which the *Link* component has been running.
Mib	Ima
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp Ima Lk unavailSec (unavail)

Access	Read only
Description	For an IMA group whose *protocol* is ***atmForum10***, this attribute counts the number of unavailable seconds. Unavailability begins at the start of 10 contiguous severely errored seconds (SES) and ends at the start of 10 contiguous seconds with no SES. For an IMA group whose *protocol* is ***proprietary***, this attribute counts the number of one second intervals during which the *Link* component has been out of service.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk failures (fail)

Access	Read only
Description	This attribute counts the number of failures, during link addition or normal operation, that the link has experienced.
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk unusableSec (uus)

Access	Read only

Description	This attribute counts the number of one second intervals during which the near end has been in an unusable state. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk sevErroredSec (ses)

Access	Read only
Description	This attribute counts the number of one second intervals in which at least 30 percent of the IMA Control Protocol (ICP) cells were counted as ICP violations or at least one link defect (physical layer, LIF and LODS defects) was detected. This attribute will not increment during UAS (Unavailable Second) conditions. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk farEndUnusableSec (feUus)

Access	Read only
Description	This attribute counts the number of one second intervals during which the “Tx/Rx Unusable” condition has been received from the far end. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk farEndSevErroredSec (feSes)

Access	Read only
Description	This attribute counts the number of one second intervals containing one or more RDI defects. This attribute will not increment during FEUAS (Far-End Unavailable Second) conditions. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk farEndUnavailSec (feUnavail)

Access	Read only
Description	This attribute counts the number of unavailable seconds at the far end. Unavailability begins at the start of 10 contiguous severely errored seconds (SES) at the far end and ends at the start of 10 contiguous seconds at the far end with no SES. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk icpViolations (iv)

Access	Read only
Description	This attribute counts the number of errored, invalid or missing IMA Control Protocol (ICP) cells during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Lp Ima Lk txStuffEvents (txStuff)

Access	Read only
Description	This attribute counts the number of Stuff events transmitted during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk rxStuffEvents (rxStuff)

Access	Read only
Description	This attribute counts the number of Stuff events received during non-SES (Severely Errored Second) and non-UAS (Unavailable Seconds) conditions. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***
Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Ima Lk idleCellSec (idle)

Access	Read only
Description	This attributes counts the number of one second intervals during which one or more idle cells was received. The reception of idle cells is an abnormal condition which could be caused by the remote IMA using the Common Transmit Clock mode with ports whose clock sources are not synchronized. This attribute will always have a value of 0 if the *protocol for the IMA group is* ***proprietary.***

Mib	Ima
Values	Decimal (0..4294967295)
Default	No default

GROUP Lp Ima Lk OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ima

ATTRIBUTE Lp Ima Lk adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Ima
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Ima Lk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ima
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Ima Lk usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has

spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Ima

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Ima Lk availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Ima
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Ima Lk proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Ima

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp Ima Lk controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Ima

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp Ima Lk alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

	The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Ima
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Ima Lk standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Ima

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Ima Lk unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Ima
Values	false true
Default	false

COMPONENT Lp Engineering (Eng)

Scope	Device
Description	*Lp Engineering* This component has various subcomponents which hold engineering/control parameters and corresponding indicator statistics for this LP. The subcomponents can be defined for selected services or be common to a number of services.

	This component has no data of its own.
Mib	LogicalProcessor
Mib	"COMPONENT Lp Eng DataStream (Ds)" "COMPONENT Lp Eng FrameRelaySystem (Frs)" "COMPONENT Lp Eng HuntGroupService (Hgs)" "COMPONENT Lp Eng AtmResourceControl (Arc)" "COMPONENT Lp Eng FrameCoreResourceControl (Fcrc)" "COMPONENT Lp Eng AtmPathTrace (PTrace)" "COMPONENT Lp Eng ActiveAlarmList (AAList)"
Common Verbs	Help List Display

COMPONENT Lp Eng DataStream (Ds)

Instance	accounting (acc) alarm (ala) log debug (deb) scn trap stats rtStats (rts) applicationSpecific (appl)
Groups	"GROUP Lp Eng Ds Operational (Oper)"
Scope	Device

Description	*Lp Eng DataStream/<type>* This component holds engineering parameters used by DCS on this LP for a particular DCS stream.
Mib	LogicalProcessor
Opt. Subcomp.	"COMPONENT Lp Eng Ds Override (Ov)"
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Ds Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the *DataStream* components under *Lp Engineering*.
Mib	LogicalProcessor

ATTRIBUTE Lp Eng Ds agentQueueSize (agentQ)

Access	Read only
Description	This attribute indicates the maximum size of the DCS Agent queue size maximum for a DCS data stream on the LP. It is the maximum size to which the *Agent*'s *currentQueueSize* can grow. When the queue is full and more data is offered to the *Agent*, it will be discarded. The following are the system defaults (in number of records): - alarm: 100 - accounting: 10000 - debug: 0 - log: 50 - scn: 200 - trap: 50 - stats: 0 - rtStats: 0 - applicationSpecific: 200

	To override the system defaults, see *Lp Eng Ds Ov*'s *agentQueueSize* attribute.
Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Lp Eng Ds Override (Ov)

Groups	"GROUP Lp Eng Ds Ov Provisioned (Prov)"
Scope	Device
Description	*Lp Eng Ds/<type> Override* This component holds provisionable engineering parameters used by DCS on this LP for a particular DCS stream.
Mib	LogicalProcessor
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Ds Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *DataStream Ov* components under *Lp Engineering*.
Mib	LogicalProcessor

ATTRIBUTE Lp Eng Ds Ov agentQueueSize (agentQ)

Access	Read and write
Description	This attribute specifies the maximum size of the DCS Agent's queue for this data stream on this LP. For more details on the defaults and other information, refer to the parent component's *agentQueueSize* attribute.

The size should be set to 0 if absolutely no data is to be accepted from applications. There are threshold alarms based on the value of the Agent's *currentQueueSize* attribute (a Set when the queue becomes 75% full and a Clear after dropping back to 50% full). To properly determine what to set this to, consult the "Nortel Networks Multiservice Switch Engineering Notes and Guidelines".

The size should not be 0 for the log stream. A semantic check prevents a user from setting the value of this attribute to 0 for the log stream.

For security reasons, only a system administrator is allowed to set the value of this attribute for the log stream.

Mib	LogicalProcessor
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Lp Eng FrameRelaySystem (Frs)

Groups	"GROUP Lp Eng Frs Operational (Oper)"
Scope	Device
Description	*Lp Eng FrameRelaySystem* This component holds engineering parameters and statistics used by Frame Relay on this LP.
Mib	FrameRelayEng
Opt. Subcomp.	"COMPONENT Lp Eng Frs Override (Ov)"
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Frs Operational (Oper)

Properties	Operational
Description	This group contains the Frame Relay default or current engineering parameters and statistics for this LP.
Mib	FrameRelayEng

ATTRIBUTE Lp Eng Frs maxCalls

Access	Read only
Description	This attribute indicates the maximum number of Frame Relay (FR) calls of any type (PVC, SPVC, or SVC) which can be simultaneously “current” on the LP. Note that “current” doesn’t necessarily mean that the call is in data transfer. It minimally means that such a call can subsequently generate accounting records. When the value of *currentCalls* reaches the value of *maxCalls* for FR on this LP, subsequent call attempts are rejected by the FR service.
Mib	FrameRelayEng
Values	Decimal (0..1000000)
Default	1000000

ATTRIBUTE Lp Eng Frs headroomCalls

Access	Read only
Description	This attribute indicates a number which allows a network engineer to do some statistical multiplexing for admitting calls when certain overload conditions are reached. For setting this, refer to the Engineering Guidelines. It depends on conditions such as the expected sustained SVC call setup/clear rates and how conservative one wants to be in certain “error” conditions where many calls are cleared simultaneously.
Mib	FrameRelayEng
Values	Decimal (0..1000000)
Default	1000000

ATTRIBUTE Lp Eng Frs currentCalls

Access	Read only
Description	This attribute counts the total number of Frame Relay calls (initially just FrUni and FrNni) which are “current”. Note that “current” doesn’t necessarily mean that the call is in data transfer. It minimally means that such a call can subsequently generate accounting records.
Mib	FrameRelayEng
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eng Frs callsRefused

Access	Read only
Description	This attribute counts the total number of call connections (including calls from the link as well as calls from the subnet) that have been refused because *currentCalls* has reached the limits, as specified by the engineering formulas for *Frs* on this LP.
Mib	FrameRelayEng
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Lp Eng Frs Override (Ov)

Groups	"GROUP Lp Eng Frs Ov Provisioned (Prov)"
Scope	Device
Description	*Lp Eng Frs Override*

	This component holds provisionable engineering parameters used by Frame Relay on this LP.
Mib	FrameRelayEng
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Frs Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the Frame Relay provisionable engineering parameters for this LP.
Mib	FrameRelayEng

ATTRIBUTE Lp Eng Frs Ov maxCalls

Access	Read and write
Description	This attribute specifies the maximum number of Frame Relay calls of any type (PVC, SPVC, or SVC) which can be simultaneously “current” on this LP. Note that “current” doesn’t necessarily mean that the call is in data transfer. It minimally means that such a call can subsequently generate accounting records. When the value of *currentCalls* reaches the value of *maxCalls* for FR on this LP, subsequent call attempts are rejected by the FR services.
Mib	FrameRelayEng
Values	Decimal (0..1000000)
Default	1000000

ATTRIBUTE Lp Eng Frs Ov headroomCalls

Access	Read and write
Description	This attribute specifies a number which allows a network engineer to do some statistical multiplexing for admitting calls

	when certain overload conditions are reached. For setting this, refer to the Engineering Guidelines. It depends on conditions such as the expected sustained SVC call setup/clear rates and how conservative one wants to be in certain “error” conditions where many calls are cleared simultaneously.
Mib	FrameRelayEng
Values	Decimal (0..1000000)
Default	1000000

COMPONENT Lp Eng HuntGroupService (Hgs)

Groups	"GROUP Lp Eng Hgs Operational"
Scope	Device
Description	*Lp Eng HuntGroupService* The *HuntGroupService* component contains engineering statistics for all hunt groups on the FP.
Mib	HuntGroupEng
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Hgs Operational

Properties	Operational
Description	The *Operational* group contains attributes for all hunt groups on the LP.
Mib	HuntGroupEng

ATTRIBUTE Lp Eng Hgs huntGroups

Access	Read only
Description	This attribute indicates the number of hunt groups provisioned on the LP.

Mib	HuntGroupEng
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Lp Eng Hgs huntAttempts

Access	Read only
Description	This attribute counts the total number of hunt attempts made by all hunt groups. The count includes both initial and subsequent hunt attempts. Individual hunt groups maintain this counter within the *huntAttempts* attribute of the *Hg/n* component. This counter wraps to 0 when it exceeds its maximum value.
Mib	HuntGroupEng
Values	Decimal (0..4294967295)
Default	0

COMPONENT Lp Eng AtmResourceControl (Arc)

Groups	"GROUP Lp Eng Arc Operational (Oper)"
Scope	Device
Description	*Lp/n Eng AtmResourceControl* This component describes the usage of ATM-specific resources on an FP running ATM services. This component is always dynamically created under any *LP Eng* which supports an FP. The *Lp Eng Arc* component is used to provision and display the main connection capacity in the FPs. On an ATM FP, this main connection space is used exclusively as an ATM-specific resource. For the non-ATM FPs, this connection space is used

	mainly as a channel space for all frame services supported on the FP.
Mib	AtmBase
Opt. Subcomp.	"COMPONENT Lp Eng Arc Override (Ov)"
Opt. Subcomp.	"COMPONENT Lp Eng Arc Cqc (Cqc)" "COMPONENT Lp Eng Arc Aqm (Aqm)" "COMPONENT Lp Eng Arc Apc (Apc)"
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Arc Operational (Oper)

Properties	Operational
Description	This group describes the usage of ATM-specific resources on a Logical Processor running ATM services. The attributes contained in thsi group represent Queue Controller resource usage for all ATM cards (CQC for CQC-based cards and PQC for ATM IP cards).
Mib	AtmBase

ATTRIBUTE Lp Eng Arc multicastBranchesAvailable (mcastAvail)

Access	Read only
Description	This attribute indicates the total number of available multicast branches for un-spared *AtmIf*s on this FP.
Mib	AtmBase
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Lp Eng Arc multicastBranchesUsage (mcastUsage)

Access	Read only
Description	This attribute indicates the total number of multicast branches that are in use on this FP for un-spared *AtmIf*s.
Mib	AtmBase
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Lp Eng Arc txCellMemoryAllocation (txCell)

Access	Read only
Description	This attribute indicates the fraction of the transmit memory that is allocated for the transmission of cells on the FP. Cell memory is used for ATM Bearer Services, ATM SVCs and ATM PVCs. The remaining transmit memory is allocated for the transmission of frames. Frame memory is used for trunks, ATM VCC testing and for inter-card communication. This attribute is not available on APC-based and QRD-based FPs. On APC-based and QRD-based FPs, Tx cell memory is completely separated among individual ports.
Mib	AtmBase
Values	Decimal (1..99)
Units	%
Default	No default

ATTRIBUTE Lp Eng Arc txCellMemoryCongestionState (txCellCong)

Access	Read only
Description	This attribute indicates the congestion state of the transmit cell memory for this FP. This attribute indicates which *txCellMemoryThresholds* corresponds to the current value of *txCellMemoryUsage*. The

congestion state is used to determine if cells of a particular discard priority (DP) are discarded before being queued for transmit.

The congestion state of transmit cell memory is indicated by a numeric value ranging from 3 to 0. When transmit cell memory is in congestion state “x”, traffic with DP > “x” is discarded before transmit. Traffic with DP < “x” may be queued for transmit, depending on the congestion level of the connection transmit queue. Traffic with DP = “x” may be either queued or discarded depending on how close the value of *txCellMemoryUsage* is to the next threshold as displayed in *txCellMemoryThresholds*. For example, CLP1 traffic is queued until the value indicated by *txCellMemoryUsage* equals the value indicated in *txCellMemoryThresholds* 3. At that point, CLP1 traffic is discarded.

This attribute is not displayed on APC-based and QRD-based FPs.

Mib AtmBase

Values Decimal (0..3)

Default No default

ATTRIBUTE Lp Eng Arc rxCellMemoryAllocation (rxCell)

Access Read only

Description This attribute indicates the fraction of the receive memory which is allocated for the reception of cells on the FP. Cell memory is used for ATM Bearer Services, ATM SVCs, and ATM PVCs.

The remaining receive memory is allocated to the reception of frames. Frame memory is used for trunks, ATM VCC testing, and for inter-card communication.

This attribute is not available on APC-based and QRD-based FPs.

Mib AtmBase

Values Decimal (1..99)

Units	%
Default	No default

ATTRIBUTE Lp Eng Arc rxCellMemoryCongestionState (rxCellCong)

Access	Read only
Description	This attribute indicates the congestion state of the receive cell memory on this FP. This attribute indicates which *rxCellMemoryThresholds* corresponds to the current value of *rxCellMemoryUsage*. The congestion state is used to determine if cells of a particular discard priority (DP) are discarded before being queued for processing on this FP. The congestion state of receive cell memory is indicated by a numeric value ranging from 3 to 0. When receive cell memory is in congestion state “x”, traffic with DP > “x” is discarded before processing. Traffic with DP < “x” may be queued for processing, depending on the congestion level of the processor or bus queue. Traffic with DP = “x” may be either queued or discarded depending on how close the value of *rxCellMemoryUsage* is to the next threshold as displayed in *rxCellMemoryThresholds*. For example, CLP1 traffic is queued until the value indicated by *rxCellMemoryUsage* equals the value indicated in *rxCellMemoryThresholds* 3. At that point, CLP1 traffic is discarded. This attribute is not displayed on APC-based and QRD-based FPs.
Mib	AtmBase
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Lp Eng Arc protectedConnectionPoolAvailable (protConnAvail)

Access	Read only

Description	This attribute indicates the number of available connection resources for spared *AtmIfs* (VCC and VPC) that can be used on this FP. One resource is used for VCC and VPC connections.
Mib	AtmBase
Values	Decimal (0..64000)
Default	No default

ATTRIBUTE Lp Eng Arc protectedConnectionPoolUsage (protConnUsage)

Access	Read only
Description	This attribute indicates the number of connection resources in use on this FP for spared *AtmIfs* (VCC and VPC).
Mib	AtmBase
Values	Decimal (0..64000)
Default	No default

ATTRIBUTE Lp Eng Arc protectedMcastBranchesAvailable (protMcastAvail)

Access	Read only
Description	This attribute indicates the total number of available multicast branches for spared *AtmIfs* on this FP.
Mib	AtmBase
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Lp Eng Arc protectedMcastBranchesUsage (protMcastUsage)

Access	Read only
Description	This attribute indicates the total number of multicast branches that are in use on this FP for spared *AtmIfs*.
Mib	AtmBase

Values	Decimal (0..16384)
Default	No default

ATTRIBUTE Lp Eng Arc connectionPoolAvailable (connAvail)

Access	Read only
Description	This attribute indicates the number of available connection resources for use by un-spared *AtmIfs* (VCC, VPC, and VPT) and for spared *AtmIfs* (VPT only) on this FP. One resource is used for VCC and VPC connections, two resources for a basic VPT and three resources for a standard VPT.
Mib	AtmBase
Values	Decimal (0..64000)
Default	No default

ATTRIBUTE Lp Eng Arc connectionPoolUsage (connUsage)

Access	Read only
Description	This attribute indicates the number of connection resources in use on this FP for un-spared *AtmIfs* (VCC, VPC, and VPT) and for spared *AtmIfs* (VPT only).
Mib	AtmBase
Values	Decimal (0..64000)
Default	No default

ATTRIBUTE Lp Eng Arc txCellMemoryMaxUsage (txCellMaxUsage)

Access	Read only
Description	On CQC-based ATM FPs, this attribute indicates the maximum usage of transmit cells for all ports on this FP. On ATM IP FPs, this attribute indicates the maximum usage of transmit cells in the PQC. Queuing of ATM cells for transmit normally occurs in the AQM, that is indicated in the *Lp Eng Arc Aqm/x txCellMemoryUsage* attribute. Transmit cells should only

be queued in the PQC under circumstances of extreme transient congestion.

This attribute is not available on APC-based and QRD-based FPs. On APC-based and QRD-based FPs, Tx cell memory is completely separated among individual ports. The maximum Tx cell memory usage is available on a per-APC basis under each individual *Lp Eng Arc Apc/x* component.

This value is reset to the current usage every 15 minutes and when the card is reset.

Mib	AtmBase
Values	Decimal (0..163839)
Units	cells
Default	No default

ATTRIBUTE Lp Eng Arc txCellMemoryUsage (txCellUsage)

Access	Read only
Description	This attribute indicates the current number of transmit cells that are in use for this FP. On CQC-based ATM FPs, this number indicates the total transmit cells that are in use for all ports on this FP. On ATM IP FPs, this number indicates the number of transmit cells that are in use in the PQC. Queuing of ATM cells for transmit normally occurs in the AQM, that is indicated in the *Lp Eng Arc Aqm/*x *txCellMemoryUsage* attribute. Transmit cells should only be queued in the PQC under circumstances of extreme transient congestion. This attribute is not available on APC-based and QRD-based FPs. On APC-based FPs, Tx cell memory is completely separated among individual ports.
Mib	AtmBase
Values	Decimal (0..163839)

Units	cells
Default	No default

ATTRIBUTE Lp Eng Arc rxCellMemoryMaxUsage (rxCellMaxUsage)

Access	Read only
Description	This attribute indicates the maximum usage of receive cells for all ports on this FP. Receive cell memory is used for storing ATM cells received by this FP which are currently queued either for handling by the processor on this FP or queued for transmitting over the backplane to other FPs. This value is reset to the current usage every 15 minutes and when the card is reset. This attribute is not displayed on APC-based and QRD-based FPs.
Mib	AtmBase
Values	Decimal (0..163839)
Units	cells
Default	No default

ATTRIBUTE Lp Eng Arc rxCellMemoryUsage (rxCellUsage)

Access	Read only
Description	This attribute indicates the current number of receive cells which are in use for all ports on this FP. Receive cell memory is used for storing ATM cells received by this FP which are currently queued either for handling by the processor on this FP or queued for transmitting over the backplane to other FPs on this switch. This attribute is not displayed on APC-based and QRD-based FPs.
Mib	AtmBase
Values	Decimal (0..163839)

Units	cells
Default	No default

ATTRIBUTE Lp Eng Arc perVcQueueAvailable (queueAvail)

Access	Read only
Description	This attribute indicates the number of available per-VC queue resources for use by connections on this FP. Whether or not a connection requires a per-VC queue resource is determined by the connection's ATM service category provisioning. A per-VC queue resource is required when the ATM service category has the *trafficShaping* attribute provisioned as either ***enabled*** or ***inverseUpc*** and also when the ATM service category has the *unshapedTransmitQueueing* attribute provisioned with a value of ***perVc***. This attribute is only applicable to the ***16pOC3PosAtm*** card and is filtered from the display on all other cards
Mib	AtmBase
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Lp Eng Arc perVcQueueUsage (queueUsage)

Access	Read only
Description	This attribute indicates the number of per-VC queue resources in use by connections on this FP. Whether or not a connection requires a per-VC queue resource is determined by the connection's ATM service category provisioning. A per-VC queue resource is required when the ATM service category has the *trafficShaping* attribute provisioned as either ***enabled*** or ***inverseUpc*** and also when the ATM service category has the *unshapedTransmitQueueing* attribute provisioned with a value of ***perVc***.

This attribute is only applicable to the ***16pOC3PosAtm*** card and is filtered from the display on all other cards.

Mib	AtmBase
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Lp Eng Arc txCellMemoryThresholds (txCellThresh)

Access	Read only
Description	This attribute is a vector that indicates the size and three discard thresholds for transmit cell memory for this FP. The transmit cell memory is used for storing ATM cells to be transmitted by this FP. This attribute is not applicable and is not displayed on APC-based and QRD-based FPs. The first value indicates the transmit cell memory size. This is derived based on the total transmit memory capacity of this FP, and the value of the *connectionPoolCapacity* and the *txCellMemoryAllocation* attributes. The current value of *txCellMemoryUsage* together with the vector of values in *txCellMemoryThresholds* determines the *txCellMemoryCongestionState*. The congestion state determines whether cells of a given discard priority (DP) are discarded or queued for transmit. When the *txCellMemoryUsage* attribute is between threshold 0 and threshold 1, the *txCellMemoryCongestionState* indicates the value 0. In congestion state 0, traffic with DP > 0 is discarded. Threshold 1 is set approximately at 90 percent of threshold 0, the total transmit cell memory size. When the *txCellMemoryUsage* attribute is between threshold 1 and threshold 2, the *txCellMemoryCongestionState* indicates the value 1. In congestion state 1, traffic with DP > 1 is discarded. Threshold 2 is set approximately at 85 percent of threshold 0, the total transmit cell memory size.

When the *txCellMemoryUsage* attribute is between threshold 2 and threshold 3, the *txCellMemoryCongestionState* indicates the value 2. In congestion state 2, traffic with DP > 2 is discarded. Threshold 3 is set approximately at 75 percent of threshold 0, the total transmit cell memory size.

When the *txCellMemoryUsage* attribute is below threshold 3, the *txCellMemoryCongestionState* indicates the value 3. In congestion state 3, traffic with DP=3 is queued.

Mib	AtmBase
Vector of	Decimal (0..163839)
Units	cells
Index	Decimal (0..3)
Default	No default

ATTRIBUTE Lp Eng Arc rxCellMemoryThresholds (rxCellThresh)

Access	Read only
Description	This attribute is a vector which indicates the size and three discard thresholds for receive cell memory for this FP. Receive cell memory is used for storing ATM cells received by this FP which are queued either for handling by the processor on this FP or queued for transmitting over the backplane to other FPs on this switch. The first value indicates the receive cell memory size. This is derived based on the total receive memory capacity of this FP, and the value of the *connectionPoolCapacity* and the *rxCellMemoryAllocation* attributes. The current value of *rxCellMemoryUsage* together with the vector of values in *rxCellMemoryThresholds* determines the *rxCellMemoryCongestionState*. The congestion state determines whether cells of a given discard priority (DP) are discarded or queued.

When the *rxCellMemoryUsage* attribute is between threshold 0 and threshold 1, the *rxCellMemoryCongestionState* indicates the value 0. In congestion state 0, traffic with DP > 0 is discarded. Threshold 1 is set approximately at 90 percent of threshold 0, the total receive cell memory size.

When the *rxCellMemoryUsage* attribute is between threshold 1 and threshold 2, the *rxCellMemoryCongestionState* indicates the value 1. In congestion state 1, traffic with DP > 1 is discarded. Threshold 2 is set approximately at 85 percent of threshold 0, the total receive cell memory size.

When the *rxCellMemoryUsage* attribute is between threshold 2 and threshold 3, the *rxCellMemoryCongestionState* indicates the value 2. In congestion state 2, traffic with DP > 2 is discarded. Threshold 3 is set approximately at 75 percent of threshold 0, the total receive cell memory size.

When the *rxCellMemoryUsage* attribute is below threshold 3, the *rxCellMemoryCongestionState* indicates the value 3. In congestion state 3, traffic with DP=3 is queued.

This attribute is not displayed on APC-based and QRD-based FPs.

Mib	AtmBase
Vector of	Decimal (0..163839)
Units	cells
Index	Decimal (0..3)
Default	No default

COMPONENT Lp Eng Arc Override (Ov)

Groups	"GROUP Lp Eng Arc Ov Provisioned (Prov)"
Scope	Device
Description	*Lp/n Eng Arc Override* This component is used to configure the usage of ATM-specific resources on a Logical Processor running ATM services. The

attributes listed represent Queue Controller resource configuration for all ATM cards (CQC for CQC based cards and PQC for ATM IP cards). This component is only permitted under the Logical Processors which are linked to ATM card types.

Mib: AtmBase

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Lp Eng Arc Ov Provisioned (Prov)

Properties: Provisioned

Description: This group specifies the configuration of processor-wide ATM-specific resources on a Logical Processor running ATM services on ATM cards. Note that altering any of these parameters will result in a card reboot.

Mib: AtmBase

ATTRIBUTE Lp Eng Arc Ov multicastBranchesCapacity (mcastCap)

Access: Read and write

Criticality: Process

Description: This attribute specifies the number of multicast branches that can be established for all un-spared *AtmIfs* on this FP.

A multicast branch is used for cell replication on a VCC connection whose *Vcc distributionType* attribute is set to a value of ***pointToMultipoint***. A branch represents one ATM destination for the replicated cells.

Increasing the value of this attribute reduces the memory available for the cell and frame memory.

This attribute is ignored for the ***1pOC48ChSmIrAtm*** card as it does not support multicast connections.

	For CQC-based ATM FPs, the maximum value for this attribute is 10752.
Mib	AtmBase
Values	Decimal (0..16384)
Default	0

ATTRIBUTE Lp Eng Arc Ov txCellMemoryAllocation (txCell)

Access	Read and write
Criticality	Process
Description	This attribute specifies the fraction of the transmit memory which should be allocated to the transmission of cells on an FP. The remaining memory is allocated for the transmission of frames. Frame memory is used for trunks, ATM VCC testing and for inter-card communication. Cell memory is used for ATM Bearer Service, ATM SVCs and ATM PVCs. There is an absolute minimum quantity of frame buffers which is required by ATM software on the FP. If the value of this attribute is smaller than the absolute minimum, the ATM software allocates the minimum required, rather than the actual number requested. The actual percentage of the transmit memory allocated to the transmit cell memory is indicated by the *Arc txCellMemoryAllocation* attribute. A difference between the provisioned and the operational values may exist due to the requirement for a minimum number of frame buffers or rounding during computation within the FP.
Mib	AtmBase
Values	Decimal (1..99)
Units	%
Default	50

ATTRIBUTE Lp Eng Arc Ov rxCellMemoryAllocation (rxCell)

Access	Read and write
Criticality	Process
Description	This attribute specifies the fraction of the receive memory which should be allocated to the reception of cells on an FP. The remaining receive memory is allocated for the reception of frames. Frame memory is used for trunks, ATM VCC testing and for inter-card communication. Cell memory is used for ATM Bearer Service, ATM SVCs and ATM PVCs. There is an absolute minimum quantity of frame buffers which is required by ATM software on the FP. If the value of this attribute is smaller than the absolute minimum, the ATM software allocates the minimum required, rather than the actual number requested. The actual percentage of the receive memory allocated to the receive cell memory is indicated by the *Arc rxCellMemoryAllocation* attribute. A difference between the provisioned and the operational values may exist due to the requirement for a minimum number of frame buffers or rounding during computation within the FP.
Mib	AtmBase
Values	Decimal (1..99)
Units	%
Default	20

ATTRIBUTE Lp Eng Arc Ov protectedMcastBranchesCapacity (protMcastCap)

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of multicast branches that can be established for all spared *AtmIfs* on this FP. A multicast branch is used for cell replication on a VCC connection whose *Vcc distributionType* attribute is set to a value of ***pointToMultipoint***. A branch represents one ATM destination

for the replicated cells.

This attribute can only be non-zero if the Logical Processor is associated with a card of one of the following card types: ***4pOC3SmIrAtm***, ***4pOC3MmAtm***, ***12pDS3Atm***, ***12pE3Atm***, or ***1pOC12SmLrAtm***.

If any port on the Logical Processor is provisioned in an inter-card *LAPS* configuration, then this attribute must have the same value on both associated Logical Processors.

Increasing the value of this attribute reduces the memory available for the cell and frame memory.

Mib	AtmBase
Values	Decimal (0..16384)
Default	0

ATTRIBUTE Lp Eng Arc Ov connectionPoolCapacity (connCap)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of un-spared *AtmIf* connections (VCC, VPC, and VPT) that can be established on this FP. One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT. If the Logical Processor is associated with a card of a card type other than one of the following: ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, ***2pJ6MAtm***; the value of the attribute restricts the sum of the (*maxVccs + maxVpcs+ (maxVpts * 3) + 1)* for all *AtmIfs* bound to this Logical Processor. If the Logical Processor is associated with a card of one of the following card types: ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, ***2pJ6MAtm***; the number of available connections are distributed equally across the ports

on the FP. The number of connections associated to a particular port limits the size of the VCC space which can be defined by the *ConnMap* of the *AtmIf* linked to the port. If the *ConnMap* component does not exist, its default settings are used for this check. Furthermore, the value of this attribute is restricted based on the number of ports on the card. For one port cards, the minimum is 512, the maximum is 4096 and the value must be divisible by 256. For two port cards, the minimum is 1024, the maximum is 8192 and the value must be divisible by 512. For three port cards, the minimum is 1536, the maximum is 7680 and the value must be divisible by 768.

If the Logical Processor is associated with a card of one of the following card types: ***8pE1Atm*** *or* ***8pDS1Atm***, the maximum value for this attribute is 10752.

If the Logical Processor is associated with a card of one of the following card types: ***32pDS1Msa*** or ***32pE1Msa***, the default value of the attribute is 4096.

If the Logical Processor is associated with a card of one of the following card types: ***1pOC48SmSrPos*** or ***1pOC48SmIrPos***, the maximum value for this attribute is 24000.

If the Logical Processor is associated with a card of one of the following card types: ***32pDS1MsaMtp***, ***32pE1MsaMtp***, ***32pDS1MsaMt, 32pE1MsaMt, 32pDS1MsaStp, 32pE1MsaStp, 32pDS1MsaSt*** *or* ***32pE1MsaSt***; the default value of the attribute is 8192.

The default value of the attribute is 3072 for Logical Processor associated with all other card types.

The maximum number of supported connections per APC is 16000 for ***16pOC3SmIrAtm, 4pOC12SmIrAtm,*** and ***4pOC12SmLrAtm*** cards.

For ATM IP cards, the *Connmap* attributes are set to their default values.

Increasing the value of this attribute reduces the memory

available for cell and frame memory.

This attribute must be set to 0 if the *connectionPoolCapacity* attribute of the *Arc Cqc Ov* component is set to non-zero values.

The actual size of the pool is reflected in the *Lp Eng Arc connnectionPoolAvailable* attribute.

If the Logical Processor is associated with a card of one of the following card types: ***16pOC3SmIrAtm, 4pOC12SmIrAtm***, ***4pOC12SmLrAtm, 1pOC48ChSmIrAtm***, the maximum value for operational attribute *connectionPoolAvailable* is 56000.

To achieve the maximum *connectionPoolAvailable*, the *Lp Eng Fcrc Pqc* Ov *ipRoutesPoolCapacity* must be provisioned to 0. This requires there to be no IP features in the relevant *sw lpt featureList.*

If the total number of connections defined by adding the values of the *protectedConnectionPoolCapacity* and the *connectionPoolCapacity* attributes can not be satisfied, then the *protectedConnectionPoolCapacity* requirements are satisfied before the requirements of the *connectionPoolCapacity.*

Mib	AtmBase
Values	Decimal (0..64000)
Default	No default

ATTRIBUTE Lp Eng Arc Ov protectedConnectionPoolCapacity (protConnCap)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of spared *AtmIf* connections (VCC, VPC, and VPT) that can be established on this FP. One connection resource is used for VCC and VPC connections. Three connection resources are used for a VPT connection.

This attribute can only be non-zero if the logical Processor is associated with a card of one of the following card types: ***4pOC3SmIrAtm***, ***4pOC3MmAtm***, ***12pDS3Atm***, ***12pE3Atm***, ***1pOC12SmLrAtm***, ***4pOC12SmIrAtm***, ***4pOC12SmLrAtm***, ***1pOC48ChSmIrAtm***, ***4pDS3ChAtm***, or ***2pSTM1eCh***.

If the Logical Processor is associated with ***2pSTM1eCh***, the default value of the attribute is 3072.

The default value of the attribute is 0 for Logical Processor associated with all other card types.

If any port on the Logical Processor is provisioned in an inter-card *LAPS* configuration, then this attribute must have the same value on both associated Logical Processors.

The value of the attribute restricts the sum of the (*maxVccs* + *maxVpcs* + 3**maxVpts* + 1) across all spared *AtmIfs* bound to this Logical Processor.

The maximum number of supported connections per APC is 16000 for ***16pOC3SmIrAtm, 4pOC12SmIrAtm***, and ***4pOC12SmLrAtm*** cards.

Increasing the value of this attribute reduces the memory available for cell and frame memory.

The actual size of the pool is reflected in the *Lp Eng Arc protectedConnectionPoolAvailable* attribute.

If the Logical Processor is associated with a card of one of the following card types: ***16pOC3SmIrAtm, 4pOC12SmIrAtm***, ***4pOC12SmLrAtm, 1pOC48ChSmIrAtm,*** the maximum value for operational attribute *protectedConnectionPoolAvailable* is 56000.

To achieve the maximum *protectedConnectionPoolAvailable*, the *Lp Eng Fcrc Pqc* Ov *ipRoutesPoolCapacity* must be provisioned to 0. This requires there to be no IP features in the relevant *sw lpt featurelist.*

If the total number of connections defined by adding the values of the *protectedConnectionPoolCapacity* and the *connectionPoolCapacity* attributes can not be satisfied, then the *protectedConnectionPoolCapacity* requirements are satisfied before the requirements of the *connectionPoolCapacity.*

Mib	AtmBase
Values	Decimal (0..64000)
Default	No default

COMPONENT Lp Eng Arc Cqc (Cqc)

Groups	"GROUP Lp Eng Arc Cqc Operational (Oper)"
Scope	Device
Description	*Lp/n Eng Arc Cqc* The *Cqc* component describes the usage of ATM-specific resources on a Logical Processor running ATM services on CQC-based ATM cards. This component is always dynamically created under the *LP Eng Arc* which supports a CQC-based FP.
Mib	AtmBase
Subcomponents	"COMPONENT Lp Eng Arc Cqc Override (Ov)"
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Arc Cqc Operational (Oper)

Properties	Operational
Description	This group describes the usage of ATM-specific resources on a Logical Processor running ATM services on a CQC-based card.
Mib	AtmBase

ATTRIBUTE Lp Eng Arc Cqc cdvReduction (cdv)

Access	Read only
Criticality	Process
Description	This attribute indicates if the reduction of the maximum Cell Delay Variation (CDV) of shaped transmit traffic is applicable. When the value of this attribute is ***disabled,*** the CDV value can be determined by the following equation: CDV <= 2/ASR + 1/LS where ASR is the Actual Shaping Rate of the connection and LS is the Link Speed of the interface. When the value of this attribute is ***enabled,*** the CDV relationship changes to the following equation: CDV <= 1/ASR + 1/LS
Mib	AtmBase
Values	disabled enabled cardDependent
Default	No default

COMPONENT Lp Eng Arc Cqc Override (Ov)

Groups	"GROUP Lp Eng Arc Cqc Ov Provisioned (Prov)"
Scope	Device
Description	*Lp/n Eng Arc Cqc Override* This component is used to configure the usage of ATM-specific resources on a Logical Processor running ATM services on CQC-

based cards. (This component is only permitted under Logical Processors which are linked to ATM card types.)

Mib AtmBase

Common Verbs
Help
List
Display

GROUP Lp Eng Arc Cqc Ov Provisioned (Prov)

Properties Provisioned

Description This group specifies the configuration of processor-wide ATM-specific resources on a Logical Processor running ATM services. Note that altering any of these parameters will result in a card reboot.

Mib AtmBase

ATTRIBUTE Lp Eng Arc Cqc Ov perVcQueueInterfaces (perVcIf)

Access Read and write

Criticality Process

Description This attribute specifies the number of independent ports or IMA components which support shaping and per-VC queuing on this FP.

When this attribute is not zero, at most 4 independent ports or 4 *Ima* virtual links are supported, regardless of whether or not traffic shaping is enabled on the associated *AtmIf* components. In this case only independent port instances 0-3 or *Ima* instances 0-3 can be supported on an associated *AtmIf* component.

For 2 ports cards, the valid values for this attribute are 0, 1, or 2.
For 3 ports cards, the valid values for this attribute are 0, 1, 2 or 3.
For 8 ports cards, the valid values for this attribute are 0, 1, 2, or 4.

Mib AtmBase

Values	Decimal (0..4)
Default	0

ATTRIBUTE Lp Eng Arc Cqc Ov shapingScalingFactor (scFactor)

Access	Read and write
Criticality	Process
Description	This attribute specifies the scaling factor which is to be applied to all shaping rates for this FP. The scaling factor is an inverse factor which is applied to the chosen shaping rate to produce an actual shaping rate. For example, if a shaping rate of 25 Mbit/s is used with a scaling factor of 2, the actual shaping rate is 12.5 Mbit/s.
Mib	AtmBase
Values	Decimal (1.0; 1.4; 2.0; 2.8; 4.0; 5.6)
Default	1.0

ATTRIBUTE Lp Eng Arc Cqc Ov cdvReduction (cdv)

Access	Read and write
Criticality	Process
Description	This attribute specifies the reduction of the maximum Cell Delay Variation (CDV) of shaped transmit traffic. When the value of this attribute is set to ***disabled,*** the CDV value can be determined by the following equation: CDV <= 2/ASR + 1/LS where ASR is the Actual Shaping Rate of the connection and LS is the Link Speed of the interface. When the value of this attribute is set to ***enabled,*** the CDV relationship changes to the following equation: CDV <= 1/ASR + 1/LS As can be noted from the equations above, setting this attribute to

enabled can reduce the CDV significantly. CDV reduction may be used to conform to policers which have strict Cell Delay Variance Tolerance (CDVT). However using this function reduces the transmit bandwidth utilization of the following cards: ***3pDS3Atm***, ***3pOC3Atm***, ***2pJ6MAtm.***

When the value is ***cardDependent***, CDV reduction is disabled for card types ***3pDS3Atm***, ***3pOC3Atm***, ***2pJ6MAtm***, ***4pDs1Aal1***, ***4pE1Aal1*** and enabled for all other cards.

Mib: AtmBase

Values:
disabled
enabled
cardDependent

Default: cardDependent

ATTRIBUTE Lp Eng Arc Cqc Ov portCongestionPolicy (portCong)

Access: Read and write

Criticality: Process

Description: This attribute specifies the congestion behavior of all ports on this FP. It applies only to transmit traffic served on the common queues and does not apply to per-VC queues.

When the value is ***aggregate***, the enqueue decision of cells or frames to a common queue is based upon the congestion state of the entire port to which the queue belongs. A port is defined to be as congested as the most congested queue amongst all its common queues: the low, medium and high emission priority queues. Thus, for example, if the low priority queue is congested, the high priority queue also experiences discards even though the high priority queue may itself not be congested. Setting this attribute to ***aggregate*** assures that the low priority queues are also serviced in the event of congestion.

When the value of this attribute is set to ***individualQueue***, the enqueue decision of cells or frames to a common queue is based solely upon the congestion state of that queue, not the

port. This setting assures that the absolute priority of the traffic is taken into account, regardless of whether the lower priority queues are being served.

Mib: AtmBase

Values: aggregate
individualQueue

Default: aggregate

ATTRIBUTE Lp Eng Arc Cqc Ov connectionPoolCapacity (connCap)

Access: Read and write

Criticality: Process

Description: This attribute is provided for backward compatibility and can only be used if the Logical Processor is associated with a card of one of the following card types: ***3pE3Atm***, ***3pDS3Atm***, ***3pOC3MmAtm***, ***3pOC3SmAtm***, ***3pE1Atm***, ***3pDS1Atm***, ***2pJ6MAtm***. This attribute can be used when the desired distribution of connections across ports cannot be achieved using the *connectionPoolCapacity* attribute of the *Lp Eng Arc Ov* component.

This attribute defines the maximum number of connections (VCC, VPC and VPT) that are available on each port. VCC and VPC connections use one resource, whereas a basic *VPT* uses two connection resources. The entries are indexed by port number. This number limits the range of the *ConnMap* entries. If the *Connmap* component does not exist, its default settings are used for this check. Note that the value of this attribute must be evenly divisible by 256, and that port 2 supports at most 2560 connections, not the full 4096.

The connection pool for each port must be set to 0 if the *connectionPoolCapacity* attribute in the *Lp Eng Arc Ov* component is set to a non-zero value.

Mib	AtmBase
Vector of	Decimal (0; 512..4096)
Index	Decimal (0..2)
Default	([3] 0)

COMPONENT Lp Eng Arc Aqm (Aqm)

Instance	Decimal (0..3)
Groups	"GROUP Lp Eng Arc Aqm Operational (Oper)"
Scope	Device
Description	*Lp/n Eng Arc Aqm/n* The *Aqm* component describes the usage of ATM-specific resources on a Logical Processor running ATM services for a specific ATM Queue Manager. This component is always dynamically created under any *LP Eng* which supports an ATM IP FP. The number of instances depends upon the type of card. For the 4-port OC3 cards, in unprotected mode one *AQM* instance is used per *Sonet* or *SDH* port, where the *AQM* instance is the same as the *Sonet* or *SDH* port instance. For example, Sonet/0 uses AQM/0. In protected mode, ports 0 and 1 work together and ports 2 and 3 work together. If ports 0 and 1 are a protection pair, then AQM/0 is used. AQM/1 is dormant. If ports 2 and 3 are a protection pair, then AQM/2 is used. AQM/3 is dormant. For the ***32pE1MsaMtp, 32pE1MsaMt, 32pDS1MsaMtp, 32pDS1MsaMt, 32pE1MsaStp, 32pE1MsaSt, 32pDS1MsaStp*** *and* ***32pDS1MsaSt*** cards, AQM/0 exists for the *E1* or *DS1* electrical ports and AQM/1 exists for the *Sonet* or *SDH* optical ports. Optical ports 0 and 1 can only both exist, as a protected pair. For the ***32pE1Msa*** *and* ***32pDS1Msa*** cards, only AQM/0 exists for the *E1* or *DS1* electrical ports. For the ***1pOC12SmLrAtm*** card, only AQM/0 exists. Two physical ports exist, but if both ports are provisioned the second

may be used for protection only.

For ***12pDS3Atm*** and ***12pE3Atm*** cards, an *AQM* instance exists for each set of three ports. As clarification, DS3/0, DS3/1, and DS3/2 use AQM/0. DS3/3, DS3/4, and DS3/5 use AQM/1. DS3/6, DS3/7, and DS3/8 use AQM/2. DS3/9, DS3/10, and DS3/11 use AQM/3.

Mib	AtmBase
Subcomponents	"COMPONENT Lp Eng Arc Aqm Override (Ov)"
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Arc Aqm Operational (Oper)

Properties	Operational
Description	This group describes the usage of ATM-specific resources for a specific AQM or APC on a Logical Processor running ATM services.
Mib	AtmBase

ATTRIBUTE Lp Eng Arc Aqm connectionPoolAvailable (connPoolAvail)

Access	Read only
Description	This attribute indicates the number of connection resources available (VCC, VPC and VPT) that can be configured on the AQM or APC instance of the Logical Processor. One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT.
Mib	AtmBase
Values	Decimal (0..16000)

Default	No default

ATTRIBUTE Lp Eng Arc Aqm connectionPoolUsage (connPoolUsage)

Access	Read only
Description	This attribute indicates the total number of configured VCCs and VPCs in *AtmIf components* associated with the AQM or APC instance of the Logical Processor. One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT.
Mib	AtmBase
Values	Decimal (0..16000)
Default	No default

ATTRIBUTE Lp Eng Arc Aqm txCellMemoryCongestionState (txCellCong)

Access	Read only
Description	This attribute indicates the congestion state of the transmit cell memory for the ATM Queue Manager (AQM) ASIC on this FP. This attribute indicates which *txCellMemoryThresholds* corresponds to the current value of *txCellMemoryUsage*. The congestion state is used to determine if cells of a particular discard priority (DP) are discarded before being queued for transmit. The congestion state of transmit cell memory is indicated by a numeric value ranging from 3 to 0. When transmit cell memory is in congestion state “x”, traffic with DP > “x” is discarded before transmit. Traffic with DP < “x” may be queued for transmit, depending on the congestion level of the connection transmit queue. Traffic with DP = “x” may be either queued or discarded depending on how close the value of *txCellMemoryUsage* is to the next threshold as displayed in *txCellMemoryThresholds*. For example, CLP1 traffic is queued until the value indicated by *txCellMemoryUsage* equals the value indicated in *txCellMemoryThresholds* 3. At that point, CLP1 traffic is

discarded.

This attribute is not available on APC-based and QRD-based FPs since the txCellMemoryUsage attribute is not available.

Mib: AtmBase

Values: Decimal (0..3)

Default: No default

ATTRIBUTE Lp Eng Arc Aqm txCellMemoryMaxUsage (txCellMaxUsage)

Access: Read only

Description: This attribute indicates the maximum number which has recently occurred for the *txCellMemoryUsage* attribute.

Transmit cell memory is used for storing ATM cells to be transmitted by connections for the ATM Queue Manager (AQM) or APC ASIC on this FP. It includes all cells in all connections at all service categories.

This attribute is not available on APC-based and QRD-based FPs.

This attribute is reset to the current usage every 15 minutes and when the card is reset.

Mib: AtmBase

Values: Decimal (0..163839)

Units: cells

Default: No default

ATTRIBUTE Lp Eng Arc Aqm txCellMemoryUsage (txCellUsage)

Access: Read only

Description: This attribute indicates the current number of transmit cells which are in use on this FP.

Transmit cell memory is used for storing ATM cells to be transmitted by connections for the ATM Queue Manager (AQM)

ASIC on this FP. It includes all cells in all connections at all service categories.

This attribute is not available on APC-based and QRD-based FPs. On APC-based FPs, Tx cell memory per APC device is completely partitioned among emission priorities (and also among the ports per-APC). The usage of cell memory per APC device does not adequately reflect the usage of cell memory for individual emission priorities.

Mib	AtmBase
Values	Decimal (0..163839)
Units	cells
Default	No default

ATTRIBUTE Lp Eng Arc Aqm txCellMemoryThresholds (txCellThresh)

Access	Read only
Description	This attribute is a vector which indicates the size and three discard thresholds for transmit cell memory for the ATM Queue Manager (AQM) ASIC on this FP. Transmit cell memory is used for storing ATM cells to be transmitted by connections. It includes all cells in all connections at all service categories. The first value indicates the transmit cell memory size. It is the amount of transmit memory which is available for cell queuing, after the amount of memory specified by *connectionPoolCapacity.* The current value of *txCellMemoryUsage* together with the vector of values in *txCellMemoryThresholds* determines the *txCellMemoryCongestionState*. The congestion state determines whether cells of a given discard priority (DP) are discarded or queued for transmit. When the *txCellMemoryUsage* attribute is between threshold 0 and threshold 1, the *txCellMemoryCongestionState* indicates the value 0. In congestion state 0, traffic with DP > 0 is discarded. Threshold 1 is set approximately at 90 percent of threshold 0, the

total transmit cell memory size.

When the *txCellMemoryUsage* attribute is between threshold 1 and threshold 2, the *txCellMemoryCongestionState* indicates the value 1. In congestion state 1, traffic with DP > 1 is discarded. Threshold 2 is set approximately at 85 percent of threshold 0, the total transmit cell memory size.

When the *txCellMemoryUsage* attribute is between threshold 2 and threshold 3, the *txCellMemoryCongestionState* indicates the value 2. In congestion state 2, traffic with DP > 2 is discarded. Threshold 3 is set approximately at 75 percent of threshold 0, the total transmit cell memory size.

When the *txCellMemoryUsage* attribute is below threshold 3, the *txCellMemoryCongestionState* indicates the value 3. In congestion state 3, traffic with DP=3 is queued.

This attribute is not available on APC-based and QRD-based FPs since the *txCellMemoryUsage* attribute is not available.

Mib	AtmBase
Vector of	Decimal (0..163839)
Units	cells
Index	Decimal (0..3)
Default	No default

COMPONENT Lp Eng Arc Aqm Override (Ov)

Groups	"GROUP Lp Eng Arc Aqm Ov Provisioned (Prov)"
Scope	Device
Description	*Lp/n Eng Arc Aqm/n Override* The *Aqm Override* component is used to configure the usage of ATM-specific resources for a specific AQM on a Logical Processor running ATM services. (This component is only

permitted under Logical Processors which are linked to AQM-based FPs.)

Mib AtmBase

Common Verbs
Help
List
Display

GROUP Lp Eng Arc Aqm Ov Provisioned (Prov)

Properties Provisioned

Description This group specifies the configuration of processor-wide ATM-specific resources on a Logical Processor running ATM services on AQM-based cards. Note that altering any of these parameters results in a card reboot.

Mib AtmBase

ATTRIBUTE Lp Eng Arc Aqm Ov connectionPoolCapacity (connCap)

Access Read and write

Criticality Process

Description This attribute specifies the maximum number of connections (VCC, VPC, and VPT) that can be configured on the AQM instance of the Logical Processor. One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT.

The value of this attribute restricts the sum of the (maxVccs + maxVpcs + (maxVpts * 3) + 1) across all *AtmIf components* bound to this AQM instance. Note that 3 connections are used for each standard VPT and 2 for each basic VPT.

The value of this attribute should be less than or equal to the sum of the *connectionPoolCapacity* plus the *protectedConnectionPoolCapacity* attributes of the *Arc* component.

The default value ***derivedFromArc*** is obtained using the

following equation:

(connectionPoolCapacity + protectedConnectionPoolCapacity)/ number of AQM components on the FP.)

Mib: AtmBase

Values: Decimal (1..16000)
derivedFromArc

Default: derivedFromArc

ATTRIBUTE Lp Eng Arc Aqm Ov highPriorityEpdOffset (hiEpdO)

Access: Read and write

Criticality: Process

Description: This attribute specifies the high priority Early Packet Discard (EPD) offset for connection queues. On ATM IP FPs a given connection queue is associated with one of eight emission priorities (EP). These include six unshaped EPs, one exclusive VBR shaper EP and one ABR/VBR shaper EP. This attribute specifies the EPD offset for the exclusive VBR shaper EP and the first four (higher priority) unshaped EPs.

This offset is used to derive a connection EPD threshold for a given Congestion Control (CC) level by subtracting the offset from the All Packet Discard (APD) threshold at the same CC level. The APD thresholds are themselves derived from the transmit queue limit.

The EPD threshold only applies to a connection if the Packet-Wise Discard feature is requested. The Packet-Wise Discard feature can be enabled only if the transmit queue limit is at least 5.71 times the EPD offset. This ensures that the derived EPD threshold will never be less than 17.5% of the transmit queue limit. If this condition is not satisfied, the Packet-Wise Discard feature for the connection is automatically disabled.

Due to the above constraint, if the operator wishes to decrease the transmit queue limit and still have Packet-Wise Discard feature enabled on the connection then this offset must be set to a lower

value that meets the above requirement.

Due to hardware granularity the actual value of the EPD offset may not match exactly the value provisioned. The actual value is displayed under the ATM Connection Administrator service category subcomponents on ATM IP FPs.

This attribute does not apply to CQC FPs.

Mib	AtmBase
Values	Decimal (5..1024)
Units	cells
Default	28

ATTRIBUTE Lp Eng Arc Aqm Ov lowPriorityEpdOffset (loEpdO)

Access	Read and write
Criticality	Process
Description	This attribute specifies the low priority Early Packet Discard (EPD) offset for connection queues. On ATM IP FPs a given connection queue is associated with one of eight emission priorities (EP). These include six unshaped EPs, one exclusive VBR shaper EP and one ABR/VBR shaper EP. This attribute specifies the EPD offset for the exclusive ABR/VBR shaper EP and the last two (lower priority) unshaped EPs. This offset is used to derive a connection EPD threshold for a given Congestion Control (CC) level by subtracting the offset from the All Packet Discard (APD) threshold at the same CC level. The APD thresholds are themselves derived from the transmit queue limit. The EPD threshold only applies to a connection if the Packet-Wise Discard feature is requested. The Packet-Wise Discard feature can be enabled only if the transmit queue limit is at least 5.71 times the EPD offset. This ensures that the derived EPD threshold will never be less than 17.5% of the transmit queue limit. If this condition is not satisfied, the Packet-Wise Discard feature for the connection is automatically disabled.

Due to the above constraint, if the operator wishes to decrease the transmit queue limit and still have the Packet-Wise Discard feature enabled on the connection then this offset must be set to a lower value that meets the above requirement.

Due to hardware granularity the actual value of the EPD offset may not match exactly the value provisioned. The actual value is displayed under the ATM Connection Administrator service category subcomponents on ATM IP FPs.

This attribute does not apply to CQC FPs.

Mib	AtmBase
Values	Decimal (5..1024)
Units	cells
Default	200

ATTRIBUTE Lp Eng Arc Aqm Ov portCongestionPolicy (portCong)

Access	Read and write
Criticality	Process
Description	This attribute specifies the congestion behavior of all ports on this FP. It applies only to transmit traffic and does not apply to the CBR service category. When the value is ***aggregate***, the enqueue decision of cells or frames to a queue is based upon the congestion state of the entire port to which the queue belongs. A port is defined to be as congested as the most congested queue amongst all its queues. Thus, for example, if an nrt-VBR queue is congested, the rt-VBR queue also experiences discards even though the rt-VBR queue may itself not be congested. Setting this attribute to ***aggregate*** assures that the low priority queues are also serviced in the event of congestion. If this attribute is set to ***aggregate*** then rt-VBR must not be configured to do common queuing and its emission priority should be set to a number numerically smaller than or equal to 3. Another impact of setting this attribute to ***aggregate*** is that the per connection queue limits for nrt-VBR and UBR

connections will be increased to the link pool size and their discard thresholds will be modified to be aligned with the free list discard thresholds.

When the value of this attribute is set to ***individualQueue***, the enqueue decision of cells or frames to a queue is based solely upon the congestion state of that queue, not the port. This setting assures that the absolute priority of the traffic is taken into account, regardless of whether the lower priority queues are being served. On 3pOC3SmAtm2 and 3pOC3MmAtm2 cards, if more than one override component exists, they must have the same setting for this attribute. Otherwise, setting the attribute under one override component applies to the entire card.

Mib	AtmBase
Values	aggregate individualQueue
Default	individualQueue

COMPONENT Lp Eng Arc Apc (Apc)

Instance	Decimal (0..3)
Groups	"GROUP Lp Eng Arc Apc Operational (Oper)"
Scope	Device
Description	*Lp/n Eng Arc Apc/n* The *Apc* component is similar to the Aqm component. Apc has an additional provisional attribute, Lp/n Eng Arc Apc/n Ov

	bufferLimitPerEP used to specify the maximum buffer spaces allowed to the emission priorities on an Apc instance.
Mib	AtmBase
Subcomponents	"COMPONENT Lp Eng Arc Apc Override (Ov)"
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Arc Apc Operational (Oper)

Properties	Operational
Description	This group describes the usage of ATM-specific resources for a specific AQM or APC on a Logical Processor running ATM services.
Mib	AtmBase

ATTRIBUTE Lp Eng Arc Apc connectionPoolAvailable (connPoolAvail)

Access	Read only
Description	This attribute indicates the number of connection resources available (VCC, VPC and VPT) that can be configured on the AQM or APC instance of the Logical Processor. One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT.
Mib	AtmBase
Values	Decimal (0..16000)
Default	No default

ATTRIBUTE Lp Eng Arc Apc connectionPoolUsage (connPoolUsage)

Access	Read only

Description	This attribute indicates the total number of configured VCCs and VPCs in *AtmIf components* associated with the AQM or APC instance of the Logical Processor. One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT.
Mib	AtmBase
Values	Decimal (0..16000)
Default	No default

ATTRIBUTE Lp Eng Arc Apc txCellMemoryCongestionState (txCellCong)

Access	Read only
Description	This attribute indicates the congestion state of the transmit cell memory for the ATM Queue Manager (AQM) ASIC on this FP. This attribute indicates which *txCellMemoryThresholds* corresponds to the current value of *txCellMemoryUsage*. The congestion state is used to determine if cells of a particular discard priority (DP) are discarded before being queued for transmit. The congestion state of transmit cell memory is indicated by a numeric value ranging from 3 to 0. When transmit cell memory is in congestion state “x”, traffic with DP > “x” is discarded before transmit. Traffic with DP < “x” may be queued for transmit, depending on the congestion level of the connection transmit queue. Traffic with DP = “x” may be either queued or discarded depending on how close the value of *txCellMemoryUsage* is to the next threshold as displayed in *txCellMemoryThresholds*. For example, CLP1 traffic is queued until the value indicated by *txCellMemoryUsage* equals the value indicated in *txCellMemoryThresholds* 3. At that point, CLP1 traffic is discarded. This attribute is not available on APC-based and QRD-based FPs since the txCellMemoryUsage attribute is not available.

Mib	AtmBase
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Lp Eng Arc Apc txCellMemoryMaxUsage (txCellMaxUsage)

Access	Read only
Description	This attribute indicates the maximum number which has recently occurred for the *txCellMemoryUsage* attribute. Transmit cell memory is used for storing ATM cells to be transmitted by connections for the ATM Queue Manager (AQM) or APC ASIC on this FP. It includes all cells in all connections at all service categories. This attribute is not available on APC-based and QRD-based FPs. This attribute is reset to the current usage every 15 minutes and when the card is reset.
Mib	AtmBase
Values	Decimal (0..163839)
Units	cells
Default	No default

ATTRIBUTE Lp Eng Arc Apc txCellMemoryUsage (txCellUsage)

Access	Read only
Description	This attribute indicates the current number of transmit cells which are in use on this FP. Transmit cell memory is used for storing ATM cells to be transmitted by connections for the ATM Queue Manager (AQM) ASIC on this FP. It includes all cells in all connections at all service categories. This attribute is not available on APC-based and QRD-based FPs. On APC-based FPs, Tx cell memory per APC device is

completely partitioned among emission priorities (and also among the ports per-APC). The usage of cell memory per APC device does not adequately reflect the usage of cell memory for individual emission priorities.

Mib	AtmBase
Values	Decimal (0..163839)
Units	cells
Default	No default

ATTRIBUTE Lp Eng Arc Apc txCellMemoryThresholds (txCellThresh)

Access	Read only
Description	This attribute is a vector which indicates the size and three discard thresholds for transmit cell memory for the ATM Queue Manager (AQM) ASIC on this FP. Transmit cell memory is used for storing ATM cells to be transmitted by connections. It includes all cells in all connections at all service categories. The first value indicates the transmit cell memory size. It is the amount of transmit memory which is available for cell queuing, after the amount of memory specified by *connectionPoolCapacity.* The current value of *txCellMemoryUsage* together with the vector of values in *txCellMemoryThresholds* determines the *txCellMemoryCongestionState*. The congestion state determines whether cells of a given discard priority (DP) are discarded or queued for transmit. When the *txCellMemoryUsage* attribute is between threshold 0 and threshold 1, the *txCellMemoryCongestionState* indicates the value 0. In congestion state 0, traffic with DP > 0 is discarded. Threshold 1 is set approximately at 90 percent of threshold 0, the total transmit cell memory size. When the *txCellMemoryUsage* attribute is between threshold 1 and threshold 2, the *txCellMemoryCongestionState* indicates the value 1. In congestion state 1, traffic with DP > 1 is discarded.

Threshold 2 is set approximately at 85 percent of threshold 0, the total transmit cell memory size.

When the *txCellMemoryUsage* attribute is between threshold 2 and threshold 3, the *txCellMemoryCongestionState* indicates the value 2. In congestion state 2, traffic with DP > 2 is discarded. Threshold 3 is set approximately at 75 percent of threshold 0, the total transmit cell memory size.

When the *txCellMemoryUsage* attribute is below threshold 3, the *txCellMemoryCongestionState* indicates the value 3. In congestion state 3, traffic with DP=3 is queued.

This attribute is not available on APC-based and QRD-based FPs since the *txCellMemoryUsage* attribute is not available.

Mib	AtmBase
Vector of	Decimal (0..163839)
Units	cells
Index	Decimal (0..3)
Default	No default

COMPONENT Lp Eng Arc Apc Override (Ov)

Groups	"GROUP Lp Eng Arc Apc Ov Provisioned (Prov)"
Scope	Device
Description	*Lp/n Eng Arc Apc/n Override* The *Apc Override* component is used to configure the usage of ATM-specific resources for a specific APC on a Logical Processor running ATM services. (This component is only

permitted under Logical Processors which are linked to APC-based FPs)

Mib: AtmBase

Common Verbs: Help, List, Display

GROUP Lp Eng Arc Apc Ov Provisioned (Prov)

Properties: Provisioned

Description: This group specifies the configuration of processor-wide ATM-specific resources on a Logical Processor running ATM services on APC-based cards. Note that altering any of these parameters results in a card reboot.

Mib: AtmBase

ATTRIBUTE Lp Eng Arc Apc Ov connectionPoolCapacity (connCap)

Access: Read and write

Criticality: Process

Description: This attribute specifies the maximum number of connections (VCC, VPC, and VPT) that can be configured on the APC instance of the Logical Processor. One connection resource is used for VCC and VPC connections, two connection resources for a basic VPT and three connection resources for a standard VPT.

The value of this attribute restricts the sum of the (maxVccs + maxVpcs + (maxVpts * 3) + 1) across all *AtmIf* components bound to this APC instance. Note that three connections are used for each standard VPT and two for each basic VPT.

The value of this attribute should be less than or equal to the sum of the *connectionPoolCapacity* plus the *protectedConnectionPoolCapacity* of the *Arc* component.

The default value ***derivedFromArc*** is obtained using the following equation:

	(connectionPoolCapacity + p*rotectedConnectionPoolCapacity*)/ number of APC components on the FP.
Mib	AtmBase
Values	Decimal (1..16000) derivedFromArc
Default	derivedFromArc

ATTRIBUTE Lp Eng Arc Apc Ov highPriorityEpdOffset (hiEpdO)

Access	Read and write
Criticality	Process
Description	This attribute specifies the high priority Early Packet Discard (EPD) offset for connection queues. On ATM IP FPs a given connection queue is associated with one of eight emission priorities (EP). These include six unshaped EPs, one exclusive VBR shaper EP and one ABR/VBR shaper EP. This attribute specifies the EPD offset for the exclusive VBR shaper EP and the first four (higher priority) unshaped EPs. This offset is used to derive a connection EPD threshold for a given Congestion Control (CC) level by subtracting the offset from the All Packet Discard (APD) threshold at the same CC level. The APD thresholds are themselves derived from the transmit queue limit. The EPD threshold only applies to a connection if the Packet-Wise Discard feature is requested. The Packet-Wise Discard feature can be enabled only if the transmit queue limit is at least 5.71 times the EPD offset. This ensures that the derived EPD threshold will never be less than 17.5% of the transmit queue limit. If this condition is not satisfied, the Packet-Wise Discard feature for the connection is automatically disabled. Due to the above constraint, if the operator wishes to decrease the transmit queue limit and still have the Packet-Wise Discard feature enabled on the connection then this offset must be set to a lower value that meets the above requirement.

Due to hardware granularity the actual value of the EPD offset may not match exactly the value provisioned. The actual value is displayed under the ATM Connection Administrator service category subcomponents on ATM IP FPs.

This attribute does not apply to CQC FPs.

Mib	AtmBase
Values	Decimal (5..1024)
Units	cells
Default	28

ATTRIBUTE Lp Eng Arc Apc Ov lowPriorityEpdOffset (loEpdO)

Access	Read and write
Criticality	Process
Description	This attribute specifies the low priority Early Packet Discard (EPD) offset for connection queues. On ATM IP FPs a given connection queue is associated with one of eight emission priorities (EP). These include six unshaped EPs, one exclusive VBR shaper EP and one ABR/VBR shaper EP. This attribute specifies the EPD offset for the exclusive ABR/VBR shaper EP and the last two (lower priority) unshaped EPs. This offset is used to derive a connection EPD threshold for a given Congestion Control (CC) level by subtracting the offset from the All Packet Discard (APD) threshold at the same CC level. The APD thresholds are themselves derived from the transmit queue limit. The EPD threshold only applies to a connection if the Packet-Wise Discard feature is requested. The Packet-Wise Discard feature can be enabled only if the transmit queue limit is at least 5.71 times the EPD offset. This ensures that the derived EPD threshold will never be less than 17.5% of the transmit queue limit. If this condition is not satisfied, the Packet-Wise Discard feature for the connection is automatically disabled.

Due to the above constraint, if the operator wishes to decrease the transmit queue limit and still have the Packet-Wise Discard feature enabled on the connection then this offset must be set to a lower value that meets the above requirement.

Due to hardware granularity the actual value of the EPD offset may not match exactly the value provisioned. The actual value is displayed under the ATM Connection Administrator service category subcomponents on ATM IP FPs.

This attribute does not apply to CQC FPs.

Mib	AtmBase
Values	Decimal (5..1024)
Units	cells
Default	200

ATTRIBUTE Lp Eng Arc Apc Ov portCongestionPolicy (portCong)

Access	Read and write
Criticality	Process
Description	This attribute specifies the congestion behavior of all ports on this FP. It applies only to transmit traffic and does not apply to the CBR service category. When the value is ***aggregate***, the enqueue decision of cells or frames to a queue is based upon the congestion state of the entire port to which the queue belongs. A port is defined to be as congested as the most congested queue amongst all its queues. Thus, for example, if an nrt-VBR queue is congested, the rt-VBR queue also experiences discards even though the rt-VBR queue may itself not be congested. Setting this attribute to ***aggregate*** assures that the low priority queues are also serviced in the event of congestion. If this attribute is set to ***aggregate*** then rt-VBR must not be configured to do common queuing and its emission priority should be set to a number numerically smaller than or equal to 3. Another impact of setting this attribute to ***aggregate*** is that the per connection queue limits for nrt-VBR and UBR connections will be increased to the link pool size and their

discard thresholds will be modified to be aligned with the free list discard thresholds.

When the value of this attribute is set to ***individualQueue***, the enqueue decision of cells or frames to a queue is based solely upon the congestion state of that queue, not the port. This setting assures that the absolute priority of the traffic is taken into account, regardless of whether the lower priority queues are being served. On 3pOC3SmAtm2 and 3pOC3MmAtm2 cards, if more than one override component exists, they must have the same setting for this attribute. Otherwise, setting the attribute under one override component applies to the entire card.

Mib	AtmBase
Values	aggregate individualQueue
Default	individualQueue

ATTRIBUTE Lp Eng Arc Apc Ov bufferLimitPerEP (buffPerEP)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum buffer size allowed for each of the eight emission priorities of traffic towards the link. A class buffer pool limit is designed to prevent one emission priority from consuming all the available buffer space. The eight *bufferLimitPerEP* values represent maximum buffer size per emission priority, in number of cells. To guarantee proper buffer isolation among emission priorities, the sum of *bufferLimitPerEP* values for all emission priorities must not exceed the total buffer space available, which is 261118 cells. The default values are approximately 15%, 0%, 15%, 50%, 15%, 0%, 0%, and 5% of total available buffer space for emission priorities 0 through 7 respectively.
Mib	AtmBase
Vector of	Decimal (0..523264)

Units	cells
Index	Decimal (0..7)
Default	(39168, 0, 39168, 130559, 39168, 0, 0, 13055)

COMPONENT Lp Eng FrameCoreResourceControl (Fcrc)

Groups	"GROUP Lp Eng Fcrc Operational (Oper)"
Scope	Device
Description	*Lp/n Eng FrameCoreResourceControl* This component is used to view the usage of frame specific resources on a *LogicalProcessor* running Frame based services. The *FrameCoreResourceControl* provisioned component is not supported on the 32 port Multi-Service Access Functional Processor.
Mib	AtmBase
Opt. Subcomp.	"COMPONENT Lp Eng Fcrc Override (Ov)"
Opt. Subcomp.	"COMPONENT Lp Eng Fcrc Pqc (Pqc)"
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Fcrc Operational (Oper)

Properties	Operational
Description	This group indicates the configuration of processor-wide frame specific resources on a *LogicalProcessor.*
Mib	AtmBase

ATTRIBUTE Lp Eng Fcrc subConnectionPoolAvailable (subConnAvail)

Access	Read only

Description	This attribute indicates the number of sub-connections available for the *LogicalProcessor.* A sub-connection is used for interworking the ATM services with the frame oriented services such as Frame Relay and Path Oriented Routing System (PORS). When a frame is received at a sub-connection, the frame header is modified to be compatible with the service it is to be forwarded to. This pool is used for connection oriented services only. Each of the following components uses one sub-connection from this pool: *FrAtm/n Dlci/n Siwf* *McsMgr Frf5EpG/n Frf5Ep/n Lmi* *McsMgr Frf5EpG/n Frf5Ep/n Dlci/n* Note: When the value of this attribute reaches zero, no more connections are accepted for any of the services which utilize this pool. To increase the size of this pool, use the *Lp Eng Fcrc Ov subConnectionPoolCapacity* attribute.
Mib	AtmBase
Values	Decimal (0..49152)
Default	No default

ATTRIBUTE Lp Eng Fcrc subConnectionPoolUsage (subConnUsage)

Access	Read only
Description	This attribute indicates the number of sub-connections being utilized by the *LogicalProcessor.* It is only applicable to PQC-based ATM IP cards. A sub-connection is used for interworking the ATM services with the frame oriented services such as Frame Relay and Path Oriented Routing System (PORS). When a frame is received at a sub-connection, the frame header is modified to be compatible with the service it is to be forwarded to. This pool is used for connection oriented services only. Each of the following components uses one sub-connection from this

pool:
FrAtm/n Dlci/n Siwf
McsMgr Frf5EpG/n Frf5Ep/n Lmi
McsMgr Frf5EpG/n Frf5Ep/n Dlci/n

Mib: AtmBase

Values: Decimal (0..49152)

Default: No default

ATTRIBUTE Lp Eng Fcrc lnnConnectionPoolAvailable (lnnConnAvail)

Access: Read only

Description: This attribute indicates the number of resource records available for the connections which utilize Logical Network Number (LNN) on the *LogicalProcessor.*

A logical network is a subset of nodes together with a subset of trunks that interconnect those nodes. It carries the traffic for a defined set of network protocols. An LNN is used to identify a logical network. The connectionless services that utilize the logical networks require some processing at the intermediate nodes. This pool is allocated at the intermediate nodes to sustain these connectionless services.

If the *McsMgr DprsMcsEpG/n Ep/n EpD transportConnectionPreference* attribute is set to ***atmOnly***, each instance of the *McsMgr DprsMcsEpG/n Ep/n* component uses one resource record from this pool, otherwise it does not use this pool.

When the value of this attribute reaches zero, no more connections are accepted for any of the services which utilize this pool. To increase the size of this pool, use the *Fcrc Ov lnnConnectionPoolCapacity* attribute.

Mib: AtmBase

Values: Decimal (0..2048)

Default: No default

ATTRIBUTE Lp Eng Fcrc InnConnectionPoolUsage (InnConnUsage)

Access	Read only
Description	This attribute indicates the number of resource records being utilized for the connections which use Logical Network Number (LNN) on the *LogicalProcessor*. It is only applicable to PQC-based ATM IP cards. A logical network is a subset of nodes together with a subset of trunks that interconnect those nodes. It carries the traffic for a defined set of network protocols. An LNN is used to identify a logical network. The connectionless services that utilize the logical networks require some processing at the intermediate nodes. This pool is applied at the intermediate nodes to sustain these connectionless services. If the *McsMgr DprsMcsEpG/n Ep/n EpD transportConnectionPreference* attribute is set to ***atmOnly***, each instance of the *McsMgr DprsMcsEpG/n Ep/n* component uses one resource record from this pool, otherwise it does not use this pool.
Mib	AtmBase
Values	Decimal (0..2048)
Default	No default

ATTRIBUTE Lp Eng Fcrc txFrameMemoryCongestionState (txFrCong)

Access	Read only
Description	This attribute indicates the congestion state of the transmit frame memory for this FP. This attribute indicates which *txFrameMemoryThresholds* corresponds to the current value of *txFrameMemoryUsage*. The congestion state is used to determine if frames of a particular discard priority (DP) are discarded before being queued for transmit. The congestion state of transmit frame memory is indicated by a

numeric value ranging from 3 to 0. When transmit frame memory is in congestion state “x”, traffic with DP > “x” is discarded before transmit. Traffic with DP < “x” may be queued for transmit, depending on the congestion level of the transmit queue. Traffic with DP = “x” may be either queued or discarded depending on how close the value of *txFrameMemoryUsage* is to the next threshold as displayed in *txFrameMemoryThresholds*. For example, DP=3 traffic is queued until the value indicated by *txFrameMemoryUsage* equals the value indicated in *txFrameMemoryThresholds* 3. At that point, DP=3 traffic is discarded.

Mib — AtmBase

Values — Decimal (0..3)

Default — No default

ATTRIBUTE Lp Eng Fcrc rxFrameMemoryCongestionState (rxFrCong)

Access — Read only

Description — This attribute indicates the congestion state of the receive frame memory for this FP.

This attribute indicates which *rxFrameMemoryThresholds* corresponds to the current value of *rxFrameMemoryUsage*. The congestion state is used to determine if frames of a particular discard priority (DP) are discarded before being queued for processing on this FP.

The congestion state of receive frame memory is indicated by a numeric value ranging from 3 to 0. When receive frame memory is in congestion state “x”, traffic with DP > “x” is discarded before processing. Traffic with DP < “x” may be queued for processing, depending on the congestion level of the processor or bus queue. Traffic with DP = “x” may be either queued or discarded depending on how close the value of *rxFrameMemoryUsage* is to the next threshold as displayed in *rxFrameMemoryThresholds*. For example, DP=3 traffic is queued until the value indicated by *rxFrameMemoryUsage* equals the value indicated in *rxFrameMemoryThresholds* 3. At that point, DP=3 traffic is discarded.

Mib	AtmBase
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Lp Eng Fcrc txFrameMemoryMaxUsage (txFrMaxUsage)

Access	Read only
Description	This attribute indicates the maximum number which has recently occurred for the *txFrameMemoryUsage* attribute. On CQC-based ATM FPs, this number indicates the maximum usage of transmit frames for all ports on this FP. On ATM IP FPs, this number indicates the maximum usage of transmit frames in the PQC ASIC. Queuing of frames for transmit only occurs in the PQC. This value is reset to the current usage every 15 minutes and when the card is reset.
Mib	AtmBase
Values	Decimal (0..32767)
Units	frameBlocks
Default	No default

ATTRIBUTE Lp Eng Fcrc txFrameMemoryUsage (txFrUsage)

Access	Read only
Description	This attribute indicates the current number of transmit frames which are in use for this FP. On CQC-based ATM FPs, this number indicates the total transmit frames which are in use for all ports on this FP. On ATM IP FPs, this number indicates the number of transmit frames which are in use in the PQC ASIC. Queuing of frames for transmit only occurs in the PQC.

Mib	AtmBase
Values	Decimal (0..32767)
Units	frameBlocks
Default	No default

ATTRIBUTE Lp Eng Fcrc rxFrameMemoryMaxUsage (rxFrMaxUsage)

Access	Read only
Description	This attribute indicates the maximum number which has recently occurred for the *rxFrameMemorySize* attribute. On CQC-based ATM FPs, this number indicates the maximum usage of receive frames for all ports on this FP. On ATM IP FPs, this number indicates the maximum usage of received frames in the PQC ASIC. Queuing of received frames only occurs in the PQC. This value is reset to the current usage every 15 minutes and when the card is reset.
Mib	AtmBase
Values	Decimal (0..32767)
Units	frameBlocks
Default	No default

ATTRIBUTE Lp Eng Fcrc rxFrameMemoryUsage (rxFrUsage)

Access	Read only
Description	This attribute indicates the current number of receive frames which are in use for this FP. On CQC-based ATM FPs, this number indicates the total receive frames which are in use for all ports on this FP. On ATM IP FPs, this number indicates the number of receive

frames which are in use in the PQC ASIC. Queuing of received frames only occurs in the PQC.

Mib	AtmBase
Values	Decimal (0..32767)
Units	frameBlocks
Default	No default

ATTRIBUTE Lp Eng Fcrc txFrameMemoryThresholds (txFrThresh)

Access	Read only
Description	This attribute is a vector which indicates the size and three discard thresholds for transmit frame memory for this FP. The transmit frame memory is used for storing frames to be transmitted by this FP. The first value indicates the transmit frame memory size. This is derived based on the total transmit memory capacity of this FP, and the number of connections specified. The current value of *txFrameMemoryUsage* together with the vector of values in *txFrameMemoryThresholds* determines the *txFrameMemoryCongestionState*. The congestion state determines whether frames of a given discard priority (DP) are discarded or queued for transmit. When the *txFrameMemoryUsage* attribute is between threshold 0 and threshold 1, the *txFrameMemoryCongestionState* indicates the value 0. In congestion state 0, traffic with DP > 0 is discarded. Threshold 1 is set approximately at 90 percent of threshold 0, the total transmit frame memory size. When the *txFrameMemoryUsage* attribute is between threshold 1 and threshold 2, the *txFrameMemoryCongestionState* indicates the value 1. In congestion state 1, traffic with DP > 1 is discarded. Threshold 2 is set approximately at 85 percent of threshold 0, the total transmit frame memory size. When the *txFrameMemoryUsage* attribute is between threshold 2

and threshold 3, the *txFrameMemoryCongestionState* indicates the value 2. In congestion state 2, traffic with DP > 2 is discarded. Threshold 3 is set approximately at 75 percent of threshold 0, the total transmit frame memory size.

When the *txFrameMemoryUsage* attribute is below threshold 3, the *txFrameMemoryCongestionState* indicates the value 3. In congestion state 3, traffic with DP=3 is queued.

Mib	AtmBase
Vector of	Decimal (0..32767)
Units	frameBlocks
Index	Decimal (0..3)
Default	No default

ATTRIBUTE Lp Eng Fcrc rxFrameMemoryThresholds (rxFrThresh)

Access	Read only
Description	This attribute is a vector which indicates the size and three discard thresholds for receive frame memory for this FP. The receive frame memory is used for storing frames received by this FP. The first value indicates the total receive frame memory size. This is derived based on the total receive memory capacity of this FP, and the number of connections specified. The current value of *rxFrameMemoryUsage* together with the vector of values in *rxFrameMemoryThresholds* determines the *rxFrameMemoryCongestionState*. The congestion state determines whether frames of a given discard priority (DP) are discarded or queued for processing. When the *rxFrameMemoryUsage* attribute is between threshold 0 and threshold 1, the *rxFrameMemoryCongestionState* indicates the value 0. In congestion state 0, traffic with DP > 0 is discarded. Threshold 1 is set approximately at 90 percent of threshold 0, the total receive frame memory size.

When the *rxFrameMemoryUsage* attribute is between threshold 1 and threshold 2, the *rxFrameMemoryCongestionState* indicates the value 1. In congestion state 1, traffic with DP > 1 is discarded. Threshold 2 is set approximately at 85 percent of threshold 0, the total receive frame memory size.

When the *rxFrameMemoryUsage* attribute is between threshold 2 and threshold 3, the *rxFrameMemoryCongestionState* indicates the value 2. In congestion state 2, traffic with DP > 2 is discarded. Threshold 3 is set approximately at 75 percent of threshold 0, the total receive frame memory size.

When the *rxFrameMemoryUsage* attribute is below threshold 3, the *rxFrameMemoryCongestionState* indicates the value 3. In congestion state 3, traffic with DP=3 is queued.

Mib	AtmBase
Vector of	Decimal (0..32767)
Units	frameBlocks
Index	Decimal (0..3)
Default	No default

COMPONENT Lp Eng Fcrc Override (Ov)

Groups	"GROUP Lp Eng Fcrc Ov Provisioned (Prov)"
Scope	Device

Description	*Lp Eng Fcrc Override* This component holds provisionable engineering parameters used by frame services on this *LogicalProcessor.*
Mib	AtmBase
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Fcrc Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains frame services provisionable engineering parameters for this *LogicalProcessor.* Note that altering any of these parameters will result in a card reset.
Mib	AtmBase

ATTRIBUTE Lp Eng Fcrc Ov subConnectionPoolCapacity (subConnCap)

Access	Read and write
Criticality	Process
Description	This attribute indicates the maximum number of sub-connections for the *LogicalProcessor.* A sub-connection is used for interworking the ATM services with the frame oriented services such as Frame Relay and Path Oriented Routing System (PORS). When a frame is received at a sub-connection, the frame header is modified to be compatible with the service it is to be forwarded to. Due to limited resources, not all of the sub-connections requested by this attribute may be allocated. The desired number of sub-connections allocated is indicated by the sum of *fcrc subConnectionPoolAvailable* and *fcrc subConnectionPoolUsage* attributes.

This pool is used for connection oriented services only. Each of the following components uses one sub-connection from this pool:
FrAtm/n Dlci/n Siwf
McsMgr Frf5EpG/n Frf5Ep/n Lmi
McsMgr Frf5EpG/n Frf5Ep/n Dlci/n

When the sub-connection pool is exhausted, no more connections are accepted from the services which utilize this pool.

Note: Ip Routing entries also compete for this memory.

The maximum size of this pool is 8192 for CQC based cards. The default ***cardDependent*** has the effect of setting *subConnectionPoolCapacity* to 1024 for both CQC cards and SGAF cards.

Mib	AtmBase
Values	Decimal (0..49152) cardDependent
Default	cardDependent

ATTRIBUTE Lp Eng Fcrc Ov InnConnectionPoolCapacity (InnConnCap)

Access	Read and write
Criticality	Process
Description	This attribute indicates the maximum number of resource records for the connections which utilize Logical Network Number (LNN) on the *LogicalProcessor.* A logical network is a subset of nodes together with a subset of trunks that interconnect those nodes. It carries the traffic for a defined set of network protocols. An LNN is used to identify a logical network. The connectionless services that utilize the logical networks require some processing at the intermediate nodes. This pool is allocated at the intermediate nodes to sustain these connectionless services. If the *McsMgr DprsMcsEpG/n Ep/n EpD*

transportConnectionPreference attribute is set to ***atmOnly***, each instance of the *McsMgr DprsMcsEpG/n Ep/n* component uses one resource record from this pool, otherwise it does not use this pool.

Note: Frame and Cell queues also compete for this memory.

Each DPRS instance requires two resource records from this pool.
The maximum size of this pool is 256 for CQC based cards. The default ***cardDependent*** has the effect of setting *lnnConnectionPoolCapacity* to 128 for CQC cards and 256 for SGAF cards.

Mib	AtmBase
Values	Decimal (1..2048) cardDependent
Default	cardDependent

COMPONENT Lp Eng Fcrc Pqc (Pqc)

Groups	"GROUP Lp Eng Fcrc Pqc Operational (Oper)"
Scope	Device
Description	*Lp Eng Fcrc Pqc* This component is used to view the usage of resources specific to frame services on a PQC based FP.
Mib	AtmBase
Subcomponents	"COMPONENT Lp Eng Fcrc Pqc Override (Ov)"
Common Verbs	Help List Display Add DELete

GROUP Lp Eng Fcrc Pqc Operational (Oper)

Properties	Operational

Description	This group describes the usage of resources specific to frame services on a PQC based FP.
Mib	AtmBase

ATTRIBUTE Lp Eng Fcrc Pqc ipRoutesPoolSize (ipRts)

Access	Read only
Description	This attribute indicates the number of IP routing entries permitted on the Logical Processor. If there are enough resources on the card, this value is equal to the provisioned attribute (in *Fcrc Pqc Ov*) *ipRoutesPoolCapacity.*
Mib	AtmBase
Values	Decimal (0..100000)
Default	No default

ATTRIBUTE Lp Eng Fcrc Pqc ipRoutesPoolUsage (ipRtsUsage)

Access	Read only
Description	This attribute represents the current number of IP routing entries that are in use.
Mib	AtmBase
Values	Decimal (0..100000)
Default	No default

ATTRIBUTE Lp Eng Fcrc Pqc ipRoutesPoolAvailableEst (ipRtsAvail)

Access	Read only
Description	Each IP routing resource can hold between one and three IP routing entries. Therefore, it is not possible to know exactly how many more IP routing entries can be added to the IP routing table. This attribute specifies the estimated number of IP routing entries that are available on the Logical Processor. It is an approximation based on the current average number of IP routing entries per IP routing resource.
Mib	AtmBase

Values	Decimal (0..100000)
Default	No default

ATTRIBUTE Lp Eng Fcrc Pqc ipInputRecordsPoolSize (ipInput)

Access	Read only
Description	This attribute contains the maximum number of IP input records that are available on a PQC based Logical Processor. IP input records are used by IP-aware media associated to a *Vr Pp* component. In general, one IP input record is used per Layer 2 connection used by IP-aware media.
Mib	AtmBase
Values	Decimal (0..32768)
Default	No default

ATTRIBUTE Lp Eng Fcrc Pqc ipInputRecordsPoolUsage (ipInputUsage)

Access	Read only
Description	This attribute indicates the current number of IP input records that are used by the IP instances on this Logical Processor.If this number exceeds *ipInputRecordsPoolSize*, some IP-aware media protocol ports will not be able to receive traffic.
Mib	AtmBase
Values	Decimal (0..32768)
Default	No default

ATTRIBUTE Lp Eng Fcrc Pqc ipOutputRecordsPoolSize (ipOutput)

Access	Read only
Description	This attribute contains the maximum number of IP output records that are available on this Logical Processor.
Mib	AtmBase
Values	Decimal (0..32768)
Default	No default

ATTRIBUTE Lp Eng Fcrc Pqc ipOutputRecordsPoolUsage (ipOutputUsage)

Access	Read only
Description	This attribute contains the current number of IP output records that are used by the IP instances currently active on a PQC based Logical Processor. IP output records are used by every active IP next hop onto which a flow has been exercised. If Equal-Cost Multi-Path (ECMP) IP routes are used on this node, IP output records can become exhausted rapidly. ECMP can be turned off by setting *Vr Ip Ospf ecmpStatus* attribute to ***disabled***.
Mib	AtmBase
Values	Decimal (0..32768)
Default	No default

COMPONENT Lp Eng Fcrc Pqc Override (Ov)

Groups	"GROUP Lp Eng Fcrc Pqc Ov Provisioned (Prov)"
Scope	Device
Description	*Lp Eng Fcrc Pqc Ov* This component is used to configure resources specific to frame services on a PQC based Logical Processor.
Mib	AtmBase
Common Verbs	Help List Display

GROUP Lp Eng Fcrc Pqc Ov Provisioned (Prov)

Properties	Provisioned
Description	This group is used for fine tuning resource configuration of frame services on a PQC based Logical Processor.
Mib	AtmBase

ATTRIBUTE Lp Eng Fcrc Pqc Ov ipRoutesPoolCapacity (ipRtsCap)

Access	Read and write
Criticality	Process
Description	This attribute indicates the number of desired IP routing entries for the Logical Processor. It is used to determine the number of IP routing resources to be allocated on the card. Each IP routing resource can hold between one and three IP routing entries. To calculate the number of IP routing resources required, an average of 2 IP routing entries per IP routing resource is used. If there are not enough resources on the card, a smaller pool is allocated. Operational attribute (in Fcrc Pqc) *ipRoutesPoolSize* indicates the actual size of the pool.
Mib	AtmBase
Values	Decimal (0..100000)
Default	4096

COMPONENT Lp Eng AtmPathTrace (PTrace)

Groups	"GROUP Lp Eng PTrace Operational (Oper)"
Scope	Device
Description	*Lp/n Eng AtmPathTrace* This component holds the path trace engineering parameters and statistics for the following features: ***AtmUni***, ***AtmPnni***, and ***AtmIisp*** on this *Lp*.
Mib	PathTrace
Opt. Subcomp.	"COMPONENT Lp Eng PTrace Override (Ov)"
Common Verbs	Help List Display Add DELete

GROUP Lp Eng PTrace Operational (Oper)

Properties	Operational
Description	This group contains the current engineering parameters and statistics for path trace for the following features: ***AtmUni***, ***AtmPnni,*** and ***AtmIisp*** on this *Lp*.
Mib	PathTrace

ATTRIBUTE Lp Eng PTrace maxTraceRecords (mRecords)

Access	Read only
Description	This attribute indicates the maximum number of path trace records that are allowed to be stored on this *Lp*. Once the maximum has been reached, each *AtmPathTraceFilter* component manages the records it owns.
Mib	PathTrace
Values	Decimal (0..200)
Default	No default

ATTRIBUTE Lp Eng PTrace currentTraceRecords (cRecords)

Access	Read only
Description	This attribute indicates the current number of Path Trace records that are stored on this *Lp*.
Mib	PathTrace
Values	Decimal (0..200)
Default	No default

ATTRIBUTE Lp Eng PTrace maxConcurrentTraceRequests (mcRequests)

Access	Read only
Description	This attribute indicates the maximum number of concurrent trace requests on this *Lp*. Once the maximum has been reached, the Trace Transit List IE in the connection setup request is dropped and the setup request proceeds.

Mib	PathTrace
Values	Decimal (1..200)
Default	No default

ATTRIBUTE Lp Eng PTrace currentTraceRequests (cRequests)

Access	Read only
Description	This attribute indicates the number of active current trace requests on this *Lp*.
Mib	PathTrace
Values	Decimal (0..200)
Default	No default

COMPONENT Lp Eng PTrace Override (Ov)

Groups	"GROUP Lp Eng PTrace Ov Provisioned (Prov)"
Scope	Device
Description	*Lp Eng PTrace Override* This component holds provisionable engineering parameters used to override the default maximum values allowed on this *Lp*.
Mib	PathTrace
Common Verbs	Help List Display Add DELete

GROUP Lp Eng PTrace Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable engineering parameters for this *Lp*.
Mib	PathTrace

ATTRIBUTE Lp Eng PTrace Ov maxTraceRecords

Access	Read: All Write: All
Description	This attribute specifies the maximum number of records allowed to be stored on this *Lp*. Once the maximum has been reached, each *AtmPathTraceFilter* component manages the records it owns. If the value is set to zero, all *AtmPathTraceFilter* components are removed. If the existing value is changed from a higher value to a lower value by a difference of 20, all records on the *Lp* are lost If the existing value is changed from a lower value to a higher value, all records remain.
Mib	PathTrace
Values	Decimal (0..200)
Default	0

ATTRIBUTE Lp Eng PTrace Ov maxConcurrentTraceRequests

Access	Read: All Write: All
Description	This attribute indicates the maximum number of concurrent trace requests on this *Lp*. Once the maximum has been reached, the Trace Transit List IE in the connection setup request is dropped and the setup request proceeds.
Mib	PathTrace
Values	Decimal (1..200)
Default	20

COMPONENT Lp Eng ActiveAlarmList (AAList)

Groups	"GROUP Lp Eng AAList Operational (Oper)"
Scope	Device

Description	*Lp Eng ActiveAlarmList* This component holds the engineering parameters and operational statistics for the active alarms on this LP.
Mib	ActiveAlarmList
Opt. Subcomp.	"COMPONENT Lp Eng AAList Override (Ov)"
Common Verbs	Help List Display Add DELete

GROUP Lp Eng AAList Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for the ActiveAlarmList component.
Mib	ActiveAlarmList

ATTRIBUTE Lp Eng AAList maxListSize (size)

Access	Read only
Description	This attribute indicates the maximum number of active alarms this LP can hold. **Possible Values:** *Disabled:*Do not store active alarms on this LP. *10..200*: *Unlimited*: This value indicates that the system should not limit the number of active alarms on this LP. Alarms can still be discarded if the memory resources are congested.
Mib	ActiveAlarmList
Values	Decimal (10..200) disabled (dis) unlimited (unl)
Default	No default

ATTRIBUTE Lp Eng AAList alarmsRx

Access	Read only
Description	This attribute counts the active alarms that have been received from this LP.
Mib	ActiveAlarmList
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eng AAList alarmsDiscarded

Access	Read only
Description	This attribute counts the active alarms that have been discarded on this LP. Alarms are discarded when the number of active alarms received on this LP exceeds what it can hold, or the memory resource of the LP is congested.
Mib	ActiveAlarmList
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eng AAList currentListSize

Access	Read only
Description	This attribute indicates the current number of active alarms stored on this LP.
Mib	ActiveAlarmList
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eng AAList peakListSize (peak)

Access	Read only

Description	This attribute indicates the peak number of the active alarms that have been received on this LP since the last time the LP came up.
Mib	ActiveAlarmList
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Lp Eng AAList Override (Ov)

Groups	"GROUP Lp Eng AAList Ov Provisioned (Prov)"
Scope	Device
Description	*Lp Eng AAList Override* This component holds provisionable engineering parameters for the active alarms on this LP.
Mib	ActiveAlarmList
Common Verbs	Help List Display Add DELete

GROUP Lp Eng AAList Ov Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *ActiveAlarmList Override* components under the *Lp Engineering component*.
Mib	ActiveAlarmList

ATTRIBUTE Lp Eng AAList Ov maxListSize (size)

Access	Read and write
Description	This attribute specifies the maximum number of active alarms on this LP. For more details on the default and other information, refer to the parent component's *maxListSize* attribute.

	Possible Values: *Disabled:* Do not store active alarms on this LP. *10..200*: *AutoConfigured*: System Supplied. A value of 100 is selected in this release. *Unlimited*: This value indicates that the system should not limit the number of active alarms on this LP. Alarms can still be discarded if the memory resources are congested.
Mib	ActiveAlarmList
Values	Decimal (10..200) disabled (dis) autoConfigured (auto) unlimited (unl)
Default	autoConfigured

COMPONENT Lp VoiceServicesProcessor (Vsp)

Groups	"GROUP Lp Vsp Provisioned (Op)" "GROUP Lp Vsp OsiState (State)"
Scope	Device
Description	*Lp/n VoiceServicesProcessor* *Dlep/n VoiceServicesProcessor* This component represents a Voice Services Processor FP. When added, *PModule* subcomponents are added automatically. For the ***12mVspAal*** and ***Vsp2*** cards, 12 *PModule* instances are added. For the ***2pGeMmSrVsp3*** card, 24 *PModule* instances are added.

	For the ***2pOC3ChSmIrVsp3*** card, 23 *PModule* instances are added.
Mib	LogicalProcessor
Subcomponents	"COMPONENT Lp Vsp ProcessingModule (PModule)"
Opt. Subcomp.	"COMPONENT Lp Vsp Ethernet1000BaseSX (GigE)"
Dyn. Subcomp.	"COMPONENT Lp Vsp Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Vsp Provisioned (Op)

Properties	Provisioned
Description	This group contains provisioning data for the *Vsp* Component.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp linkToApplication (lta)

Access	Read and write
Criticality	Process
Description	This attribute specifies a service link to an *Nsta* component that defines the application services available in the VSP card.
Mib	LogicalProcessor
Values	Link (Service, linkToServer)
Default	No default

GROUP Lp Vsp OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Vsp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: LogicalProcessor

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Vsp usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: LogicalProcessor

Values: idle
active (activ)
busy

Default: idle

COMPONENT Lp Vsp ProcessingModule (PModule)

Instance: Decimal (1..24)

Groups	"GROUP Lp Vsp PModule Provisioned (Prov)" "GROUP Lp Vsp PModule OsiState (State)" "GROUP Lp Vsp PModule Operational (Oper)"
Scope	Device
Description	*Lp/n Vsp ProcessingModule/n* *Dlep/n Vsp ProcessingModule/n* A *ProcessingModule* (*PModule*) component instance represents a distinct physical processing module on a Voice Services Processor (VSP) FP. Each *PModule* instance is uniquely identified by a number that corresponds to a specific physical location on the VSP FP.
Mib	LogicalProcessor
Dyn. Subcomp.	"COMPONENT Lp Vsp PModule ProcessingBlock (PBlock)"
Common Verbs	Help List Display Add DELete

GROUP Lp Vsp PModule Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for a *ProcessingModule*.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp PModule moduleType (modType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of processing module expected for this *ProcessingModule* instance. A value of ***vpm*** refers to a processing module instance that is

capable of processing voice, voiceband data, and data.
A value of ***spm*** refers to a processing module instance that is capable of processing signaling, and hosting a media or signaling gateway.
A value of ***none*** refers to a processing module instance that is unavailable for use.

Mib: LogicalProcessor

Values:
none
vpm
spm

Default: none

GROUP Lp Vsp PModule OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: LogicalProcessor

ATTRIBUTE Lp Vsp PModule adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

	The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Vsp PModule operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Vsp PModule usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: LogicalProcessor

Values:
idle
active (activ)
busy

Default: idle

GROUP Lp Vsp PModule Operational (Oper)

Properties: Operational

Description: This group indicates operational information for a *ProcessingModule*.

Mib: LogicalProcessor

ATTRIBUTE Lp Vsp PModule insertedModuleType (insModType)

Access: Read only

Description: This attribute indicates the type of processing module currently present in the physical position on a Voice Services Processor FP.

A value of ***vpm*** indicates the presence of a processing module capable of processing voice, voiceband data, and data.
A value of ***spm*** indicates the presence of a processing module capable of processing signaling, and hosting a media or signaling gateway.
A value of ***none*** indicates that no processing module is present.
A value of ***unknown*** indicates the presence of a processing module with capabilities not known by the software.

Mib: LogicalProcessor

Values:
none
unknown
vpm
spm

Default	No default

ATTRIBUTE Lp Vsp PModule productCode (prc)

Access	Read only
Description	This attribute indicates the product engineering code and release of the *ProcessingModule*.
Mib	LogicalProcessor
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Lp Vsp PModule failureCause (failCause)

Access	Read only
Description	This attribute indicates the reason why the physical processing module has failed. The various failure causes are: ***none*** - There is no failure. ***cannotLoadFirmware*** - A module has been detected, but the firmware load operation failed. ***failedDiagnostics*** - The diagnostics cycle has completed and an error has been detected within the module. ***mismatched*** - The *insertedModuleType* of the *PModule* does not match its provisioned *moduleType*. ***connectivityFailed*** - The test cycle has run and an error has been detected on one of the *PBlock*s within the *PModule*. ***notResponding*** - One of the *PBlock*s within the *PModule* is not responding.
Mib	LogicalProcessor
Values	none cannotLoadFirmware failedDiagnostics mismatched connectivityFailed notResponding
Default	none

COMPONENT Lp Vsp PModule ProcessingBlock (PBlock)

Instance	Decimal (1..2)
Groups	"GROUP Lp Vsp PModule PBlock Operational (Oper)" "GROUP Lp Vsp PModule PBlock Utilization (Util)"
Scope	Device
Description	*Lp/n Vsp PModule/n ProcessingBlock/n* *Dlep/n Vsp PModule/n ProcessingBlock/n* This dynamic component represents a block of Data Processors within a *ProcessingModule*. The Processing Block is the smallest unit on the Voice Services Processor (VSP) FP on which different Data Processing software algorithms may be executed, or on which diagnostics may be performed.
Mib	LogicalProcessor
Common Verbs	Help List Display

GROUP Lp Vsp PModule PBlock Operational (Oper)

Properties	Operational
Description	This group contains status information about the *ProcessingBlock* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp PModule PBlock serviceList (servList)

Access	Read only
Description	This attribute indicates the components that have resources allocated on this *ProcessingBlock* component. This attribute is not displayed if the *Shelf Card cardType* attribute is set to ***2pOC3ChSmIrVsp3***.

Mib	LogicalProcessor
List of	The name of the component
Default	No default

GROUP Lp Vsp PModule PBlock Utilization (Util)

Properties	Operational
Description	This group contains information about processing utilization of this *PBlock* component. This group is filtered if the *modType* attribute of the parent *PModule* component is not set to ***spm***, or on the ***12mVspAal*** card.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp PModule PBlock timeInterval

Access	Read only
Description	This attribute indicates the time period for which the average, minimum, and maximum utilization values are calculated. If the associated *Vsp* component is locked this attribute will be reset to ***0***. This attribute is reset to ***0*** every 15 minutes.
Mib	LogicalProcessor
Values	Decimal (0..15)
Units	minutes
Default	No default

ATTRIBUTE Lp Vsp PModule PBlock cpuUtil

Access	Read only
Description	This attribute indicates the approximate processing utilization of this *PBlock* component.
Mib	LogicalProcessor

Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Vsp PModule PBlock cpuUtilAvg

Access	Read only
Description	This attribute indicates average processing utilization of this *PBlock* component over the time period indicated in the *timeInterval* attribute.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Vsp PModule PBlock cpuUtilAvgMin

Access	Read only
Description	This attribute indicates the minimum average processing utilization of this *PBlock* component over the time period indicated in the *timeInterval* attribute.
Mib	LogicalProcessor
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Vsp PModule PBlock cpuUtilAvgMax

Access	Read only
Description	This attribute indicates the maximum average processing utilization of this *PBlock* component over the time period indicated in the *timeInterval* attribute.
Mib	LogicalProcessor

Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Lp Vsp Test (Test)

Groups	"GROUP Lp Vsp Test OsiState (State)" "GROUP Lp Vsp Test Setup (Setup)" "GROUP Lp Vsp Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.
Mib	LogicalProcessor
Common Verbs	Help List Display

VERB START Lp Vsp Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Vsp Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp Vsp Test OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Vsp Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: LogicalProcessor

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Vsp Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: LogicalProcessor

Values: idle
active (activ)
busy

Default: idle

GROUP Lp Vsp Test Setup (Setup)

Properties: Operational

Description

This group contains all of the operational data for a *Test* component.

Mib LogicalProcessor

ATTRIBUTE Lp Vsp Test purpose (purpose)

Access Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib LogicalProcessor

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Lp Vsp Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).

sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: LogicalProcessor

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Vsp Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: LogicalProcessor

Values: Decimal (4..4096)

Units: bytes

Default 1024

ATTRIBUTE Lp Vsp Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib LogicalProcessor

Values ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default ccitt32kBitPattern

ATTRIBUTE Lp Vsp Test customizedPattern (cp)

Access Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib LogicalProcessor

Values Hex (H.0..H.ffffffff)

Units Hex

Default H.55555555

ATTRIBUTE Lp Vsp Test dataStartDelay (dsd)

Access Read and write

Description

This attribute specifies the time delay (in seconds) between when

the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib LogicalProcessor

Values Decimal (0..1814400)

Units seconds

Default 0

ATTRIBUTE Lp Vsp Test displayInterval (di)

Access Read and write

Description

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib LogicalProcessor

Values Decimal (0..30240)

Units minutes

Default 5

ATTRIBUTE Lp Vsp Test duration

Access Read and write

Description

This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.

Mib LogicalProcessor

Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Vsp Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have

been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: LogicalProcessor

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Lp Vsp Test bitsTx

Access: Read only

Description:

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: LogicalProcessor

Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	LogicalProcessor
Values	Long Integer

Default	No default

ATTRIBUTE Lp Vsp Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	LogicalProcessor

Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	LogicalProcessor
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp Vsp Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)

Units	minutes
Default	0.00

ATTRIBUTE Lp Vsp Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	LogicalProcessor
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp Vsp Ethernet1000BaseSX (GigE)

Instance	Decimal (0..1)
Groups	"GROUP Lp Vsp GigE OsiState (State)" "GROUP Lp Vsp GigE Eth1000Operational (Oper)" "GROUP Lp Vsp GigE Eth1000Statistics (Stats)"
Scope	Device
Description	*Lp/n Vsp GigE/n* This component monitors and provides access to statistical measurements of the *VspEth1000BaseSX* ports on the card, when the ***vgsIpGigE*** or the ***vgsIpG729GigE*** feature is provisioned.

Two *VspEth1000BaseSX* ports are supported on the ***2pGeMmSrVsp3*** Function Processor.

Mib LogicalProcessor

Common Verbs
Help
List
Display
Add
DELete

GROUP Lp Vsp GigE OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib LogicalProcessor

ATTRIBUTE Lp Vsp GigE adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is

	administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LogicalProcessor
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Vsp GigE operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	LogicalProcessor
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Vsp GigE usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	LogicalProcessor
Values	idle active (activ) busy
Default	idle

GROUP Lp Vsp GigE Eth1000Operational (Oper)

Properties	Operational
Description	This group contains the port operational attributes of the *VspEth1000BaseSX* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp GigE macAddress (macAdd)

Access	Read only
Description	This attribute indicates the medium access controller address. The value of this attribute will be assigned by the system. The medium access controller address is displayed in canonical format.
Mib	LogicalProcessor
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Vsp GigE autoNegotiationStatus (negStatus)

Access	Read only
Description	This attribute indicates the status of the auto negotiation at the physical level. Possible values are: ***succeeded*** – auto-negotiation has completed successfully.

failed – auto-negotiation has failed to negotiate a compatible set of capabilities.

inProgress – auto-negotiation is currently in progress.

disabled – the port has detected that the far end does not support auto-negotiation.

Mib	LogicalProcessor
Values	succeeded failed inProgress disabled
Default	No default

ATTRIBUTE Lp Vsp GigE ingressFlowControlStatus (ingFcStatus)

Access	Read only
Description	This attribute indicates whether the ingress flow control has been successfully negotiated with the link partner. Possible values are: ***enabled*** - this state will generate pause frames when internal congestion is detected. ***disabled*** - in this state, no pause frames are generated. In addition, there is a risk that the received packets may be discarded due to lack of internal resources.
Mib	LogicalProcessor
Values	enabled disabled
Default	No default

ATTRIBUTE Lp Vsp GigE lossofSyncAlarm (syncAlarm)

Access	Read only

Description	This attribute indicates whether the loss of synchronization alarm is ***on*** or ***off***. Possible values are: ***on*** - the alarm is set. ***off*** - the alarm is clear.
Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Vsp GigE autoNegIncompleteAlarm (negAlarm)

Access	Read only
Description	This attribute indicates whether the auto-negotiation incomplete alarm is ***on*** or ***off***. Possible values are: ***on*** - the alarm is set. ***off*** - the alarm is clear.
Mib	LogicalProcessor
Values	on off
Default	No default

ATTRIBUTE Lp Vsp GigE remoteFaultIndicationAlarm (remFaultAlarm)

Access	Read only
Description	This attribute indicates whether the remote fault indication alarm is ***on*** or ***off***. Possible values are:

	on - the alarm is set. ***off*** - the alarm is clear.
Mib	LogicalProcessor
Values	on off
Default	No default

GROUP Lp Vsp GigE Eth1000Statistics (Stats)

Properties	Operational
Description	This group contains the statistics for the *VspEth1000BaseSX* component.
Mib	LogicalProcessor

ATTRIBUTE Lp Vsp GigE framesTransmittedOk (frmTxOk)

Access	Read only
Description	This attribute counts the frames that were transmitted without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE framesReceivedOk (frmRxOk)

Access	Read only
Description	This attribute counts the number of frames that were received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE octetsTransmittedOk (octetsTxOk)

Access	Read only
Description	This attribute counts the octets that were transmitted without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE octetsReceivedOk (octetsRxOk)

Access	Read only
Description	This attribute counts the octets that were received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE pauseFramesTransmitted (txPause)

Access	Read only
Description	This attribute counts the pause medium access controller control frames transmitted. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE pauseFramesReceived (rxPause)

Access	Read only

Description	This attribute counts the pause medium access controller control frames received. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE undersizeFrames (underFrm)

Access	Read only
Description	This attribute counts the frames that were received but were less than the minimum size (64 bytes). This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE framesTooLong (longFrm)

Access	Read only
Description	This attribute counts the frames that were received but were greater than the maximum size. The count includes frames which have a bad frame check sequence. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE frameCheckSequenceErrors (fcsErr)

Access	Read only
Description	This attribute counts the frames received that were an integral number of octets in length and did not pass the FCS check. This count does not include frames received that were too long or too

	short. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE symbolErrors (symErr)

Access	Read only
Description	This attribute counts the times a valid length frame was received and had at least one occurance of a data reception or symbol error. This counter increments once per valid Carrier Event as defined by the specification IEEE 802.3 - 2000 edition. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE broadcastFramesReceivedOk (bcastRxOk)

Access	Read only
Description	This attribute counts the valid broadcast frames received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LogicalProcessor
Values	Long Integer
Default	No default

ATTRIBUTE Lp Vsp GigE discardedFrames (discFrm)

Access	Read only
Description	This attribute counts the valid frames discarded because of a lack of resources available to receive them. This counter wraps to zero after it reaches its maximum value.

Mib	LogicalProcessor
Values	Long Integer
Default	No default

COMPONENT Lp Ethernet100BaseT (Eth100)

Instance	Decimal (0..1)
Groups	"GROUP Lp Eth100 CustomerIdentifierData (CidData)" "GROUP Lp Eth100 IfEntryProv (IfEntry)" "GROUP Lp Eth100 Provisioned (Prov)" "GROUP Lp Eth100 AdminInfo (AdminInfo)" "GROUP Lp Eth100 OsiState (State)" "GROUP Lp Eth100 OperationalStatus (OperStatus)" "GROUP Lp Eth100 Operational (Oper)" "GROUP Lp Eth100 Eth100Statistics (Eth100Stats)" "GROUP Lp Eth100 Statistics (Stats)"
Scope	Device
Description	*Lp/n Ethernet100BaseT/n* This component defines an instance of a 100BaseT Ethernet station attached to a bus. One instance of this component must be created for each hardware interface.
Mib	LanDrivers
Subcomponents	"COMPONENT Lp Eth100 LanTest (Lt)" "COMPONENT Lp Eth100 Test"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Eth100 CustomerIdentifierData (CidData)

Properties	Provisioned

Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	LanDrivers
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Eth100 IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 ifAdminStatus (ifState)

Access	Read and write

Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

ATTRIBUTE Lp Eth100 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	LanDrivers
Values	Decimal (1..65535)
Default	No default

GROUP Lp Eth100 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Eth100BaseT* component.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 duplexMode

Access	Read and write
Description	This attribute specifies the duplex mode of the port. This attribute is ignored if auto negotiation is successful.
Mib	LanDrivers

Values	half full
Default	half

ATTRIBUTE Lp Eth100 lineSpeed

Access	Read and write
Description	This attribute sets the operating speed for the Ethernet 100BaseT port. This attribute is ignored if auto negotiation is successful.
Mib	LanDrivers
Values	Decimal (10; 100)
Units	Mbit/s
Default	100

ATTRIBUTE Lp Eth100 autoNegotiation

Access	Read and write
Description	This attribute is used to select whether or not the port does auto negotiation. The provisionable values of *duplexMode* and *lineSpeed* are ignored if auto negotiation is successful. Refer to the operational attribute *autoNegStatus* for auto negotiation results.
Mib	LanDrivers
Values	enabled disabled
Default	enabled

ATTRIBUTE Lp Eth100 applicationFramerName (framer)

Access	Read and write
Description	This attribute contains the component name of a Framer which is associated with the Eth100BaseT component. This defines which Lan Application will be using this Eth100BaseT interface.
Mib	LanDrivers

Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp Eth100 switchoverOnFailure (switch)

Access	Read and write
Description	This attribute specifies if a FP switchover should occur when a port or link failure is detected by the initial test process or if a steady state link failure is observed. The switchover occurs only if the standby FP's port is operational. This value '***enabled***' specifies that a switchover should take place if a port or link failure is detected. This value '***disabled***' specifies that a switchover should not take place when a port or link failure is detected.
Mib	LanDrivers
Values	enabled disabled
Default	disabled

ATTRIBUTE Lp Eth100 switchoverHoldoff (soHoldoff)

Access	Read and write
Description	This attribute specifies the time interval between detection of a port or link failure and initiation of FP switchover. This attribute is ignored if *switchoverOnFailure* is ***disabled***. The switchover occurs only if the standby FP's port is operational. The attribute gives the customer a choice to have a switchover immediate upon changing cable or hold-off time up to 3 minutes. The default value is 0 (no hold-off). Note that a non-zero value will result in outage but will allow the link time to recover before initiating a switchover.
Mib	LanDrivers
Values	Decimal (0..180)
Units	seconds
Default	0

GROUP Lp Eth100 AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	LanDrivers
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Eth100 commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	LanDrivers
Values	String (0..60, ASCII)
Default	No default

GROUP Lp Eth100 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	LanDrivers

ATTRIBUTE Lp Eth100 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	LanDrivers
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Eth100 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: LanDrivers

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Eth100 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: LanDrivers

Values: idle
active (activ)
busy

Default: idle

GROUP Lp Eth100 OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: LanDrivers

ATTRIBUTE Lp Eth100 snmpOperStatus

Access: Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	LanDrivers
Values	up down testing
Default	up

GROUP Lp Eth100 Operational (Oper)

Properties	Operational
Description	This group contains the Port operational attributes of the *Eth100BaseT* component.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 macAddress

Access	Read only
Description	This attribute indicates the medium access controller (MAC) address. The MAC address is displayed in canonical format.
Mib	LanDrivers
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Eth100 autoNegStatus

Access	Read only
Description	This attribute displays the status of the auto negotiation at the Phy level.
Mib	LanDrivers

Values	succeeded failed disabled
Default	No default

ATTRIBUTE Lp Eth100 actualLineSpeed

Access	Read only
Description	This attribute indicates the line speed of the Eth100BaseT port.
Mib	LanDrivers
Values	Decimal (10; 100)
Units	Mbit/s
Default	No default

ATTRIBUTE Lp Eth100 actualDuplexMode

Access	Read only
Description	This attribute indicates whether the hardware is in half duplex or full duplex mode.
Mib	LanDrivers
Values	half full
Default	No default

ATTRIBUTE Lp Eth100 activeStatus

Access	Read only
Description	This attribute indicates the status of the Ethernet port on the active FP.
Mib	LanDrivers
Values	available notavailable
Default	No default

ATTRIBUTE Lp Eth100 standbyStatus

Access	Read only
Description	This attribute indicates the status of the Ethernet port on the standby FP.
Mib	LanDrivers
Values	available notavailable
Default	No default

GROUP Lp Eth100 Eth100Statistics (Eth100Stats)

Properties	Operational
Description	This group contains the statistical attributes for the *Eth100BaseT* component.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 framesTransmittedOk (frmTxOk)

Access	Read only
Description	This attribute counts the number of frames which were transmitted without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 framesReceivedOk (frmRxOk)

Access	Read only
Description	This attribute counts the number of frames which were received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 octetsTransmittedOk (octetsTxOk)

Access	Read only
Description	This attribute counts the number of octets which were transmitted without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 octetsReceivedOk (octetsRxOk)

Access	Read only
Description	This attribute counts the number of octets which were received without errors. This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 undersizeFrames (undersizeFrm)

Access	Read only
Description	This attribute counts the number of frames that were received but were less than the minimum size (64 bytes). This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 receivedOctetsIntoRouterBr (rxOctetsRtrBr)

Access	Read only
Description	This attribute counts the number of octets that were not hardware switched but were passed the Router or Bridge software. This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 receivedFramesIntoRouterBr (rxFrmRtrBr)

Access	Read only
Description	This attribute counts the number of frames which were not hardware switched but were passed to the Router or Bridge software. This counter wraps to zero after it reaches its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

GROUP Lp Eth100 Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes for the *Ethernet* component.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 alignmentErrors

Access	Read only
Description	The *alignmentErrors* counter indicates the number of frames received which were not an integral number of octets in length. Frames will be checked for *alignmentErrors* before they are checked for Frame Check Sequence (FCS) errors. If there is an alignment error, the error will only be counted here and not in

	fcsErrors. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 fcsErrors

Access	Read only
Description	The *fcsErrors*, Frame Check Sequence (FCS) error, counter indicates the number of frames received which were an integral number of octets in length and did not pass the FCS check. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 singleCollisionFrames

Access	Read only
Description	The *singleCollisionFrames* counter indicates the number of frames successfully transmitted which experienced exactly one collision. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 multipleCollisionFrames

Access	Read only
Description	The *multipleCollisionFrames* counter indicates the number of frames successfully transmitted which experienced more than one collision. This counter wraps around after it exceeds its maximum value.

Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 sqeTestErrors

Access	Read only
Description	The *sqeTestErrors*, Signal Quality Error (SQE) Test errors, counter indicates the number of times the “SQE Test Error” message has been generated for the station. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 deferredTransmissions

Access	Read only
Description	The *deferredTransmissions* counter indicates the number of frames which experienced a transmission delay because the medium was busy. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 lateCollisions

Access	Read only
Description	The *lateCollisions* counter indicates the number of times a collision was detected later than 512 bit-times into the transmission of a packet. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 excessiveCollisions

Access	Read only
Description	The *excessiveCollisions* counter indicates the number of frames which failed to get transmitted due to excessive collisions. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 macTransmitErrors

Access	Read only
Description	The Medium Access Controller (MAC) transmit error counter indicates the number of times that a transmission failed due to internal MAC transmit errors. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 carrierSenseErrors

Access	Read only
Description	The carrier sense error counter indicates the number of times that the carrier sense condition was lost or never asserted when attempting to transmit a frame. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 frameTooLongs

Access	Read only
Description	The frame too long counter indicates the number of frames received which exceeded the maximum frame size. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Eth100 macReceiveErrors

Access	Read only
Description	The Medium Access Controller (MAC) receive error counter indicates the number of times a receive failed due to internal MAC receive errors. This counter wraps around after it exceeds its maximum value.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Lp Eth100 LanTest (Lt)

Groups	"GROUP Lp Eth100 Lt TestOp (Top)"
Scope	Device
Description	*Lp/n Fddi/n LanTest*, or *Lp/n Ethernet/n LanTest*, or *Lp/n TokenRing/n LanTest, or* *Lp/n IlsForwarder/n LanTest* The LanTest component is used to control testing on LAN interfaces. This includes LLC layer loopback, on-card loopback,

	SNMP required tests, and any testing to be done in the lab or manufacturing.
Mib	LanDrivers
Dyn. Subcomp.	"COMPONENT Lp Eth100 Lt FrameCompare (FrmCmp)" "COMPONENT Lp Eth100 Lt FrameCopy (FrmCpy)" "COMPONENT Lp Eth100 Lt PortConfig (PrtCfg)" "COMPONENT Lp Eth100 Lt FrameBuild (Fb)" "COMPONENT Lp Eth100 Lt Control (Cntl)"
Common Verbs	Help List Display

VERB Start Lp Eth100 Lt

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of LanTest.

VERB Stop Lp Eth100 Lt

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp Eth100 Lt

Impact	Service
Description	This verb is used to reset the LanTest component.

VERB Get Lp Eth100 Lt

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt

Impact	Passive
Description	This verb is used to display the list of arguments to an attribute.

GROUP Lp Eth100 Lt TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt FrameCompare (FrmCmp)

Groups	"GROUP Lp Eth100 Lt FrmCmp TestOp (Top)"
Scope	Device
Description	This component compares frames received from the hardware and emulator during testing.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt FrmCmp

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCompare component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt FrmCmp

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt FrmCmp TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt FrmCmp tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt FrameCopy (FrmCpy)

Groups	"GROUP Lp Eth100 Lt FrmCpy TestOp (Top)"
Scope	Device

Description	This component receives its input from FrameBuild and places it upon the hardware which sends it to the appropriate emulator.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt FrmCpy

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCopy component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt FrmCpy

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt FrmCpy TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt FrmCpy tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt PortConfig (PrtCfg)

Groups	"GROUP Lp Eth100 Lt PrtCfg TestOp (Top)"

Scope	Device
Description	This component controls the emulator and hardware to ensure frames output from each will match in FrameCompare.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt PrtCfg

Impact	Passive
Description	*This verb is used to get and display operational parameters for the LanTest PortConfig component. This includes attributes set using the Set verb.*

VERB Tlist Lp Eth100 Lt PrtCfg

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt PrtCfg TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt PrtCfg tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt FrameBuild (Fb)

Groups	"GROUP Lp Eth100 Lt Fb TestOp (Top)"
Scope	Device
Description	LanTest Framebuild This component controls the building of all frames built and sent by the LanTest component. Each component under FrameBuild builds a portion of a packet or frame.
Mib	LanDrivers
Dyn. Subcomp.	"COMPONENT Lp Eth100 Lt Fb TransmitInfo (TxInfo)" "COMPONENT Lp Eth100 Lt Fb FddiMac (MacFddi)" "COMPONENT Lp Eth100 Lt Fb EthernetMac (MacEnet)" "COMPONENT Lp Eth100 Lt Fb TokenRingMac (MacTr)" "COMPONENT Lp Eth100 Lt Fb DataField (Data)" "COMPONENT Lp Eth100 Lt Fb IpHeader (IpH)" "COMPONENT Lp Eth100 Lt Fb LlcHeader (Llch)" "COMPONENT Lp Eth100 Lt Fb AppleHeader (AppleH)" "COMPONENT Lp Eth100 Lt Fb IpxHeader (IpxH)"
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameBuild component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb TestOp (Top)

Properties	Operational

Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb TransmitInfo (TxInfo)

Groups	"GROUP Lp Eth100 Lt Fb TxInfo TestOp (Top)"
Scope	Device
Description	LanTest TransmitInfo This component builds a transmit header which is attached to all frames transmitted on LAN interfaces.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb TxInfo

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TransmitInfo component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb TxInfo

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb TxInfo TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb TxInfo tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb FddiMac (MacFddi)

Groups	"GROUP Lp Eth100 Lt Fb MacFddi TestOp (Top)"
Scope	Device
Description	LanTest FddiMac This component builds an FDDI MAC header which is attached to all FDDI frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb MacFddi

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FddiMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb MacFddi

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb MacFddi TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb MacFddi tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb EthernetMac (MacEnet)

Groups	"GROUP Lp Eth100 Lt Fb MacEnet TestOp (Top)"
Scope	Device
Description	LanTest EthernetMac This component builds an Ethernet MAC header which is attached to all Ethernet frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb MacEnet

Impact	Passive
Description	This verb is used to get and display operational parameters LanTest EthernetMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb MacEnet

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb MacEnet TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb MacEnet tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb TokenRingMac (MacTr)

Groups	"GROUP Lp Eth100 Lt Fb MacTr TestOp (Top)"
Scope	Device

Description	LanTest TokenRingMac This component builds a Token Ring MAC header which is attached to all Token Ring frames.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb MacTr

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TokenRingMac component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb MacTr

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb MacTr TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb MacTr tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb DataField (Data)

Groups	"GROUP Lp Eth100 Lt Fb Data TestOp (Top)"
Scope	Device
Description	This component adds a data field to frame.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb Data

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest DataField component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb Data

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb Data TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb Data tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb IpHeader (IpH)

Groups	"GROUP Lp Eth100 Lt Fb IpH TestOp (Top)"
Scope	Device
Description	LanTest IpHeader This component adds an IP header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb IpH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest IpHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb IpH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb IpH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb IpH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb LlcHeader (Llch)

Groups	"GROUP Lp Eth100 Lt Fb Llch TestOp (Top)"
Scope	Device
Description	LanTest LlcHeader This component adds an LLC 802.2 or Ethernet header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb Llch

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest LlcHeader component. This includes attributes set using the SET verb.

VERB Tlist Lp Eth100 Lt Fb Llch

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb Llch TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb Llch tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers

Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb AppleHeader (AppleH)

Groups	"GROUP Lp Eth100 Lt Fb AppleH TestOp (Top)"
Scope	Device
Description	This component adds an AppleTalk header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb AppleH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest AppleHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb AppleH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb AppleH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb AppleH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers

Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Fb IpxHeader (IpxH)

Groups	"GROUP Lp Eth100 Lt Fb IpxH TestOp (Top)"
Scope	Device
Description	This component adds an IPX header to a frame or packet.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Fb IpxH

Impact	Passive
Description	This verb is used to get and display operational parameters forLanTest IpxHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Fb IpxH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Fb IpxH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Fb IpxH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.

Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Lt Control (Cntl)

Groups	"GROUP Lp Eth100 Lt Cntl TestOp (Top)"
Scope	Device
Description	LanTest Control This component controls the overall testing by telling the FrameBuild component to start and check the FrameCompare component to see if the test is complete.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Get Lp Eth100 Lt Cntl

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest Control component. This includes attributes set using the Set verb.

VERB Tlist Lp Eth100 Lt Cntl

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp Eth100 Lt Cntl TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Lt Cntl tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	LanDrivers
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp Eth100 Test

Groups	"GROUP Lp Eth100 Test PortTestOp (PTO)" "GROUP Lp Eth100 Test Results (Results)"
Scope	Device
Description	*Lp/n Fddi/n Test*, or *Lp/n Ethernet/n Test*, or *Lp/n TokenRing/n Test, or* *Lp/n IlsForwarder/n Test* The Test component is used to do StartUp port test for LAN cards.
Mib	LanDrivers
Common Verbs	Help List Display

VERB Start Lp Eth100 Test

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of Test.

VERB Stop Lp Eth100 Test

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp Eth100 Test

Impact	Service
Description	This verb is used to reset the Test component.

GROUP Lp Eth100 Test PortTestOp (PTO)

Properties	Operational
Description	This group contains the operational data for the *LanPortTest* component.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: card test sets up an internal loop on the board and runs a bit error rate test; manual test assumes the line is looped back externally and a bit error rate test is performed; localLoop test loops back the local modem and performs a bit error rate test; remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test; externalLoop test loops back the line to the far end; payloadLoop test only loops back the payload data received from the incoming line; Note that localLoop, remoteLoop and payloadLoop are not supported by all function processors.
Mib	LanDrivers
Values	onCard normal wrapA wrapB thruA thruB extWrapA extWrapB extThruA extThruB

	extWrapAB extWrapBA
Default	No default

ATTRIBUTE Lp Eth100 Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes.
Mib	LanDrivers
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Lp Eth100 Test duration (duration)

Access	Read and write
Description	This attribute specifies the duration of the test data transmission. In the case of an externalLoop, this is the time that the loop is in effect. Note that dataStartDelay does not apply to the externalLoop.
Mib	LanDrivers
Values	Decimal (1..30240)
Units	minutes
Default	1

GROUP Lp Eth100 Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the Test component.
Mib	LanDrivers

ATTRIBUTE Lp Eth100 Test elapsedTime

Access	Read only
Description	This attribute is the number of minutes elapsed since the test started for an externalLoop test. For a data test, this is the time since test data was first transmitted.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Eth100 Test timeRemaining

Access	Read only
Description	This attribute is the number of minutes remaining before the test is to be stopped according to the duration attribute.
Mib	LanDrivers
Values	Decimal (0..4294967295)
Units	minutes
Default	0

ATTRIBUTE Lp Eth100 Test causeOfTermination

Access	Read only
Description	This attribute records the reason the test is terminated.
Mib	LanDrivers
Values	testTimeExpired stoppedByOperator unknown neverStarted testRunning
Default	neverStarted

ATTRIBUTE Lp Eth100 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth100 Test bitsTx

Access	Read only
Description	This attribute counts the bits sent during the test period. This counter is not expected to reach its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth100 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth100 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers

Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth100 Test erroredFrmRx

Access	Read only
Description	This attribute counts the errored frames received during the test period. The counter wraps to 0 when it exceeds its maximum value.
Mib	LanDrivers
Values	Long Integer
Default	No default

COMPONENT Lp OamEthernet (OamEnet)

Instance	Decimal (0..0)
Groups	"GROUP Lp OamEnet CustomerIdentifierData (CidData)" "GROUP Lp OamEnet IfEntryProv (IfEntry)" "GROUP Lp OamEnet Provisioned (Prov)" "GROUP Lp OamEnet AdminInfo (AdminInfo)" "GROUP Lp OamEnet OsiState (State)" "GROUP Lp OamEnet OperationalStatus (OperStatus)" "GROUP Lp OamEnet Operational (Oper)" "GROUP Lp OamEnet OamEnetStatistics (OamEnetStats)" "GROUP Lp OamEnet Statistics (Stats)"
Scope	Device
Description	Lp/0 OamEthernet This component represents an Ethernet port on the control processor. Only one instance of this component may be created corresponding to the one hardware port on the control processor. This port is designed specifically and exclusively for Operations,

Administration, and Maintenance purposes; any other use of this port is unsupported and not advised.

Mib: OamEthernet

Dyn. Subcomp.: "COMPONENT Lp OamEnet LanTest (Lt)"
"COMPONENT Lp OamEnet Test"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- Unlock

VERB LOCK Lp OamEnet

Impact: Service

Description: Lock [-force] [-forever] <component name>
This verb causes the *OamEthernet* component to first enter the OSI shuttingDown state. In this state all connections to the OAM Ethernet port are severed and any new connections are not accepted. Once shuttingDown state is reached the OSI state will change to locked. When the port is locked it can be tested using the *Test* component.

The default behavior for this verb is for the port to remain locked for a period of five minutes before automatically unlocking. This behavior can be overridden with the forever option.

Options:

-force
If this option is present, service to current clients is terminated and the locked state is entered immediately (that is, without first going through the shuttingDown state). Without this option, *Lock* behaves as described above.

-forever
If this option is present, then after the locked state is entered an *Unlock* command is required to get the service into the unlocked state.

GROUP Lp OamEnet CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	OamEthernet
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp OamEnet IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	OamEthernet
Values	up down testing
Default	up

ATTRIBUTE Lp OamEnet ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	OamEthernet
Values	Decimal (1..65535)
Default	No default

GROUP Lp OamEnet Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioned attributes for the *OamEthernet* component.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet applicationFramerName (framer)

Access	Read and write
Criticality	Process

Description	This attribute specifies which *Lan Application* is running on this port.
Mib	OamEthernet
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp OamEnet switchoverOnFailure (switch)

Access	Read and write
Description	This attribute specifies if a CP switchover should occur if a port or link failure is detected by the initial test process or if a steady state link failure is observed. The switchover will occur only if the standby CP OAM Ethernet port is operational. This attribute can be set to one of the following values: ***enabled***: This value indicates that a switchover will take place if a port or link failure is detected. ***disabled***: This value indicates that a switchover will not take place if a port or link failure is detected.
Mib	OamEthernet
Values	enabled disabled
Default	enabled

ATTRIBUTE Lp OamEnet extendedStatistics (extStats)

Access	Read and write
Description	This attribute specifies if extended statistics are to be collected for the *OamEthernet* component. The extended statistics include: *singleCollisionFrames*, *multipleCollisionFrames*, *lateCollisions*, *excessiveCollisions*, *carrierSenseErrors*, and *clearToSendSignalLoss*. These statistics all require extra processing to gather and store which may have a negative impact on the overall performance of the OAM Ethernet port.

	If *extendedStatistics* is set to disabled, then these particular statistical attributes will be suppressed from display operations.
Mib	OamEthernet
Values	enabled disabled
Default	disabled

ATTRIBUTE Lp OamEnet lineSpeed

Access	Read and write
Description	This attribute specifies the operating speed for the OAM Ethernet port. The operating speed is either ***tenMeg***, ***hundredMeg***, or ***autoConfig***. If the attribute is set to ***autoConfig*** then the operating speed is determined by the auto-negotiation process. The actual line speed is reported by the *actualLineSpeed* attribute.
Mib	OamEthernet
Values	tenMeg hundredMeg autoConfig
Default	autoConfig

ATTRIBUTE Lp OamEnet duplexMode

Access	Read and write
Description	This attribute specifies the duplex mode for the OAM Ethernet port. If the attribute is set to ***autoConfig*** then the duplex mode determined by the auto-negotiation process. The actual duplex mode is reported by the *actualDuplexMode* attribute.
Mib	OamEthernet

Values	half full autoConfig
Default	autoConfig

ATTRIBUTE Lp OamEnet switchoverHoldoff (soHoldoff)

Access	Read and write
Description	This attribute specifies the time interval between detection of a port or link failure and initiation of CP switchover. This attribute is ignored if *switchoverOnFailure* is ***disabled***. The switchover will occur only if the standby CP OAM Ethernet port is operational.
Mib	OamEthernet
Values	Decimal (10..60)
Units	seconds
Default	30

GROUP Lp OamEnet AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	OamEthernet
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp OamEnet commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	OamEthernet
Values	String (0..60, ASCII)
Default	No default

GROUP Lp OamEnet OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: OamEthernet

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp OamEnet operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: OamEthernet

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp OamEnet usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	OamEthernet
Values	idle active (activ) busy
Default	idle

GROUP Lp OamEnet OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	OamEthernet
Values	up down testing
Default	up

GROUP Lp OamEnet Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *OamEthernet* component.

Mib	OamEthernet

ATTRIBUTE Lp OamEnet macAddress

Access	Read only
Description	This attribute indicates the medium access controller (MAC) address automatically assigned to the *Oam Ethernet* port by the system. The MAC address is displayed in canonical format.
Mib	OamEthernet
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp OamEnet activeStatus

Access	Read only
Description	This attribute indicates the status of the *Oam Ethernet* port on the active CP.
Mib	OamEthernet
Values	available notAvailable
Default	No default

ATTRIBUTE Lp OamEnet standbyStatus

Access	Read only
Description	This attribute indicates the status of the *Oam Ethernet* port on the standby CP.
Mib	OamEthernet
Values	available notAvailable
Default	No default

ATTRIBUTE Lp OamEnet actualLineSpeed

Access	Read only

Description	This attribute indicates the actual line speed of the *Oam Ethernet* port.
Mib	OamEthernet
Values	Decimal (10; 100)
Units	Mbit/s
Default	No default

ATTRIBUTE Lp OamEnet actualDuplexMode

Access	Read only
Description	This attribute indicates the actual duplex mode of operation, half, or full.
Mib	OamEthernet
Values	half full
Default	No default

GROUP Lp OamEnet OamEnetStatistics (OamEnetStats)

Properties	Operational
Description	This group contains statistical attributes for the *OamEthernet* component.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet clearToSendSignalLoss

Access	Read only
Description	This attribute counts how often the clear to send signal was lost when attempting to transmit a frame. This counter wraps to zero when it exceeds its maximum value. This attribute is only active if the *extendedStatistics* attribute is enabled.
Mib	OamEthernet

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet frameTooShort

Access	Read only
Description	This attribute counts the frames received whose length is less than the allowed minimum frame length. This counter wraps to zero when it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet numberOfRxCollisions

Access	Read only
Description	This attribute counts the collisions detected during reception. This counter wraps to zero when it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet lackOfResourcesDiscards

Access	Read only
Description	This attribute counts the good frames discarded because of a lack of resources available to contain them on the system. This counter wraps to zero when it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet overrunErrors

Access	Read only

Description	This attribute counts the frames known to be lost because the local system bus was not available. This counter wraps to zero when it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

GROUP Lp OamEnet Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes for the *Ethernet* component.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet alignmentErrors

Access	Read only
Description	The *alignmentErrors* counter indicates the number of frames received which were not an integral number of octets in length. Frames will be checked for *alignmentErrors* before they are checked for Frame Check Sequence (FCS) errors. If there is an alignment error, the error will only be counted here and not in *fcsErrors*. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet fcsErrors

Access	Read only
Description	The *fcsErrors*, Frame Check Sequence (FCS) error, counter indicates the number of frames received which were an integral number of octets in length and did not pass the FCS check. This counter wraps around after it exceeds its maximum value.

Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet singleCollisionFrames

Access	Read only
Description	The *singleCollisionFrames* counter indicates the number of frames successfully transmitted which experienced exactly one collision. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet multipleCollisionFrames

Access	Read only
Description	The *multipleCollisionFrames* counter indicates the number of frames successfully transmitted which experienced more than one collision. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet sqeTestErrors

Access	Read only
Description	The *sqeTestErrors*, Signal Quality Error (SQE) Test errors, counter indicates the number of times the “SQE Test Error” message has been generated for the station. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet deferredTransmissions

Access	Read only
Description	The *deferredTransmissions* counter indicates the number of frames which experienced a transmission delay because the medium was busy. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet lateCollisions

Access	Read only
Description	The *lateCollisions* counter indicates the number of times a collision was detected later than 512 bit-times into the transmission of a packet. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet excessiveCollisions

Access	Read only
Description	The *excessiveCollisions* counter indicates the number of frames which failed to get transmitted due to excessive collisions. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet macTransmitErrors

Access	Read only
Description	The Medium Access Controller (MAC) transmit error counter indicates the number of times that a transmission failed due to internal MAC transmit errors. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet carrierSenseErrors

Access	Read only
Description	The carrier sense error counter indicates the number of times that the carrier sense condition was lost or never asserted when attempting to transmit a frame. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet frameTooLongs

Access	Read only
Description	The frame too long counter indicates the number of frames received which exceeded the maximum frame size. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp OamEnet macReceiveErrors

Access	Read only

Description	The Medium Access Controller (MAC) receive error counter indicates the number of times a receive failed due to internal MAC receive errors. This counter wraps around after it exceeds its maximum value.
Mib	OamEthernet
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Lp OamEnet LanTest (Lt)

Groups	"GROUP Lp OamEnet Lt TestOp (Top)"
Scope	Device
Description	*Lp/n Fddi/n LanTest*, or *Lp/n Ethernet/n LanTest*, or *Lp/n TokenRing/n LanTest, or* *Lp/n IlsForwarder/n LanTest* The LanTest component is used to control testing on LAN interfaces. This includes LLC layer loopback, on-card loopback, SNMP required tests, and any testing to be done in the lab or manufacturing.
Mib	OamEthernet
Dyn. Subcomp.	"COMPONENT Lp OamEnet Lt FrameCompare (FrmCmp)" "COMPONENT Lp OamEnet Lt FrameCopy (FrmCpy)" "COMPONENT Lp OamEnet Lt PortConfig (PrtCfg)" "COMPONENT Lp OamEnet Lt FrameBuild (Fb)" "COMPONENT Lp OamEnet Lt Control (Cntl)"
Common Verbs	Help List Display

VERB Start Lp OamEnet Lt

Impact	Service
Description	This verb is used to start a test as per the attributes set within each subcomponent of LanTest.

VERB Stop Lp OamEnet Lt

Impact	Service
Description	This verb is used to stop a test.

VERB Reset Lp OamEnet Lt

Impact	Service
Description	This verb is used to reset the LanTest component.

VERB Get Lp OamEnet Lt

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt

Impact	Passive
Description	This verb is used to display the list of arguments to an attribute.

GROUP Lp OamEnet Lt TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt FrameCompare (FrmCmp)

Groups	"GROUP Lp OamEnet Lt FrmCmp TestOp (Top)"
Scope	Device
Description	This component compares frames received from the hardware and emulator during testing.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt FrmCmp

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCompare component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt FrmCmp

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt FrmCmp TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt FrmCmp tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)

Default	No default

COMPONENT Lp OamEnet Lt FrameCopy (FrmCpy)

Groups	"GROUP Lp OamEnet Lt FrmCpy TestOp (Top)"
Scope	Device
Description	This component receives its input from FrameBuild and places it upon the hardware which sends it to the appropriate emulator.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt FrmCpy

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameCopy component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt FrmCpy

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt FrmCpy TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt FrmCpy tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet

Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt PortConfig (PrtCfg)

Groups	"GROUP Lp OamEnet Lt PrtCfg TestOp (Top)"
Scope	Device
Description	This component controls the emulator and hardware to ensure frames output from each will match in FrameCompare.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt PrtCfg

Impact	Passive
Description	*This verb is used to get and display operational parameters for the LanTest PortConfig component. This includes attributes set using the Set verb.*

VERB Tlist Lp OamEnet Lt PrtCfg

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt PrtCfg TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt PrtCfg tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.

Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt FrameBuild (Fb)

Groups	"GROUP Lp OamEnet Lt Fb TestOp (Top)"
Scope	Device
Description	LanTest Framebuild This component controls the building of all frames built and sent by the LanTest component. Each component under FrameBuild builds a portion of a packet or frame.
Mib	OamEthernet
Dyn. Subcomp.	"COMPONENT Lp OamEnet Lt Fb TransmitInfo (TxInfo)" "COMPONENT Lp OamEnet Lt Fb FddiMac (MacFddi)" "COMPONENT Lp OamEnet Lt Fb EthernetMac (MacEnet)" "COMPONENT Lp OamEnet Lt Fb TokenRingMac (MacTr)" "COMPONENT Lp OamEnet Lt Fb DataField (Data)" "COMPONENT Lp OamEnet Lt Fb IpHeader (IpH)" "COMPONENT Lp OamEnet Lt Fb LlcHeader (Llch)" "COMPONENT Lp OamEnet Lt Fb AppleHeader (AppleH)" "COMPONENT Lp OamEnet Lt Fb IpxHeader (IpxH)"
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FrameBuild component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb TransmitInfo (TxInfo)

Groups	"GROUP Lp OamEnet Lt Fb TxInfo TestOp (Top)"
Scope	Device
Description	LanTest TransmitInfo This component builds a transmit header which is attached to all frames transmitted on LAN interfaces.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb TxInfo

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TransmitInfo component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb TxInfo

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb TxInfo TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb TxInfo tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb FddiMac (MacFddi)

Groups	"GROUP Lp OamEnet Lt Fb MacFddi TestOp (Top)"
Scope	Device

Description	LanTest FddiMac This component builds an FDDI MAC header which is attached to all FDDI frames.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb MacFddi

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest FddiMac component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb MacFddi

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb MacFddi TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb MacFddi tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb EthernetMac (MacEnet)

Groups	"GROUP Lp OamEnet Lt Fb MacEnet TestOp (Top)"
Scope	Device
Description	LanTest EthernetMac This component builds an Ethernet MAC header which is attached to all Ethernet frames.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb MacEnet

Impact	Passive
Description	This verb is used to get and display operational parameters LanTest EthernetMac component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb MacEnet

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb MacEnet TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb MacEnet tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)

Default	No default

COMPONENT Lp OamEnet Lt Fb TokenRingMac (MacTr)

Groups	"GROUP Lp OamEnet Lt Fb MacTr TestOp (Top)"
Scope	Device
Description	LanTest TokenRingMac This component builds a Token Ring MAC header which is attached to all Token Ring frames.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb MacTr

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest TokenRingMac component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb MacTr

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb MacTr TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb MacTr tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.

Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb DataField (Data)

Groups	"GROUP Lp OamEnet Lt Fb Data TestOp (Top)"
Scope	Device
Description	This component adds a data field to frame.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb Data

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest DataField component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb Data

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb Data TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb Data tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.

Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb IpHeader (IpH)

Groups	"GROUP Lp OamEnet Lt Fb IpH TestOp (Top)"
Scope	Device
Description	LanTest IpHeader This component adds an IP header to a frame or packet.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb IpH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest IpHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb IpH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb IpH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb IpH tData (td)

Access	Read and write

Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb LlcHeader (Llch)

Groups	"GROUP Lp OamEnet Lt Fb Llch TestOp (Top)"
Scope	Device
Description	LanTest LlcHeader This component adds an LLC 802.2 or Ethernet header to a frame or packet.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb Llch

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest LlcHeader component. This includes attributes set using the SET verb.

VERB Tlist Lp OamEnet Lt Fb Llch

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb Llch TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb Llch tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb AppleHeader (AppleH)

Groups	"GROUP Lp OamEnet Lt Fb AppleH TestOp (Top)"
Scope	Device
Description	This component adds an AppleTalk header to a frame or packet.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb AppleH

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest AppleHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb AppleH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb AppleH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb AppleH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Fb IpxHeader (IpxH)

Groups	"GROUP Lp OamEnet Lt Fb IpxH TestOp (Top)"
Scope	Device
Description	This component adds an IPX header to a frame or packet.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Fb IpxH

Impact	Passive
Description	This verb is used to get and display operational parameters forLanTest IpxHeader component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Fb IpxH

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Fb IpxH TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.

Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Fb IpxH tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Lt Control (Cntl)

Groups	"GROUP Lp OamEnet Lt Cntl TestOp (Top)"
Scope	Device
Description	LanTest Control This component controls the overall testing by telling the FrameBuild component to start and check the FrameCompare component to see if the test is complete.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Get Lp OamEnet Lt Cntl

Impact	Passive
Description	This verb is used to get and display operational parameters for the LanTest Control component. This includes attributes set using the Set verb.

VERB Tlist Lp OamEnet Lt Cntl

Impact	Passive
Description	This verb is used to display the list of arguments to a component.

GROUP Lp OamEnet Lt Cntl TestOp (Top)

Properties	Operational
Description	This group contains the operational data for the LanTest component and its subcomponents.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Lt Cntl tData (td)

Access	Read and write
Description	This attribute is used to display and set attributes.
Mib	OamEthernet
Values	String (0..255, ASCII)
Default	No default

COMPONENT Lp OamEnet Test

Groups	"GROUP Lp OamEnet Test Operational (Oper)" "GROUP Lp OamEnet Test Results"
Scope	Device
Description	Lp/0 OamEthernet Test The *Test* component appears only for 10BaseT OAM Ethernet ports on the CP. It is used to run the port test for the OAM Ethernet port.
Mib	OamEthernet
Common Verbs	Help List Display

VERB Start Lp OamEnet Test

Impact	System_admin
Description	This verb is used to start a port test on the OAM Ethernet port as per the configuration of the *Test* component's attributes. If the port is not in the locked state when the *Start* command is issued it will automatically be locked by the *Test* component before the tests are run.

GROUP Lp OamEnet Test Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the Test component.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Test type

Access	Read: System_admin Write: System_admin
Description	This attribute is the type of test to be run. The four types of tests available are: the port hardware logic test, the configure and dump memory registers test, the memory mapping test and the Time Domain Reflectometry (TDR) test. The possible values of this attribute are: ***hardwareLogic***: this test checks the port hardware controller for logic errors in some of the on-chip counters and shift registers. ***configuration***: this test configures the memory registers of the hardware controller in a predetermined way and then dumps the registers and checks their contents for errors. ***memoryMap***: this test does an extensive test of the memory structures used by the OAM Ethernet port to verify that they are configured correctly and are error-free. ***tdr***: this test is used to detect and locate cable faults caused by either a short or an open circuit on the coaxial cable.

Mib	OamEthernet
Values	hardwareLogic configuration memoryMap tdr
Default	No default

GROUP Lp OamEnet Test Results

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	OamEthernet

ATTRIBUTE Lp OamEnet Test causeOfTermination

Access	Read only
Description	This attribute records the reason why the test terminated. The possible values of this attribute are: ***testTimeExpired***: this value indicates the time allotted for the test to run has expired which caused the test terminate. If the port is locked without the forever option then it will remain locked for only five minutes before being automatically unlocked. If the port unlocks itself after five minutes while the test is running then this attribute will be set to ***testTimeExpired***. If the forever option is used then the test will run until completion, failure, or a *Stop* command. ***stoppedByOperator***: this value indicates that the test was terminated when an operator issued a *Stop* command. ***unknown***: this value indicates that the test terminated for an unknown reason. ***neverStarted***: this value indicates that the test never started because the port could not be locked or because there is a hardware failure preventing the tests from running.

testRunning: this value indicates that the test is currently running.

testComplete: this value indicates that the test completed normally.

Mib: OamEthernet

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
testComplete

Default: neverStarted

ATTRIBUTE Lp OamEnet Test testResult

Access: Read only

Description: This attribute records the result of last port test executed on the OAM Ethernet port. The result can be one of the following values.
pass: the test passed
fail: the test failed
neverRun: the test has not been run
running: the test is running

Mib: OamEthernet

Values:
running
pass
fail
neverRun

Default: No default

COMPONENT Lp EDS1

Instance: Decimal (0..1)

Groups:
"GROUP Lp EDS1 Provisioned (Prov)"
"GROUP Lp EDS1 OperationalStatus (OperStatus)"

"GROUP Lp EDS1 OsiState (State)"
"GROUP Lp EDS1 Operational (Oper)"

Scope: Application

Description: *Lp/0 EDS1/n*
The *EDS1* component controls a DS1 external timing port on a ***CPeD*** and ***CP*** Control Processor. The *EDS1* component can only be added under the *LP/0* component and only if the CP type is ***CPeD*** or ***CP***. The Control Processor supports up to two external timing ports.

Mib: ExternalTimingDS1

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Lp EDS1 Provisioned (Prov)

Properties: Provisioned

Description:
This group contains all of the provisioning data for an *EDS1* component.

Mib: ExternalTimingDS1

ATTRIBUTE Lp EDS1 lineType (lineType)

Access: Read and write

Description:
This attribute defines the framing format of the DS1 line. The option ***d4*** defines a framing pattern of 12 frames per multiframe. The option ***esf*** defines a framing pattern of 24 frames per multiframe. The default option ***esf*** is permitted.

Mib: ExternalTimingDS1

Values	d4 esf
Default	esf

ATTRIBUTE Lp EDS1 ssmRxDefault

Access	Read and write
Description	This attribute specifies the default Synchronization Status Message (SSM) reported to the NS component. The SSM is used by the NS component to select the most suitable clock synchronization reference based on the SSM values recommended by Bellcore standard GR.253 with relative Quality Levels of 0 through 8 and 15 where 1 is the highest quality, 8 is the lowest, 0 indicates “Quality Unknown” and 15 indicates “Do Not Use For Synchronization”. The default SSM is used when the received SSM indicates Quality Unknown or when the SSM is not reported by the hardware.
Mib	ExternalTimingDS1
Values	Decimal (0..8; 15)
Default	2

GROUP Lp EDS1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	ExternalTimingDS1

ATTRIBUTE Lp EDS1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib	ExternalTimingDS1
Values	up down testing
Default	up

GROUP Lp EDS1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	ExternalTimingDS1

ATTRIBUTE Lp EDS1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: ExternalTimingDS1

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp EDS1 operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: ExternalTimingDS1

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp EDS1 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: ExternalTimingDS1

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp EDS1 availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot

operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	ExternalTimingDS1
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp EDS1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: ExternalTimingDS1

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp EDS1 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: ExternalTimingDS1

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp EDS1 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: ExternalTimingDS1

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp EDS1 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: ExternalTimingDS1

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp EDS1 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	ExternalTimingDS1
Values	false true
Default	false

GROUP Lp EDS1 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for *EE1* and *EDS1* components.
Mib	ExternalTimingDS1

ATTRIBUTE Lp EDS1 losAlarm (losAlarm)

Access	Read only
Description	This attribute indicates whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS defects have been observed and accumulated for a period of 2

seconds +/- 0.5 second . A LOS defect is detected upon observing all zeros for 150 ms . If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOS alarm state is cleared. The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 second.

Mib: ExternalTimingDS1

Values: on
off

Default: off

ATTRIBUTE Lp EDS1 lofAlarm (lofAlarm)

Access: Read only

Description

This attribute indicates whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 second . If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOF alarm state is cleared. The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 second.

Mib: ExternalTimingDS1

Values: on
off

Default: off

ATTRIBUTE Lp EDS1 rxAisAlarm (rxAisAlarm)

Access: Read only

Description

This attribute indicates whether an AIS (Alarm Indication Signal) alarm has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 second. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period. If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurement based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state. The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 second.

Mib ExternalTimingDS1

Values
on
off

Default off

COMPONENT Lp EE1

Instance Decimal (0..1)

Groups
"GROUP Lp EE1 Provisioned (Prov)"
"GROUP Lp EE1 OperationalStatus (OperStatus)"
"GROUP Lp EE1 OsiState (State)"
"GROUP Lp EE1 Operational (Oper)"

Scope Application

Description

Lp/0 EE1/n
The *EE1* component controls an E1 external timing port on a ***CPeE*** and ***CP*** Control Processor. The *EE1* component can only be added under the *LP/0* component and only if the CP type is

CPeE or ***CP***. The Control Processor supports up to two external timing ports.

Mib ExternalTimingE1

Common Verbs

Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Lp EE1 Provisioned (Prov)

Properties Provisioned

Description

This group contains all of the provisioning data for an *EE1* component.

Mib ExternalTimingE1

ATTRIBUTE Lp EE1 rxSynchClk

Access Read and write

Description This attribute specifies if the E1 BIT port is receiving a 2.048 MHz square wave synchronization (analog) clock or a E1 data frame signal as input. A value of ***squareWave*** indicates that the analog clock is received. A value of ***e1Signal*** indicates the E1 data frame signal is received. The default value is ***e1Signal***.

Mib ExternalTimingE1

Values e1Signal
squareWave

Default e1Signal

ATTRIBUTE Lp EE1 ssmRxDefault

Access Read and write

Description	This attribute specifies the default Synchronization Status Message (SSM) reported to the NS component. The SSM is used by the NS component to select the most suitable clock synchronization reference based on the SSM values recommended by ITU standard G.704 with relative Quality Levels of 0 through 8 and 15 where 1 is the highest quality, 8 is the lowest, 0 indicates “Quality Unknown” and 15 indicates “Do Not Use For Synchronization”. The default SSM is used when the received SSM indicates Quality Unknown or when the SSM is not reported by the hardware.
Mib	ExternalTimingE1
Values	Decimal (0..8; 15)
Default	0

GROUP Lp EE1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	ExternalTimingE1

ATTRIBUTE Lp EE1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	ExternalTimingE1
Values	up down testing
Default	up

GROUP Lp EE1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	ExternalTimingE1

ATTRIBUTE Lp EE1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	ExternalTimingE1
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE Lp EE1 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	ExternalTimingE1
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp EE1 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: ExternalTimingE1

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp EE1 availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	ExternalTimingE1
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp EE1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	ExternalTimingE1
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp EE1 controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.

Mib	ExternalTimingE1
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp EE1 alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	ExternalTimingE1
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp EE1 standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	ExternalTimingE1
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)

Default	notSet

ATTRIBUTE Lp EE1 unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	ExternalTimingE1
Values	false true
Default	false

GROUP Lp EE1 Operational (Oper)

Properties	Operational
Description	This group contains the common operational data for *EE1* and *EDS1* components.
Mib	ExternalTimingE1

ATTRIBUTE Lp EE1 losAlarm (losAlarm)

Access	Read only
Description	This attribute indicates whether a LOS (Loss of Signal) alarm state has been entered. A LOS alarm is declared after LOS defects have been observed and accumulated for a period of 2 seconds +/- 0.5 second . A LOS defect is detected upon observing all zeros for 150 ms . If the LOS defects are intermittently occurring, the LOS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The port goes into an operational state of ***disabled*** until the LOS alarm state is cleared. The LOS alarm state is cleared when LOS defects are absent for 10 seconds +/- 0.5 second.

Mib ExternalTimingE1

Values
on
off

Default off

ATTRIBUTE Lp EE1 lofAlarm (lofAlarm)

Access Read only

Description

This attribute indicates whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (for DS1: 2 out of 5 framing bits in error; for E1: 3 consecutive frame alignment patterns in error) have been detected for 3 seconds +/- 0.5 second . If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The port goes into an operational state of ***disabled*** until the LOF alarm state is cleared. The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 second.

Mib ExternalTimingE1

Values
on
off

Default off

ATTRIBUTE Lp EE1 rxAisAlarm (rxAisAlarm)

Access Read only

Description

This attribute indicates whether an AIS (Alarm Indication Signal) alarm has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds +/- 0.5 second. An AIS defect is detected after having received less

	than 3 zeros in a 2048 bit period. If the AIS defects are intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurement based on a 200 ms polling cycle. The port goes into an operational state of ***disabled*** for the duration of an AIS alarm state. The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 second.
Mib	ExternalTimingE1
Values	on off
Default	off

COMPONENT Lp PCUServicesProcessor (Pcusp)

Groups	"GROUP Lp Pcusp Provisioned (Op)" "GROUP Lp Pcusp OsiState (State)" "GROUP Lp Pcusp Operational (Oper)"
Scope	Device
Description	*Lp/n PCUServicesProcessor* This component contains a group of processing modules on a Packet Control Unit Services Processor FP. There is one *Pcusp* instance for each *Pcusa*. When added, the *ProcessingModule*

	subcomponents are added automatically. For the ***12mPcusp*** card, there are 12 *PModule*s added.
Mib	Pcusp
Subcomponents	"COMPONENT Lp Pcusp ProcessingModule (PModule)"
Dyn. Subcomp.	"COMPONENT Lp Pcusp Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Pcusp Provisioned (Op)

Properties	Provisioned
Description	This group contains provisioning data for the *Pcusp* Component.
Mib	Pcusp

ATTRIBUTE Lp Pcusp linkToApplication (l2a)

Access	Read and write
Criticality	Process
Description	This attribute specifies a service link to an *Pcusa* component which provides the application services available in the PCUSP.
Mib	Pcusp
Values	Link (Service, linkToServer)
Default	No default

GROUP Lp Pcusp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each

attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Pcusp

ATTRIBUTE Lp Pcusp adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Pcusp

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Pcusp operationalState (osiOper)

Access: Read only

Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Pcusp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Pcusp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Pcusp

Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Pcusp availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Pcusp
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Pcusp proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Pcusp
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Pcusp controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Pcusp
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Pcusp alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Pcusp
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Pcusp standbyStatus (osiStby)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Pcusp
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Pcusp unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

	The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Pcusp
Values	false true
Default	false

GROUP Lp Pcusp Operational (Oper)

Properties	Operational
Description	This group contains status information about the *Pcusp* component.
Mib	Pcusp

ATTRIBUTE Lp Pcusp standbyPModulesStatus (stdbPmod)

Access	Read only
Description	This attribute indicates an overview of the status of *Pmodule* component on the standby PCUSP card. The various attribute values are: ***available*** ***cantLoadFirmware*** - A *PModule* component has been detected, but the firmware load operation failed. ***failedDiagnostics*** - The diagnostics cycle has completed and an error has been detected within the *PModule* component. ***mismatched*** - The *insertedModuleType* attribute of the *PModule* component does not match its provisioned *moduleType* attribute. ***connectivityFailed*** - The test cycle has run and an error was detected on one *PBlock*s component within the *PModule* component. ***notResponding*** - One *PBlock* within the *PModule* component is not responding. ***reset InProgress*** - The *PModule* component is resetting.

Mib	Pcusp
Vector of	available cantLoadFirmware failedDiagnostic mismatched connectivityFailed notResponding resetInProgress notAvailable
Index	Decimal (1..12)
Default	([12] notAvailable)

COMPONENT Lp Pcusp ProcessingModule (PModule)

Instance	Decimal (1..12)
Groups	"GROUP Lp Pcusp PModule Provisioned (Prov)" "GROUP Lp Pcusp PModule OsiState (State)" "GROUP Lp Pcusp PModule Operational (Oper)"
Scope	Device
Description	*Lp/n Pcusp ProcessingModule/n* A *ProcessingModule* (*PModule*) represents a single voice/data processing module on a Packet Control Unit Services Processor (PCUSP) FP. The *PModule* are automatically added when the *Pcusp* is provisioned.
Mib	Pcusp
Dyn. Subcomp.	"COMPONENT Lp Pcusp PModule ProcessingBlock (PBlock)"
Common Verbs	Help List Display Add

VERB RESET Lp Pcusp PModule

Impact	Service
Description	*Lp/n Pcusp ProcessingModule RESET* The *Reset* verb is used to reset a processing module. It can be used when a failure has occured on a signal processing module.

GROUP Lp Pcusp PModule Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for a *ProcessingModule*.
Mib	Pcusp

ATTRIBUTE Lp Pcusp PModule moduleType (modType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of Processing Module expected for this *ProcessingModule* instance. The module types are: ***none*** - No module has been detected. ***spm*** - A module type of SPM has been detected.
Mib	Pcusp
Values	none spm
Default	spm

GROUP Lp Pcusp PModule OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	Pcusp

ATTRIBUTE Lp Pcusp PModule adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Pcusp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Pcusp PModule operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Pcusp

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Pcusp PModule usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Pcusp

Values: idle
active (activ)
busy

Default: idle

GROUP Lp Pcusp PModule Operational (Oper)

Properties: Operational

Description: This group indicates operational information on the *ProcessingModule*.

Mib: Pcusp

ATTRIBUTE Lp Pcusp PModule insertedModuleType (insModType)

Access: Read only

Description	This attribute indicates the type of *ProcessingModule* currently present in the physical position on a Packet Control Unit Services Processor FP. The module types are: ***spm*** **-** A module type of Signal Processing Module has been detected. ***none*** - No module has been detected. ***unknown*** - The module is of a type not known by the software.
Mib	Pcusp
Values	none unknown spm
Default	No default

ATTRIBUTE Lp Pcusp PModule productCode (prc)

Access	Read only
Description	This attribute indicates the product engineering code and release of the *ProcessingModule*.
Mib	Pcusp
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Lp Pcusp PModule failureCause (failCause)

Access	Read only
Description	This attribute indicates the reason why the *ProcessingModule* has failed. The various failure causes are: ***none*** - There is no failure. ***cantLoadFirmware*** - A *PModule* has been detected, but the firmware load operation failed. ***failedDiagnostics*** - The diagnostics cycle has completed and an error has been detected within the *PModule*. ***mismatched*** - The *insertedModuleType* of the *PModule* does not

match its provisioned *moduleType*.
connectivityFailed - The test cycle has run and an error was detected on one *PBlock*s within the *PModule*.
notResponding - One *PBlock* within the *PModule* is not responding.
reset InProgress - The *PModule* is resetting.

Mib: Pcusp

Values:
none
cantLoadFirmware
failedDiagnostics
mismatched
connectivityFailed
notResponding
resetInProgress

Default: none

COMPONENT Lp Pcusp PModule ProcessingBlock (PBlock)

Instance: Decimal (1..2)

Groups:
"GROUP Lp Pcusp PModule PBlock Operational (Oper)"
"GROUP Lp Pcusp PModule PBlock PBlockStatistics (Stats)"

"COLLECTED STATS LogicalProcessor PCUServicesProcessor ProcessingModule ProcessingBlock"

Scope: Device

Description:
Lp/n Pcusp PModule/n ProcessingBlock/n
This dynamic component represents a Processing Block within a *ProcessingModule*.
The Processing Block is the smallest unit on the PCUSA card on

	which different Data Processing software sets may be loaded, or on which diagnostics may be performed.
Mib	Pcusp
Common Verbs	Help List Display

GROUP Lp Pcusp PModule PBlock Operational (Oper)

Properties	Operational
Description	This group contains status information about the *ProcessingBlock*.
Mib	Pcusp

ATTRIBUTE Lp Pcusp PModule PBlock serviceList (servList)

Access	Read only
Description	This attribute indicates which *Pcusa/n Conn/n PcmLink* components have allocated timeslot resources on this *ProcessingBlock*.
Mib	Pcusp
List of	The name of the component
Default	No default

GROUP Lp Pcusp PModule PBlock PBlockStatistics (Stats)

Properties	Operational
Description	This group contains statistical data.
Mib	Pcusp

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtil (util)

Access	Read only
Description	This attribute indicates the current load of the SPM MPC processor.

Mib	Pcusp
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilAvg (avg)

Access	Read only
Description	This attribute indicates the average PBlock CPU load.
Mib	Pcusp
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilMin (min)

Access	Read only
Description	This attribute indicates the minimum PBlock CPU load.
Mib	Pcusp
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilMax (max)

Access	Read only
Description	This attribute indicates the maximum PBlock CPU load.
Mib	Pcusp
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Pcusp PModule PBlock memoryUsage (mem)

Access	Read only
Description	This attribute indicates the percentage of RAM memory used by the PCU application.
Mib	Pcusp
Values	Decimal (0..100)
Units	%
Default	No default
Default	COLLECTED STATS LogicalProcessor PCUServicesProcessor ProcessingModule ProcessingBlock
Description	The statistics record generated by the LogicalProcessor PCUServicesProcessor ProcessingModule ProcessingBlock component.

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilAvg (avg)

Description	This attribute indicates the average PBlock CPU load during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilMin (min)

Description	This attribute indicates the minimum PBlock CPU load during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilMax (max)

Description	This attribute indicates the maximum PBlock CPU load during the statistics collection interval.
Values	Decimal (0..100)
Units	%

COMPONENT Lp Pcusp Test (Test)

Groups	"GROUP Lp Pcusp Test OsiState (State)" "GROUP Lp Pcusp Test Setup (Setup)" "GROUP Lp Pcusp Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.
Mib	Pcusp
Common Verbs	Help List Display

VERB START Lp Pcusp Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Pcusp Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Lp Pcusp Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Pcusp

ATTRIBUTE Lp Pcusp Test adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Pcusp

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Pcusp Test operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Pcusp

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Pcusp Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Pcusp

Values: idle
active (activ)
busy

Default: idle

GROUP Lp Pcusp Test Setup (Setup)

Properties: Operational

Description:

This group contains all of the operational data for a *Test* component.

Mib: Pcusp

ATTRIBUTE Lp Pcusp Test purpose (purpose)

Access Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib Pcusp

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Lp Pcusp Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection

(bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib: Pcusp

Values:
card
manual
localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default: card

ATTRIBUTE Lp Pcusp Test frmSize (size)

Access: Read and write

Description:
This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib: Pcusp

Values: Decimal (4..4096)

Units: bytes

Default: 1024

ATTRIBUTE Lp Pcusp Test frmPatternType (fpt)

Access: Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: Pcusp

Values: ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default: ccitt32kBitPattern

ATTRIBUTE Lp Pcusp Test customizedPattern (cp)

Access: Read and write

Description

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: Pcusp

Values: Hex (H.0..H.ffffffff)

Units: Hex

Default: H.55555555

ATTRIBUTE Lp Pcusp Test dataStartDelay (dsd)

Access: Read and write

Description

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib	Pcusp
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Pcusp Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Pcusp
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Pcusp Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Pcusp
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Pcusp Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	Pcusp

ATTRIBUTE Lp Pcusp Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test

pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: Pcusp

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Lp Pcusp Test bitsTx

Access: Read only

Description:

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: Pcusp

Values: Long Integer

Default: No default

ATTRIBUTE Lp Pcusp Test bytesTx

Access	Read only
Description	This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.
Mib	Pcusp
Values	Long Integer
Default	No default

ATTRIBUTE Lp Pcusp Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Pcusp
Values	Long Integer
Default	No default

ATTRIBUTE Lp Pcusp Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Pcusp
Values	Long Integer
Default	No default

ATTRIBUTE Lp Pcusp Test bytesRx

Access	Read only

Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusp
Values	Long Integer
Default	No default

ATTRIBUTE Lp Pcusp Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Pcusp
Values	Long Integer
Default	No default

ATTRIBUTE Lp Pcusp Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusp
Values	Long Integer
Default	No default

ATTRIBUTE Lp Pcusp Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09. Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.
Mib	Pcusp
Values	String (5, ASCII)
Default	No default

ATTRIBUTE Lp Pcusp Test elapsedTime

Access	Read only
Description	This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.
Mib	Pcusp
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

ATTRIBUTE Lp Pcusp Test timeRemaining

Access	Read only
Description	This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.
Mib	Pcusp
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp MultiLinkFrameRelay (Mlfr)

Instance	Decimal (0..111)
Groups	"GROUP Lp Mlfr Provisioned (Prov)" "GROUP Lp Mlfr Operational (Oper)" "GROUP Lp Mlfr Statistics (Stats)" "GROUP Lp Mlfr CustomerIdentifierData (CidData)" "GROUP Lp Mlfr OsiState (State)"
Scope	Application
Description	*Lp/n MultiLinkFrameRelay/n* This component represents a group of DS1 links, called a bundle. Multi-Link Frame Relay (MLFR) provides a data rate greater than DS1 and less than DS3, in increments of DS1. The *Mlfr* component may be created only if the *cardType* is .
Mib	Mlfr
Subcomponents	"COMPONENT Lp Mlfr Link (Lk)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Mlfr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Mlfr* component.
Mib	Mlfr

ATTRIBUTE Lp Mlfr applicationFramerName (framer)

Access	Read and write
Description	This attribute specifies the link to the *Framer* component using the *Mlfr component*. An example is *Framer/3*.
Mib	Mlfr
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp Mlfr activationClass (actClass)

Access	Read and write
Description	This attribute specifies the conditions under which the bundle is activated. There are four classes of activation: ***class A***: One or more bundle links are up. ***class B***: All bundle links are up. ***class C***: A minimum threshold is provisioned. The threshold represents the minimum number of bundle links that must up.
Mib	Mlfr
Values	classA classB classC
Default	classA

ATTRIBUTE Lp Mlfr activationThreshold (thresh)

Access	Read and write

Description	This attribute specifies the minimum number of links that must be up before the bundle will be up. The value of this attribute is only used when the *activationClass* attribute is set to ***classC***.
Mib	Mlfr
Values	Decimal (1..28)
Default	1

ATTRIBUTE Lp Mlfr maxDiffDelay (delay)

Access	Read and write
Description	This attribute specifies the maximum acceptable round-trip differential delay between links in the MLFR bundle. An alarm is generated for links violating the maximum differential delay. Such links are not allowed to remain up.
Mib	Mlfr
Values	Decimal (20..600)
Units	msec
Default	132

ATTRIBUTE Lp Mlfr helloTimer (hello)

Access	Read and write
Description	This attribute specifies the amount of time between consecutive HELLO messages, sent on each link that is up.
Mib	Mlfr
Values	Decimal (1..180)
Units	seconds
Default	10

ATTRIBUTE Lp Mlfr ackTimer (ack)

Access	Read and write

Description	This attribute specifies the maximum time period to wait for an ADD_LINK_ACK, HELLO_ACK, or REMOVE_LINK_ACK message. If *ackTimer* expires before a bundle link endpoint receives a HELLO_ACK or ADD_LINK_ACK message, then every *ackTimer* seconds a HELLO message is sent and every (*maxRetries* + 1) **ackTimer* seconds an ADD_LINK message is sent. If *ackTimer* expires before a bundle link endpoint receives a REMOVE_LINK_ACK message, then every *ackTimer* seconds a HELLO message is sent and after (*maxRetries* + 1) **ackTimer* seconds the bundle link enters in idle state.
Mib	Mlfr
Values	Decimal (1..10)
Units	seconds
Default	4

ATTRIBUTE Lp Mlfr maxRetries (retries)

Access	Read and write
Description	This attribute specifies the maximum number of retransmission attempts for consecutive HELLO or REMOVE_LINK messages following the expiration of *ackTimer.*
Mib	Mlfr
Values	Decimal (1..5)
Default	2

ATTRIBUTE Lp Mlfr fragmenting (frag)

Access	Read and write
Description	This attribute specifies whether fragmentation of transmitted frames is permitted. If the value is ***enabled***, frames which are at least *fragmentingThreshold* octets in length are divided into fragments which are at most *fragmentSize* octets long. The value enabled may be used only if the remote end can accept fragmented frames. If the value is ***disabled***, frames are always transmitted without fragmentation. Fragmentation of received

	frames is always acceptable, regardless of the value of this attribute.
Mib	Mlfr
Values	enabled disabled
Default	disabled

ATTRIBUTE Lp Mlfr fragmentSize (fragSize)

Access	Read and write
Description	This attribute specifies the fragment size. A frame is divided in data fragments which are sent over different links in a bundle. The fragment size is configured in the transmitter, and two peer transmitters need not use the same fragment size. The value of this attribute is only used when the *fragmenting* attribute is set to ***enabled***.
Mib	Mlfr
Values	Decimal (10..8000)
Units	octets
Default	128

ATTRIBUTE Lp Mlfr fragmentingThreshold (fragTresh)

Access	Read and write
Description	This attribute specifies the minimum size a frame must have in order to be fragmented. The value of this attribute is only used when the *fragmenting* attribute is set to ***enabled***. Frames smaller than this size will not be fragmented. The *fragmentingThreshold* value must be bigger or equal to *fragmentSize* value.
Mib	Mlfr
Values	Decimal (10..8000)
Units	octets
Default	192

ATTRIBUTE Lp Mlfr resequenceTimer (reseqTim)

Access	Read and write
Description	This attribute specifies the interval of time to wait for receiving out-of-order fragments and frames.
Mib	Mlfr
Values	Decimal (20..132)
Units	msec
Default	50

GROUP Lp Mlfr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Mlfr* component.
Mib	Mlfr

ATTRIBUTE Lp Mlfr remoteName (remName)

Access	Read only
Description	This attribute indicates the name of the remote bundle, as it was received from the *Link* component.
Mib	Mlfr
Values	String (1..49, ASCII)
Default	No default

GROUP Lp Mlfr Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Mlfr* component.
Mib	Mlfr

ATTRIBUTE Lp Mlfr runningTime (running)

Access	Read only

Description	This attribute counts the length of time for which the *Mlfr* component has been in the ***unlocked*** state or has been used for operational testing. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp Mlfr unavailSec (unavail)

Access	Read only
Description	This attribute counts the length of time for which the *Mlfr* component has been ***unlocked*** and ***disabled***. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp Mlfr resequenceErrors (reseqErr)

Access	Read only
Description	This attribute counts the resequencing errors. These are the errors caused by lost or duplicated frames or data fragments. When the maximum count is exceeded, the count wraps to zero. For example, sequence number 56, 59 and 60 are received for DLCI 100. It is decided by some means that sequence 57 and 58 are lost. This counter would then be incremented by one, even though two frames were lost.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr discardedFrames (discFrames)

Access	Read only
Description	This attribute counts frames and fragments discarded by the receiver bundle due to re sequencing errors. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

GROUP Lp Mlfr CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Mlfr

ATTRIBUTE Lp Mlfr customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	Mlfr
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Mlfr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Mlfr

ATTRIBUTE Lp Mlfr adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Mlfr

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Mlfr operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Mlfr
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Mlfr usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Mlfr
Values	idle active (activ) busy
Default	idle

COMPONENT Lp Mlfr Link (Lk)

Instance	Decimal (0..27)
Groups	"GROUP Lp Mlfr Lk Provisioned (Prov)" "GROUP Lp Mlfr Lk Operational (Oper)" "GROUP Lp Mlfr Lk Statistics (Stats)" "GROUP Lp Mlfr Lk OsiState (State)"
Scope	Application
Description	*Lp/n Mlfr/n Link/m* This component is used to define a DS1 link belonging to an *Mlfr* component.
Mib	Mlfr
Common Verbs	Help List Display Add DELete

GROUP Lp Mlfr Lk Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Link* subcomponent.
Mib	Mlfr

ATTRIBUTE Lp Mlfr Lk interfaceName

Access	Read and write
Criticality	Component

Description	This attribute specifies the *Link* subcomponent associated with a specific interface on a function processor, for example: *Lp/5 Ds3/0 Ds1/3 Chan/0*. The following checks are performed: 1. The *Link*'s *interfaceName* must link to a *DS1 Channel/0* component on the same *Lp* as the *Mlfr* component. 2. All the *Link*s of the same *Mlfr* component must be bound to *DS1 Channel/0* components under the same *DS3*. 3. All the *Link*s of the same *Mlfr* component must be bound to *DS1 Channel/0* components having the same value for *timeslotDataRate*. 4. All the 24 timeslots of the *DS1 Channel/0* component must be provisioned.
Mib	Mlfr
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Lp Mlfr Lk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Link* subcomponent.
Mib	Mlfr

ATTRIBUTE Lp Mlfr Lk errorCause (cause)

Access	Read only
Description	This attribute indicates the error cause on the near end of this link. Possible values are: ***noError***: there is no error on the near end of this link. ***inconsistentBundle***: Possible configuration mismatch detected for the remote name of the MLFR bundle. ***unknownVendor***: Unrecognized Organizationally Unique Identifier (OUI) received. ***linkIdle***: The link is not *operational*. ***linkDown***: The link physical layer is *down*. ***diffDelay***: The link differential delay exceeds the maximum allowed. ***loopbackDetected***: The link has detected a potential loopback

condition.
unexpectedAddLink: An ADD_LINK message was received when the link was up.

Mib: Mlfr

Values:
noError
inconsistentBundle
unknownVendor
linkIdle
linkDown
diffDelay
loopbackDetected
other
unexpectedAddLink

Default: No default

ATTRIBUTE Lp Mlfr Lk remoteCause (remCause)

Access: Read only

Description: This attribute indicates the error cause on the far end of his link. Possible values are:
noError: there is no error on the far end of this link.
inconsistentBundle: Possible configuration mismatch detected for the remote name of the MLFR bundle.
unknownVendor: Unrecognized Organizationally Unique Identifier (OUI) received.
linkIdle: The link is not *operational*.
linkDown: The link physical layer is *down*.
diffDelay: The link differential delay exceeds the maximum allowed.
loopbackDetected: The link has detected a potential loopback condition.
unexpectedAddLink: An ADD_LINK message was received when the link was up.
"": No error cause was received yet from the far end.

Mib: Mlfr

Values:
noError
inconsistentBundle

	unknownVendor linkIdle linkDown diffDelay loopbackDetected other unexpectedAddLink
Default	No default

ATTRIBUTE Lp Mlfr Lk remoteName (remName)

Access	Read only
Description	This attribute indicates the name of the remote link.
Mib	Mlfr
Values	String (1..49, ASCII)
Default	No default

ATTRIBUTE Lp Mlfr Lk diffDelay (diff)

Access	Read only
Description	This attribute indicates the differential delay between this link and the link, in the same MLFR bundle, having the least delay. The value ***notMeasured*** means that the relative delay could not be measured. This can be due to physical layer problems or to no MLFR Link Integrity Protocol (LIP) messages being received on the link.
Mib	Mlfr
Values	Decimal (0..4294967294) notMeasured
Units	msec
Default	No default

GROUP Lp Mlfr Lk Statistics (Stats)

Properties	Operational

Description	This group contains the statistics data for the *Link* subcomponent.
Mib	Mlfr

ATTRIBUTE Lp Mlfr Lk runningTime (running)

Access	Read only
Description	This attribute counts the length of time for which the *Link* component has been in the *unlocked* state or has been used for operational testing. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp Mlfr Lk unavailSec (unavail)

Access	Read only
Description	This attribute counts the length of time for which the *Link* component has been ***unlocked*** and out of service. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Lp Mlfr Lk failures (fail)

Access	Read only
Description	This attribute counts the number of failures that the *Link* component has experienced since being created. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr Lk framesLipTx (lipTx)

Access	Read only
Description	This attribute counts the number of Link Integrity Protocol (LIP) frames sent on the link. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr Lk framesLipRx (lipRx)

Access	Read only
Description	This attribute counts the number of LIP frames received on the link. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr Lk framesLipInvalid (lipInv)

Access	Read only
Description	This attribute counts the number of invalid LIP frames received on the link. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr Lk timerExpired (timExp)

Access	Read only
Description	This attribute counts the number of times the HELLO or ACK timers expired. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr Lk loopback (loop)

Access	Read only
Description	This attribute counts the number of times a loopback has been suspected on the link. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Lp Mlfr Lk mismatch (mis)

Access	Read only
Description	This attributes counts the number of times far end bundle name doesn't correspond to *remoteName* for *Mlfr* component. When the maximum count is exceeded, the count wraps to zero.
Mib	Mlfr
Values	Decimal (0..4294967295)
Default	No default

GROUP Lp Mlfr Lk OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state

combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Mlfr

ATTRIBUTE Lp Mlfr Lk adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Mlfr

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Lp Mlfr Lk operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be

providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Mlfr

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Mlfr Lk usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Mlfr

Values: idle
active (activ)
busy

Default: idle

COMPONENT Lp AdjunctProcessor (Ap)

Instance: Decimal (0..31)

Groups: "GROUP Lp Ap OsiState (State)"
"GROUP Lp Ap Properties (Prop)"
"GROUP Lp Ap Utilization (Util)"

Scope	Device
Description	*Lp/n Ap/n* This component represents an Adjunct Processor on a Functional Processor (FP).
Mib	AdjunctProcessor
Dyn. Subcomp.	"COMPONENT Lp Ap RncApplication (RncAp)"
Common Verbs	Help List Display

VERB RESET Lp Ap

Impact	Service
Description	*Reset Lp/n Ap/m* This command is used to reset a single adjunct processor card. Resetting a processor card implies: (1) resetting the hardware (as if the card had just been powered on), (2) performing the card's self-tests, and (3) reloading the software..

GROUP Lp Ap OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AdjunctProcessor

ATTRIBUTE Lp Ap adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: AdjunctProcessor

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Ap operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: AdjunctProcessor

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Ap usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: AdjunctProcessor

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Ap availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The

operationalState is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: AdjunctProcessor

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp Ap proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it

can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: AdjunctProcessor

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp Ap controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: AdjunctProcessor

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp Ap alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: AdjunctProcessor

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp Ap standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization

activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: AdjunctProcessor

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp Ap unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: AdjunctProcessor

Values:
false
true

Default: false

GROUP Lp Ap Properties (Prop)

Properties: Operational

Description: This group contains the operational attributes which specify characteristics of the Adjunct Processor.

Mib: AdjunctProcessor

ATTRIBUTE Lp Ap productCode (pec)

Access: Read only

Description	This attribute indicates the product code for the Adjunct Processor.
Mib	AdjunctProcessor
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Lp Ap serialNumber

Access	Read only
Description	This attribute indicates the Adjunct Processor serial number.
Mib	AdjunctProcessor
Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE Lp Ap memoryCapacity

Access	Read only
Description	This attribute indicates the total amount of memory present on the Adjunct Processor.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap sharedMsgBlockCapacity

Access	Read only
Description	This attribute indicates the Adjunct Processor’s shared message block memory capacity.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte

Default	No default

ATTRIBUTE Lp Ap localMsgBlockCapacity

Access	Read only
Description	This attribute indicates the Adjunct Processor's local message block memory capacity. These message blocks are used for local messaging on the card.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap ipAddress (ipAddr)

Access	Read only
Description	This attribute indicates the IP address of the Adjunct Processor.
Mib	AdjunctProcessor
Values	IP address
Default	No default

GROUP Lp Ap Utilization (Util)

Properties	Operational
Description	This group contains the operational attributes that specify the Adjunct Processor's utilization levels.
Mib	AdjunctProcessor

ATTRIBUTE Lp Ap cpuUtilization (cpuUtil)

Access	Read only
Description	This attribute indicates an approximation of the current Adjunct Processor utilization level.
Mib	AdjunctProcessor

Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Lp Ap memoryUtilization

Access	Read only
Description	This attribute indicates the Adjunct Processor's current memory utilization.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap sharedMsgBlockUsage

Access	Read only
Description	This attribute indicates the Adjunct Processor's current shared message block memory utilization.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap sharedMsgBlockUsageAvg

Access	Read only
Description	This attribute indicates the Adjunct Processor's average memory utilization of shared message blocks, over the past 15 minutes. This utilization value is calculated using 15 second samples.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)

Units	kbyte
Default	No default

ATTRIBUTE Lp Ap sharedMsgBlockUsageAvgMin

Access	Read only
Description	This attribute indicates the Adjunct Processor's minimum memory utilization of shared message blocks, over the past 15 minutes. This utilization value is calculated using 15 second samples.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap sharedMsgBlockUsageAvgMax

Access	Read only
Description	This attribute indicates the Adjunct Processor's maximum memory utilization of shared message blocks, over the past 15 minutes. This utilization value is calculated using 15 second samples.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap localMsgBlockUsage

Access	Read only
Description	This attribute indicates the Adjunct Processor's current memory utilization of message blocks which are used for local messaging on the card.
Mib	AdjunctProcessor

Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap localMsgBlockUsageAvg

Access	Read only
Description	This attribute indicates the Adjunct Processor's average memory utilization of message blocks used for local messaging on the card over the past 15 minutes. This utilization value is calculated using 15 second samples.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap localMsgBlockUsageAvgMax

Access	Read only
Description	This attribute indicates the Adjunct Processor's maximum memory utilization of message blocks used for local messaging on the card over the past 15 minutes. This utilization value is updated at 15 second intervals.
Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Lp Ap localMsgBlockUsageAvgMin

Access	Read only
Description	This attribute indicates the Adjunct Processor's minimum memory utilization of message blocks used for local messaging

on the card over the past 15 minutes. This utilization value is updated at 15 second intervals.

Mib	AdjunctProcessor
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

COMPONENT Lp Ap RncApplication (RncAp)

Groups	"GROUP Lp Ap RncAp Operational (Oper)" "GROUP Lp Ap RncAp Status (Stats)"
Scope	Device
Description	*Lp/n Ap/n RncApplication* This component represents an RNC application running on this Adjunct Processor.
Mib	AdjunctProcessor
Common Verbs	Help List Display

GROUP Lp Ap RncAp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of *RncApplication*.
Mib	AdjunctProcessor

ATTRIBUTE Lp Ap RncAp processorRole (role)

Access	Read only
Description	This attribute indicates the functional behavior of the Adjunct Processor. Possible values are: - ***none*** indicates that this Adjunct Processor has not been assigned a role yet. This value is only attained when the Adjunct Processor is disabled or just after it has become enabled. Within a

few minutes at most, the role will take on one of the 4 pending values, and quickly change the corresponding permanent value.
- ***protocolConverterPending*** indicates that initialization of the Adjunct Processor is still in progress. Once initialization is complete, the role will take on the value of protocolConverter.
- ***radioAccessBearerPending*** indicates that initialization of the Adjunct Processor is still in progress. Once initialization is complete, the role will take on the value of radioAccessBearer.
- ***activeMasterPending*** indicates that initialization of the Adjunct Processor is still in progress. Once initialization is complete, the role will take on the value of activeMaster.
- ***standbyMasterPending*** indicates that initialization of the Adjunct Processor is still in progress. Once initialization is complete, the role will take on the value of standbyMaster.
- ***protocolConverter*** indicates that this Adjunct Processor is responsible for converting packets to and from AAL2 for Iub and IuCS.
- ***radioAccessBearer*** indicates that this Adjunct Processor is responsible for supporting all radio protocols.
- ***activeMaster*** indicates that this Adjunct Processor handles all shelf-wide Packet Server support.
- ***standbyMaster*** indicates that this Adjunct Processor is a spare for the activeMaster.
- ***activeNetworkInterfacePending*** indicates that the initialization of this Adjunct Processor is still in progress, once the initialization is completed, this processor will be the active Network Interface.
- ***standbyNetworkInterfacePending*** indicates that the initialization of this Adjunct Processor is in progress and once the initilization is completed, this processor will be the standbyNetwork Interface.
- ***activeNetworkInterface*** indicates that this Adjunct Processor is an active NetworkInterface.
- ***standbyNetworkInterface*** indicates that this Adjunct Processor is a spare for the active NetworkInterface.
- ***activeOmu***indicates that this Adjunct Processor is an active OMU.
- ***standbyOmu*** indicates that this Adjunct Processor is a spare for the active OMU.
- ***activeOmuPending*** indicates that the initialization of this Adjunct Processor is in progress and once the initilization is

completed, this processor will be the activeOmu.
- ***standbyOmuPending*** indicates that the initialization of this Adjunct Processor is in progress and once the initilization is completed, this processor will be the standbyOmu.
- ***tmu*** indicates that this Adjunct Processor is an active TMU.
- ***tmuPending*** indicates that he initialization of this Adjunct Processor is in progress and once the initilization is completed, this processor will be a TMU.

Mib: AdjunctProcessor

Set of:
none (none)
radioAccessBearer (rab)
protocolConverter (pc)
activeMaster (aMaster)
standbyMaster (sMaster)
radioAccessBearerPending (rabPend)
protocolConverterPending (pcPend)
activeMasterPending (aMstPend)
standbyMasterPending (sMstPend)
activeNi (aNi)
standbyNi (sNi)
activeNiPending (aNiPend)
standbyNiPending (sNiPend)
activeOmu (aOmu)
standbyOmu (sOmu)
activeOmuPending (aOmuPend)
standbyOmuPending (sOmuPend)
tmu (tmu)
tmuPending (tmuPend)

Default: No default

ATTRIBUTE Lp Ap RncAp processorInstance (instance)

Access: Read only

Description: This attribute indicates the instance number associated with the processor. The instance number does not indicate any special type of role.
- ***na*** indicates that instance numbers for this processor is not applicable.
- ***unknown*** indicates that a instance number has not yet been

assigned to the processor.

Mib	AdjunctProcessor
Values	Decimal (0..4294967293) na unknown
Default	0

GROUP Lp Ap RncAp Status (Stats)

Properties	Operational
Description	This group contains the operational attributes of Status
Mib	AdjunctProcessor

ATTRIBUTE Lp Ap RncAp numOfSparedCells (sparedCell)

Access	Read only
Description	This attribute counts the number of spared cells that are allocated on an AP. The reserved value “unknown” means that the system is busy and has difficulty obtaining the value. The operator should wait a few seconds before repeating the display command in order to obtain the correct value. If the “unknown” value persists for a long period of time and the AP component is enabled, this may indicate a system problem.
Mib	AdjunctProcessor
Values	Decimal (0..4294967293) na unknown
Default	0

ATTRIBUTE Lp Ap RncAp numOfUnSparedCells (unSparedCell)

Access	Read only
Description	This attribute counts the number of unspared cells that are allocated on an AP. The reserved value “unknown” means that the system is busy and has difficulty obtaining the value. The

operator should wait a few seconds before repeating the display command in order to obtain the correct value. If the “unknown” value persists for a long period of time and the AP component is enabled, this may indicate a system problem.

Mib: AdjunctProcessor

Values: Decimal (0..4294967293)
na
unknown

Default: 0

ATTRIBUTE Lp Ap RncAp numOfCalls (numCall)

Access: Read only

Description: This attribute counts the number of calls that are allocated on an AP. The reserved value “unknown” means that the system is busy and has difficulty obtaining the value. The operator should wait a few seconds before repeating the display command in order to obtain the correct value. If the “unknown” value persists for a long period of time and the AP component is enabled, this may indicate a system problem.

Mib: AdjunctProcessor

Values: Decimal (0..4294967293)
na
unknown

Default: 0

ATTRIBUTE Lp Ap RncAp numOfSparedPaths (sparedPath)

Access: Read only

Description: This attribute counts the number of spared paths that are allocated on an AP. The reserved value “unknown” means that the system is busy and has difficulty obtaining the value. The operator should wait a few seconds before repeating the display command in order to obtain the correct value. If the “unknown” value persists for a long period of time and the AP component is enabled, this may indicate a system problem.

Mib	AdjunctProcessor
Values	Decimal (0..4294967293) na unknown
Default	0

ATTRIBUTE Lp Ap RncAp numOfUnSparedPaths (unsparedPath)

Access	Read only
Description	This attribute counts the number of unspared paths that are allocated on an AP. The reserved value “unknown” means that the system is busy and has difficulty obtaining the value. The operator should wait a few seconds before repeating the display command in order to obtain the correct value. If the “unknown” value persists for a long period of time and the AP component is enabled, this may indicate a system problem.
Mib	AdjunctProcessor
Values	Decimal (0..4294967293) na unknown
Default	5

COMPONENT Lp NetworkProcessingUnit (Npu)

Groups	"GROUP Lp Npu Provisioned (Prov)"
Scope	Device
Description	*Lp NetworkProcessingUnit* (*Npu*) This component contains the attributes that are associated with the NetworkProcessingUnit (NPU) device on board a Generic Queue Manager (GQM) based card. The NPU is a specialized device that can process data packets at a high data rate. This component is allowed and is mandatory only for the following card types: ***16pOC3PosAtm***

This component must not be used with other card types which do not allow the provisioning of an *Npu* component.

Mib NetworkProcessingUnit

Common Verbs
Help
List
Display
Add
DELete

GROUP Lp Npu Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attributes for the *Npu* component.

Mib NetworkProcessingUnit

ATTRIBUTE Lp Npu serviceBundleName (sbn)

Access Read and write

Description This attribute specifies the name of the service bundle to be used for a ***16pOC3PosAtm*** card. The ***16pOC3PosAtm*** card is the only card that requires the provisioning of the *Npu* component which contains this attribute.
For a ***16pOC3PosAtm*** card, this attribute must be set to one of the followings:
allServices
mplsAtmIp
porsAtmIp
Both the ***mplsAtmIp*** and ***porsAtmIp*** bundles have support for the ***atmCore***, ***ip***, and ***atmTrunks*** features.
Service bundle ***mplsAtmIp***, in addition, supports all the MPLS related features including ***mplsLdp***, ***mplsRsvpTe***, ***mplsStaticLsp***, ***mplsTeEmulation***, ***l2vpnAtmAccessFpSp*** and ***rfc2547bis***. This service bundle does not support the ***porsTrunk*** feature.
Service bundle ***porsAtmIp***, in addition, supports the ***porsTrunk*** feature. This service bundle does not support any of the MPLS features.
Service bundle ***allServices*** has no feature support restrictions. It

supports all the services that run on the card. This service bundle cannot be used with cards whose product code start with NTHW44. Because ***allServices*** has support for all the services that run on the card, it is the service bundle of choice for the ***16pOC3PosAtm*** cards whose product code do not start with NTHW44. However, one of ***mplsAtmIp*** or ***porsAtmIp*** must be used on a card if there is a need to have it interchangeable with a card having product code NTHW44.
The *serviceBundleName* attribute has a default setting of ***serviceBundleNotDefined***. The user must change this setting to a valid service bundle that is appropriate for the card and can support the features in the *Sw Lpt featurelist* attribute.
A change to the ***serviceBundleName*** attribute is a critical change to the *Lp* component only on cards whose product code start with NTHW44.

Mib	NetworkProcessingUnit
Values	serviceBundleNotDefined allServices mplsAtmIp porsAtmIp
Default	serviceBundleNotDefined

COMPONENT Lp Ethernet (Eth)

Instance	Decimal (0..7)
Groups	"GROUP Lp Eth Provisioned (Prov)" "GROUP Lp Eth CustomerIdentifierData (CidData)" "GROUP Lp Eth AdminInfo (AdminInfo)" "GROUP Lp Eth IfEntryProv (IfEntry)" "GROUP Lp Eth OperationalStatus (OperStatus)" "GROUP Lp Eth OsiState (State)" "GROUP Lp Eth Operational (Oper)" "GROUP Lp Eth Statistics (Stats)"
Scope	Device
Description	Lp/n Ethernet/n The *Ethernet* component controls and monitors an Ethernet port on a function processor. The number of ports supported depends

	on the type of the card. The instance number of the *Ethernet* component corresponds to the physical port number on the card.
Mib	Ethernet
Subcomponents	"COMPONENT Lp Eth TrafficManager (Tm)"
Opt. Subcomp.	"COMPONENT Lp Eth OpticalModule (Om)"
Dyn. Subcomp.	"COMPONENT Lp Eth Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Eth Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for an *Ethernet* component.
Mib	Ethernet

ATTRIBUTE Lp Eth applicationFramerName (framer)

Access	Read and write
Description	This attribute specifies which application uses the *Ethernet* component.
Mib	Ethernet
Values	Link (Service, interfaceName)
Default	No default

ATTRIBUTE Lp Eth maxFrameSize

Access	Read and write

Description	This attribute specifies the maximum frame size allowed on the link. Frames received on the link that are greater that the max frame size are discarded and counted in the *framesTooLong* attribute or in the *jabbers* attribute if the FCS is bad. The maximum frame size calculation includes the 802.3/v2 ethernet header and CRC or FCS octets, and excludes Preamble and Inter-Packet Gap. Recommended frame sizes are: 1518 for port-mode, 1522 for Vlan-mode, and anything up to 9182 for Jumbo Frame.
Mib	Ethernet
Values	Decimal (1518..9182)
Default	1518

ATTRIBUTE Lp Eth autoNegotiation

Access	Read and write
Description	This attribute specifies that auto negotiation is turned on or off for the ethernet port. This attribute must be set to off, if the far-end does not support auto-negotiation.
Mib	Ethernet
Values	off on
Default	on

ATTRIBUTE Lp Eth duplexMode

Access	Read and write
Description	This attribute specifies the duplex mode of the ethernet port. This attribute is ignored if auto negotiation is successful.
Mib	Ethernet
Values	half full
Default	full

ATTRIBUTE Lp Eth lineSpeed

Access	Read and write
Description	This attribute specifies the operating speed of the ethernet port. This attribute is ignored if auto negotiation is successful.
Mib	Ethernet
Values	Decimal (10; 100; 1000)
Units	Mbit/s
Default	No default

GROUP Lp Eth CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Ethernet

ATTRIBUTE Lp Eth customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of

	any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	Ethernet
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Eth AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	Ethernet

ATTRIBUTE Lp Eth vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	Ethernet
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Lp Eth commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	Ethernet
Values	String (0..60, ASCII)
Default	No default

GROUP Lp Eth IfEntryProv (IfEntry)

Properties	Provisioned

Description	This group contains the provisionable attributes for the ifEntry.
Mib	Ethernet

ATTRIBUTE Lp Eth ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ethernet
Values	up down testing
Default	up

ATTRIBUTE Lp Eth ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Ethernet
Values	Decimal (1..65535)
Default	No default

GROUP Lp Eth OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ethernet

ATTRIBUTE Lp Eth snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ethernet
Values	up down testing
Default	up

GROUP Lp Eth OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ethernet

ATTRIBUTE Lp Eth adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is

administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Ethernet

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Lp Eth operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Ethernet

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Lp Eth usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ethernet
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Eth availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can

be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Ethernet
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Eth proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Ethernet

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp Eth controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Ethernet

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Lp Eth alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Ethernet

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp Eth standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Ethernet

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Lp Eth unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Ethernet
Values	false true
Default	false

GROUP Lp Eth Operational (Oper)

Properties	Operational
Description	This group contains the operational data for an *Ethernet* component.
Mib	Ethernet

ATTRIBUTE Lp Eth failureCause

Access	Read only
Description	This attribute indicates the failure cause of an Ethernet port. The port enters a failed state after the condition has been observed for a period of 2.5 seconds +/-0.5 seconds. The port comes out of the failed state when the condition has been cleared for a period of 10 seconds +/- 0.5 seconds. The attribute is set to one of the

following values while the OSI *availabilityStatus* attribute is set to ***failed***:

lossOfSync: Port synchronization cannot be achieved.

remoteOffline: The far end is offline.

remoteLinkFailure: The far end has detected a link failure.

autoNegError: The far end does not support a compatible set of auto-negotiation capabilities, or auto-negotiation has failed.

noFailure: There is no failure.

Mib: Ethernet

Values:
lossOfSync
remoteLinkFailure
remoteOffline
autoNegError
noFailure

Default: noFailure

ATTRIBUTE Lp Eth autoNegStatus

Access: Read only

Description: This attribute indicates the status of the Ethernet port auto-negotiation. The possible values are:

succeeded: Auto-negotiation has completed successfully.

failed: Auto-negotiation has failed to mediate a compatible set of capabilities.

inProgress: Auto-negotiation is currently in progress.

disabled*:* The far end does not support auto-negotiation.

Mib: Ethernet

Values	succeeded failed inProgress disabled
Default	No default

ATTRIBUTE Lp Eth actualLineSpeed

Access	Read only
Description	This attribute indicates the line speed of the Ethernet port.
Mib	Ethernet
Values	Decimal (10; 100; 1000)
Units	Mbit/s
Default	No default

ATTRIBUTE Lp Eth actualDuplexMode

Access	Read only
Description	This attribute indicates the duplex mode of the ethernet port.
Mib	Ethernet
Values	unknown half full
Default	No default

GROUP Lp Eth Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for an *Ethernet* component. Each attribute is a positive integer that monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	Ethernet

ATTRIBUTE Lp Eth framesTransmittedOk (frmTxOk)

Access	Read only
Description	This attribute counts the frames that were transmitted without error.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth framesReceivedOk (frmRxOk)

Access	Read only
Description	This attribute counts the frames that were received without error.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth octetsTransmittedOk (octTxOk)

Access	Read only
Description	This attribute counts the octets that were transmitted without error. The count includes data, padding octets, destination address (DA), source address (SA), length field, and frame check sequence (FCS), but excludes preamble and source field delimiter (SFD).
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth octetsReceivedOk (octRxOk)

Access	Read only

Description	This attribute counts the octets that were received without error. The count includes data, padding octets, destination address (DA), source address (SA), length field, and frame check sequence (FCS), but excludes preamble and source field delimiter (SFD). The count also excludes octets contained within received frames that are classified as being errored (fcsErrors etc.).
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth undersizeFrames

Access	Read only
Description	This attribute counts the discarded frames that were received with less than the minimum size (64 bytes).
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth fragments

Access	Read only
Description	This attribute counts the discarded frames that were received with less than the minimum size (64 bytes) with a bad frame check sequence (FCS).
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth framesTooLong

Access	Read only
Description	This attribute counts the discarded frames that were received and exceeds the maximum permitted frame size. The maximum size of a frame depends on it supported encapsulated types.

Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth jabbers

Access	Read only
Description	This attribute counts the discarded frames that were received and exceeds the maximum permitted frame size with a bad frame check sequence (FCS). The maximum size of a frame depends on it supported encapsulated types.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth fcsErrors

Access	Read only
Description	This attribute counts the discarded received frames with an integral number of octets in length and did not pass the Frame Check Sequence (FCS). The count does not include frames received that are too long (jabbers) or too short (fragments).
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth symbolErrors

Access	Read only
Description	This attribute counts the discarded received frames with a valid length, but at least one data reception error or one symbol error was observed. This counter increments once per valid Carrier Event.
Mib	Ethernet

Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth pauseFramesReceived

Access	Read only
Description	This attribute counts the PAUSE Media Access Control (MAC) control frames received.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth alignmentErrors

Access	Read only
Description	This attribute counts the frames received that were not an integral number of octets in length. Frames will be checked for alignment errors before they are checked for Frame Check Sequence (FCS) errors. If there is an alignment error, the error will only be counted by the *alignmentErrors* attribute and not by the *fcsErrors* attribute.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth singleCollisionFrames

Access	Read only
Description	This attribute counts the successfully transmitted frames that experienced exactly one collision.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth multipleCollisionFrames

Access	Read only
Description	This attribute counts the successfully transmitted frames that experienced more than one collision.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth deferredTransmissions

Access	Read only
Description	This attribute counts the frames that experienced a transmission delay because the medium was busy.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth lateCollisions

Access	Read only
Description	This attribute counts the number of times a collision was detected later than 512 bit-times into the transmission of a packet.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth excessiveCollisions

Access	Read only
Description	This attribute counts the frames that failed to get transmitted due to excessive collisions.
Mib	Ethernet

Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth macTransmitErrors

Access	Read only
Description	This attribute counts the number of times that a transmission failed due to internal MAC transmit errors.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth carrierSenseErrors

Access	Read only
Description	This attribute counts the number of times that the carrier sense condition was lost or never asserted when attempting to transmit a frame.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth macReceiveErrors

Access	Read only
Description	This attribute counts the number of times a receive failed due to internal MAC receive errors.
Mib	Ethernet
Values	Long Integer
Default	No default

COMPONENT Lp Eth TrafficManager (Tm)

Scope	Device

Description	*Lp/x Ethernet/y Tm* This component contains the emission priority queue (*GrmEmissionPriority*), and service category (*GrmServiceCategory*) subcomponents. It provides traffic management capabilities for absolute (strict) queueing and fair-weighted queueing. This component is required for the 4pGE FP.
Mib	Ethernet
Opt. Subcomp.	"COMPONENT Lp Eth Tm EmissionPriority (Ep)" "COMPONENT Lp Eth Tm ServiceCategory (Sc)"
Common Verbs	Help List Display

COMPONENT Lp Eth Tm EmissionPriority (Ep)

Instance	Decimal (0..7)
Groups	"GROUP Lp Eth Tm Ep Operational (Oper)" "GROUP Lp Eth Tm Ep ProvQueue (ProvQ)"
Scope	Application
Description	*Lp/x Ethernet/y Tm Ep/n* This component defines the characteristics of the corresponding emission priority queue for the associated physical links. This component have instances of *Ep/0* and *Ep/1* which are absolute priority queues having precedence over queues under *Ep2* to *Ep7* components. Component *Ep/0* has the highest priority. All traffic in *Ep/0* is transmitted on the link first, then traffic from component *Ep/1* is transmitted. When all traffic at *Ep/0* and *Ep/1* have been sent, other *Ep* component queues get the opportunity to transmit with the residual bandwidth. This component has instances from *Ep/2* to *Ep/7* that operate under the weighted fair queue strategy, with each queue using a

	bandwidth attribute for weight to allocate service opportunities left over by *Ep/0* and *Ep/1*.
Mib	Ethernet
Common Verbs	Help List Display

GROUP Lp Eth Tm Ep Operational (Oper)

Properties	Operational
Description	This group contains operational attributes of the *Ep* component.
Mib	Ethernet

ATTRIBUTE Lp Eth Tm Ep percentMinimumBandwidthGuarantee (pMinBw)

Access	Read only
Description	This attribute indicates the weight as a percentage of the link residual bandwidth available to this queue.
Mib	Ethernet
Values	Decimal (0.00..100.00) abs
Units	%
Default	No default

ATTRIBUTE Lp Eth Tm Ep minimumBandwidthGuaranteeOp (minBwOp)

Access	Read only
Description	This attribute indicates the minimum bandwidth guaranteed for this queue.
Mib	Ethernet
Values	Decimal (0.00..100.00) abs
Default	No default

ATTRIBUTE Lp Eth Tm Ep congestionState (cs)

Access	Read only
Description	This attribute indicates the congestion control discard priority (CCDP) of traffic destined for each of the 8 queues (*Ep/0* to *Ep/7*). There are 4 discard priorities (***ccdp0*** to ***ccdp3*** corresponding to values 0 to 3, respectively) with ***ccdp0*** traffic being the most sensitive to loss. For example, when the count of cell blocks currently in the queue is greater than the ***ccdp0*** discard threshold, the hardware device discards the arriving ***ccdp0*** traffic.
Mib	Ethernet
Values	ccdp0 ccdp1 ccdp2 ccdp3
Default	No default

ATTRIBUTE Lp Eth Tm Ep txQueueSizeOp (qsOp)

Access	Read only
Description	This attribute indicates the queue size associated with the queue for buffering traffic.
Mib	Ethernet
Values	Decimal (0..7168000)
Units	bytes
Default	No default

ATTRIBUTE Lp Eth Tm Ep txQueueUsage (qu)

Access	Read only
Description	This attribute indicates the current usage of the queue as a percentage of the total queue bandwidth.
Mib	Ethernet
Values	Decimal (0.00..100.00)

Units	%
Default	No default

ATTRIBUTE Lp Eth Tm Ep txQueueMin (qmin)

Access	Read only
Description	This attribute indicates the lowest count of bytes allocated to traffic in the queue.
Mib	Ethernet
Values	Decimal (0..7168000)
Units	bytes
Default	No default

ATTRIBUTE Lp Eth Tm Ep txQueueMax (qmax)

Access	Read only
Description	This attribute indicates the largest count of bytes allocated to traffic in the queue.
Mib	Ethernet
Values	Decimal (0..7168000)
Units	bytes
Default	No default

GROUP Lp Eth Tm Ep ProvQueue (ProvQ)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ep* component.
Mib	Ethernet

ATTRIBUTE Lp Eth Tm Ep minimumBandwidthGuarantee (minBw)

Access	Read and write
Description	This attribute specifies the weight available to this queue. It

determines the relative amount of residual bandwidth left by components *Ep/0* and *Ep/1* that is allocated to this queue.

The amount of bandwidth allocated is the weight of this queue divided by the sum of the weights of components *Ep/2* through *Ep/7* multiplied against the residual bandwidth. For example, if the weight of this queue divided by the sum of the weights from *Ep/2* through *Ep/7* is 2%, and 80% of the link bandwidth is left after *Ep/0* and *Ep/1* traffic is sent, then the amount of bandwidth available to this *Ep* queue is 2% of 80% (or 1.6%) of the link bandwidth.

The default weight values are 50, 25, 10, 7, 5, 3 assigned to components *Ep/2*, *Ep/3*, *Ep/4*, *Ep/5*, *Ep/6*, and *Ep/7*, respectively.

Mib	Ethernet
Values	Decimal (0.00..100.00) autoConfig
Default	autoConfig

ATTRIBUTE Lp Eth Tm Ep redMode (red)

Access	Read and write
Description	This attribute specifies whether random early packet discard is set to a value of either ***disable*** or ***enable*** for the queue. It serves as an early warning of congestion with the occasional packet being discarded when the queue begins to be congested, but it is not a congestion control mechanism in itself. No frame is randomly discarded if this attribute is set to ***disable***. If it is set to ***enable***, only the frames whose red bit is set are targeted to be randomly discarded. In PCR5.1, the upstream device sets the red bit of every frame so that random eary discard is controlled by the setting of this attribute. The default is ***disable***.
Mib	Ethernet
Values	disable enable
Default	disable

ATTRIBUTE Lp Eth Tm Ep txQueueSize (qs)

Access	Read and write
Description	This attribute specifies the maximum size of the link associated with the queue for buffering traffic. For the 4pGE card, each of the port's 8 *Ep/x* queues have a maximum queue size for its *txQueueSize* attribute. The maximum queue sizes are 500K, 500K, 500K, 500K, 7M, 4.2M, 3M, and 2.2M for each *Ep/0, Ep/1, Ep/2, Ep/3, Ep/4, Ep/5, Ep/6* and *Ep/7* components, respectively. The default values are 100K, 300K, 300K, 300K, 7M, 4.2M, 3M, and 2.2M for each of *Ep/0, Ep/1, Ep/2, Ep/3, Ep/4, Ep/5, Ep/6* and *Ep/7* components, respectively. The autoConfig sets the *txQueueSize* to the default value corresponding to the component instance.
Mib	Ethernet
Values	Decimal (0..7168000) autoConfig
Units	bytes
Default	autoConfig

COMPONENT Lp Eth Tm ServiceCategory (Sc)

Instance	Decimal (0..7)
Groups	"GROUP Lp Eth Tm Sc Operational (Oper)"
Scope	Application
Description	*Lp/x Ethernet/y Tm Sc* This component displays the default characteristics of the service category for queue scheduling.
Mib	Ethernet
Common Verbs	Help List Display

GROUP Lp Eth Tm Sc Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Sc* component.
Mib	Ethernet

ATTRIBUTE Lp Eth Tm Sc scToEpMappingOp (epOp)

Access	Read only
Description	This attribute indicates the emission queue which is used for this *Sc* component. The default values are ***ep0***, ***ep1***, ***ep2, ep3***, ***ep4***, ***ep5***, ***ep6*** and ***ep7*** assigned to *Sc/7*, *Sc/6*, *Sc/5*, *Sc/4*, *Sc/3*, *Sc/2*, *Sc/1*, and *Sc/0*, respectively.
Mib	Ethernet
Values	ep0 ep1 ep2 ep3 ep4 ep5 ep6 ep7
Default	No default

COMPONENT Lp Eth OpticalModule (Om)

Groups	"GROUP Lp Eth Om Provisioned (Prov)" "GROUP Lp Eth Om OsiState (State)" "GROUP Lp Eth Om Operational (Oper)"
Scope	Device
Description	*Lp/n Ethernet/n OpticalModule* This component represents the optical module device of the port.

The optical module is used to identify the type of connection for a port.

Mib: Ethernet

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Lp Eth Om Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioning data for the *OpticalModule* component.

Mib: Ethernet

ATTRIBUTE Lp Eth Om type

Access: Read and write

Description: This attribute specifies the expected optical module type. The values for the *type* and *insertedType* attributes must match; otherwise, an alarm is raised and the *OpticalModule* component is disabled.

none: This value indicates that no optical module type is specified.

LX: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 1310nm, Media = Single-Mode.

SX: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 850nm, Media = Multi-Mode.

OC3SmLr: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength =1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC3SmIr: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

OC3MmSr: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Multi-Mode, Reach = 2Km (Short Reach).

OC12SmLr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC12SmIr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

OC48SmLr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmLr2: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1550 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmIr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

Mib

Ethernet

Values

none
LX
SX
OC3SmLr
OC3SmIr
OC3MmSr
OC12SmLr
OC12SmIr
OC48SmLr

	OC48SmLr2 OC48SmIr
Default	none

GROUP Lp Eth Om OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ethernet

ATTRIBUTE Lp Eth Om adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ethernet
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE Lp Eth Om operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ethernet
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Eth Om usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ethernet

Values	idle active (activ) busy
Default	idle

GROUP Lp Eth Om Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *OpticalModule* component.
Mib	Ethernet

ATTRIBUTE Lp Eth Om insertedType

Access	Read only
Description	This attribute indicates the inserted optical module type. ***none***: This value indicates that there is no optical module inserted in the card. ***LX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 1310nm, Media = Single-Mode. ***SX***: This value indicates that the optical module is a gigabit ethernet type with the following specifications: Wavelength = 850nm, Media = Multi-Mode. ***OC3SmLr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength =1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach). ***OC3SmIr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach). ***OC3MmSr***: This value indicates that the optical module is an OC3 type with the following specifications: Wavelength = 1310 nm, Media = Multi-Mode, Reach = 2Km (Short Reach).

OC12SmLr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC12SmIr: This value indicates that the optical module is an OC12 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

OC48SmLr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmLr2: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1550 nm, Media = Single-Mode, Reach = 80Km (Long Reach).

OC48SmIr: This value indicates that the optical module is an OC48 type with the following specifications: Wavelength = 1310 nm, Media = Single-Mode, Reach = 15Km (Intermediate Reach).

Mib: Ethernet

Values:
none
LX
SX
OC3SmLr
OC3SmIr
OC3MmSr
OC12SmLr
OC12SmIr
OC48SmLr
OC48SmLr2
OC48SmIr

Default: none

ATTRIBUTE Lp Eth Om serialNumber

Access: Read only

Description: This attribute indicates the serial number of the inserted optical module.

Mib	Ethernet
Values	String (0..64, Extended ASCII)
Default	""

ATTRIBUTE Lp Eth Om failureCause

Access	Read only
Description	This attribute indicates the cause for the optical module's failure. The possible values are: ***typeMismatch***: This error indicates a mismatch between the *type* and *insertedType* attributes. ***internalError***: This error indicates an internal diagnostic failure of the optical module. ***unsupportedOm:*** This error indicates that the inserted optical module is not supported on this card. ***absentOm***: This error indicates that no optical module are currently present on this port. ***noFailure***: There is no failure.
Mib	Ethernet
Values	typeMismatch internalError unsupportedOm absentOm noFailure
Default	noFailure

COMPONENT Lp Eth Test (Test)

Groups	"GROUP Lp Eth Test OsiState (State)" "GROUP Lp Eth Test Setup (Setup)" "GROUP Lp Eth Test Results (Results)"
Scope	Application

Description

The *Test* component is configured to control a hardware facility test on a physical (*V35*, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.

Mib Ethernet

Common Verbs

Help
List
Display

VERB START Lp Eth Test

Impact Service

Description

This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Lp Eth Test

Impact Service

Description

This command stops a test running on the hardware component.

GROUP Lp Eth Test OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Ethernet

ATTRIBUTE Lp Eth Test adminState (osiAdmin)

Access Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ethernet
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Eth Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ethernet

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Eth Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ethernet
Values	idle active (activ) busy
Default	idle

GROUP Lp Eth Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	Ethernet

ATTRIBUTE Lp Eth Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib	Ethernet
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Lp Eth Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.
Mib	Ethernet
Values	card manual

localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default card

ATTRIBUTE Lp Eth Test frmSize (size)

Access Read and write

Description

This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib Ethernet

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Lp Eth Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib	Ethernet
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Lp Eth Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	Ethernet
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Lp Eth Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	Ethernet
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Lp Eth Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	Ethernet
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Lp Eth Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	Ethernet
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Lp Eth Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.

Mib	Ethernet

ATTRIBUTE Lp Eth Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of

loopCodeSyncFailed, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib: Ethernet

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Lp Eth Test bitsTx

Access: Read only

Description:

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: Ethernet

Values: Long Integer

Default: No default

ATTRIBUTE Lp Eth Test bytesTx

Access: Read only

Description:

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib: Ethernet

Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Ethernet
Values	Long Integer

Default	No default

ATTRIBUTE Lp Eth Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	Ethernet
Values	Long Integer
Default	No default

ATTRIBUTE Lp Eth Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported

For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib: Ethernet

Values: String (5, ASCII)

Default: No default

ATTRIBUTE Lp Eth Test elapsedTime

Access: Read only

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib: Ethernet

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 0.00

ATTRIBUTE Lp Eth Test timeRemaining

Access: Read only

Description

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib	Ethernet
Values	Decimal (0.00..30240.00)
Units	minutes
Default	0.00

COMPONENT Lp LinkAggregation (Lag)

Instance	Decimal (0..7)
Groups	"GROUP Lp Lag Provisioned (Prov)" "GROUP Lp Lag Operational (Oper)" "GROUP Lp Lag Statistics (Stats)" "GROUP Lp Lag CustomerIdentifierData (CidData)" "GROUP Lp Lag OsiState (State)"
Scope	Device
Description	*LinkAggregation/n* This component is used to define a link aggregation group (LAG). LAG provides the ability to aggregate Ethernet ports for greater bandwidth and resiliency. As needed, Ethernet ports with the same port speed are added to the LAG group in increments. To use LAG on a 4pGigE function processor, add a *LinkAggregation/n* component. The instance number of a LAG group is unique across the shelf.
Mib	Lag
Opt. Subcomp.	"COMPONENT Lp Lag Link (Lk)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Lp Lag Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Lag* component.
Mib	Lag

ATTRIBUTE Lp Lag collectorMaxDelay (delay)

Access	Read and write
Description	This attribute specifies the timeout period, in milliseconds, for the near-end system to assume that the destination system has received or discarded all frames transmitted prior to starting the timer. This timer is used by the Marker protocol. After expiry of the timer, the near-end system will restart frame transmission on another link in the LAG.
Mib	Lag
Values	Decimal (0..656)
Units	msec
Default	10

ATTRIBUTE Lp Lag lacpMode (mode)

Access	Read and write
Description	This attribute specifies the timeout period for the near-end system to receive LACP frames.
Mib	Lag
Values	passive active
Default	active

ATTRIBUTE Lp Lag minActiveLinks (minimumLinks)

Access	Read and write

Description	This attribute specifies the minimum number of links that must be active for the LAG to remain operational. For the 4pGigE function processor, this attribute can have a value between 1 and 4. This attribute should be set to the default value, when interoperating with third-party equipment. In addition, changing this attribute can impact the operation of the LAG.
Mib	Lag
Values	Decimal (1..31)
Default	1

ATTRIBUTE Lp Lag partnerAdminSystemId (partnerAdminId)

Access	Read and write
Description	This attribute specifies the administrative value for the far-end LAG MAC address and Key. This attribute is used when the near-end and far-end systems operate in LACP passive mode.
Mib	Lag
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Lag partnerAdminKey (partnerKey)

Access	Read and write
Description	This attribute specifies the administrative value for the far-end LAG MAC address and Key. This attribute is used when the near-end and far-end systems operate in LACP passive mode. This attribute must be set if *lacpMode* is set to ***active***.
Mib	Lag
Values	Decimal (0..65536)
Default	No default

ATTRIBUTE Lp Lag partnerAdminSystemPriority (partnerPriority)

Access	Read and write

Description	This attribute specifies the administrative value for the far-end LAG priority. This attribute is used when the near-end and far-end systems operate in LACP *passive* mode. This attribute must be set if *lacpMode* is set to ***active***.
Mib	Lag
Values	Decimal (1..65536)
Default	1

ATTRIBUTE Lp Lag applicationFramerName (framer)

Access	Read and write
Description	This attribute defines the link to the *Framer* component using the *Lag* component. An example is *La/15 Framer*.
Mib	Lag
Values	Link (Service, interfaceName)
Default	No default

GROUP Lp Lag Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Lag* component.
Mib	Lag

ATTRIBUTE Lp Lag failureCause (cause)

Access	Read only
Description	This attribute indicates the cause of the current local end failure experienced by the LAG. The failure may have occurred during a start-up procedure or during normal operation. Possible values are: ***noFailure***: no local end failure. ***noGoodLinks***: no good links were available during LAG start-up or normal operation. ***badLagIdInStartup***: during start-up, different LAG identifiers (LAGIDs) were received on the links.

	badLidInStartup: during start-up, duplicate LAG link identifiers (LIDs) were received on the links. ***remoteFailure***: all the links at the far end are down. ***minActiveLinksThreshold***: the number of links active in the LAG group is less than the value set in *minActiveLinks*.
Mib	Lag
Values	noFailure noGoodLinks badLagIdInStartup badLidInStartup remoteFailure minActiveLinksThreshold
Default	No default

ATTRIBUTE Lp Lag actorSystemId (actorId)

Access	Read only
Description	This attribute indicates the MAC address used by the near-end LAG.
Mib	Lag
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Lp Lag partnerOperSystemId (partnerOperId)

Access	Read only
Description	This attribute indicates the operational value for the far-end LAG MAC address.
Mib	Lag
Values	String (6, Dashed Hex)
Default	No default

GROUP Lp Lag Statistics (Stats)

Properties	Operational

Description	This group contains the statistics data for the *Lag* component.
Mib	Lag

ATTRIBUTE Lp Lag runningTime (running)

Access	Read only
Description	This attribute indicates the length of time (in seconds) for which the *Lag* component has been in the unlocked state or has been used for operational testing.
Mib	Lag
Values	Long Integer
Units	seconds
Default	No default

ATTRIBUTE Lp Lag unavailSecs (unavail)

Access	Read only
Description	This attribute indicates the number of one second intervals during which the *Lag* component has been unlocked and out of service.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag failures (fail)

Access	Read only
Description	This attribute counts the complete failures, that the *Lag* component has experienced since being added. It must be noted that a service degradation, such as 1 of the 3 links in a LAG group being down, is not counted as a failure. If an *Lag* component is in a failure loop and does not come up, then this count will only increase by 1.
Mib	Lag
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Lp Lag rxFrameOctets (rxOctets)

Access	Read only
Description	This attribute counts the valid user frames, in octets, received on the LAG.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag txFrameOctets (txOctets)

Access	Read only
Description	This attribute counts the valid user frames, in octets, transmitted on the LAG.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag rxFramePackets (rxPackets)

Access	Read only
Description	This attribute counts the valid packets received on the LAG.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag txFramePackets (txPackets)

Access	Read only
Description	This attribute indicates the total number of valid packets transmitted on the LAG.
Mib	Lag

Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag rxFrameDiscards (rxDiscards)

Access	Read only
Description	This attribute counts the discarded user frames after they were received on the LAG.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag txFrameDiscards (txDiscards)

Access	Read only
Description	This attribute counts the discarded user frames during transmission on the LAG.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag rxFrameErrors (rxErrors)

Access	Read only
Description	This attribute counts the invalid user frames received on the LAG.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag txFrameErrors (txErrors)

Access	Read only
Description	This attribute counts the invalid user frames prior to their transmission on the LAG.

Mib	Lag
Values	Long Integer
Default	No default

GROUP Lp Lag CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Lag

ATTRIBUTE Lp Lag customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Lag
Values	Decimal (0; 1..8191)
Default	0

GROUP Lp Lag OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Lag

ATTRIBUTE Lp Lag adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Lag
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE Lp Lag operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Lag
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Lag usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Lag

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Lp Lag availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Lag
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Lp Lag proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Lag
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Lp Lag controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.

Mib	Lag
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Lag alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Lag
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Lp Lag standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Lag
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)

Default	notSet

ATTRIBUTE Lp Lag unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Lag
Values	false true
Default	false

COMPONENT Lp Lag Link (Lk)

Instance	Decimal (0..31)
Groups	"GROUP Lp Lag Lk Provisioned (Prov)" "GROUP Lp Lag Lk Operational (Oper)" "GROUP Lp Lag Lk Statistics (Stats)" "GROUP Lp Lag Lk OsiState (State)"
Scope	Device
Description	*Lag/n Link/n* This component is used to define an Ethernet link belonging to a

LAG group. To use LAG on a 4pGigE function processor, add a *Lag/n Link/n* component instance.

Mib	Lag
Common Verbs	Help List Display Add DELete

GROUP Lp Lag Lk Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Link* subcomponent.
Mib	Lag

ATTRIBUTE Lp Lag Lk interfaceName

Access	Read and write
Criticality	Component
Description	This attribute associates the *Link* subcomponent with a specific physical interface on a function processor, for example *Lp/5 Ethernet/3*. LAG groups and independent links can coexist on a card running LAG. A link in a LAG group cannot operate as an independent link. An independent link in operation must be detached from its *applicationFramerName*, before it can be added into a LAG group.
Mib	Lag
Values	Link (Hardware, applicationFramerName)
Default	No default

ATTRIBUTE Lp Lag Lk partnerAdminPortNumber (adminPortNumber)

Access	Read only

Description	This attribute indicates the administrative value for the port number at the far-end system for this LAG link. This attribute is used when the near-end and far-end systems operate in LACP passive mode. This attribute must be set if *lacpMode* for LAG is set to ***active***.
Mib	Lag
Values	Decimal (0..31)
Default	No default

ATTRIBUTE Lp Lag Lk partnerAdminPortPriority (portPriority)

Access	Read only
Description	This attribute indicates the administrative value for the port number at the far-end system for this LAG link. This attribute is used when the near-end and far-end systems operate in LACP passive mode. This attribute must be set if *lacpMode* for LAG is set to ***active***.
Mib	Lag
Values	Decimal (0..31)
Default	No default

GROUP Lp Lag Lk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Link* subcomponent.
Mib	Lag

ATTRIBUTE Lp Lag Lk partnerOperPortNumber (operPortNumber)

Access	Read only
Description	This attribute indicates the operational value for the port number at the far-end system for this LAG link. This attribute is used when the near-end and far-end systems operate in LACP passive mode. This attribute must be set if *lacpMode* for LAG is set to ***active***.

Mib	Lag
Values	Decimal (0..31)
Default	No default

ATTRIBUTE Lp Lag Lk failureCause (cause)

Access	Read only
Description	This attribute indicates the failure cause on this link. Possible values are: ***noFailure***: there is no failure on this link. ***interfaceDown***: the physical port used by the link is down. ***protocolError***: the link is down because bad values are being received in LAG Control Protocol (LACP) cells. ***remoteFailure***: the far end link may not be synchronized, or is not collecting or distributing frames. ***misconnected***: the link is down because the LAG group has declared that this link is not properly connected. ***notInSync***: the link is down because it may not be synchronized, collecting or distributing frames.
Mib	Lag
Values	noFailure interfaceDown lacpError markerError lagLocked notInSync notCollecting notDistributing badActor badPort stateChange badPartner lacpTimeout lacpModeChange unknownError
Default	No default

GROUP Lp Lag Lk Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the *Link* subcomponent.
Mib	Lag

ATTRIBUTE Lp Lag Lk runningTime (running)

Access	Read only
Description	This attribute counts the length of time (in seconds) for which the *Link* component has been running.
Mib	Lag
Values	Long Integer
Units	seconds
Default	No default

ATTRIBUTE Lp Lag Lk unavailSecs (uas)

Access	Read only
Description	This attribute counts the one second intervals during which the near end has been in an unusable state.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk failures (fail)

Access	Read only
Description	This attribute counts the failures during link addition or normal operation, that the link has experienced.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk rxLacp (rxLacp)

Access	Read only
Description	This attribute counts LACP frames received from the remote end system.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk txLacp (txLacp)

Access	Read only
Description	This attribute counts the LACP frames transmitted from the near end system.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk rxInvalidLacp (invalidLacp)

Access	Read only
Description	This attribute counts the invalid LACP frames received from the remote end system.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk rxMarker (rxMarker)

Access	Read only
Description	This attribute counts the Marker frames received from the remote end system.
Mib	Lag

Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk txMarker (txMarker)

Access	Read only
Description	This attribute counts the Marker frames transmitted from the near end system.
Mib	Lag
Values	Long Integer
Default	No default

ATTRIBUTE Lp Lag Lk rxInvalidMarker (invalidMarker)

Access	Read only
Description	This attribute counts the invalid Marker frames received from the remote end system.
Mib	Lag
Values	Long Integer
Default	No default

GROUP Lp Lag Lk OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Lag

ATTRIBUTE Lp Lag Lk adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Lag
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Lp Lag Lk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

	The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Lag
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Lp Lag Lk usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Lag
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Lp Lag Lk availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: Lag

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Lp Lag Lk proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does

initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Lag

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Lp Lag Lk controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	Lag
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Lp Lag Lk alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Lag

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Lp Lag Lk standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the

role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Lag

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Lp Lag Lk unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Lag

Values:
false
true

Default: false

Nortel Networks Multiservice Switch 7400/15000/20000

Component Lp

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component McsMgr

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component McsMgr

Publication: NN10600-060
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COMPONENT McsManager (McsMgr)

Groups	"GROUP McsMgr Provisioned (Prov)" "GROUP McsMgr OsiState (State)" "GROUP McsMgr Operational (Oper)"
Scope	Network
Description	*McsManager* There is at most one *McsManager* per module. The *McsManager* is required for FRF5 PVC and DPRS MCS functionality. The *McsManager* can run on one of a number of LPs. The LP of the active *McsManager* can be determined by looking at the *currentLp* operational attribute.
Mib	McsMgr
Opt. Subcomp.	"COMPONENT McsMgr Frf5EndPointGroup (Frf5EpG)"
Opt. Subcomp.	"COMPONENT McsMgr DprsMcsEndPointGroup (DprsMcsEpG)"
Common Verbs	Help List Display Add DELete

GROUP McsMgr Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes of the *McsManager*.
Mib	McsMgr

ATTRIBUTE McsMgr maxEps (mEps)

Access	Read and write
Description	This attribute specifies the number of end points that will be allowed on the module.This includes end points originating from and terminating on this module. When this limit is reached calls requiring the creation of an end point are rejected. The current number of EPs is indicated by the *currentEps* attribute.
Mib	McsMgr
Values	Decimal (1..16384)
Default	512

ATTRIBUTE McsMgr epAlarmThreshold (epThresh)

Access	Read and write
Description	This attribute specifies the maximum number of end points that can exist before an alarm is raised. When *currentEps* exceeds this value an alarm is generated. The alarm is cleared when *currentEps* falls below this value.
Mib	McsMgr
Values	Decimal (1..16384)
Default	128

ATTRIBUTE McsMgr overrideNsapAddress (oNsap)

Access	Read and write
Criticality	Component

Description	This attribute specifies the NSAP address to use as the address of the *McsManager*. If this attribute is left empty the default *McsManager* NSAP address is used. The *nsapAddress* attribute indicates the NSAP address used by the *McsManager*. The default NSAP address for the *McsManager* takes the form: <26 byte module prefix>0020480d100100
Mib	McsMgr
Values	String (0..44, AESANsapAddress)
Default	""

ATTRIBUTE McsMgr security (sec)

Access	Read and write
Description	This attribute enables or disables security for the *McsManager*. In the case of DPRS MCS Switched Paths, if security is set to ***on*** this node must have a *DprsMcsEpGroup* with the *nsapAddress* of the *Addr* subcomponent set to the same value as the node originating the call setup for the call to be accepted.If this attribute is set to ***off*** this node will accept DPRS MCS setup requests from any other node in the network. This attribute has no effect on the setup of FRF5 switched paths since an originating and terminating EP are required to establish an FRF5 switched path.
Mib	McsMgr
Values	off on
Default	off

GROUP McsMgr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific

	information and the valid state combinations, refer to the appropriate NTP.
Mib	McsMgr

ATTRIBUTE McsMgr adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	McsMgr
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE McsMgr operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: McsMgr

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE McsMgr usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: McsMgr

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE McsMgr availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: McsMgr

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE McsMgr proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	McsMgr
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE McsMgr controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib McsMgr

Set of subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default No default

ATTRIBUTE McsMgr alarmStatus (osiAlarm)

Access Read only

Description If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently

being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib McsMgr

Set of underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default No default

ATTRIBUTE McsMgr standbyStatus (osiStby)

Access Read only

Description If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	McsMgr
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE McsMgr unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	McsMgr
Values	false true
Default	false

GROUP McsMgr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *McsManager* component.
Mib	McsMgr

ATTRIBUTE McsMgr currentLp (curLp)

Access	Read only
Description	This attribute indicates the current LP on which the *McsManager* resides. If this attribute is blank then no *McsManager* is available.
Mib	McsMgr
Values	The name of the component
Default	No default

ATTRIBUTE McsMgr currentEps (totalEps)

Access	Read only
Description	The indicates the number of EPs both originating and terminating on this module.
Mib	McsMgr
Values	Decimal (0..16384)
Default	No default

ATTRIBUTE McsMgr nsapAddress (nsap)

Access	Read only
Description	This attribute indicates the NSAP address of the *McsManager* on this node. The value of this attributed depends on how the *overrideNsapAddress* attribute is set. All DPRS MCS and FRF5

	switched paths that are to terminate on this node must specify this NSAP address as their destination.
Mib	McsMgr
Values	String (0..44, ASCII)
Default	No default

ATTRIBUTE McsMgr candidateLps (canLps)

Access	Read only
Description	This attribute indicates the set of LPs capable of running the *McsManager*. If this attribute is blank then there are no candidate LPs.
Mib	McsMgr
List of	The name of the component
Default	No default

COMPONENT McsMgr DprsMcsEndPointGroup (DprsMcsEpG)

Instance	Decimal (1..8191)
Groups	"GROUP McsMgr DprsMcsEpG Operational (Oper)"
Scope	Network
Description	*McsMgr DprsMcsEndPointGroup/n* The *DprsMcsEndPointGroup* component contains all of the provisioned End Points or all of the dynamic End Points that share a common destination NSAP address, thereby terminating on the same destination node. This means that there could be at most two *DprsMcsEndPointGroups* to the same destination, a provisioned *DprsMcsEpG* and a dynamic *DprsMcsEpG*. The associated group is indicated by the *associatedEpGroupName* attribute. *DprsMcsEpG* component instances in the 1-4096 range can be provisioned.

	DprsMcsEpG component instances in the 4097-8191 range are dynamic.
Mib	DprsMcsEp
Subcomponents	"COMPONENT McsMgr DprsMcsEpG Address (Addr)"
Subcomponents	"COMPONENT McsMgr DprsMcsEpG EndPoint (Ep)"
Common Verbs	Help List Display Add DELete

GROUP McsMgr DprsMcsEpG Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *DprsMcsEpG* component.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG remoteAddress (rAddr)

Access	Read only
Description	This attribute indicates the NSAP address of the *McsMgr* at the destination module to which all *EndPoints* of this group are connected.
Mib	DprsMcsEp
Values	String (0..44, ASCII)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG associatedEpGroupName (assocEpGrpName)

Access	Read only
Description	For a provisioned *DprsMcsEpG*, this attribute indicates the name of the *DprsMcsEpG* that contains the dynamic *Eps* to the same destination.

	For a dynamic *DprsMcsEpG*, this attribute indicates the name of the *DprsMcsEpG* that contains the provisioned Eps to the same destination. A null component name indicates that there is no *DprsMcsEpG* associated with this group.
Mib	DprsMcsEp
Values	The name of the component
Default	No default

COMPONENT McsMgr DprsMcsEpG Address (Addr)

Groups	"GROUP McsMgr DprsMcsEpG Addr Provisioned (Prov)"
Scope	Application
Description	*McsMgr DprsMcsEpG/n Address* This component contains the destination NSAP address used by all DPRS MCS End Points provisioned under a *DprsMcsEpG*.
Mib	DprsMcsEp
Common Verbs	Help List Display

GROUP McsMgr DprsMcsEpG Addr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Address* component.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Addr remoteAddress (rAddr)

Access	Read and write
Criticality	Process

Description	This attribute specifies the NSAP address of the *McsMgr* at the destination module. This address is used by the *EndPoints* components provisioned under this *DprsMcsEpG* component to establish a DPRS MCS Switched Path.
Mib	DprsMcsEp
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Addr commentText

Access	Read and write
Description	This attribute specifies additional textual information to be added by the network operator. Typical use of this attribute is to specify the destination module name.
Mib	DprsMcsEp
Values	String (0..60, ASCII)
Default	""

COMPONENT McsMgr DprsMcsEpG EndPoint (Ep)

Instance	Decimal (1..256)
Groups	"GROUP McsMgr DprsMcsEpG Ep OsiState (State)" "GROUP McsMgr DprsMcsEpG Ep Operational (Oper)" "GROUP McsMgr DprsMcsEpG Ep Statistics (Stats)"

"COLLECTED STATS McsManager DprsMcsEndPointGroup EndPoint"

Scope	Network
Description	*McsMgr DprsMcsEpG/n EndPoint/n* The *EndPoint* component represents the DPRS MCS Switched

	Path. It multiplexes multiple Frame Relay DLCIs and transports them over an underlying PORS or ATM connection.
Mib	DprsMcsEp
Subcomponents	"COMPONENT McsMgr DprsMcsEpG Ep EndPointDescriptor (EpD)"
Dyn. Subcomp.	"COMPONENT McsMgr DprsMcsEpG Ep AtmConnection (AtmCon)" "COMPONENT McsMgr DprsMcsEpG Ep LogicalConnection (LCo)" "COMPONENT McsMgr DprsMcsEpG Ep Connection (Con)"
Dyn. Subcomp.	"COMPONENT McsMgr DprsMcsEpG Ep CallAdmissionControl (Cac)"
Common Verbs	Help List Display Add DELete LOCK Unlock

VERB Ping McsMgr DprsMcsEpG Ep

Impact	Passive
Description	*Ping McsMgr DprsMcsEpG/n Ep/n* A *Ping* issued against the *Ep* causes a query packet to be sent to the remote *Ep*, allowing the user to verify that the underlying PORS or ATM transport connection is up. The ping query packet sent includes 10 octets of data and 4 octets of ping packet headers. A ping reply packet expected in response to a ping query also includes 10 octets of data and 4 octets of packet headers.

GROUP McsMgr DprsMcsEpG Ep OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	DprsMcsEp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE McsMgr DprsMcsEpG Ep operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	DprsMcsEp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE McsMgr DprsMcsEpG Ep usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	DprsMcsEp

Values	idle active (activ) busy
Default	idle

ATTRIBUTE McsMgr DprsMcsEpG Ep availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	DprsMcsEp
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	DprsMcsEp
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	DprsMcsEp
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	DprsMcsEp
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: DprsMcsEp

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE McsMgr DprsMcsEpG Ep unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: DprsMcsEp

Values	false true
Default	false

GROUP McsMgr DprsMcsEpG Ep Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *EndPoint* component.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep lastTransportConnectionClearCause (lastTrConClearCause)

Access	Read only
Description	This attribute indicates the most recent clear cause for the transport connection. This indicates the causes provided by the network. A value of zero indicates that the transport connection has never been cleared. A value of 1000 indicates that the network has not provided a clear cause for the transport connection clearing. Section 5.4.5.15 of the ATMF UNI 3.1 specification lists the clear causes provided by the network.
Mib	DprsMcsEp
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep type

Access	Read only
Description	This attribute indicates the type of the end point. If the value is ***originating***, this *Ep* is provisioned and is responsible for initiating the SPVC call to set up the PORS or ATM connection. If the value is ***terminating***, this *Ep* is created dynamically by the

	McsMgr at the destination node when it receives a call setup request.
Mib	DprsMcsEp
Values	originating (orig) terminating (term)
Default	originating

ATTRIBUTE McsMgr DprsMcsEpG Ep supportedTransferPriorities (supTps)

Access	Read only
Description	This attribute indicates the Frame Relay transfer priorities supported by the transport connection.
Mib	DprsMcsEp
Set of	Decimal (0..15)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep connectionTransferPriority (connTp)

Access	Read only
Description	This attribute indicates the transfer priority used to establish the transport connection.
Mib	DprsMcsEp
Values	Decimal (0..15)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep serviceCategory (sc)

Access	Read only
Description	This attribute indicates the ATM service category of the transport connection.
Mib	DprsMcsEp
Values	ubr cbr

	rtVbr nrtVbr
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep remoteComponentName (remoteName)

Access	Read only
Description	This attribute indicates the component name of the remote *Ep*, learned from the remote end. For example: *"EM/NODEY2D0 McsMgr DprsMcsEpG/1 Ep/1"*. The value is a null string if the transport connection is down.
Mib	DprsMcsEp
Values	String (0..46, ASCII)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep remoteRoutingId (remoteRid)

Access	Read only
Description	This attribute indicates the routing identifier (RID) associated with the node on which the remote *Ep* resides. The remote RID is learned from the remote *Ep*. The value is valid when the transport connection is up and zero otherwise.
Mib	DprsMcsEp
Values	Decimal (0..126)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep remoteModuleId (remoteMid)

Access	Read only
Description	This attribute indicates the module identifier (MID) associated with the node on which the remote *Ep* resides. The remote MID is learned from the remote *Ep*. The value is valid when the transport connection is up and zero otherwise.

Mib	DprsMcsEp
Values	Decimal (0..1909)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep lastTrConnDiagCode (lastTrConnDiagCode)

Access	Read only
Description	This attribute indicates the diagnostic code of the most recently cleared transport connection. This indicates the diagnostic code (associated with the *lastTransportConnectionClearCause*) provided by the network. A string containing only a 0 or 00 (zero) indicates that the network has not provided a diagnostic code for the most recently cleared transport connection. Section 5.4.5.15 of the ATMF UNI 3.1 specification lists the diagnostic codes that can be provided by the network.
Mib	DprsMcsEp
Values	String (0..10, Hex)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep forwardBandwith (fBw)

Access	Read only
Description	This attribute indicates the bandwidth at which the transport connection agrees to transfer information in the forward (from the originating to the dynamic End Point) direction.
Mib	DprsMcsEp
Values	Decimal (0..155000000)
Units	bit/s
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep reverseBandwidth (rBw)

Access	Read only

Description	This attribute indicates the bandwidth at which the transport connection agrees to transfer information in the reverse (from the dynamic to the to the originating End Point) direction.
Mib	DprsMcsEp
Values	Decimal (0..155000000)
Units	bit/s
Default	No default

GROUP McsMgr DprsMcsEpG Ep Statistics (Stats)

Properties	Operational
Description	This group contains statistics of traffic received on the DPRS MCS Switched Path.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep setupAttempts

Access	Read only
Description	This attribute counts the number of attempts made to set up the transport connection. The counter wraps around to zero when the maximum value is exceeded.
Mib	DprsMcsEp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr DprsMcsEpG Ep pktDiscErroredFromMcs

Access	Read only
Description	This attribute counts errored packets received on the DPRS MCS Switched Path; these packets are discarded. The counter wraps around to zero when the maximum value is exceeded.
Mib	DprsMcsEp
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep pktFromMcs

Access	Read only
Description	This attribute counts the packets received on the DPRS MCS Switched Path for each discard priority. This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***). Each entry (counter) wraps around to zero when the maximum value is exceeded.
Mib	DprsMcsEp
Vector of	Long Integer
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep octetsFromMcs

Access	Read only
Description	This attribute counts the octets received on the DPRS MCS Switched Path for each discard priority. This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***). Each entry (counter) wraps around to zero when the maximum value is exceeded.

Mib	DprsMcsEp
Vector of	Long Integer
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep pktDiscCongestedFromMcs

Access	Read only
Description	This attribute counts packets received on the DPRS MCS Switched Path for each discard priority that have been discarded at the transport card due to congestion at the access card. This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***). Each entry (counter) wraps around to zero when the maximum value is exceeded.
Mib	DprsMcsEp
Vector of	Decimal (0..4294967295)
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)
Default	No default

COLLECTED STATS McsManager DprsMcsEndPointGroup EndPoint

Description	The statistics record generated by the McsManager DprsMcsEndPointGroup EndPoint component.

ATTRIBUTE McsMgr DprsMcsEpG Ep remoteComponentName (remoteName)

Description — This attribute indicates the component name of the remote *Ep*, learned from the remote end.
For example: *"EM/NODEY2D0 McsMgr DprsMcsEpG/1 Ep/1"*.
The value will be a null string if the transport connection is down at the end of the statistics collection interval.

Values — String (0..46, ASCII)

ATTRIBUTE McsMgr DprsMcsEpG Ep bandwidthHWM

Description — This attribute indicates the high-water mark of the bandwidth at which the transport connection agrees to transfer data during the last statistics collection interval. The value for this attribute is equal to the provisioned bandwidth when the connection is up, and is 0 when the transport connection is down.
This attribute, when combined with *bandwidthLWM* can also be used to indicate a transport connection outage occurrence.

Values — Decimal (0..155000000)

Units — bit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep bandwidthLWM

Description — This attribute indicates the low-water mark of the bandwidth at which the transport connection agrees to transfer data during the last statistics collection interval. The value for this attribute is equal to the provisioned bandwidth when the connection is up, and is 0 when the transport connection is down.
This attribute, when combined with *bandwidthHWM* can also be used to indicate a transport connection outage occurrence.

Values — Decimal (0..155000000)

Units — bit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep serviceCategory (sc)

Description — This attribute indicates the ATM service category of the transport connection.

Values — ubr
cbr
rtVbr
nrtVbr

ATTRIBUTE McsMgr DprsMcsEpG Ep pktFromMcs

Description	This attribute indicates the number of packets received on the DPRS MCS Switched Path End Point for each discard priority in the last statistics collection interval. This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0(***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***).
Vector of	Long Integer
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)

ATTRIBUTE McsMgr DprsMcsEpG Ep octetsFromMcs

Description	This attribute indicates the octets received on the DPRS MCS Switched Path End Point for each discard priority in the last statistics collection interval. This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***).
Vector of	Long Integer
Index	discardPriority0 (dp0) discardPriority1 (dp1) discardPriority2 (dp2) discardPriority3 (dp3)

ATTRIBUTE McsMgr DprsMcsEpG Ep pktDiscCongestedFromMcs

Description	This attribute indicates the number of packets received on the DPRS MCS Switched Path End Point for each discard priority that have been discarded at the transport card in the last statistics collection interval due to congestion at the access card. This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard

priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***).

Vector of — Decimal (0..4294967295)

Index — discardPriority0 (dp0)
discardPriority1 (dp1)
discardPriority2 (dp2)
discardPriority3 (dp3)

ATTRIBUTE McsMgr DprsMcsEpG Ep pktDiscErroredFromMcs

Description — This attribute the number of errored packets received on the DPRS MCS Switched Path End Point that have been discarded in the last statistics collection interval.

Values — Decimal (0..4294967295)

COMPONENT McsMgr DprsMcsEpG Ep EndPointDescriptor (EpD)

Groups — "GROUP McsMgr DprsMcsEpG Ep EpD Provisioned (Prov)"

Scope — Network

Description — *McsMgr DprsMcsEpG/n Ep/n EndPointDescriptor*
This component establishes the underlying PORS or ATM connection. There can only be one DPRS MCS Switched Path for a given Frame Relay transfer priority between a pair of nodes. Therefore, the *supportedTransferPriorities* on this *EndPoint* must be mutually exclusive with the *supportedTransferPriorities* of all other *EndPoints* within this *DprsMcsEndPointGroup*.

Mib — DprsMcsEp

Common Verbs — Help
List
Display

GROUP McsMgr DprsMcsEpG Ep EpD Provisioned (Prov)

Properties — Provisioned

Description — This group contains the parameters used to establish the transport connection for this *Ep*.

Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep EpD connectionTransferPriority (connTp)

Access	Read and write
Description	This attribute specifies the transfer priority used to establish the transport connection. It references the *ModuleData Frs AtmNet Tpm* to determine the ATM service category to be used by the transport connection. This attribute is used by the *Ep* solely for the purpose of determining the service category that should be used to establish the transport connection.
Mib	DprsMcsEp
Values	Decimal (0..15)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep EpD transportConnectionPreference (transConPref)

Access	Read and write
Description	This attribute specifies the preference of routing system to be used to set up the transport connection. If a value of ***atmOnly*** is specified, attempts to set up the transport connection will be made using only the ATM routing system's network facilities. If a value of ***porsOnly*** is specified, attempts to set up the transport connection will be made using only PORS network facilities.
Mib	DprsMcsEp
Values	atmOnly porsOnly
Default	porsOnly

ATTRIBUTE McsMgr DprsMcsEpG Ep EpD profile (prof)

Access	Read and write
Criticality	Component

Description	This attribute specifies the PORS profile to be used for the transport connection when it is set up using PORS. This attribute is ignored if the *transportConnectionPreference* is ***atmOnly***.
Mib	DprsMcsEp
Values	Link (Service, users)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep EpD porsManualPath (mpath)

Access	Read and write
Criticality	Component
Description	This attribute specifies the PORS manual path to be used for the transport connection when it is set up using PORS. The manual path that this attribute is linked to specifies the sequence of Trunks that will be used when PORS chooses and instantiates the route. This attribute is ignored if the *transportConnectionPreference* is ***atmOnly***.
Mib	DprsMcsEp
Values	Link (Service, users)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep EpD supportedTransferPriorities (supTps)

Access	Read and write
Description	This attribute specifies the Frame Relay transfer priorities that are supported through the transport connection. It is used to determine which *EndPoint* within a *DprsMcsEndPointGroup* is to multiplex a particular Frame Relay DLCI. A particular transfer priority can be specified on at most one *EndPoint* within a *DprsMcsEndPointGroup*.
Mib	DprsMcsEp
Set of	Decimal (0..15)
Default	(0)

ATTRIBUTE McsMgr DprsMcsEpG Ep EpD forwardBandwidth (fBw)

Access	Read and write
Description	This attribute specifies the bandwidth this End Point will request when setting up a transfer connection which the transport in the forward (from the originating to the terminating End Point) direction. A conservative value would be the sum of the committed information rates (CIRs) of all individual Frame Relay DLCIs multiplexed on the transport connection. For ATM connections, the value is converted to an equivalent Peak Cell Rate (PCR01) for all cells with Cell Loss Priority (CLP), CLP = 0 and CLP = 1. Note that the conversion to an equivalent cell rate for ATM connections may result in some wasted bandwidth depending on the average frame size to cell ratio.
Mib	DprsMcsEp
Values	Decimal (56000..155000000)
Units	bit/s
Default	512000

ATTRIBUTE McsMgr DprsMcsEpG Ep EpD reverseBandwidth (rBw)

Access	Read and write
Description	This attribute specifies the bandwidth this End Point will request when setting up a transfer connection which the transport in the reverse (from the terminating to the originating End Point) direction. A conservative value would be the sum of the committed information rates (CIRs) of all individual Frame Relay DLCIs multiplexed on the transport connection. For ATM connections, the value is converted to an equivalent Peak Cell Rate (PCR01) for all cells with Cell Loss Priority (CLP), CLP = 0 and CLP = 1. Note that the conversion to an equivalent cell rate for ATM connections may result in some wasted bandwidth depending on

	the average frame size to cell ratio.
Mib	DprsMcsEp
Values	Decimal (56000..155000000) sameAsForward
Units	bit/s
Default	sameAsForward

COMPONENT McsMgr DprsMcsEpG Ep AtmConnection (AtmCon)

Groups	"GROUP McsMgr DprsMcsEpG Ep AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	DprsMcsEp
Common Verbs	Help List Display

GROUP McsMgr DprsMcsEpG Ep AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	DprsMcsEp

Values	The name of the component
Default	No default

COMPONENT McsMgr DprsMcsEpG Ep LogicalConnection (LCo)

Groups	"GROUP McsMgr DprsMcsEpG Ep LCo PathData" "GROUP McsMgr DprsMcsEpG Ep LCo Statistics (Stats)"
Scope	Application
Description	...*Lc* This component contains all of the operation attributes for a Path Oriented Logical Connection.
Mib	DprsMcsEp
Common Verbs	Help List Display

VERB RERoute McsMgr DprsMcsEpG Ep LCo

Impact	Service
Description	RERoute ..Lc This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *RERoute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified. This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively. When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path. If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP McsMgr DprsMcsEpG Ep LCo PathData

Properties	Operational
Description	This group contains all operational attributes for the path oriented LCo.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo state

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs

while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.

Mib: DprsMcsEp

Values:
pathDown
selectingRoute
connecting
pathUp
pathDownRetrying

Default: No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo overrideRemoteName (orn)

Access: Read: All
Write: All

Description: If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.

Mib: DprsMcsEp

Values: String (0..40, ASCII)

Default: ""

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo end

Access: Read only

Description: This attribute identifies whether this is the calling or called end of the path.

Mib: DprsMcsEp

Values	calling called
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo costMetric (cost)

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	DprsMcsEp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.
Mib	DprsMcsEp
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to this LCo. The value reported is rounded to the nearest

	millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	DprsMcsEp
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	DprsMcsEp
Values	Decimal (0..4)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo holdingPriority (hpri)

Access	Read only
Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and

	four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	DprsMcsEp
Values	Decimal (0..4)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	DprsMcsEp
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value
Mib	DprsMcsEp
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo requiredTrafficType (rttyp)

Access	Read only

Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType***,** will be candidates for this connection.
Mib	DprsMcsEp
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo permittedTrunkTypes (pttyp)

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.

Mib	DprsMcsEp
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	DprsMcsEp
Values	Decimal (0..7)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks

	whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	DprsMcsEp
Values	Decimal (0..7)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo emissionPriority (epri)

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority. EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	DprsMcsEp
Values	Decimal (0..2)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority.* One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).
Mib	DprsMcsEp
Values	Decimal (1..3)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo pathType (pType)

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	DprsMcsEp
Values	normal manual forced
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path

	reconnects and stops counting when it reaches its maximum value.
Mib	DprsMcsEp
Values	Decimal (0..255)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	DprsMcsEp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This reason is also issued when there is no physical connectivity between two end nodes.
Mib	DprsMcsEp
Values	none destinationNameTooLong destinationNotSpecified

unknownDestinationName
incorrectDestination
incorrectDestinationEndPoint
unknownSource
unknownDestination
sameNode
routeCostTooMuch
routesDelayTooLong
attributesNotMet
anError
attributeProfileProblem
manualPathIndexProblem

Default none

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo lastTearDownReason

Access Read only

Description This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons:
none - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up.
normalShutDown - This path has gone down due to normal call termination.
insufficientTxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction.
insufficientRxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction.
trunkFailure- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute.
trunkCardFailure- A trunk FP card has failed along the path.
accessCardFailure- The FP on which the peer access service was running has failed.

operatorForced- The path has terminated due to the operator locking a trunk along the path.
lostLcnClash- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.

trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib DprsMcsEp

Values
none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound
farEndNotFound
wrongModuleReached
farEndBusy
callLoopedBack
unknownReason
farEndNotReady
remoteNameMismatch
serviceTypeMismatch
reconnectFromFarEnd
bumped
accessCardFailure
optimized
overrideRemoteName
trunkOrFarEndDidNotSupportMode

Default none

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo pathFailureAction

Access Read only

Description	This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends
Mib	DprsMcsEp
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo bumpPreference (bpref)

Access	Read only
Description	This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is lower (numerically higher) than the connection's *setupPriority*. A connection may also always bump in order to obtain the best route.
Mib	DprsMcsEp
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	DprsMcsEp
Values	disabled enabled
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	DprsMcsEp
Values	Time (DHMS)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.
Mib	DprsMcsEp
List of	String (0..40, ASCII)
List Size	21

Default	No default

GROUP McsMgr DprsMcsEpG Ep LCo Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	DprsMcsEp
Values	Long Integer
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	DprsMcsEp
Values	Long Integer
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo pktsFromNetwork

Access	Read only
Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	DprsMcsEp
Values	Long Integer
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	DprsMcsEp
Values	Long Integer
Default	No default

COMPONENT McsMgr DprsMcsEpG Ep CallAdmissionControl (Cac)

Groups	"GROUP McsMgr DprsMcsEpG Ep Cac Operational (Oper)"

"COLLECTED STATS McsManager DprsMcsEndPointGroup EndPoint CallAdmissionControl"

Scope	Network
Description	*McsMgr DprsMcsEpG/n Ep/n CallAdmissionControl* This component indicates the operational values of the attributes specified by the *McsMgr DprsMcsEpG/n Ep/n Cac Cacd* component. Provisioning this component under an *EndPoint* forces each Frame Relay service connection using the switched path created by the given *EndPoint* to perform a service level CAC as the VC for the Frame Relay service connection is being established. Each Frame Relay service connection is either accepted or rejected based on the CAC attributes specified through the *Cacd* subcomponent. This component is optional on the originating End Point and Call Admission Control is not performed when this component is not provisioned on the originating End Point. This component is dynamic on the dynamic End Point and is

present when there is a provisioned instance of the *CallAdmissionControl* component on the originating End Point.

Mib DprsMcsEp

Subcomponents "COMPONENT McsMgr DprsMcsEpG Ep Cac CallAdmissionControlDescriptor (Cacd)"

Common Verbs
Help
List
Display
Add
DELete

GROUP McsMgr DprsMcsEpG Ep Cac Operational (Oper)

Properties Operational

Description This group contains the operational attributes of the *CallAdmissionControl* component.

Mib DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac effectiveBandwidth (eBw)

Access Read only

Description This attribute indicates the total bandwidth which is used as the bandwidth pool for tracking call admission requests.
On the originating End Point the *effectiveBandwidth* is equal to the *forwardBandwidth* attribute specified in this End Point's *Epd* component multiplied by the *forwardOversubFactor* specified in the *Cacd* subcomponent.
On the terminating End Point the *effectiveBandwidth* is equal to the *reverseBandwidth* attribute specified in this End Point's *Epd* component multiplied by this End Point's *reverseOversubFactor* specified in the *Cacd* subcomponent.
This value indicates CIR bandwidth when the *cacType* attribute of the *Cacd* subcomponent is specified as ***cir***.
This value indicates EIR bandwidth when the *cacType* attribute of the *Cacd* subcomponent is specified as ***eir***.

Mib DprsMcsEp

Values	Long Integer
Units	bit/s
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac effectiveBandwidthAvailable (eBwAvail)

Access	Read only
Description	This attribute indicates the effective bandwidth that is still available in the bandwidth pool for use by Frame Relay service connections requesting bandwidth. This value is the amount of *effectiveBandwith* less the amount reserved by Frame Relay service connections that have been admitted. To display the specific Frame Relay service connections which have successfully completed call admission and to see the amount of bandwidth they have reserved, the network operator can use the following command: *Display McsMgr DprsMcsEpG/n Ep/n Connection/** This value indicates CIR bandwidth when the *cacType* attribute of the *Cac* subcomponent is specified as ***cir***. This value indicates EIR bandwidth when the *cacType* attribute of the *Cac* subcomponent is specified as ***eir***.
Mib	DprsMcsEp
Values	Long Integer
Units	bit/s
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac numberOfCallsActive (numOfCalls)

Access	Read only
Description	This attribute indicates the total number of Frame Relay service connections which have successfully completed call admission and are currently in service. To display the specific Frame Relay service connections which have successfully completed call admission and to see the amount of bandwidth they have reserved the network operator can use the following command: *Display McsMgr DprsMcsEpG/n Ep/n Connection/**

Mib	DprsMcsEp
Values	Decimal (0..512)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac cacPolicy (cacp)

Access	Read only
Description	This attribute indicates the CAC policy in use at this end of the switched path. For the originating End Point this is the value specified by the *forwardCacPolicy* attribute of the *Cacd* subcomponent. For the terminating End Point this is the value specified by the *reverseCacPolicy* attribute of the *Cacd* subcomponent of the originating End Point at the other end of the switched path. To determine the component name of the originating End Point, the following command can be used: *Display McsMgr DprsMcsEpG/n Ep/n remoteComponentName*
Mib	DprsMcsEp
Values	enforced (enf) monitored (mon)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac cacType (cact)

Access	Read only
Description	This attribute indicates the CAC type in use at this end of the switched path. For the originating End Point this is the value specified by the *forwardCacType* attribute of the *Cacd* subcomponent. For the terminating End Point this is the value specified by the *reverseCacType* attribute of the *Cacd* subcomponent of the originating End Point at the other end of the switched path.To determine the component name of the originating End Point, the following command can be used: *Display McsMgr DprsMcsEpG/n Ep/n remoteComponentName*
Mib	DprsMcsEp

Values	eir cir
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac maximumSvcBandwidth (maxSvcBw)

Access	Read only
Description	This attribute indicates the largest amount of SVC bandwidth which can be reserved for a single Frame Relay service connection using the switched path. For the originating End Point this is the value specified by the *forwardMaximumSvcBw* attribute of the *Cacd* subcomponent. For the terminating End Point this is the value specified by the *reverseMaximumSvcBw* attribute of the *Cacd* subcomponent by the originating End Point at the other end of the switched path. This value indicates CIR bandwidth when the *cacType* attribute of the *Cac* subcomponent is ***cir***. This value indicates EIR bandwidth when the *cacType* attribute of the *Cac* subcomponent is ***eir***. The value of ***noMaximum*** for this attribute indicates that this attribute has either been provisioned not to have a maximum value or that the *cacPolicy* is ***monitored.***
Mib	DprsMcsEp
Values	Decimal (0..155000000) noMaximum
Units	bit/s
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac maximumPvcBandwidth (maxPvcBw)

Access	Read only
Description	This attribute indicates the largest amount of PVC bandwidth allowed to be reserved for a single Frame Relay service connection using the switched path. For the originating End Point this is the value specified by the *forwardMaximumSvcBw* attribute of the *Cacd* subcomponent. For the terminating End Point this is the value specified by the *reverseMaximumSvcBw* attribute of the *Cacd* subcomponent by

	the originating End Point at the other end of the switched path. This value indicates CIR bandwidth when the *cacType* attribute of the *Cac* subcomponent is ***cir***. This value indicates EIR bandwidth when the *cacType* attribute of the *Cac* subcomponent is ***eir.*** The value of ***noMaximum*** for this attribute indicates that this attribute has either been provisioned not to have a maximum value or that the *cacPolicy* is ***monitored.***
Mib	DprsMcsEp
Values	Decimal (0..155000000) noMaximum
Units	bit/s
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac numberOfCacFailures (numCacFailed)

Access	Read only
Description	This attribute counts the total number of Frame Relay service connections which have failed to successfully complete call admission on the given switched path. This number does not increase if the *cacPolicy* attribute of the *McsMgr DprsMcsEpG/n EndPoint/m Cac* component is set to ***monitored***. This value wraps back to 0 when its maximum value is exceeded.
Mib	DprsMcsEp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac lastFailedFrDlci (lastFldFrDlci)

Access	Read only
Description	This attribute indicates the component name of the last Frame Relay service connection which did not successfully complete call admission. This value is empty if no call admission failure has occurred.
Mib	DprsMcsEp

Values	The name of the component
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac lastFailedReason (failedReason)

Access	Read only
Description	This attribute indicates the reason for the failure of the last Frame Relay service connection's attempt at call admission. ***none*** indicates that there has been no call admission failure. ***noBandwidthAvailable*** indicates that there was insufficient ***effectiveBandwidthAvailable*** to admit the Frame Relay service connection. ***maxSvcExceeded*** indicates that an SVC was attempting to reserve more bandwidth than that specified by *maximumSvcBandwidth* attribute. ***maxPvcExceeded*** indicates that an SVC was attempting to reserve more bandwidth than that specified by *maximumPvcBandwidth* attribute. ***endPointCacUnavailable*** indicates that the End Point was not in a state in which it could process the call admission request. The Frame Relay service should attempt call admission again after a suitable backoff period. ***maxConsExceeded*** indicates that 512 call admission connections have already been accepted on this End Point.
Mib	DprsMcsEp
Values	none noBandwidthAvailable (noBw) maxSvcExceeded (maxSvc) maxPvcExceeded (maxPvc) epCacUnavailable (epCacUnavail) maxConsExceeded (maxCons)
Default	none

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac overSubscriptionFactor (osFactor)

Access	Read only
Description	This attribute indicates the oversubscription factor that is applied

	to the forward and reverse bandwidth attributes of the parent component to determine the *effectiveBandwidth*. On the originating side of the switched path this value is equal to the *forwardOsFactor* specified in the *Cacd* subcomponent. On the terminating side of the switched path this value is equal to the *reverseOsFactor* attribute of the *Cacd* subcomponent at the originating end of the switched path.
Mib	DprsMcsEp
Values	Decimal (0.00..100.00)
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac alarmThreshold

Access	Read only
Description	This attribute indicates the alarm threshold values that are used at this end of the switched path. On the originating end of the switch path these values are those specified by the *forwardAlarmThresholds* attribute of the *Cacd* subcomponent. On the terminating end of the switched path these values are those specified by the *reverseAlarmThresholds* attribute of the *Cacd* subcomponent on the originating end of the switched path
Mib	DprsMcsEp
Vector of	Decimal (0..100)
Index	minor major critical
Default	No default
Default	COLLECTED STATS McsManager DprsMcsEndPointGroup EndPoint CallAdmissionControl
Description	The statistics record generated by the McsManager DprsMcsEndPointGroup EndPoint CallAdmissionControl component.

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac effectiveBandwidth

Description	This value indicates the level of effective bandwidth available during the last statistics collection interval, as indicated by the *effectiveBandwidth* attribute of the *McsMgr DprsMcsEpG/m EndPoint/n Cac* component in thousands of bits per second.
Values	Decimal (0..4294967295)
Units	kbit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac effectiveBandwidthAvailableLWM

Description	This value indicates the lowest level of effective bandwidth available as indicated by the *effectiveBandwidthAvailable* attribute of the *McsMgr DprsMcsEp/m EndPoint/n Cac* component, in thousands of bits per second during the last statistics collection interval.
Values	Decimal (0..4294967295)
Units	kbit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac numberOfCallsActiveHWM

Description	This value indicates the highest level of the *numberOfCallsActive* attribute of the *McsMgr DprsMcsEp/m EndPoint/n Cac* component, during the last statistics collection interval.
Values	Decimal (0..512)

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac numberOfCacFailures

Description	This value indicates the number of call admission failures in the last statistics collection interval. This value equals the increase in the *numberOfCacFailures* attribute of the *McsMgr DprsMcsEp/m EndPoint/n Cac* component during the last statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT McsMgr DprsMcsEpG Ep Cac CallAdmissionControlDescriptor (Cacd)

Groups	"GROUP McsMgr DprsMcsEpG Ep Cac Cacd Forward (Frwd)" "GROUP McsMgr DprsMcsEpG Ep Cac Cacd Reverse (Rvrs)"
Scope	Network

Description	The component allows the network operator to specify the CAC attributes used for call admission for the originating and terminating End Points of this switched path. This component is provisioned at the originating End Point only.
Mib	DprsMcsEp
Common Verbs	Help List Display

GROUP McsMgr DprsMcsEpG Ep Cac Cacd Forward (Frwd)

Properties	Provisioned
Description	This group contains the parameters that are used to specify the call admission control characteristics for the given End Point in the forward direction.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd forwardCacPolicy (fCacP)

Access	Read and write
Description	This attribute specifies the call admission policy which is to be used in the forward direction. When this attribute is set to ***enforced***, a Frame Relay service connection fails call admission if there is insufficient *effectiveBandwidth* available in the forward direction, the *forwardMaximumSvcBw* is exceeded, or the *forwardMaximumPvcBw* is exceeded. Call admission failure causes the Frame Relay service connection to clear. When this attribute is set to ***monitored*** no Frame Relay service call will ever fail call admission.
Mib	DprsMcsEp
Values	enforced (enf) monitored (mon)
Default	monitored

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd forwardCacType (fCacT)

Access	Read and write
Description	This attributes specifies whether the *effectiveBandwidth* in the forward direction is treated as ***eir*** or ***cir*** bandwidth.
Mib	DprsMcsEp
Values	eir cir
Default	cir

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd forwardOversubFactor (fOsFactor)

Access	Read and write
Description	This attribute specifies the level of oversubscription to be used when calculating the parent component's *effectiveBandwidth* in the forward direction. The *forwardBandwidth* attribute of the *McsMgr DprsMcsEpG/m Ep/n Epd* subcomponent is multiplied by this attribute to determine the *effectiveBandwidth* attribute.
Mib	DprsMcsEp
Values	Decimal (0.00..100.00)
Default	1.00

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd forwardMaximumSvcBw (fMaxSvcBw)

Access	Read and write
Description	This attribute specifies the maximum bandwidth that can be reserved by a Frame Relay SVC. The *forwardCacType* parameter specifies if this value is to be treated as an EIR or CIR value. If this attribute is set to ***noMaximum*** or the *forwardCacPolicy* is set to ***monitored*** this check is not made.
Mib	DprsMcsEp
Values	Decimal (0..155000000) noMaximum
Units	bit/s
Default	noMaximum

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd forwardMaximumPvcBw (fMaxPvc)

Access	Read and write
Description	This attribute specifies the maximum bandwidth that can be reserved by a Frame Relay PVC. The *forwardCacType* parameter specifies if this value is to be treated as an EIR or CIR value. If this attribute is set to ***noMaximum*** or the *forwardCacPolicy* is set to ***monitored*** this check is not made.
Mib	DprsMcsEp
Values	Decimal (0..155000000) noMaximum
Units	bit/s
Default	noMaximum

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd forwardAlarmThresholds (fAlarmThresh)

Access	Read and write
Description	This attribute specifies the bandwidth reservation level at which the minor, major, and critical alarms are raised at in the forward direction. By default all alarms are set to 0 disables alarm generation. Each of these threshold alarms is cleared when the reservation level falls 10% below the respective threshold level.
Mib	DprsMcsEp
Vector of	Decimal (0..100)
Index	minor major critical
Default	(0, 0, 0)

GROUP McsMgr DprsMcsEpG Ep Cac Cacd Reverse (Rvrs)

Properties	Provisioned
Description	This group contains the parameters that are used to specify the call admission control characteristics for the given End Point in the reverse direction.

Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd reverseCacPolicy (rCacPolicy)

Access	Read and write
Description	This attribute is used to specify the CAC policy to be used in the reverse direction. When this attribute is set to ***enforced*** a Frame Relay service connection will fail call admission if there insufficient *effectiveBandwidth* in the reverse direction, the *reverseMaximumSvcBw* is exceeded or the *reverseMaximumPvcBw* is exceeded. Call admission failure causes the Frame Relay service connection clear. When this attribute is set to ***monitored*** no Frame Relay service call is ever rejected. When this attribute is set to ***sameAsForward*** the *reverseCacPolicy* is the same as that specified by the *forwardCacPolicy* attribute.
Mib	DprsMcsEp
Values	enforced (enf) monitored (mon) sameAsForward (sameAsForw)
Default	sameAsForward

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd reverseCacType (rCacType)

Access	Read and write
Description	This attributes specifies if the *effectiveBandwidth* in the reverse direction is treated as ***eir*** or ***cir*** bandwidth. When this attribute is set to ***sameAsForward*** the *reverseCacType* is the same as that specified by the *forwardCacType* attribute.
Mib	DprsMcsEp
Values	eir cir sameAsForward (sameAsFor)
Default	sameAsForward

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd reverseCacOverSub (rOsFactor)

Access	Read and write
Description	This attribute specifies the level of over subscription to be used when calculating the parent component's *effectiveBandwidth* in the reverse direction. The *reverseBandwidth* attribute of the *McsMgr DprsMcsEpG/m Ep/n Epd* subcomponent is multiplied by this attribute to determine the *effectiveBandwidth* in the reverse direction. When this attribute is set to ***sameAsForward*** the *reverseCacOverSub* is the same as that specified by the *forwardCacOverSub* attribute.
Mib	DprsMcsEp
Values	Decimal (0.00..100.00) sameAsForward
Default	sameAsForward

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd reverseMaxSvcBw (rMaxSvcBw)

Access	Read and write
Description	This attribute specifies the maximum bandwidth that can be reserved by a Frame Relay SVC. The *reverseCacType* parameter specifies if this value is to be treated as an EIR or CIR value. If the *reverseCacPolicy* is set to ***monitored*** or the value of this attribute is set to ***noMaximum*** this check is not made. When this attribute is set to ***sameAsForward*** the *reverseMaxSvcBw* is the same as that specified by the *forwardMaxSvcBw* attribute.
Mib	DprsMcsEp
Values	Decimal (0..155000000) noMaximum sameAsForward
Default	sameAsForward

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd reverseMaxPvcBw (rMaxPvcBw)

Access	Read and write
Description	This attribute specifies the maximum bandwidth that can be reserved by a Frame Relay PVC. The *reverseCacType* parameter

specifies if this value is to be treated as an EIR or CIR value.
If the *reverseCacPolicy* is set to ***monitored*** or the value of this attribute is set to ***noMaximum*** this check is not made.
When this attribute is set to ***sameAsForward*** the *reverseMaxPvcBw* is the same as that specified by the *forwardMaxPvcBw* attribute.

Mib	DprsMcsEp
Values	Decimal (0..155000000) noMaximum sameAsForward
Default	sameAsForward

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac Cacd reverseAlarmThresholds (rAlarmThresh)

Access	Read and write
Description	This attribute specifies the reservation level at which the minor, major, and critical alarms are raised in the reverse direction. By default all alarms are set to 0 which is the off setting. Each of these threshold alarms are cleared when the reservation level falls 10% below each respective threshold level.
Mib	DprsMcsEp
Vector of	Decimal (0..100)
Index	minor major critical
Default	(0, 0, 0)

COMPONENT McsMgr DprsMcsEpG Ep Connection (Con)

Instance	Decimal (1..512)
Groups	"GROUP McsMgr DprsMcsEpG Ep Con Operational (Oper)"
Scope	Network
Description	*McsMgr DprsMcsEpG/n Ep/n Connection/n* This component represents a Frame Relay service connection

	which has successfully completed call admission on a given switched path.
Mib	DprsMcsEp
Common Verbs	Help List Display

GROUP McsMgr DprsMcsEpG Ep Con Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Connection* component.
Mib	DprsMcsEp

ATTRIBUTE McsMgr DprsMcsEpG Ep Con frameRelayDlci (frDlci)

Access	Read only
Description	This attribute indicates the DLCI of a Frame Relay service connection that has successfully completed call admission and has reserved bandwidth on this switched path.
Mib	DprsMcsEp
Values	The name of the component
Default	No default

ATTRIBUTE McsMgr DprsMcsEpG Ep Con reservedBandwidth (rBw)

Access	Read only
Description	This attribute indicates the amount of bandwidth reserved by the given Frame Relay service connection. To determine if this is EIR or CIR bandwidth see the *cacType* attribute for this *EndPoint*.
Mib	DprsMcsEp
Values	Decimal (0..155000000)
Units	bit/s

Default	No default

COMPONENT McsMgr Frf5EndPointGroup (Frf5EpG)

Instance	Decimal (1..8191)
Scope	Application
Description	*McsMgr Frf5EndPointGroup/n* The *Frf5EpG* component contains FRF.5 End Points that share a common destination NSAP address, and a list of address prefixes.
Mib	Frf5Ep
Subcomponents	"COMPONENT McsMgr Frf5EpG Address (Addr)"
Opt. Subcomp.	"COMPONENT McsMgr Frf5EpG EndPoint (Ep)"
Common Verbs	Help List Display Add DELete

COMPONENT McsMgr Frf5EpG Address (Addr)

Groups	"GROUP McsMgr Frf5EpG Addr Provisioned (Prov)"
Scope	Application
Description	*McsMgr Frf5EpG/n Address* This component contains the destination NSAP address used by all FRF.5 End Points provisioned under an *Frf5EpG*. The *Address* also provides the list of address prefixes directed to the end points under this group.
Mib	Frf5Ep
Common Verbs	Help List Display

GROUP McsMgr Frf5EpG Addr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Address* component.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Addr remoteAddress (rAddr)

Access	Read and write
Description	This attribute specifies the ATM End System Address (AESA) in the ISO NSAP format that is used by each *EndPoint* under this *Frf5EpG* to establish a VCC. For example, NSAP ATM address “45000006138292323F000000000020480D002900”.
Mib	Frf5Ep
Values	String (0..44, ASCII)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Addr commentText

Access	Read and write
Description	This optional attribute contains additional textual information to be added by the network operator.
Mib	Frf5Ep
Values	String (0..750, ASCII)
Default	""

ATTRIBUTE McsMgr Frf5EpG Addr addressPrefix (addrPre)

Access	Read and write
Description	This attribute specifies the list of prefixes directed to the *EndPoints* under this *Frf5EndPointGroup*. The individual end point is selected for each sub-connection on the basis of its supported Transfer priorities as defined by the *supportedTransferPriorities* attribute.

	For example, E.164 prefix “e.613722”, X.121 prefix “x.302”.
Mib	Frf5Ep
List of	String (3..17, ASCII)
Default	No default

COMPONENT McsMgr Frf5EpG EndPoint (Ep)

Instance	Decimal (0..15)
Groups	"GROUP McsMgr Frf5EpG Ep OsiState (State)" "GROUP McsMgr Frf5EpG Ep Operational (Oper)"
Scope	Application
Description	*McsMgr Frf5EpG/n EndPoint/n* The *EndPoint* component represents a single ATM VCC that can multiplex multiple Frame Relay DLCIs.
Mib	Frf5Ep
Subcomponents	"COMPONENT McsMgr Frf5EpG Ep EndPointDescriptor (Epd)"
Opt. Subcomp.	"COMPONENT McsMgr Frf5EpG Ep LocalManagementInterface (Lmi)"
Dyn. Subcomp.	"COMPONENT McsMgr Frf5EpG Ep DataLinkConnectionIdentifier (Dlci)" "COMPONENT McsMgr Frf5EpG Ep AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP McsMgr Frf5EpG Ep OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Frf5Ep
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE McsMgr Frf5EpG Ep operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Frf5Ep
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE McsMgr Frf5EpG Ep usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Frf5Ep

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE McsMgr Frf5EpG Ep availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Frf5Ep
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	Frf5Ep
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)

Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Frf5Ep
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep alarmStatus (osiAlarm)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	Frf5Ep
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Frf5Ep
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE McsMgr Frf5EpG Ep unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

	The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Frf5Ep
Values	false true
Default	false

GROUP McsMgr Frf5EpG Ep Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the FRF.5 ATM connection.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep lastVccClearCause

Access	Read only
Description	This attribute indicates the clear cause value of the last SPVC release message received on the FRF.5 end point VCC pipe.
Mib	Frf5Ep
Values	Decimal (0..255)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep connectionTransferPriority (conntp)

Access	Read only
Description	This attribute indicates the transfer priority used to establish the ATM connection and to multiplex the Frame Relay DLCIs.
Mib	Frf5Ep
Values	Decimal (0..15)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep serviceCategory (sc)

Access	Read only
Description	This attribute indicates the ATM service category that is used for this connection.
Mib	Frf5Ep
Values	ubr cbr rtVbr nrtVbr
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep peakCellRate01 (pcr01)

Access	Read only
Description	This attribute indicates the Peak Cell Rate (PCR) of the FRF.5 ATM VCC for all cells (with CLP=0 and CLP=1). The *pcr01* is derived from the End Point traffic parameters using the conversion policy of the *connectionTransferPriority.* The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep sustainedCellRate0 (scr0)

Access	Read only
Description	This attribute indicates the Sustained Cell Rate (SCR) of the FRF.5 ATM VCC for high priority cells (with CLP=0). The *scr0* is derived from the End Point traffic parameters using the conversion policy of the *connectionTransferPriority.* The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.

Mib	Frf5Ep
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep sustainedCellRate01 (scr01)

Access	Read only
Description	This attribute indicates the Sustained Cell Rate (SCR) of the FRF.5 ATM VCC for all cells (with CLP=0 and CLP=1). The *scr01* is derived from the End Point traffic parameters using the conversion policy of the *connectionTransferPriority.* The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Units	cell/s
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep maximumBurstSize0 (mbs0)

Access	Read only
Description	This attribute indicates the Maximum Burst Size (MBS) of the FRF.5 ATM VCC for high priority cells (with CLP=0). The *mbs0* is derived from the End Point traffic parameters using the conversion policy of the *connectionTransferPriority.* The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Units	cells

Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep maximumBurstSize01 (mbs01)

Access	Read only
Description	This attribute indicates the Maximum Burst Size (MBS) of the FRF.5 ATM VCC for all cells (with CLP=0 and CLP=1). The *mbs01* is derived from the End Point traffic parameters using the conversion policy of the *connectionTransferPriority*. The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Units	cells
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep avgFrameSize (afs)

Access	Read only
Description	This attribute indicates the average frame size that is used in the traffic parameter conversion policy calculations for this end point.
Mib	Frf5Ep
Values	Decimal (1..8187)
Units	bytes
Default	128

ATTRIBUTE McsMgr Frf5EpG Ep trafficParmConvPolicy (tpcp)

Access	Read only
Description	This attribute indicates the traffic parameter conversion policy used to specify the equivalent ATM bandwidth rate at this end point. Policy 3 characterizes the traffic in the following way:

- ATM traffic descriptor type 6 is selected
- PCR0+1 is based on the AR
- SCR0+1 is based on the CIR and EIR
- MBS0+1 is based on Bc, Be, CIR, EIR, and AR
- Takes into account that the instantaneous rate of the frame relay stream can burst above CIR and up to the AR.

Policy 4 characterizes the traffic in the following way:
- ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer.
- PCR0+1 is based on the AR
- SCR0 is based on the CIR
- MBS0 is based on Bc, CIR, and AR
- There is no direct characterization of EIR. The allowed EIR can be derived using the difference between the AR and CIR.

Policy 5 characterizes the traffic in the following way:
- ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer
- PCR0+1 is based on CIR and EIR
- SCR0 is based on the CIR
- MBS0 is based on the Bc, CIR, and AR
- The maximum PCR is no longer based on AR but based on the CIR and EIR.

Policy 6 characterizes the traffic in the following way:
- ATM traffic descriptor type 3 is selected
- PCR0+1 is based only on CIR.

Mib	Frf5Ep
Values	3 4 5 6
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep type

Access	Read only
Description	This attribute indicates the FRF.5 End Point type. If the value is ***master***, this End Point is responsible for initiating the call to set up the FRF.5 ATM VCC. If the value is ***slave***, this End Point receives call setup requests from the remote end.
Mib	Frf5Ep
Values	master slave
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep lastVccCauseDiag

Access	Read only
Description	This attribute indicates the diagnostic value of the last SPVC release message received on the FRF.5 end point VCC pipe.
Mib	Frf5Ep
Values	String (1..8, Hex)
Default	No default

COMPONENT McsMgr Frf5EpG Ep LocalManagementInterface (Lmi)

Groups	"GROUP McsMgr Frf5EpG Ep Lmi ProtocolParameters (Parms)" "GROUP McsMgr Frf5EpG Ep Lmi NniProtocolParameters (NniParms)" "GROUP McsMgr Frf5EpG Ep Lmi OsiState (State)" "GROUP McsMgr Frf5EpG Ep Lmi ProtocolStatusInfo (Psi)" "GROUP McsMgr Frf5EpG Ep Lmi Statistics (Stats)"
Scope	Application

Description *DsMgr Frf5EpG/n Ep/m LocalManagementInterface*
This component defines the parameters for implementing the Frame Relay Forum FRF.5 Local Management Interface protocol.

Mib Frf5Ep

Common Verbs
Help
List
Display
Add
DELete

GROUP McsMgr Frf5EpG Ep Lmi ProtocolParameters (Parms)

Properties Provisioned

Description
This group contains the provisionable attributes of the Local Management Interface component.

Mib Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Lmi procedures (proc)

Access Read and write

Description
This attribute selects the procedures to be used for the Local Management Interface. The following are the supported procedures:

none: no Local Management Interface procedures are running on the ATM VCC. This accommodates remote interworking functions which do not implement LMI procedures. In this case, the remaining attributes of this group will be ignored.

ccitt: Local Management Interface procedures from the CCITT specification are supported. *Dlci/0* is used for the LMI protocol, to comply with FRF.5.

ansi: Local Management Interface procedures from the ANSI specification are supported. *DLCI 0* is used for the LMI protocol.

Mib	Frf5Ep
Values	none ansi ccitt
Default	ccitt

ATTRIBUTE McsMgr Frf5EpG Ep Lmi asyncStatusReport (asr)

Access	Read and write
Description	This attribute selects the use of asynchronous PVC status report procedures as specified in the CCITT specification (ITU-T Q.933, Annex A), and the ANSI specification Annex D.
Mib	Frf5Ep
Values	off on
Default	on

ATTRIBUTE McsMgr Frf5EpG Ep Lmi errorEventThreshold (n392)

Access	Read and write
Description	For the network side procedure, an event is defined as follows: (1) receipt of a STATUS ENQUIRY message, or (2) expiration of timer T392. An error event is (1) nonreceipt of STATUS ENQUIRY in T392 seconds; (2) invalid format of an LMI message; (3) invalid receive sequence number. For the user side procedure, an event is defined as a polling cycle or a status enquiry and status report exchange. An error event is (1) non-receipt of a STATUS within the polling cycle, or (2) invalid format of an LMI message, or (3) invalid sequence number. This attribute specifies the number of error events which, if they occur within *eventCount* events, will cause a protocol error condition. The condition is cleared after *eventCount* sequential correct events occur.

It must be less than or equal to *eventCount* (n393).

Mib Frf5Ep

Values Decimal (1..10)

Default 3

ATTRIBUTE McsMgr Frf5EpG Ep Lmi eventCount (n393)

Access Read and write

Description

This attribute specifies the number of contiguous events within which no more than *eventErrorThreshold* error events are allowed.

It must be greater than or equal to *errorEventThreshold* (n392).

Mib Frf5Ep

Values Decimal (1..10)

Default 4

ATTRIBUTE McsMgr Frf5EpG Ep Lmi checkPointTimer (t392)

Access Read and write

Description

This attribute selects the time (in seconds) within which a STATUS ENQUIRY message is expected. It must be greater than *linkVerificationTimer* (t391).

Mib Frf5Ep

Values Decimal (5..255)

Units seconds

Default 200

ATTRIBUTE McsMgr Frf5EpG Ep Lmi side

Access Read and write

Description

This attribute selects the user side procedure (DTE), or the network side procedure (DCE), or both the user side and the network side procedures of the LMI.

This attribute can be set to ***user, network*** or ***both***.

Mib Frf5Ep

Values network
user
both

Default both

GROUP McsMgr Frf5EpG Ep Lmi NniProtocolParameters (NniParms)

Properties Provisioned

Description

This group contains the provisionable attributes of the FRF.5 LMI procedures which are unique to NNI.

Mib Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Lmi fullStatusPollingCycles (n391)

Access Read and write

Description This attribute specifies how frequently the FRF.5 LMI initiates a Status Enquiry for a full PVC status report. A polling cycle is a Status Enquiry and Status Report exchange.

Mib Frf5Ep

Values Decimal (1..255)

Default 1

ATTRIBUTE McsMgr Frf5EpG Ep Lmi linkVerificationTimer (t391)

Access Read and write

Description

This attribute specifies how frequently the FRF.5 LMI initiates a

	Status Enquiry for link integrity verification. It must be less than *checkPointTimer* (t392).
Mib	Frf5Ep
Values	Decimal (5..255)
Units	seconds
Default	180

GROUP McsMgr Frf5EpG Ep Lmi OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Lmi adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	Frf5Ep
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE McsMgr Frf5EpG Ep Lmi operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Frf5Ep
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE McsMgr Frf5EpG Ep Lmi usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Frf5Ep
Values	idle active (activ) busy
Default	idle

GROUP McsMgr Frf5EpG Ep Lmi ProtocolStatusInfo (Psi)

Properties	Operational
Description	This group provides the protocol status of the Local Management Interface.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Lmi protocolStatus

Access	Read only
Description	This attribute indicates whether the LMI is in an error condition or whether the protocol is behaving normally. This attribute will be set to ***errorCondition*** after enough LMI errors have been detected to warrant a change in condition. This occurs when *n392* of the last *n393* events are in error. The error condition is lifted when a sufficient number of consecutive events has occurred without error. This occurs when *n393* consecutive good events take place. The consequence of an error condition is that all DLCIs on this interface will become inactive in both directions.
Mib	Frf5Ep
Values	errorCondition normalCondition
Default	normalCondition

ATTRIBUTE McsMgr Frf5EpG Ep Lmi opProcedures (opProc)

Access	Read only
Criticality	Process

Description

This attribute indicates the procedures being used for the Local Management Interface. This attribute should be ignored if *protocolStatus* is not ***normalCondition***. The following procedures are supported:

none: Local Management Interface procedures are not running on this interface. This accommodates Frame Relay user equipment that has not implemented any LMI procedures.

ansi: Local Management Interface procedures from the ANSI specification are being used. DLCI 0 is used for the LMI protocol.

itu: Local Management Interface procedures from the ITU-T specification are being used. DLCI 0 is used for the LMI protocol.

Mib

Frf5Ep

Values

none
ansi
itu

Default

No default

GROUP McsMgr Frf5EpG Ep Lmi Statistics (Stats)

Properties

Operational

Description

This group contains the operational statistics for the FRF.5 NNI Local Management Interface.

Mib

Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Lmi keepAliveStatusToInterface (kasti)

Access

Read only

Description

This attribute counts the Local Management Interface keep alive status messages sent to the ATM VCC in response to a status enquiry for keep alive status. When the maximum count is reached it wraps to zero.

Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi fullStatusToInterface (fsti)

Access	Read only
Description	This attribute counts the Local Management Interface full status messages sent to the ATM VCC in response to a status enquiry for keep alive or full status. When the maximum count is reached it wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi keepAliveStatusEnqFromInterface (kafi)

Access	Read only
Description	This attribute counts the Local Management Interface valid keep alive status enquiry messages received from the ATM VCC. When the maximum count is reached it wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi fullStatusEnqFromInterface (fsfi)

Access	Read only
Description	This attribute counts the Local Management Interface valid full status enquiry messages received from the ATM VCC. When the maximum count is reached it wraps to zero.
Mib	Frf5Ep

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi networkSideEventHistory (nsh)

Access	Read only
Description	This attribute displays the Local Management Interface network side procedure event history in order of occurrence. An event is represented by a single symbol. A '+' symbol indicates a good event. An 'X' symbol indicates a protocol error event. The left most event is the most recent to occur. The provisioned *eventCount* dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status enquiry message. An error event is either a T392 timer expiry or receipt of a status enquiry with an incorrect sequence number.
Mib	Frf5Ep
Values	String (1..10, ASCII)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep Lmi userSideEventHistory (ush)

Access	Read only
Description	This attribute displays the Local Management Interface user side procedure event history in order of occurrence. An event is represented by a single symbol. A '+' symbol indicates a good event. An 'X' symbol indicates a protocol error event. The left most event is the most recent to occur. The provisioned *eventCount* dictates the maximum number of events displayed. A good event is triggered by receipt of a valid status message. An error event is either a T391 timer expiry or receipt of a status message with an incorrect sequence number.
Mib	Frf5Ep
Values	String (1..10, ASCII)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep Lmi protocolErrors (proto)

Access	Read only
Description	This attribute counts the number of Local Management Interface protocol errors. It is the sum of the sequence (*sequenceErrors* and *statusSequenceErrors*) and timeout (*pollingVerifTimeouts* and *noStatusReportCount*) errors. When the maximum count is reached it wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi unexpectedIes (uie)

Access	Read only
Description	This attribute counts the number of Local Management Interface frames received with an Information Element identifier that is unknown or unexpected. An unexpected Information Element is not a protocol error. When the maximum count is reached, this counter wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi sequenceErrors (seq)

Access	Read only
Description	This attribute counts the number of Local Management Interface Status Enquiry message sequence errors. A sequence error is receipt of a Status Enquiry message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)

Default 0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi statusSequenceErrors (stseq)

Access Read only

Description

This attribute counts the number of Local Management Interface Status message sequence errors. A sequence error is receipt of a Status message with a receive sequence number not equal to the last send sequence number. When the maximum count is reached the counter wraps to zero.

Mib Frf5Ep

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi unexpectedReports (ur)

Access Read only

Description

This attribute counts the number of Local Management Interface frames received with an unknown or unexpected report type. An unexpected report type is not a protocol error. When the maximum count is reached the counter wraps to zero.

Mib Frf5Ep

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi pollingVerifTimeouts (tmo)

Access Read only

Description

This attribute counts the *checkPointTimer* (T392) expiries occurring on the Local Management Interface. When the maximum count is reached the counter wraps to zero.

Mib Frf5Ep

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi noStatusReportCount (nsrc)

Access Read only

Description

This attribute counts the number of times when no status report or an invalid status report comes from the external network. This attribute is incremented:
i) after a status enquiry is sent out and the T391 timer expires without having a status report received.
ii) if an invalid status report is received.

When the maximum count is reached it wraps to zero.

Mib Frf5Ep

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi keepAliveEnqToIf (kaeti)

Access Read only

Description

This attribute counts the number of Local Management Interface keep alive enquiry status messages sent to the external user device for keep alive status. When the maximum count is reached it wraps to zero.

Mib Frf5Ep

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE McsMgr Frf5EpG Ep Lmi fullStatusEnqToIf (fseti)

Access Read only

Description

This attribute counts the number of Local Management Interface full status messages sent to the external user device in response to

	a status enquiry for keep alive or full status. When the maximum count is reached it wraps to zero.
Mib	Frf5Ep
Values	Decimal (0..4294967295)
Default	0

COMPONENT McsMgr Frf5EpG Ep EndPointDescriptor (Epd)

Groups	"GROUP McsMgr Frf5EpG Ep Epd Provisioned (Prov)" "GROUP McsMgr Frf5EpG Ep Epd CustomerIdentifierData (CidData)"
Scope	Application
Description	*McsMgr Frf5EpG/n Ep/n EndPointDescriptor* This component describes the ATM SPVC which supports the FRF.5 connection.
Mib	Frf5Ep
Common Verbs	Help List Display

GROUP McsMgr Frf5EpG Ep Epd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the FRF.5 End Point.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Epd remoteConnectionIdentifier (rci)

Access	Read and write
Description	This attribute specifies the remote connection identifier. It either represents the VPI.VCI logical channel number assignment of a remote ATM interface, or the *Endpoint.Frf5EndPointGroup* instances of a remote FRF.5 EndPoint.
Mib	Frf5Ep

Values	Integer Sequence (0..255; 0..16128)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep Epd connectionTransferPriority (conntp)

Access	Read and write
Description	This attribute specifies the transfer priority used to establish the ATM connection. The *EndPoint* references the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component to determine the ATM service category to be used by the connection. This attribute is also used to determine which *EndPoint* within an *Frf5EndPointGroup* is to multiplex a particular *FrAtm Dlci*.
Mib	Frf5Ep
Values	Decimal (0..15)
Default	No default

ATTRIBUTE McsMgr Frf5EpG Ep Epd committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (CIR), and represents the rate at which the network FRF.5 ATM VCC agrees to transfer information under normal conditions. A conservative CIR value would be the sum of the CIRs of all the individual *FrAtm Dlci*s multiplexed by the VCC. The *cir* is converted into ATM service parameters according to the conversion policy specified by the *connectionTransferPriority* attribute. The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..50000000)
Units	bit/s
Default	64000

ATTRIBUTE McsMgr Frf5EpG Ep Epd excessInformationRate (eir)

Access	Read and write
Description	This attribute specifies the excess information rate (EIR), and represents the rate at which the network FRF.5 ATM VCC attempts to transfer information. A conservative EIR value would be the sum of the EIRs of all the individual *FrAtm Dlci*s multiplexed by the VCC. The *eir* is converted into ATM service parameters according to the conversion policy specified by the *connectionTransferPriority* attribute. The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..50000000)
Units	bit/s
Default	0

ATTRIBUTE McsMgr Frf5EpG Ep Epd committedBurstSize (bc)

Access	Read and write
Description	This attribute specifies the committed burst size (Bc), and represents the amount of data that the network FRF.5 ATM VCC agrees to transfer under normal conditions. A conservative Bc value would be the sum of the Bcs of all the individual *FrAtm Dlci*s multiplexed by the VCC. The *bc* is converted into ATM service parameters according to the conversion policy specified by the *connectionTransferPriority* attribute. The conversion policy is defined under the *ModuleData FrameRelayService AtmNetworking TransferPriority/n* component.
Mib	Frf5Ep
Values	Decimal (0..50000000)
Units	bits
Default	16000

ATTRIBUTE McsMgr Frf5EpG Ep Epd type

Access	Read and write
Description	This attribute specifies the FRF.5 End Point type. If the value is provisioned as ***master***, this End Point is responsible for initiating the SPVC call to set up the FRF.5 ATM VCC. If the value is provisioned as ***slave***, this End Point receives call setup requests from a master remote end.
Mib	Frf5Ep
Values	master slave
Default	master

ATTRIBUTE McsMgr Frf5EpG Ep Epd accessRate (ar)

Access	Read and write
Description	This attribute represents the access rate of the FRF.5 EndPoint. A conservative value would be the sum of the access rates of all the *FrAtms'* that have DLCIs multiplexed by the VCC. The access rate is converted into ATM service parameters when conversion policies 3, 4 and 5 are used. For policy 6, this attribute is ignored.
Mib	Frf5Ep
Values	Decimal (0..50000000)
Units	bit/s
Default	1536000

ATTRIBUTE McsMgr Frf5EpG Ep Epd excessBurstSize (be)

Access	Read and write
Description	This attribute specifies the excess burst size (Be), and represents the amount of uncommitted data that the network FRF.5 ATM VCC agrees to transfer under normal conditions. A conservative Be value would be the sum of the Bes of all the individual *FrAtm Dlci*s multiplexed by the VCC. The *be* is converted into ATM service parameters according to the conversion policy specified by the *connectionTransferPriority* attribute. The conversion policy is defined under the *ModuleData*

	FrameRelayService AtmNetworking TransferPriority/n component.
Mib	Frf5Ep
Values	Decimal (0..50000000)
Units	bits
Default	0

GROUP McsMgr Frf5EpG Ep Epd CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Epd customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Frf5Ep

Values	Decimal (0; 1..8191)
Default	0

COMPONENT McsMgr Frf5EpG Ep DataLinkConnectionIdentifier (Dlci)

Instance	Decimal (16..1007; 1022)
Groups	"GROUP McsMgr Frf5EpG Ep Dlci Operational (Oper)"
Scope	Application
Description	*McsMgr Frf5EpGrp/n Ep/n DataLinkConnectionIdentifier/n* This component represents a logical connection multiplexed inside the FRF.5 ATM VCC.
Mib	Frf5Ep
Common Verbs	Help List Display

GROUP McsMgr Frf5EpG Ep Dlci Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the FRF.5 DLCI.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep Dlci aBitStatusToIf (abti)

Access	Read only
Description	This attribute indicates the most recent A-bit status sent to the ATM VCC. If the value is ***inactive***, the reason for the LMI failure is given by the *aBitReasonToNetwork*.
Mib	Frf5Ep
Values	inactive active
Default	inactive

ATTRIBUTE McsMgr Frf5EpG Ep Dlci aBitReasonToIf (abrti)

Access	Read only
Description	This attribute indicates the reason for the latest inactive A-bit status sent to the ATM VCC. The value is ***notApplicable*** when the *aBitStatusToNetwork* is ***active***. The value is ***remoteUserSignaled*** if the *FrAtm* originating the A-Bit status has detected that the virtual circuit is down at the remote network through the LMI protocol. The *FrAtm* must be running network site LMI protocol for this A-Bit status reason to be sent. The value is ***localLmiError*** if the LMI protocol is down at this *Ep*. The value is ***remoteLmiError*** if the LMI protocol is down at the *FrAtm* originating this A-Bit status reason. The value is ***localLinkDown*** if the physical interface is disabled at this *Ep*. The value is ***pvcDown*** if no A-Bit status has been sent to this *Ep* (i.e., no A-Bit status has been relayed from the *FrAtm*). The value is ***remoteLinkDown*** if the physical interface is disabled at the *FrAtm* originating this A-Bit status reason.
Mib	Frf5Ep
Values	notApplicable remoteUserSignaled localLmiError remoteLmiError localLinkDown remoteLinkDown pvcDown
Default	notApplicable

ATTRIBUTE McsMgr Frf5EpG Ep Dlci aBitStatusFromIf (abfi)

Access	Read only
Description	This attribute indicates the most recent A-bit status received from the ATM VCC. If the value is ***inactive***, the reason for the LMI failure is given by the *aBitReasonFromNetwork*.

Mib	Frf5Ep
Values	inactive active
Default	inactive

ATTRIBUTE McsMgr Frf5EpG Ep Dlci aBitReasonFromIf (abrfi)

Access	Read only
Description	This attributes indicates the reason for the latest inactive A-bit status received from the ATM VCC. The value is ***notApplicable*** when the *aBitStatusFromNetwork* is ***active***. The value is ***remoteUserSignaled*** if the remote FRF.5 End Point originating the A-Bit status has detected that the virtual circuit is down at the remote network through the LMI protocol. The remote FRF.5 End Point must be running network site LMI protocol for this A-Bit status reason to be sent. The value is ***localLmiError*** if the LMI protocol is down at this *Ep*. The value is ***localLinkDown*** if the physical interface is disabled at this *Ep*. The value is ***missingFromLmiReport*** if the remote FRF.5 End Point did not provide a reason along with the inactive A-Bit status.
Mib	Frf5Ep
Values	notApplicable remoteUserSignalled localLmiError localLinkDown missingFromLmiReport
Default	notApplicable

ATTRIBUTE McsMgr Frf5EpG Ep Dlci accessConnectionComponent (acc)

Access	Read only
Description	This attribute identifies the *FrAtm Dlci* to which this *Dlci* component is bound.

Mib	Frf5Ep
Values	String (0..26, ASCII)
Default	No default

COMPONENT McsMgr Frf5EpG Ep AtmConnection (AtmCon)

Groups	"GROUP McsMgr Frf5EpG Ep AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Frf5Ep
Common Verbs	Help List Display

GROUP McsMgr Frf5EpG Ep AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Frf5Ep

ATTRIBUTE McsMgr Frf5EpG Ep AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Frf5Ep
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component McsMgr

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component MmTx

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component MmTx

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COMPONENT MaintenanceMonitorTx (MmTx)

Instance	Decimal (1..15)
Groups	"GROUP MmTx CustomerIdentifierData (CidData)" "GROUP MmTx Provisioned (Prov)" "GROUP MmTx OsiState (State)" "GROUP MmTx Operational (Oper)"
Scope	Application
Description	*MaintenanceMonitorTx/n* A *MaintenanceMonitorTx* component identifies an instance of the MaintenanceMonitor AAL1 Circuit Emulation Service. The service that is used to transport the copy of the monitored traffic to a local or remote observer is basic structured AAL1 CES. This stream is mono directional from the monitor point to the observer. Any ATM traffic that is received from the observer (which may occur if the observer uses a standard AAL1 CES service) is discarded at the monitoring point. A separate instance of this component is required for each monitored channel. Instance numbers, which are used to uniquely identify *MaintenanceMonitorTx* component instances, are arbitrary.

	Only one instance of *MaintenanceMonitorTx* may be linked to a particular *LogicalProcessor*.
Mib	CircuitEmulationService
Opt. Subcomp.	"COMPONENT MmTx NailedUpAdaptationPoint (Nap)"
Common Verbs	Help List Display Add DELete

GROUP MmTx CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	CircuitEmulationService

ATTRIBUTE MmTx customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of

	any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	CircuitEmulationService
Values	Decimal (0; 1..8191)
Default	0

GROUP MmTx Provisioned (Prov)

Properties	Provisioned
Description	This group contains basic provisioning data for the Maintenance Monitor Transmitter (MmTx). A MmTx represents a mono-directional AAL1 Circuit Emulation Service. AAL1 CES attributes in this group are essential information to the operator about the AAL1 CES service that must be matched in the *Aal1Ces* component that receives the monitored stream. The check escape checks that only one instance of a *MaintenanceMonitorTx* is linked to any one *Lp*.
Mib	CircuitEmulationService

ATTRIBUTE MmTx linkToLogicalProcessor (lpName)

Access	Read and write
Criticality	Component
Description	This attribute specifies the instance of a hardware component to which an instance of this component is linked. Only *Lp* components may be linked.
Mib	CircuitEmulationService
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE MmTx monitoredDirection (direction)

Access	Read and write
Criticality	Process

Description	This attribute specifies the direction of the monitored traffic. When ***ingress*** value is specified, the traffic coming from the interface and going to the backplane is monitored and specified by *chanToMonitor.* When ***Egress*** value is specified, the traffic coming from the backplane and going to the interface is monitored and specified by *chanToMonitor.*
Mib	CircuitEmulationService
Values	ingress egress
Default	ingress

ATTRIBUTE MmTx serviceType (servType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the service type of the CES. The *serviceType* attribute in the receiving *Aal1Ces* component must have the same value as this attribute.
Mib	CircuitEmulationService
Values	basicStructured
Default	basicStructured

ATTRIBUTE MmTx partialFill (partFill)

Access	Read and write
Criticality	Component
Description	This attribute specifies the number of octets that are carried in an ATM cell by the AAL1 CES service. A full cell contains 47 octets.

	The *partialFill* attribute in the receiving *Aal1Ces* component must have the same value as this attribute.
Mib	CircuitEmulationService
Values	Decimal (47)
Units	octets
Default	47

GROUP MmTx OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	CircuitEmulationService

ATTRIBUTE MmTx adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To

enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: CircuitEmulationService

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE MmTx operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: CircuitEmulationService

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE MmTx usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	CircuitEmulationService
Values	idle active (activ) busy
Default	idle

ATTRIBUTE MmTx availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	CircuitEmulationService
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE MmTx proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: CircuitEmulationService

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE MmTx controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: CircuitEmulationService

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE MmTx alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

	The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	CircuitEmulationService
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE MmTx standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	CircuitEmulationService

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE MmTx unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	CircuitEmulationService
Values	false true
Default	false

GROUP MmTx Operational (Oper)

Properties	Operational
Description	This group contains status information about the AAL1 Circuit Emulation Service and the related ATM service. It also specifies the Channel to be monitored.
Mib	CircuitEmulationService

ATTRIBUTE MmTx connectionStatus (connStatus)

Access	Read only
Description	This attribute indicates if a service is non-operational because of a problem with the service interface side of the service (in which case, it is set to ***channelNotReady***) or because of a problem with the ATM side of the service (in which case, it is set to

atmNotConfigured or ***atmNotReady***).

When this attribute is set to ***channelNotReady***, it is an indication that the corresponding *Chan* component (as defined by the attribute *interfaceName*) or the *Chan* component's parent port component (*Lp/n Ds1/m* or *Lp/n E1/m*) is locked.

When this attribute is set to ***atmNotConfigured***, it is an indication that no sub-component has been provisioned, and thus no ATM connection has been configured for the service.

When this attribute is set to ***atmNotReady***, it is an indication that the ATM connection with which the service is associated (as defined by a sub-component) has been lost or that it is currently unable to carry CES data.

When this attribute is set to ***channelNotSpecified***, it is an indication that the *chanToMonitor* attribute is not set to a valid channel.

This attribute is set to ***connected*** when a service is operational (that is, the OSI attribute *operationalState* is ***enabled***.)

Mib: CircuitEmulationService

Values:
connected
channelNotReady
atmNotReady
atmNotConfigured
channelNotSpecified

Default: channelNotReady

ATTRIBUTE MmTx chanToMonitor (chan)

Access: Read and write

Description: *chanToMonitor* specifies the LP, port (*E1* or *DS1*), and channel to monitor. The LP must be the same LP specified in the provisionable attribute *linkToLogicalProcessor*. This attribute's value is of the form Lp/x E1/y Chan/z or Lp/x DS1/y Chan/z.

Mib: CircuitEmulationService

Values	The name of the component
Default	No default

COMPONENT MmTx NailedUpAdaptationPoint (Nap)

Groups	"GROUP MmTx Nap Provisioned (Prov)"
Scope	Application
Description	*Aal1Ces/n NailedUpAdaptationPoint* A *NailedUpAdaptationPoint* is a nailed-up point which straddles the CBR/ATM domains and which is associated with the adaptation of CBR data to/from ATM cells. If a *NailedUpAdaptationPoint* component is provisioned under an *Aal1Ces* component, no other components may be provisioned under the same *Aal1Ces* component.
Mib	CircuitEmulationService
Common Verbs	Help List Display Add DELete

GROUP MmTx Nap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *NailedUpAdaptationPoint* component.
Mib	CircuitEmulationService

ATTRIBUTE MmTx Nap atmConnection (ac)

Access	Read and write
Criticality	Component
Description	This attribute specifies the identity of the component to which the *NailedUpAdaptationPoint* is linked. This is an *AtmIf Vcc*

	NailedUpEndPoint or an AtmIf Vpt Vcc NailedUpEndPoint (the AAL1 cells are transported off the switch over an ATM UNI, where they are routed to the appropriate AAL1 entity at the other end by the ATM bearer service).
Mib	CircuitEmulationService
Values	Link (Service, applicationName)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component MmTx

Release 6.1

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Component Mod

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COMPONENT ModuleData (Mod)

Groups	"GROUP Mod Provisioned (Prov)"
Scope	Network
Description	Module wide provisioning data is used to define a number of attributes used by various systems within the module.
Mib	BaseShelf
Subcomponents	"COMPONENT Mod FrameRelaySystem (Frs)"
Opt. Subcomp.	"COMPONENT Mod VirtualCircuitSystem (Vcs)"
Common Verbs	Help List Display

GROUP Mod Provisioned (Prov)

Properties	Provisioned
Description	*Mod Provisionable* This group provides attributes that are used by internal and external systems to identify the module.
Mib	BaseShelf

ATTRIBUTE Mod nodeId

Access	Read and write
Criticality	Module

Description	This attribute specifies a number that uniquely identifies a node in the network. Changing the value of the *nodeId* attribute causes the node to be restarted.
Mib	BaseShelf
Values	Decimal (1..4095)
Default	No default

ATTRIBUTE Mod nodeName

Access	Read and write
Criticality	Module
Description	This attribute specifies a string that is unique to this module in the network. This name is the component instance value of EM - the root of the component hierarchy. It has, therefore, the same restriction and behavior as any string instance value (for example, it is converted to upper case). Note that the EM component is typically suppressed on output. Changing the value of the *nodeName* attribute causes the node to restarted.
Mib	BaseShelf
Values	String (1..12, ASCII)
Default	NONAME

ATTRIBUTE Mod namsId

Access	Read and write
Criticality	Module
Description	This attribute specifies the Network Administration (Nams) Identifier associated with the node. It must be unique across the entire network of nodes supporting the transport of DPN traffic as well as all RMs and AMs in the network.

	The *namsId* attribute must be set when a *DpnAddressPlan* component is configured on a node. The value of the *namsId* attribute is used in accounting records, statistics records, and time change accounting records; it identifies nodes in these records. The Nams Id is assigned by the network administrator. A value of ***49151*** indicates that no Nams Id has been assigned to the module. Changing the value of the *namsId* attribute causes the node to be restarted.
Mib	BaseShelf
Values	Decimal (256..49151)
Default	49151

ATTRIBUTE Mod regionId

Access	Read and write
Description	This attribute specifies the Topology Region to which the node belongs. Nodes only exchange topological information with connected nodes in the same region. Changing the value of the *regionId* attribute does NOT cause the node to be restarted.
Mib	BaseShelf
Values	Decimal (0..126)
Default	0

ATTRIBUTE Mod nodePrefix

Access	Read and write
Criticality	Module

Description	This attribute specifies an NSAP prefix which is distributed to all other nodes whose *clusterNode* attribute under the *Rtg* component is provisioned with the same value as this node within a Topology region. The attribute can be used to identify this node. This prefix is used by PORS, PNNI routing, and MCS. PORS calls that use NSAP addressing (for example, CES) look for the node with the longest NSAP prefix that matches the called party address. The NSAP prefixes that PORS matches against are the *nodePrefix* and the *alternatePorsPrefixes*. PNNI forms the default value of the *nodeAddressPrefix* attribute under the *AtmPnni* component with this NSAP prefix followed by a unique MAC address. MCS uses the *nodePrefix* to form an NSAP address that is registered with the Networking API. This NSAP address is used to identify this node when establishing an MCS switched path. The value entered must be 26 characters long. All characters must be hexadecimal with the following restrictions: - the first two characters are in the range of ‘10’ to ‘FE’, inclusive. - if the first two characters are ‘45’, the 18th character must be an ‘f’ or an ‘F’
Mib	BaseShelf
Values	String (0..26, ASCII)
Default	""

ATTRIBUTE Mod alternatePorsPrefixes

Access	Read and write
Criticality	Module
Description	This attribute specifies four NSAP prefixes which are distributed to all other nodes whose *clusterNode* attribute under the *Rtg* component is provisioned with the same value as this node within a Topology region. The attribute can be used to identify this node. These prefixes are used by PORS.

PORS calls that use NSAP addressing (for example, CES) look for the node with the longest NSAP prefix that matches the called party address. The NSAP prefixes that PORS matches against are the *alternatePorsPrefixes* and the *nodePrefix*.

These prefixes may contain up to 40 hexadecimal characters.

Mib	BaseShelf
Vector of	String (0..40, ASCII)
Index	Decimal (0..3)
Default	([4] "")

COMPONENT Mod VirtualCircuitSystem (Vcs)

Groups	"GROUP Mod Vcs AccountingOptions (AccOpt)" "GROUP Mod Vcs WindowOptions (WinOpt)" "GROUP Mod Vcs AddressingOptions (AddOpt)" "GROUP Mod Vcs InterfaceOptions (IntOpt)"
Scope	Application
Description	

ModuleData Vcs
ModuleData VirtualCircuitSystem is used to define a number of general characteristics for all *Vcs* that originate from or terminate on a particular module. As an example, the *Vc* Window matrix is defined on a module basis to provide the expected virtual circuit window sizes to associate with all *Vcs* on the module. All the modules in the network should have identical *VirtualCircuitSystem* attributes. If these attributes are not

consistent across the network applications which need *Vc* may not be able to establish calls.

Mib SubnetInterface

Common Verbs
Help
List
Display
Add
DELete

GROUP Mod Vcs AccountingOptions (AccOpt)

Properties Provisioned

Description Accounting information is owned by the *Vc* System; it is stored in the *Vc* Accounting component, which itself is considered to be a component on the switch. The Accounting Component contains a bit map indicating which of the accounting facilities are to be spooled in the accounting record - for example, bit '0' if set indicates that the accounting facility with facility code H.00 should be spooled if present in the *Vc* for accounting purposes. The data contained in the *Vc* Accounting must be identical network wide even though the component can be changed and upgraded on a module by module basis.

Mib SubnetInterface

ATTRIBUTE Mod Vcs segmentSize

Access Read and write

Description This attribute specifies the segment size for accounting of national calls. Minimum allowed segment size is ***1***. If data segment is sent which is less than *segmentSize* it is still counted as one segment.

Mib SubnetInterface

Values
1
2
4
8

	16 32 64 128 256 512 1024 2048 4096
Default	128

ATTRIBUTE Mod Vcs unitsCounted

Access	Read and write
Description	This attribute specifies what is counted by frame services. If set to frames, frames are counted, else segments are counted.
Mib	SubnetInterface
Values	segments frames
Default	segments

ATTRIBUTE Mod Vcs accountingFax (afax)

Access	Read and write
Description	Each value corresponds to an accounting facility code, of which there are currently 10 facility codes defined with codes H.00 to H.09, and corresponding to the above 10 facilities. Each of the above facilities may or may not be present and stored in the Vc for accounting purposes, depending on the nature of the call. For example, only those Vcs where a NUI (Network User Identifier) is used for charging or identification purposes will have a NUI stored in the Vc.
Mib	SubnetInterface
Set of	originalCalledAddressFax

Default	(originalCalledAddressFax)

ATTRIBUTE Mod Vcs generationMode (genMod)

Access	Read and write
Description	This attribute specifies part of the rules by which the network generates accounting records. If set to ***bothEnds***, then both ends of the *Vc* generate accounting records. If set to ***singleEnd***, then the charged end of the *Vc* generates accounting records. In single end generation mode, if the call does not clear gracefully, both ends of the *Vc* will generate accounting record.
Mib	SubnetInterface
Values	bothEnds singleEnd
Default	singleEnd

GROUP Mod Vcs WindowOptions (WinOpt)

Properties	Provisioned
Description	*WindowOptions group* defines attributes used when establishing *Vc*. These attributes are common to each *Vc* unless overridden by other options in a call. For example X.25 options used in call request.
Mib	SubnetInterface

ATTRIBUTE Mod Vcs windowSize (wins)

Access	Read and write
Description	This is the *windowSize* corresponding to the given packet size and throughput class. All *Vcs* using the windowSize matrix support large *Vc* windows on both ends of the *Vc*, and support the signaling of the chosen *Vc* window size from the destination (called) end to the source (calling) end. This is the only matrix supported. The *windowSize* should be configured in the same way network wide, though it can be upgraded on a module by module basis.

Vcs using the *windowSize* matrix will run properly if the matrices on different nodes differ since the *Vc* window is selected by the destination (called) side of the *Vc*.

Mib SubnetInterface

Array of Decimal (1..63)

Row packetSize (pkt) [16
32
64
128
256
512
1024
2048
4096
8192
32768
65535]

Column throughputClass (tpt) [Decimal (0..15)]

Default ([12 * 16] 4)

GROUP Mod Vcs AddressingOptions (AddOpt)

Properties Provisioned

Description

The *Vc AddressingOptions* group describes the addressing parameters. It is currently owned by the *Vc*.

Most of the data contained in the *Vc AddressingOptions* group is identical network wide even though the group can be changed and upgraded on a module by module basis.

Mib SubnetInterface

ATTRIBUTE Mod Vcs defaultNumberingPlan (npi)

Access Read and write

Criticality Process

Description	This attribute specifies the numbering plan used which determines the address format: X.121-- the international numbering plan for public packet switched data networks or E.164-- the international numbering plan for ISDN and PSTN. The default numbering plan does not need to be consistent across all of the nodes in the network.
Mib	SubnetInterface
Values	x121 e164
Default	x121

ATTRIBUTE Mod Vcs networkIdType (nit)

Access	Read only
Description	This attribute specifies whether the network uses a DNIC or INIC. It is used by X.75 Gateways to indicate whether in network the DNIC or INIC is used in various utilities. If it is DNIC it can be DNIC or DCC type. If it is INIC it can be 4 digits only.
Mib	SubnetInterface
Values	dnic inic
Default	dnic

ATTRIBUTE Mod Vcs x121Type (xtyp)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether DNIC mode or DCC mode is used in X.121 address of international calls. If DCC is specified, then the first 3 digits of each DNA must be the Network ID Code. If this attribute is changed all Dnas in the network must start with this code. Numbering plan is affected by the change.

Mib	SubnetInterface
Values	dnic dcc
Default	dnic

ATTRIBUTE Mod Vcs networkIdCode (nic)

Access	Read and write
Description	This attribute specifies the DNIC (Data Network ID Code) of the network or DCC code.
Mib	SubnetInterface
Values	BCD (3..4)
Default	No default

ATTRIBUTE Mod Vcs x121IntlAddresses (xia)

Access	Read and write
Description	This attribute indicates if any DTE is allowed to signal international addresses.
Mib	SubnetInterface
Values	disallowed allowed
Default	allowed

ATTRIBUTE Mod Vcs x121IntllPrefixDigit (xipd)

Access	Read and write
Description	This attribute indicates the prefix digit to be used for X.121 international calls. When this digit is provided the call will have full international address.
Mib	SubnetInterface
Values	Decimal (0..9)

Default	9

ATTRIBUTE Mod Vcs x121MinAddressLength (xmial)

Access	Read and write
Description	This attribute indicates minimum length of x121 address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	1

ATTRIBUTE Mod Vcs x121MaxAddressLength (xmaal)

Access	Read and write
Description	This attribute indicates maximum length of x121 address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	15

ATTRIBUTE Mod Vcs x121ToE164EscapeSignificance (xtees)

Access	Read and write
Description	This attribute specifies whether an X.121 to E.164 escape digit has significance in selecting an X.32 (analog) or an ISDN switched path. If two values are significant (the value 0 or the value 9) then yes is set to this attribute. If the value of the originally entered escape digit is not significant in routing the call then value of no is assigned to this attribute.
Mib	SubnetInterface
Values	no yes
Default	no

ATTRIBUTE Mod Vcs e164IntlFormatAllowed (eifa)

Access	Read and write

Description

This attribute indicates whether or not to allow national format E.164 addresses. If this attribute is set to a value of Yes (=1) then national format E.164 addresses are not allowed and international format addresses only are allowed. If this attribute is set to a value of No (=0), then national format E.164 addresses are allowed.

If only international format E.164 addresses are allowed, then the 'e164NatlPrefixDigit' attribute is not required, nor is the 'e164IntlPrefixDigits' required.

Mib: SubnetInterface

Values: disallowed
allowed

Default: allowed

ATTRIBUTE Mod Vcs e164IntlPrefixDigits (eipd)

Access: Read and write

Description

This attribute specifies the E.164 international prefix digits. If applicable, it is specified as 1 to 3 BCD digits.

The 3 BCD digits are stored with the length of the international prefix in the low order nibble, nibble [0] followed by the most significant digit of the international prefix in the next low order nibble, nibble [1], etc.

This attribute is not required if the corresponding attribute, 'e164IntlFormatOnly' is set to a value of Yes (=1).

Mib: SubnetInterface

Values: BCD (0..3)

Default: 0

ATTRIBUTE Mod Vcs e164NatlPrefixDigit (enpd)

Access: Read and write

Description

This attribute contains the E.164 national prefix which may be added in front of E.164 local or national call. If e164IntlFormatOnly is set to 1, this attribute is not needed.

Mib SubnetInterface

Values Decimal (0..9)

Default 1

ATTRIBUTE Mod Vcs e164LocalAddressLength (elal)

Access Read and write

Description

This attribute indicates the length of a local E.164 DNA on this module. This attribute is not required if the corresponding attribute, e164IntlFormatOnly is set to a value of yes.

This attribute does not need to be consistent across all of the nodes in the network.

Mib SubnetInterface

Values Decimal (4..15)

Default 7

ATTRIBUTE Mod Vcs e164TeleCountryCode (etcc)

Access Read and write

Description

This attribute specifies the E.164 Telephone Country Code (TCC) for the country in which the network resides. If applicable, it is specified as 1 to 3 BCD digits.

The 3 BCD digits are stored with the length of the TCC in the low order nibble, nibble [0] followed by the most significant digit of the TCC in the next low order nibble, nibble [1], etc.

Mib SubnetInterface

Values BCD (1..4)

Default	1

ATTRIBUTE Mod Vcs e164NatlMinAddressLength (enmial)

Access	Read and write
Description	This attribute indicates minimum length of e164 national address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	1

ATTRIBUTE Mod Vcs e164NatlMaxAddressLength (enmaal)

Access	Read and write
Description	This attribute indicates maximum length of e164 national address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	15

ATTRIBUTE Mod Vcs e164IntlMinAddressLength (eimial)

Access	Read and write
Description	This attribute indicates minimum length of e164 international address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	1

ATTRIBUTE Mod Vcs e164IntlMaxAddressLength (eimaal)

Access	Read and write
Description	This attribute indicates maximum length of e164 international address.
Mib	SubnetInterface

Values	Decimal (1..16)
Default	15

ATTRIBUTE Mod Vcs e164LocalMinAddressLength (elmial)

Access	Read and write
Description	This attribute indicates minimum length of e164 local address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	1

ATTRIBUTE Mod Vcs e164LocalMaxAddressLength (elmaal)

Access	Read and write
Description	This attribute indicates maximum length of e164 local address.
Mib	SubnetInterface
Values	Decimal (1..16)
Default	15

GROUP Mod Vcs InterfaceOptions (IntOpt)

Properties	Provisioned
Description	The *Vc InterfaceOptions* group defines *Vc* system parameters common in the network. It is owned by the *Vc* and is considered to be a module wide component on the switch. The data contained in the *Vc InterfaceOptions* group must be identical network wide even though this group can be changed and upgraded on a module by module basis.
Mib	SubnetInterface

ATTRIBUTE Mod Vcs highPriorityPacketSizes (hpps)

Access	Read only

Description

This attribute indicates which packet sizes are supported for high priority calls within the network.

Mib SubnetInterface

Set of
16
32
64
128
256
512
1024
2048
4096

Default (16, 32, 64, 128, 256, 512, 1024, 2048, 4096)

ATTRIBUTE Mod Vcs maxSubnetPacketSize (msps)

Access Read and write

Description

This attribute specifies the maximum subnet packet size used for the connections originating or terminating on this module. All modules in the same network should have the same *maxSubnetPacketSize*.

If this value is not identical throughout the network, the following points need to be considered:

a) When a Nortel Networks Multiservice Switch and a DPN switch are connected in the same network, the *maxSubnetPacketSize* on a DPN switch can be at most 2048 and the DPN part of the network must be configured with hardware that supports this size:

- Dedicated PE386 Network link/Trunk
- Minimum measured link speed of 256kbit/s

This hardware has to be present on every potential data path between connecting end points!

b) The calling end of the connection signals the *maxSubnetPacketSize* value to the called end. The called end then compares this value to its own provisioned value and selects the smaller value. Note that this smaller value is not signaled back to the calling end. The calling and called ends can therefore have different *maxSubnetPacketSize* values.

Mib: SubnetInterface

Values:
16
32
64
128
256
512
1024
2048
4096

Default: 512

ATTRIBUTE Mod Vcs callSetupTimer (cst)

Access: Read and write

Description

This attribute specifies the *Vc callSetupTimer* in units of 1 second ticks. This timer specifies how long the *Vc* will wait, after sending
a subnet Call Request packet into the network, for a response from the remote end of the *Vc* (in the form of a subnet Raccept packet). If, after sending a subnet Call packet into the network, a response is not received within this time period, the *Vc* will time out, clearing the call in the assumption that the remote end is unreachable. This timer must be long enough to take into account the time required for routing the subnet Call Request through the Source Call Routing and the Destination Call Routing systems in order to be delivered to the final destination.

Mib: SubnetInterface

Values: Decimal (5..100)

Default	5

ATTRIBUTE Mod Vcs callRetryTimer (crt)

Access	Read and write
Description	This attribute specifies, for *Vc* implementing Direct Calls with the auto-call retry feature (including PVCs), the *Vc callRetryTimer* in units of 1 second ticks. This timer specifies how long the *Vc* will wait between unsuccessful call attempts.
Mib	SubnetInterface
Values	Decimal (30..300)
Default	60

ATTRIBUTE Mod Vcs delaySubnetAcks (dsa)

Access	Read and write
Description	This attribute specifies delay acknowledgment timer mechanism. If this attribute is set to ***no***, then the *Vc* will automatically return acknowledgment packets without delay. If this attribute is set to ***yes***, then the *Vc* will wait for one second in an attempt to piggyback the acknowledgment packet on another credit or data packet. If the *Vc* cannot piggyback the acknowledgment packet within this time, then the packet is returned without piggybacking.
Mib	SubnetInterface
Values	no yes
Default	no

COMPONENT Mod FrameRelaySystem (Frs)

Scope	Application

Description	*Mod FrameRelaySystem* The *Frs* component defines the overall module wide data that is applicable to the Frame Relay system.
Mib	ModCommon
Subcomponents	"COMPONENT Mod Frs AtmNetworking (AtmNet)" "COMPONENT Mod Frs DprsNetworking (DprsNet)" "COMPONENT Mod Frs IpCosToFrQos (IpCosToFrQos)"
Common Verbs	Help List Display Unlock

COMPONENT Mod Frs AtmNetworking (AtmNet)

Groups	"GROUP Mod Frs AtmNet Provisioned (Prov)"
Scope	Application
Description	*Mod Frs AtmNetworking* *AtmNetworking* is used to define a number of general characteristics for all Frame Relay to ATM interworking on module. All the modules in the network should have identical *AtmNetworking* attributes. If these attributes are not consistent across the network, then the service may be degraded.
Mib	ModAtmQos
Subcomponents	"COMPONENT Mod Frs AtmNet TransferPriorityMapping (Tpm)"
Common Verbs	Help List Display

GROUP Mod Frs AtmNet Provisioned (Prov)

Properties	Provisioned
Description	This group contains information related to the Frame Relay to ATM interworking.

Mib	ModAtmQos

ATTRIBUTE Mod Frs AtmNet retryTimerPeriod (rtp)

Access	Read and write
Description	This attribute specifies the module wide retry timer interval for failed SPVC calls using Frame Relay to ATM Networking. Changes to this attribute will take effect on subsequent call setups.
Mib	ModAtmQos
Values	Decimal (30..300)
Units	seconds
Default	60

COMPONENT Mod Frs AtmNet TransferPriorityMapping (Tpm)

Instance	Decimal (0..15)
Groups	"GROUP Mod Frs AtmNet Tpm Provisioned (Prov)"
Scope	Application
Description	*Mod Frs AtmNet TransferPriorityMapping/n* This component specifies call setup parameters for Frame Relay to ATM interworking using transfer priority *n*. The changed parameters will take effect on new calls. Some attributes can be overridden on per interface basis by *FrAtm Ca Tpm* component.
Mib	ModAtmQos
Common Verbs	Help List Display Add Unlock

GROUP Mod Frs AtmNet Tpm Provisioned (Prov)

Properties	Provisioned
Description	This group specifies the mapping from Frame Relay parameters to ATM parameters for a Frame Relay using the defined transfer priority.
Mib	ModAtmQos

ATTRIBUTE Mod Frs AtmNet Tpm emissionPriority (ep)

Access	Read and write
Description	This attribute specifies the egress emission priority at the FR to ATM interface. A value of 3 specifies the highest priority, whereas a value of 0 specifies the lowest priority.
Mib	ModAtmQos
Values	Decimal (0..3)
Default	0

ATTRIBUTE Mod Frs AtmNet Tpm atmServiceCategory (sc)

Access	Read and write
Description	This attribute specifies the ATM class of service value to be used on a transport connection.
Mib	ModAtmQos
Values	ubr cbr rtVbr nrtVbr
Default	nrtVbr

ATTRIBUTE Mod Frs AtmNet Tpm avgFrameSize (afs)

Access	Read and write
Description	This attribute specifies the average frame size that is used in the traffic parameter conversion policy calculations for this transfer priority to determine the overhead factor for FR to ATM interworking. The overhead factor affects the granularity of the bandwidth requirements. The values should be identical across

the network. Otherwise, there may result in bandwidth conversion inconsistencies.

Mib	ModAtmQos
Values	Decimal (1..8187)
Units	bytes
Default	128

ATTRIBUTE Mod Frs AtmNet Tpm trafficParmConvPolicy (tpcp)

Access	Read and write
Description	This attribute specifies the traffic parameter conversion policy to use for this transfer priority to specify the equivalent bandwidth rate at the FrAtm interface. Policy 3 characterizes the traffic in the following way: - ATM traffic descriptor type 6 is selected - PCR0+1 is based on the AR - SCR0+1 is based on the CIR and EIR - MBS0+1 is based on Bc,Be,CIR,EIR and AR - Takes into account that the instantaneous rate of the frame relay stream can burst above CIR and up to the AR. Policy 4 characterizes the traffic in the following way: - ATM traffic descriptor type 7 or 8 is selected. Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer. - PCR0+1 is based on the AR - SCR0 is based on the CIR - MBS0 is based on Bc,CIR and AR - There is no direct characterization of EIR. The allowed EIR can be derived using the difference between the AR and CIR. Policy 5 characterizes the traffic in the following way: - ATM traffic descriptor type 7 or 8 is selected . Type 7 is chosen when non-conforming cells are to be discarded and type 8 when non-conforming cells are tagged by UPC traffic policer - PCR0+1 is based on CIR and EIR - SCR0 is based on the CIR

- MBS0 is based on the Bc,CIR and AR
- The maximum PCR is no longer based on AR but based on the CIR and EIR.

Policy 6 characterizes the traffic in the following way:
- ATM traffic descriptor type 3 is selected
- PCR0+1 is based only on CIR.

Mib: ModAtmQos

Values:
3
4
5
6

Default: 6

ATTRIBUTE Mod Frs AtmNet Tpm assignedBandwidthPool (asgBwPool)

Access: Read and write

Description: This attribute specifies the bandwidth pool which is used to support this transfer priority. The bandwidth pool is defined in the *frAtm Ca* component.

Mib: ModAtmQos

Values:
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

Default	0

COMPONENT Mod Frs DprsNetworking (DprsNet)

Scope	Application
Description	*Mod Frs DprsNetworking* *DprsNetworking* is used to define a number of general characteristics for all Frame Relay connections using DPRS networking. All the modules in the network should have identical *DprsNetworking* attributes. If these attributes are not consistent across the network, then the service may be degraded.
Mib	ModDprsQos
Subcomponents	"COMPONENT Mod Frs DprsNet TransferPriorityMappingDprsNet (Tpm)"
Common Verbs	Help List Display

COMPONENT Mod Frs DprsNet TransferPriorityMappingDprsNet (Tpm)

Instance	Decimal (0..15)
Groups	"GROUP Mod Frs DprsNet Tpm Provisioned (Prov)"
Scope	Application
Description	*Mod Frs DprsNet TransferPriorityMappingDprsNet/n* This component represents default transfer priority mappings for Frame Relay connections using DPRS networking.
Mib	ModDprsQos
Common Verbs	Help List Display Add

GROUP Mod Frs DprsNet Tpm Provisioned (Prov)

Properties	Provisioned

Description	This group specifies the mapping from the defined transfer priority to the egress emission priority and routing class of service. The mapping of transfer priority to egress emission priority and routing class of service may be modified by the user. Any changes to transfer priority mappings take effect on new calls. Existing connections are not affected by changes to transfer priority mappings unless the service is reset by locking and unlocking the connection or resetting the card where the service resides.
Mib	ModDprsQos

ATTRIBUTE Mod Frs DprsNet Tpm emissionPriority (ep)

Access	Read and write
Description	This attribute specifies the egress emission priority at the Frame Relay interface. A value of ***3*** specifies the highest priority, whereas a value of ***0*** specifies the lowest priority.
Mib	ModDprsQos
Values	Decimal (0..3)
Default	0

ATTRIBUTE Mod Frs DprsNet Tpm routingClassOfService (rcos)

Access	Read and write
Description	This attribute specifies the routing class of service value to be used on a transport connection. A value of ***multimedia*** specifies the highest class of service and a value of ***throughput*** specifies the lowest class of service.
Mib	ModDprsQos
Values	throughput delay multimedia
Default	throughput

ATTRIBUTE Mod Frs DprsNet Tpm assignedIngressBandwidthPool (asgInBwPool)

Access	Read and write
Description	This attribute specifies the ingress bandwidth pool which is used to support this transfer priority at the *FrUni* and *FrNni* interface. For *FrUni* and *FrNni*, this pool is defined by provisioning attributes *ingressCirBandwidthPool* and *ingressEirBandwidthPool* under the *FrUni Ca* and *FrNni Ca* component respectively. The value of this attribute can be overridden at the interface level by provisioning attribute *assignedIngressBandwidthPool* under the *FrUni Ca Tpm/n* and *FrNni Ca Tpm/n* component respectively.
Mib	ModDprsQos
Values	Decimal (0..15)
Default	0

ATTRIBUTE Mod Frs DprsNet Tpm assignedEgressBandwidthPool (asgEgBwPool)

Access	Read and write
Description	This attribute specifies the egress bandwidth pool which is used to support this transfer priority at the *FrUni* and *FrNni* interface. For *FrUni* and *FrNni*, this pool is defined by provisioning attributes *egressCirBandwidthPool* and *egressEirBandwidthPool* under the *FrUni Ca* and *FrNni Ca* component respectively. The value of this attribute can be overridden at the interface level by provisioning attribute *assignedEgressBandwidthPool* under the *FrUni Ca Tpm/n* and *FrNni Ca Tpm/n* component respectively.
Mib	ModDprsQos
Values	Decimal (0..15)
Default	0

COMPONENT Mod Frs IpCosToFrQos (IpCosToFrQos)

Scope	Application
Description	*Mod Frs IpCosToFrQos* This component is used to define a number of general characteristics for all Frame Relay connections using Frame Relay IP Traffic management. All the modules in the network

should have identical *IpCosToFrQos* attributes. If these attributes are not consistent across the network, then the service may be degraded.

Mib: ModIpCosToFrQos

Subcomponents: "COMPONENT Mod Frs IpCosToFrQos TypeOfServiceMapping (Tosm)"

Common Verbs:
- Help
- List
- Display

COMPONENT Mod Frs IpCosToFrQos TypeOfServiceMapping (Tosm)

Instance: Decimal (0..255)

Groups: "GROUP Mod Frs IpCosToFrQos Tosm Provisioned (Prov)"

Scope: Application

Description: *Mod Frs IpCosToFrQos TypeOfServiceMapping/n*
This component represents the type of service mappings for Frame Relay connections using Frame Relay IP Traffic Management.

The instance corresponds to a particular IP TOS value. All 256 possible instances are always present. Instances of this component cannot be deleted.

Mib: ModIpCosToFrQos

Common Verbs:
- Help
- List
- Display
- Add

GROUP Mod Frs IpCosToFrQos Tosm Provisioned (Prov)

Properties: Provisioned

Description: This group specifies the mapping from the IP type of service value to the egress emission priority and discard priority. Any

	changes to TOS mappings will immediately take effect on new calls.
Mib	ModIpCosToFrQos

ATTRIBUTE Mod Frs IpCosToFrQos Tosm emissionPriority (ep)

Access	Read and write
Description	This attribute specifies the egress emission priority at the Frame Relay interface. A value of ***3*** specifies the highest priority, whereas a value of ***0*** specifies the lowest priority. Changes to this attribute effect only new calls.
Mib	ModIpCosToFrQos
Values	Decimal (0..3)
Default	0

ATTRIBUTE Mod Frs IpCosToFrQos Tosm discardPriority (dp)

Access	Read and write
Description	This attribute specifies the egress discard priority at the Frame Relay interface. A value of ***normal*** specifies the lowest priority (more readily discarded), whereas a value of ***high*** specifies the highest priority (less readily discarded). Changes to this attribute effect only new calls.
Mib	ModIpCosToFrQos
Values	normal high
Default	normal

Nortel Networks Multiservice Switch 7400/15000/20000

Component Mod

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Mpanl

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Mpanl

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COMPONENT MpaNetworkLink (Mpanl)

Instance	Decimal (1..65535)
Groups	"GROUP Mpanl CustomerIdentifierData (CidData)" "GROUP Mpanl Provisioned (Prov)" "GROUP Mpanl EmissionPriorityQs" "GROUP Mpanl OsiState (State)" "GROUP Mpanl Statistics (Stats)" "GROUP Mpanl TrafficStatistics (TrafficStats)" "GROUP Mpanl IfEntryProv (IfEntry)" "GROUP Mpanl OperationalStatus (OperStatus)" "GROUP Mpanl Operational (Oper)"
Scope	Network
Description	*MpaNetworkLink/<n>* This component defines an instance of the MPA Network Link

	(MPANL) service. The component instance value n is a unique positive integer within a module.
Mib	MpaNetworkLink
Subcomponents	"COMPONENT Mpanl DataNetworkAddress (Dna)" "COMPONENT Mpanl Signaling (Sig)" "COMPONENT Mpanl LocalManagementInterface (Lmi)" "COMPONENT Mpanl VoiceOverFrameRelay (VoFr)" "COMPONENT Mpanl Voice"
Opt. Subcomp.	"COMPONENT Mpanl Framer" "COMPONENT Mpanl FrMuxSetup" "COMPONENT Mpanl Isdn"
Dyn. Subcomp.	"COMPONENT Mpanl PrefixDataNetworkAddress (PrefixDna)" "COMPONENT Mpanl DataLinkConnectionIdentifier (Dlci)" "COMPONENT Mpanl SignalingMpanl (SigMpanl)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Mpanl CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for the MPANL component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl customerIdentifier (cid)

Access	Read only
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute,

the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	MpaNetworkLink
Values	Decimal (0; 1..8191)
Default	0

GROUP Mpanl Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes of the MPANL service.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl commentText

Access	Read and write
Description	This attribute specifies the name the customer wishes to associate with this MPANL interface.
Mib	MpaNetworkLink
Values	String (0..40, ASCII)
Default	No default

GROUP MpanI EmissionPriorityQs

Properties	Provisioned
Description	This group contains the provisionable attribute to specify the number of Frame Relay egress emission priority queues to be used on that Frame Relay Interface
Mib	MpaNetworkLink

ATTRIBUTE MpanI numberOfEmissionQs

Access	Read only
Criticality	Process
Description	This attribute specifies the number of egress emission priority queues that will be used for that Frame Relay interface. The possible values of this attribute are 2 or 4: For V.35, V.11, HSSI, E1, DS1, E3, DS3 or 8pDS1 the possible values are: 2 (in which case they are hardware queues), or 4 (in which case they are software queues). For DS1C, E1C or DS3C the possible values are 2, 4 (in all cases they are software queues).
Mib	MpaNetworkLink
Values	Decimal (2; 4)
Default	4

GROUP MpanI OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	MpaNetworkLink
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Mpanl operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	MpaNetworkLink
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Mpanl usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	MpaNetworkLink
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Mpanl availabilityStatus (osiAvail)

Access	Read only

Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is

one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	MpaNetworkLink
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Mpanl proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn’t initialize autonomously) that initialization is required

before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	MpaNetworkLink
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Mpanl controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: MpaNetworkLink

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE MpanI alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: MpaNetworkLink

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Mpanl standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and

containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: MpaNetworkLink

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE MpanI unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: MpaNetworkLink

Values:
false
true

Default: false

GROUP MpanI Statistics (Stats)

Properties: Operational

Description	FrUni/n Statistics This group contains the statistics about the operational behavior of the service at the interface level.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl lastUnknownDlci (ludlc)

Access	Read only
Description	This attribute identifies the most recent DLCI which user frames were received on for which a DLCI has not been provisioned on the port.
Mib	MpaNetworkLink
Values	Decimal (0..1023)
Default	0

ATTRIBUTE Mpanl unknownDlciFramesFromIf (unknown)

Access	Read only
Description	This attribute contains a count of the number of frames received from the interface with an unknown DLCI (DLCI which is not provisioned). When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl invalidHeaderFramesFromIf (invalid)

Access	Read only
Description	This attribute counts the number of frames received from the interface with an invalid header format. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink

Values	Decimal (0..4294967295)
Default	0

GROUP MpanI TrafficStatistics (TrafficStats)

Properties	Operational
Description	This operational group provides the traffic statistics of the service at the interface level. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.
Mib	MpaNetworkLink

ATTRIBUTE MpanI frmToIf

Access	Read only
Description	This attribute counts frames transmitted to the interface. This count may differ from its framer counterpart because Voice over Frame Relay function may fragment and pack the Frame Relay frames before transmission. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE MpanI octetToIf

Access	Read only
Description	This attribute counts octets transmitted to the interface. This count may differ from its framer counterpart because Voice over Frame Relay function may fragment and pack the Frame Relay frames before transmission. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Mpanl frmFromIf

Access	Read only
Description	This attribute counts frames received from the interface. This count may differ from its framer counterpart because Voice over Frame Relay function may fragment and pack the Frame Relay frames before transmission. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl octetFromIf

Access	Read only
Description	This attribute counts octets received from the interface. This count may differ from its framer counterpart because Voice over Frame Relay function may fragment and pack the Frame Relay frames before transmission. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl frmToIfByQueue

Access	Read only
Description	This attribute counts the total number of frames transmitted to the interface per egress emission priority queue since the component has been activated. There is potentially a maximum of 4 emission priority queues. The number of available egress queues varies according to the value of the provisionable attribute

	numberOfEmissionQs. Egress queue 0 has the lowest priority, while egress queue 3 has the highest priority.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

ATTRIBUTE MpaNl octetToIfByQueue

Access	Read only
Description	This attribute counts the total number of octets transmitted from the service to the interface per emission priority queue since the component has been activated. There is potentially a maximum of 4 emission priority queues. The number of available egress queues varies according to the value of the provisionable attribute *numberOfEmissionQs*. Egress queue 0 has the lowest priority, while egress queue 3 has the highest priority.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Replication	Decimal (0..3)
Default	No default

GROUP MpaNl IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	MpaNetworkLink

ATTRIBUTE MpaNl ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.

Mib	MpaNetworkLink
Values	up down testing
Default	up

ATTRIBUTE Mpanl ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	MpaNetworkLink
Values	Decimal (1..65535)
Default	No default

GROUP Mpanl OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	MpaNetworkLink

Values	up down testing
Default	up

GROUP Mpanl Operational (Oper)

Properties	Operational
Description	This group contains miscellaneous operational attributes of the MPANL service.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the round trip delay of the MPANL interface. The round trip delay measurement is only made when this attribute is displayed. The measured value is rounded up to the next millisecond. This attribute has the value 0, if the delay measurement cannot be made.
Mib	MpaNetworkLink
Values	Decimal (0..10000)
Units	msec
Default	No default

COMPONENT Mpanl DataNetworkAddress (Dna)

Groups	"GROUP Mpanl Dna OutgoingOptions" "GROUP Mpanl Dna CallOptions"
Scope	Network
Description	*Mpanl/<n> DataNetworkAddress* This component contains the attributes necessary for creating a

virtual circuit. These attributes indicate the default call setup capabilities for the interface.

Mib: MpaNetworkLink

Common Verbs:
Help
List
Display

GROUP Mpanl Dna OutgoingOptions

Properties: Provisioned

Description: *DnaOutOptionsProv* group defines call options of a *Dna* for calls which are made out of the interface represented by *Dna*. All these options are not used for calls arriving to the interface represented by *Dna*.

Mib: MpaNetworkLink

ATTRIBUTE Mpanl Dna defaultTransferPriority (dtp)

Access: Read and write

Description: This attribute specifies the default transfer priority to network for all outgoing calls using this particular *Dna*.

The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 levels from 0 to 15.

Each transfer priority n, where n indicates the transfer priority index, contains a default setting for routing class of service (multimedia, delay or throughput) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required.

The default *defaultTransferPriority* is ***0***.

Mib	MpaNetworkLink
Values	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Default	0

GROUP Mpanl Dna CallOptions

Properties	Provisioned
Description	*DnaCallOptions* group defines additional options for calls not related directly to direction of a call.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dna accountClass (acl)

Access	Read and write
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. Use of this attribute is decided by network operator. This attribute is returned by the local VC in the accounting record for all calls setup using this particular DNA.
Mib	MpaNetworkLink
Values	Decimal (0..255)

Default	0

ATTRIBUTE Mpanl Dna accountCollection (aco)

Access	Read and write
Description	This set attribute indicates that accounting records are to be collected by the network for the various reasons: billing, test, study, auditing. The last of the parameters, force, indicates that accounting records are to be collected irrespective of other collection reasons. The force option is available for X.75 Gateways only. If none of these reasons are set, then accounting will be suppressed. To set a specific accounting collection reason, the reason is entered and the corresponding bit in the structure is set to a value of 1. To turn off a specific accounting collection reason, the reason is entered preceded with the '^' character, and the corresponding bit in the structure is set to a value of 0. The bit placement for the accounting collection reasons is as follows: Bit 0 - Bill Bit 1 - Test Bit 2 - Study Bit 3 - Audit Bit 4 - Force
Mib	MpaNetworkLink
Set of	bill test study audit force
Default	(bill)

ATTRIBUTE Mpanl Dna serviceExchange (sre)

Access	Read and write
Description	This attribute is an arbitrary number, Data Service Exchange, as entered by the network operator and reported in accounting

record. It is converted into an internal 8-bit integer value for use in the accounting record as well as in various X.25 and X.75 Tariff utilities.

Mib: MpaNetworkLink

Values: Decimal (0..255)

Default: 0

ATTRIBUTE Mpanl Dna egressAccounting (ega)

Access: Read and write

Description

This attribute specifies if Egress accounting is enabled by the MPANL service. Disabling of Egress accounting means that only segment counts are collected by VC and there are no frame relay counts in accounting records for the MPANL service. Enabling of Egress accounting means that the accounting records for MPANL contain frame relay specific counts.

Mib: MpaNetworkLink

Values: yes
no

Default: no

COMPONENT Mpanl Framer

Groups: "GROUP Mpanl Framer Provisioned (Prov)"
"GROUP Mpanl Framer LinkOptions (Link)"
"GROUP Mpanl Framer OsiState (State)"
"GROUP Mpanl Framer Statistics (Stats)"
"GROUP Mpanl Framer LinkUtilization (Util)"

"COLLECTED STATS MpaNetworkLink Framer"

Scope: Network

Description

Mpanl/<n> Framer
The *Framer* component controls link layer framing for application components sending and receiving data on a link

interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib MpaNetworkLink

Common Verbs
- Help
- List
- Display
- Add
- DELete

GROUP Mpanl Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib MpaNetworkLink

ATTRIBUTE Mpanl Framer interfaceName

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib MpaNetworkLink

Values Link (Hardware, applicationFramerName)

Default No default

GROUP Mpanl Framer LinkOptions (Link)

Properties Provisioned

Description

This group contains attributes defining the framing of data on the link interface.

Mib MpaNetworkLink

ATTRIBUTE Mpanl Framer dataInversion

Access Read and write

Description

This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed.

This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density.

Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted.

This attribute may only take its default value for non-MSA cards.

Mib MpaNetworkLink

Values off
on

Default	off

ATTRIBUTE Mpanl Framer frameCrcType

Access	Read and write
Description	This attribute defines the type of CRC used. The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness. NoCrc means that CRC is not used. This attribute may take only its default value for non-MSA cards.
Mib	MpaNetworkLink
Values	crc16 crc32 noCrc
Default	crc16

ATTRIBUTE Mpanl Framer flagsBetweenFrames

Access	Read and write
Description	This attribute defines the number of flags that are inserted between frames sent to the link interface. The flagBetweenFrames can be set to only 1, 2, 4, 8 or 16 for 4pDS3Ch FrameRelay FP.
Mib	MpaNetworkLink
Values	Decimal (1..16)
Default	1

GROUP Mpanl Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies

about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib MpaNetworkLink

ATTRIBUTE Mpanl Framer adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib MpaNetworkLink

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Mpanl Framer operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for

operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: MpaNetworkLink

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Mpanl Framer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: MpaNetworkLink

Values: idle
active (activ)
busy

Default: idle

GROUP Mpanl Framer Statistics (Stats)

Properties: Operational

Description:

This group contains the operational statistics data for a Framer component.

Mib	MpaNetworkLink

ATTRIBUTE Mpanl Framer aborts

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Framer crcErrors

Access	Read only
Description	This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Framer lrcErrors

Access	Read only
Description	This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Framer nonOctetErrors

Access	Read only

Description

This attribute is the total number of frames that were non octet aligned.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Framer overruns

Access Read only

Description

This attribute is the total number of frames received from the link for which overruns occurred.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Framer underruns

Access Read only

Description

This attribute is the total number of frames transmitted to the link for which underruns occurred.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Framer largeFrmErrors

Access Read only

Description

This attribute is the total number of frames received which were too large. The frame exceeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.

Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Framer frmModeErrors

Access	Read only
Description	This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are inconsistent with the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	MpaNetworkLink

Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Framer ingressFrameDiscards

Access	Read only
Description	This attribute is the total number of frames discarded at ingress PQC.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

GROUP Mpanl Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic

	with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	MpaNetworkLink
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Mpanl Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	MpaNetworkLink
Values	Decimal (0..100)
Units	%
Default	0

COLLECTED STATS MpaNetworkLink Framer

Description	The statistics record generated by the MpaNetworkLink Framer component.

ATTRIBUTE Mpanl Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Mpanl Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Mpanl Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Mpanl Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Mpanl Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT Mpanl PrefixDataNetworkAddress (PrefixDna)

Instance	numberingPlanIndicator [x121 e164] dataNetworkAddress [BCD (1..15)]
Scope	Network
Description	*Mpanl/<n> PrefixDataNetworkAddress/<npi>,<dna>* This component identifies a prefixDNA provided by the MPA DTE via the MPANL protocol. It has no attributes because all of the relevant information is contained in the indices of this

component. The first index is the numbering plan indicator (x121/e164) and the second index is the prefixDNA digits.

Mib	MpaNetworkLink
Common Verbs	Help List Display

COMPONENT Mpanl DataLinkConnectionIdentifier (Dlci)

Instance	Decimal (17..1007)
Groups	"GROUP Mpanl Dlci OsiState (State)" "GROUP Mpanl Dlci CallData (Calld)" "GROUP Mpanl Dlci ServiceParametersOp (SpOp)" "GROUP Mpanl Dlci Statistics (Stats)" "GROUP Mpanl Dlci IntervalData (Int)" "GROUP Mpanl Dlci ABitStatus (Abit)"
Scope	Network
Description	*Mpanl/n DataLinkConnectionIdentifier/n* This component is responsible for the Frame Relay U-plane (User-plane) protocol for the specified instance. There can be many instances of *Dlci* for each *Mpanl*. The instance value is used to identify the logical connection, multiplexed within the physical channel, with which a frame is associated. All frames carried within a particular physical channel and having the same DLCI value are associated with the same logical connection.

A DLCI refers to a switched virtual circuit (SVC) which is created dynamically through signaling.

Mib: MpaNetworkLink

Dyn. Subcomp.:
"COMPONENT Mpanl Dlci LoopBack (Lb)"
"COMPONENT Mpanl Dlci Vc"
"COMPONENT Mpanl Dlci LogicalConnection (LCo)"
"COMPONENT Mpanl Dlci JunctorVc (Jvc)"

Common Verbs:
Help
List
Display

VERB CLEAR Mpanl Dlci

Impact: Service

Description: *Clear Mpanl/n Dlci/n*
This command is used to clear an MPANL connection.

GROUP Mpanl Dlci OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: MpaNetworkLink

ATTRIBUTE Mpanl Dlci adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or

Lock command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: MpaNetworkLink

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Mpanl Dlci operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: MpaNetworkLink

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Mpanl Dlci usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	MpaNetworkLink
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Mpanl Dlci availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: MpaNetworkLink

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Mpanl Dlci proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been

initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: MpaNetworkLink

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Mpanl Dlci controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: MpaNetworkLink

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Mpanl Dlci alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: MpaNetworkLink

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Mpanl Dlci standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	MpaNetworkLink
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Mpanl Dlci unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	MpaNetworkLink
Values	false true
Default	false

GROUP Mpanl Dlci CallData (CallId)

Properties	Operational
Description	This group of attributes describes the characteristics of the call such as call type and call state.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci q933CallState (qstate)

Access	Read only
Description	This attribute indicates the Q.933 state of an SVC call. In the description that follows, “local” refers to the user who has initiated the SETUP request, and “remote” refers to the user to

whom the local user wishes to connect.

State description:
In the ***null*** state, the network has neither received nor sent call setup requests for this DLCI.
In the ***callInitiated*** state, the network has received a SETUP message from the local user.
In the ***outgoingCallProceeding*** state, the network has sent a CALL PROCEEDING message to the local user in response to the SETUP message.
In the ***callPresent*** state, the network has sent a SETUP message to the remote user.
In the ***incomingCallProceeding*** state, the network has received a CALL PROCEEDING message from the remote user in response to a SETUP message.
In the ***active*** state, either the network has sent a CONNECT message to the local user, or the network has received a CONNECT from the remote user.
In the ***disconnectRequest*** state, the network has received a DISCONNECT message from the local user.
In the ***disconnectIndication*** state, the network has sent a DISCONNECT to the local user.
In the ***releaseRequest*** state, the network has sent out a RELEASE message to the local user.
The ***notApplicable*** state indicates that this attribute is meaningless because the DLCI is a PVC.

Mib	MpaNetworkLink
Values	null callInitiated outgoingCallProceeding callPresent incomingCallProceeding active disconnectRequest disconnectIndication releaseRequest notApplicable
Default	No default

ATTRIBUTE Mpanl Dlci q933CallReference (callref)

Access	Read only
Description	This attribute indicates the Q.933 call reference number associated with this DLCI.
Mib	MpaNetworkLink
Values	Decimal (0..32767)
Default	No default

GROUP Mpanl Dlci ServiceParametersOp (SpOp)

Properties	Operational
Description	This group contains the service parameters specific to this instance of *Dlci*.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci maximumFrameSize (n203)

Access	Read only
Description	This attribute specifies the maximum number of octets which may be included in the information field. The frame relay header and CRC octets are not included in this definition. This attribute corresponds to the dN1 parameter described in the Frame Relay Vendor Forum Specification.
Mib	MpaNetworkLink
Values	Decimal (1..4096)
Units	octets
Default	No default

ATTRIBUTE Mpanl Dlci committedBurstSize (bc)

Access	Read only

Description

This attribute indicates the committed burst size (Bc) in bits. *bc* is the amount of data that a network agrees to transfer under normal conditions over a measurement interval (*t*). Data marked DE=1 is not accounted for in Bc.

This attribute should be ignored when *rateEnforcement* is ***off***.

Mib: MpaNetworkLink

Values: Decimal (0..50000000)

Units: bits

Default: No default

ATTRIBUTE Mpanl Dlci excessBurstSize (be)

Access: Read only

Description

This attribute indicates the excess burst size (Be) in bits. Be is the amount of uncommitted data that the network will attempt to deliver over measurement interval T. Data marked DE=1 by the user or by the network is accounted for here.

This attribute should be ignored when *rateEnforcement* is ***off***.

Mib: MpaNetworkLink

Values: Decimal (0..50000000)

Units: bits

Default: No default

ATTRIBUTE Mpanl Dlci accounting (ac)

Access: Read only

Description

This attribute indicates whether accounting data collection and record generation is turned on at this DLCI. For accounting data collection and record generation to be occur, the *accountingOn*

	attribute must be ***on*** and at least one of the *accountCollection* options in the *DataNetworkAddress* component must be selected.
Mib	MpaNetworkLink
Values	off on
Default	No default

ATTRIBUTE Mpanl Dlci emissionPriorityToIf (epToIf)

Access	Read only
Description	This attribute indicates the emission priority of frames sent to the interface. A larger value denotes a higher priority.
Mib	MpaNetworkLink
Values	Decimal (0; 1; 2; 3)
Default	No default

ATTRIBUTE Mpanl Dlci transferPriorityToNetwork (tpToNwk)

Access	Read only
Description	This attribute indicates the priority at which data is transferred to the network. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 indices from 0 to 15. Each transfer priority n, where n specifies the transfer priority index, contains a default setting for routing class of service (***multimedia***, ***delay*** or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required.

Mib	MpaNetworkLink
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Mpanl Dlci transferPriorityFromNetwork (tpFromNwk)

Access	Read only
Description	This attribute indicates the priority at which data is transferred from the network. The transfer priority is a preference configured for an application according to its delay-sensitivity requirement. Frames with higher transfer priority are served by the network before the frames with lower priority. The transfer priority standard is defined to have 16 indices from 0 to 15. Each transfer priority n, where n specifies the transfer priority index, contains a default setting for routing class of service (***multimedia***, ***delay*** or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned in the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a user if required.
Mib	MpaNetworkLink
Values	Decimal (0..15)
Default	No default

GROUP Mpanl Dlci Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics for the MPANL Data Link Connection Identifier.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci frmToIf (fti)

Access	Read only
Description	This attribute counts the frames sent out the interface. When the maximum count is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci fecnFrmToIf (fecnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci becnFrmToIf (becnti)

Access	Read only
Description	This attribute counts the frames sent to the interface with the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci bciToSubnet (bcits)

Access	Read only

Description

This attribute counts the frames sent into the network with the Backward Congestion Indication (BCI) bit set. When the count reaches maximum it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci deFrmToIf (deti)

Access Read only

Description

This attribute counts the frames sent to the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci discCongestedToIf (discardcti)

Access Read only

Description

This attribute counts the number of frame discards at the MPANL service due to local congestion in the direction toward the interface. When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci discDeCongestedToIf (discarddecti)

Access Read only

Description

This attribute counts the number of discarded frames, with the

Discard Eligibility (DE) bit set, at the MPANL service, due to local congestion in the direction toward the interface. When this count reaches maximum, it wraps to zero.

Mib: MpaNetworkLink

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Mpanl Dlci frmFromIf (ffi)

Access: Read only

Description

This attribute counts the frames received from the interface. Frames that are discarded due to error or excess are not counted. When the maximum count is reached the count wraps to zero.

Mib: MpaNetworkLink

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Mpanl Dlci fecnFrmFromIf (fecnfi)

Access: Read only

Description

This attribute counts the frames received from the interface with the Forward Explicit Congestion Notification (FECN) bit set. When the count reaches maximum it wraps to zero.

Mib: MpaNetworkLink

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Mpanl Dlci becnFrmFromIf (becnfi)

Access: Read only

Description

This attribute counts the frames received from the interface with

the Backward Explicit Congestion Notification (BECN) bit set. When the count reaches maximum it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci fciFromSubnet (fcifs)

Access Read only

Description

This attribute counts the frames received from the network with the Forward Congestion Indication (FCI) bit set. When the count reaches maximum it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci bciFromSubnet (bcifsb)

Access Read only

Description

This attribute counts the frames received from the network with the Backward Congestion Indication (BCI) bit set. When the count reaches maximum it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci deFrmFromIf (defi)

Access Read only

Description

This attribute counts the frames received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.

Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci excessFrmFromIf (excess)

Access	Read only
Description	This attribute counts the frames received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discExcessFromIf (discardefi)

Access	Read only
Description	This attribute counts the frames which were discarded due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discFrameAbit (discfab)

Access	Read only
Description	This attribute counts the number of frame discards at the MPANL Service, due to an inactive PVC status, in the direction toward the network. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discCongestedFromIf (discardcfi)

Access	Read only
Description	This attribute counts the number of frame discards at the MPANL service due to local congestion in the direction toward the network. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discDeCongestedFromIf (discarddecfi)

Access	Read only
Description	This attribute counts the number of discarded frames, with the Discard Eligibility (DE) bit set, at the MPANL service, due to local congestion, in the direction toward the network. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci errorShortFrmFromIf (shortfi)

Access	Read only
Description	This attribute counts the frames received with 0 octets in the information field. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Mpanl Dlci errorLongFrmFromIf (longfi)

Access	Read only
Description	This attribute counts the frames received with number of octets in the information field greater than the subscribed maximum. When the count reaches maximum it wraps to zero. Frames whose lengths are greater than the hardware receive buffer are ignored by the hardware and are therefore not included in this count.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci becnFrmSetByService (becnset)

Access	Read only
Description	This attribute counts the number of frames with BECN set by the MPANL service. It is incremented whenever the MPANL service sets BECN on a frame upon detecting local congestion. This count is incremented regardless of whether the frame already bears a set BECN bit since its use is to determine the place of congestion. When the count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci bytesToIf (bti)

Access	Read only
Description	This attribute counts the bytes sent out the interface. When the maximum count is reached the count wraps to zero.
Mib	MpaNetworkLink

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci deBytesToIf (debti)

Access	Read only
Description	This attribute counts the bytes sent to the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discCongestedToIfBytes (discardctib)

Access	Read only
Description	This attribute counts the number of byte discards at the MPANL service due to local congestion in the direction toward the link. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discDeCongestedToIfBytes (discarddectib)

Access	Read only
Description	This attribute counts the number of discard eligible (DE=1) byte discards at the MPANL service due to local congestion in the direction toward the link. When the maximum count is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci bytesFromIf (bfi)

Access Read only

Description

This attribute counts the bytes received from the interface. Bytes that are discarded due to error or excess are not counted. When the maximum count is reached the count wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci deBytesFromIf (debi)

Access Read only

Description

This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit set. When the count reaches maximum it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci excessBytesFromIf (excessb)

Access Read only

Description

This attribute counts the bytes received from the interface with the Discard Eligibility (DE) bit clear, but subsequently set by the network due to rate enforcement. When the count reaches maximum it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci discExcessFromIfBytes (discardebi)

Access	Read only
Description	This attribute counts the bytes which were discarded due to rate enforcement. When the count reaches maximum it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discByteAbit (discbab)

Access	Read only
Description	This attribute counts the bytes which were discarded due to aBit turned off.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discCongestedFromIfBytes (discardcbib)

Access	Read only
Description	This attribute counts the number of byte discards at the MPANL service due to local congestion in the direction toward the network. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discDeCongestedFromIfBytes (discarddecbib)

Access	Read only

Description

This attribute counts the number of discard eligible (DE=1) byte discards at the MPANL service due to local congestion in the direction toward the network. When the maximum count is reached the count wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Mpanl Dlci errorLongBytesFromIf (longbi)

Access Read only

Description This attribute counts the bytes received with number of octets in the information field greater than the subscribed maximum. When the count reaches maximum it wraps to zero. Bytes whose lengths are greater than the hardware receive buffer are ignored by the hardware and are therefore not included in this count.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default 0

GROUP Mpanl Dlci IntervalData (Int)

Properties Operational

Description

This group contains the operational statistics for the MPANL Data Link Connection Identifier interval data.

Mib MpaNetworkLink

ATTRIBUTE Mpanl Dlci startTime

Access Read only

Description This attribute indicates the start time of this interval period. If the VC spans 12 hour time or time of day change, *startTime* reflects new time as recorded at 12 hour periods or time of day changes.

	A new interval period is started each time an accounting record is generated.
Mib	MpaNetworkLink
Values	Time (DHMS)
Default	No default

ATTRIBUTE Mpanl Dlci totalIngressBytes (tib)

Access	Read only
Description	This attribute counts the total bytes received from the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci totalEgressBytes

Access	Read only
Description	This attribute counts the total bytes sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci eirIngressBytes

Access	Read only
Description	This attribute counts the total bytes with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. The start of the interval period is captured in the

startTime attribute. The count is reset to zero when an accounting record is generated.

Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci eirEgressBytes

Access	Read only
Description	This attribute counts the total bytes with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci discardedBytes

Access	Read only
Description	This attribute counts the total bytes in invalid frames received from the interface and discarded at the DLCI since the start of the interval period. This count is a sum of octets in frames discarded due to the number of octets in the information field greater than the subscribed maximum or equal to 0, due to aBit turned off, or due to rate enforcement. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci totalIngressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is *segments*, this attribute counts the total number of segments in frames received from the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is *frames*, this attribute counts the total number of frames received from the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci totalEgressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is *segments*, this attribute counts the total number of segments in frames sent to the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is *frames*, this attribute counts the total number of frames sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci eirIngressSegFrm

Access	Read only

Description	If the value of the *unitsCounted* attribute in *moduleData* component is *segments*, this attribute counts the number of segments in frames with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is *frames*, this attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the subnet since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci eirEgressSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is *segments*, this attribute counts the number of segments in frames with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. If the value of the *unitsCounted* attribute in *moduleData* component is *frames*, this attribute counts the number of frames with the Discard Eligibility (DE) bit set sent to the interface since the start of the interval period. The start of the interval period is captured in the *startTime* attribute. The count is reset to zero when an accounting record is generated.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci discardedSegFrm

Access	Read only
Description	If the value of the *unitsCounted* attribute in *moduleData* component is ***segments***, this attribute counts the number of

segments in invalid frames received from the interface and discarded at the DLCI. If the value of the *unitsCounted* attribute in *moduleData* component is ***frames***, this attribute counts the number of invalid frames received from the interface and discarded at the DLCI. Segments of frames are counted since the start of the interval period. The count is reset to zero when an accounting record is generated. The count is a sum of segments in frames or frames discarded due to the number of octets in the information field greater than the subscribed maximum or equal to 0, due to aBit turned off, or due to rate enforcement.

Mib: MpaNetworkLink

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Mpanl Dlci callReferenceNumber

Access: Read only

Description: This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.

Mib: MpaNetworkLink

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Mpanl Dlci elapsedDifference

Access: Read only

Description: This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since the call started.

Mib: MpaNetworkLink

Values	Decimal (0..4294967295)
Default	0

GROUP Mpanl Dlci ABitStatus (Abit)

Properties	Operational
Description	This group contains the A-Bit status information for this Data Link Connection Identifier. A-Bit status information is only applicable for SPVCs. For SVCs, the values of attributes under this group are all **notApplicable**.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci aBitStatusToIf (abti)

Access	Read only
Description	This attribute is the most recent A-Bit status sent to the interface. The A-Bit status is originated from the SPVC end point at the remote end of the subnet and it is relayed to the interface by *Mpanl*. When an inactive setting is sent out, *Mpanl* will discard any data offered from the interface. When an active setting is sent out, *Mpanl* will try to relay all data offered from the interface to the other end of the SPVC.
Mib	MpaNetworkLink
Values	inactive active notApplicable
Default	inactive

ATTRIBUTE Mpanl Dlci aBitReasonToIf (abrti)

Access	Read only
Description	This attribute provides the reason (if any) for an inactive status to be sent to the interface. This reason is not applicable for an active

status.

A-Bit status reason description:
The A-Bit status reason is ***notApplicable*** when the A-Bit status is active.
The A-Bit status reason is ***remoteUserSignaled*** if the SPVC end point originating the A-Bit status has detected that the virtual circuit is down at the remote network through the LMI protocol. The SPVC end point must be running network site LMI protocol for this A-Bit status reason to be sent.
The A-Bit status reason is ***remoteLmiError*** if the LMI protocol is down at the SPVC end point originating this A-Bit status reason.
The A-Bit status reason is ***remoteLinkDown*** if the physical interface is disabled at the SPVC end point originating this A-Bit status reason.
The A-Bit reason is ***vcDown*** if no A-Bit status has been sent to the interface (i.e., no A-Bit status has been relayed).

Mib: MpaNetworkLink

Values:
notApplicable
remoteUserSignaled
remoteLmiError
remoteLinkDown
vcDown

Default: vcDown

ATTRIBUTE Mpanl Dlci aBitStatusFromIf (abfi)

Access: Read only

Description:

This attribute is the most recent A-Bit status received from the interface. It is an indication from the equipment attached to the interface on whether it is ready to accept data. *Mpanl* relays the A-Bit status from interface to the other end of the SPVC. When an inactive setting is received, *Mpanl* will discard any data offered from the subnet. When an active setting is received, *Mpanl* will try to relay all data offered from the subnet to the interface.

Mib: MpaNetworkLink

Values
inactive
active
notApplicable

Default
inactive

ATTRIBUTE Mpanl Dlci aBitReasonFromIf (abrfi)

Access
Read only

Description

This attribute provides the reason (if any) for an inactive status to be sent to the subnet. This reason is not applicable for an active status.

A-Bit status reason description:
The A-Bit status reason is ***notApplicable*** when the A-Bit status is active.
The A-Bit status reason is ***remoteUserSignaled*** if the SPVC end point originating the A-Bit status has detected that the DLCI is inactive at the remote network through the LMI protocol. The SPVC end point must be running network site LMI protocol for this A-Bit status reason to be sent.
The A-Bit status reason is ***remoteLmiError*** if the LMI protocol is down at the SPVC end point originating this A-Bit status reason.
The A-Bit status reason is ***remoteLinkDown*** if the physical interface is disabled at the SPVC end point originating this A-Bit status reason.
The A-Bit reason is ***vcDown*** if no A-Bit status has been received from the interface (i.e., no A-Bit status has been relayed).

Mib
MpaNetworkLink

Values
notApplicable
remoteUserSignaled
remoteLmiError
remoteLinkDown
vcDown

Default
vcDown

ATTRIBUTE Mpanl Dlci loopbackState

Access
Read only

Description	This attribute has the value ***on*** when the DLCI is in loopback mode and ***off*** otherwise. This loopback command verbs *start* and *stop* are used to initiate and terminate the loopback mode for a DLCI. While *loopbackState* is ***on***, an active A-bit signal will be reliably propagated across the subnet to the remote DLCI.
Mib	MpaNetworkLink
Values	off on
Default	off

COMPONENT Mpanl Dlci LoopBack (Lb)

Groups	"GROUP Mpanl Dlci Lb Statistics (Stats)"
Scope	Application
Description	*FrUni/n Dlci/n LoopBackFrNni/n Dlci/n LoopBack*This component is the data loopback tool for the parent *DLCI*.
Mib	MpaNetworkLink
Common Verbs	Help List Display

VERB START Mpanl Dlci Lb

Impact	Service
Description	*start FrUni/n Dlci/n LoopBack* *start FrNni/n Dlci/n LoopBack*This command resets the *LoopbackStatistics* and initiates the loopback mode. The *loopbackState* for this *DLCI* is set to ***on*** for the duration of the loopback mode. When a *DLCI* is in loopback mode, frames coming from the link are returned to the link, incrementing the local loopback statistics. Also, frames coming from the VC are returned to the VC, incrementing the remote loopback statistics. The loopback mode is ended using the stop command.

VERB STOP Mpanl Dlci Lb

Impact	Service
Description	*stop FrUni/n Dlci/n LoopBack stop FrNni/n Dlci/n LoopBack* This command terminates the loopback mode and displays the loopback statistics.

GROUP Mpanl Dlci Lb Statistics (Stats)

Properties	Operational
Description	This group contains all the statistics for the data loopback tool.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci Lb localTotalFrm (ltf)

Access	Read only
Description	This attribute records the number of frames looped back to the link since loopback was last started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb localTotalBytes (ltb)

Access	Read only
Description	This attribute records the number of bytes looped back to the link since loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb localFecnFrm (lff)

Access	Read only

Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the link since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb localBecnFrm (lbf)

Access	Read only
Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the link since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb localDeFrm (ldf)

Access	Read only
Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb localDeBytes (ldb)

Access	Read only
Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.
Mib	MpaNetworkLink

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb remoteTotalFrm (rtf)

Access	Read only
Description	This attribute records the number of frames looped back to the subnet since loopback was last started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb remoteTotalBytes (rtb)

Access	Read only
Description	This attribute records the number of bytes looped back to the subnet since loopback was last started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb remoteFecnFrm (rff)

Access	Read only
Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the subnet since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb remoteBecnFrm (rbf)

Access	Read only

Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the subnet since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb remoteDeFrm (rdf)

Access	Read only
Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl Dlci Lb remoteDeBytes (rdb)

Access	Read only
Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

COMPONENT Mpanl Dlci Vc

Groups	"GROUP Mpanl Dlci Vc CallData (Cad)" "GROUP Mpanl Dlci Vc IntervalData (Intd)" "GROUP Mpanl Dlci Vc FrameRelayData (Frd)"
Scope	Network

Description

Mpanl/<n> Dlci/<n> Vc
This component defines attributes collected by *Mpanl/n Dlci/n Vc*.

Mib

MpaNetworkLink

Common Verbs

Help
List
Display

VERB Ping Mpanl Dlci Vc

Impact

Passive

Description

Ping [-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)] Mpanl/<n> Dlci/<n> Vc

Ping causes a query packet to be sent to the destination module where an MPANL Frame Relay DLCI VC terminates. This command can only be used on an MPANL Frame Relay VC type. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the *ping* query packet will be the same as that of the Frame Relay data except at the source and destination module. The *ping* packets originate from the CP rather than the MPANL Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the MPANL FP.

Note that this command does not provide any information regarding the status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified.

The *ping* command can be issued with or without options. If no options are specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is

used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the *roundTripDelay* option is specified, the command reports the time taken to reach the destination and back. For the *roundTripDelay* option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the *ping* packets are generated and bounced back by the CP rather than the MPANL Frame Relay DLCI's FP.

The *ping* command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the *sendPktSize* and *returnPktSize* options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the *-rtd* option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the time-out response.

-returnPktDataSize: This option specifies the number of data

octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the *-rtd* option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the time-out response.

GROUP Mpanl Dlci Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.
Mib	MpaNetworkLink
Values	pvc svc spvc frf10spvc
Default	No default

ATTRIBUTE Mpanl Dlci Vc state

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	MpaNetworkLink
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Mpanl Dlci Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	MpaNetworkLink
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Mpanl Dlci Vc diagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Mpanl Dlci Vc previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Mpanl Dlci Vc calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	MpaNetworkLink
Values	x121 e164
Default	No default

ATTRIBUTE Mpanl Dlci Vc calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	MpaNetworkLink

Values	BCD (1..15)
Default	No default

ATTRIBUTE Mpanl Dlci Vc calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	MpaNetworkLink
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Mpanl Dlci Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	MpaNetworkLink
Values	x121 e164
Default	No default

ATTRIBUTE Mpanl Dlci Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	MpaNetworkLink
Values	BCD (1..15)
Default	No default

ATTRIBUTE Mpanl Dlci Vc callingLcn

Access	Read only

Description	This attribute displays the Logical Channel Number of the calling end.
Mib	MpaNetworkLink
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Mpanl Dlci Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	MpaNetworkLink
Values	yes no
Default	No default

ATTRIBUTE Mpanl Dlci Vc fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	MpaNetworkLink
Values	yes no
Default	No default

ATTRIBUTE Mpanl Dlci Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	MpaNetworkLink

Values	high normal
Default	No default

ATTRIBUTE Mpanl Dlci Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	MpaNetworkLink
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE Mpanl Dlci Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	MpaNetworkLink
Values	normal high
Default	No default

ATTRIBUTE Mpanl Dlci Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	MpaNetworkLink
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Mpanl Dlci Vc maxSubnetPktSize

Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	MpaNetworkLink
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Mpanl Dlci Vc rcosToNetwork (rcosto)

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	MpaNetworkLink
Values	throughput delay multimedia
Default	No default

ATTRIBUTE Mpanl Dlci Vc rcosFromNetwork (rcosfrom)

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	MpaNetworkLink
Values	throughput delay multimedia
Default	No default

ATTRIBUTE Mpanl Dlci Vc emissionPriorityToNetwork (epto)

Access	Read only

Description	This attribute displays the network internal emission priority to the network.
Mib	MpaNetworkLink
Values	normal high interrupting
Default	No default

ATTRIBUTE Mpanl Dlci Vc emissionPriorityFromNetwork (epfrom)

Access	Read only
Description	This attribute displays the network internal emission priority from the network.
Mib	MpaNetworkLink
Values	normal high interrupting
Default	No default

ATTRIBUTE Mpanl Dlci Vc dataPath (dapa)

Access	Read only
Description	This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed value of this attribute can be different from the provisioned value. If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system) If the connection is using ***dprsMcsOnly*** data path, the string ***dprsMcsOnly*** is displayed. If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.

Mib	MpaNetworkLink
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Mpanl Dlci Vc dprsMcsEndPoint (dmep)

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components. If the connection is using ***dprsOnly*** data path, this attribute is empty. If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.
Mib	MpaNetworkLink
List of	The name of the component
Default	No default

GROUP Mpanl Dlci Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	MpaNetworkLink

Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Mpanl Dlci Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	MpaNetworkLink
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Mpanl Dlci Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	MpaNetworkLink
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Mpanl Dlci Vc startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	MpaNetworkLink
Values	Time (DHMS)
Default	No default

ATTRIBUTE Mpanl Dlci Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

GROUP Mpanl Dlci Vc FrameRelayData (Frd)

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is

	disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods. Frame Relay *Vc* uses a best effort data packet delivery protocol and a different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*. Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci Vc frmCongestedToSubnet

Access	Read only
Description	This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc cannotForwardToSubnet

Access	Read only
Description	This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion. Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.
Mib	MpaNetworkLink
Values	Decimal (0..5000)

Default	No default

ATTRIBUTE Mpanl Dlci Vc notDataXferToSubnet

Access	Read only
Description	This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Mpanl Dlci Vc combErrorsFromSubnet

Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc duplicatesFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc notDataXferFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc frmLossTimeouts

Access	Read only
Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc ooSeqByteCntExceeded

Access	Read only

Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc peakOoSeqPktCount

Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal subnet packet disorder (not due to subnet packet discard). Current implementation also uses

	this statistics to set a maximum size for the out-of-sequenced queue.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc sendSequenceNumber

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	MpaNetworkLink
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE Mpanl Dlci Vc pktRetryTimeouts

Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc peakRetryQueueSize

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.

Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc subnetRecoveries

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.
Mib	MpaNetworkLink
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Mpanl Dlci Vc ooSeqPktCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Mpanl Dlci Vc peakOoSeqByteCount

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue

	length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	MpaNetworkLink
Values	Decimal (0..50000)
Default	No default

COMPONENT Mpanl Dlci LogicalConnection (LCo)

Groups	"GROUP Mpanl Dlci LCo PathData" "GROUP Mpanl Dlci LCo Statistics (Stats)" "GROUP Mpanl Dlci LCo CallData"
Scope	Application
Description	*Mpanl/n Dlci/m LCo* This component contains all of the operation attributes for a Path Oriented Logical Connection.
Mib	MpaNetworkLink
Common Verbs	Help List Display

VERB RERoute Mpanl Dlci LCo

Impact	Service
Description	RERoute.Lc This command is used to request a *Logical Connection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the RERoute is not completely successful. The connection must not be attempting rerouting at present. If this command is attempted on a connection that is not up but is in state pathDownRetrying an immediate route request is sent.

GROUP Mpanl Dlci LCo PathData

Properties	Operational

Description	This group contains all operational attributes for the path oriented LCo.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci LCo state

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates that the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to the route selector and it has not yet responded. The ***connectingState*** occurs while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.
Mib	MpaNetworkLink
Values	pathDown selectingRoute connecting pathUp pathDownRetrying
Default	No default

ATTRIBUTE Mpanl Dlci LCo end

Access	Read only
Description	This attribute identifies whether this is the calling or called end of the path.
Mib	MpaNetworkLink
Values	calling called
Default	No default

ATTRIBUTE Mpanl Dlci LCo costMetric (cost)

Access	Read only

Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an *LCo* that is originated and terminated on the same module is 0.
Mib	MpaNetworkLink
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Mpanl Dlci LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an *LCo* that is originated and terminated on the same module is 0.
Mib	MpaNetworkLink
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE Mpanl Dlci LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip

	delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	MpaNetworkLink
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE Mpanl Dlci LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	MpaNetworkLink
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Mpanl Dlci LCo holdingPriority (hpri)

Access	Read only
Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	MpaNetworkLink
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Mpanl Dlci LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	MpaNetworkLink
Values	Decimal (0..2048000)
Units	bit/s
Default	No default

ATTRIBUTE Mpanl Dlci LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value
Mib	MpaNetworkLink
Values	Decimal (0..2048000)
Units	bit/s
Default	No default

ATTRIBUTE Mpanl Dlci LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the

network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType***,** will be candidates for this connection.

Mib — MpaNetworkLink

Values
voice
data
video
trafficType1 (tt1)
trafficType2 (tt2)
trafficType3 (tt3)
trafficType4 (tt4)
trafficType5 (tt5)

Default — No default

ATTRIBUTE Mpanl Dlci LCo permittedTrunkTypes (pttyp)

Access — Read only

Description — This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.

Mib	MpaNetworkLink
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Mpanl Dlci LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	MpaNetworkLink
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Mpanl Dlci LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks

	whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	MpaNetworkLink
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Mpanl Dlci LCo emissionPriority (epri)

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority. EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	MpaNetworkLink
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Mpanl Dlci LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority.* One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).
Mib	MpaNetworkLink
Values	Decimal (1..3)
Default	No default

ATTRIBUTE Mpanl Dlci LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of the connection. This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Mpanl Dlci LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully reconnected. It is set to zero the first time the path is up. If a path fails anytime after connecting, this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See retryCount(rcount) - page 78. This attribute stops counting at its maximum value.
Mib	MpaNetworkLink
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Mpanl Dlci LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory.
Mib	MpaNetworkLink

Values
none
destinationNameTooLong
destinationNotSpecified
unknownDestinationName
incorrectDestination
incorrectDestinationEndPoint
unknownSource
unknownDestination
sameNode
routeCostTooMuch
routesDelayTooLong
attributesNotMet
anError
attributeProfileProblem
manualPathIndexProblem

Default
none

ATTRIBUTE Mpanl Dlci LCo lastTearDownReason

Access
Read only

Description
This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may indicate why the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons:
none - This path has no information for the teardown.
normalShutDown - This path has gone down due to normal call termination.
insufficientTxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction.
insufficientRxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction.
trunkFailure- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute.
trunkCardFailure- A trunk FP card has failed along the path.
accessCardFailure- The FP on which the peer access service was

running has failed.
operatorForced- The path has terminated due to the operator locking a trunk along the path.
lostLcnClash- The path has terminated because the PAs at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LCs). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing. Check remote provisioned DNA.
farEndBusy - The far end has been reached but it is busy. Check remote provisioned DNA and remote end provisioning.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
serviceTypeMismatch - The remote service type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority*, hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active; this just indicates why the path changed.

Mib MpaNetworkLink

Values

none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound
farEndNotFound
wrongModuleReached
farEndBusy
callLoopedBack
unknownReason
farEndNotReady
remoteNameMismatch
serviceTypeMismatch
reconnectFromFarEnd
bumped
accessCardFailure
optimized
overrideRemoteName

Default

none

ATTRIBUTE Mpanl Dlci LCo pathFailureAction

Access

Read only

Description

This attribute displays whether the application is set to tolerate a momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure.
With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. All *pathTypes* respect this attribute. Also, on a *manualPath* with both ends provisioned with independent paths (at least with respect to the

	failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends.
Mib	MpaNetworkLink
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE Mpanl Dlci LCo bumpPreference (bpref)

Access	Read only
Description	This attribute specifies when bumping will occur during the route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *holdingPriority* is lower (numerically higher) than the connection's *setupPriority*. A connection may also always bump in order to obtain the best route.
Mib	MpaNetworkLink
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE Mpanl Dlci LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	MpaNetworkLink

Values	disabled enabled
Default	No default

ATTRIBUTE Mpanl Dlci LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	MpaNetworkLink
Values	Time (DHMS)
Default	No default

ATTRIBUTE Mpanl Dlci LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.
Mib	MpaNetworkLink
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP Mpanl Dlci LCo Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci LCo pktsToNetwork

Access	Read only

Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci LCo pktsFromNetwork

Access	Read only
Description	This attribute counts the number of packets received from the remote *LCo* via the network. This attribute wraps to 0.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

ATTRIBUTE Mpanl Dlci LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote *LCo* via the network. This attribute wraps to 0.
Mib	MpaNetworkLink
Values	Long Integer
Default	No default

GROUP Mpanl Dlci LCo CallData

Properties	Operational
Description	This group contains all operational attributes for the path oriented LCo.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci LCo callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	MpaNetworkLink
Values	x121 e164
Default	x121

ATTRIBUTE Mpanl Dlci LCo callingDna

Access	Read only
Description	This attribute displays the Data Network Address (DNA) of the calling end.
Mib	MpaNetworkLink
Values	BCD (0..15)
Default	No default

ATTRIBUTE Mpanl Dlci LCo elapsedTimeTillNow

Access	Read only
Description	This attribute displays the total duration in tenths of miliseconds that a connection has been up for a call.
Mib	MpaNetworkLink
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Mpanl Dlci LCo callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	MpaNetworkLink
Values	Hex (H.0..H.ffffff)
Default	No default

ATTRIBUTE Mpanl Dlci LCo calledNpi

Access	Read only
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the called end.
Mib	MpaNetworkLink
Values	x121 e164
Default	x121

ATTRIBUTE Mpanl Dlci LCo calledDna

Access	Read only
Description	This attribute indicates the Data Network Address (DNA) of the called (destination) DTE to which this call is sent. This address if defined at the receiving end will complete the logical connection.
Mib	MpaNetworkLink
Values	BCD (0..15)
Default	No default

COMPONENT Mpanl Dlci JunctorVc (Jvc)

Groups	"GROUP Mpanl Dlci Jvc Operational (Oper)" "GROUP Mpanl Dlci Jvc Statisticsl (Stat)"
Scope	Network
Description	*Mpanl/n Dlci/n JunctorVc* This component extends the GVC connectivity across MPANL. It allows applications in a Legacy Data Module (LDM) subnet to establish GVC connections with applications in the subnet.
Mib	MpaNetworkLink
Common Verbs	Help List Display

GROUP Mpanl Dlci Jvc Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Jvc* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci Jvc currentState

Access	Read only
Description	This attribute indicates the current state of the JVC process. The state can be one of: ***null***: waiting for an incoming call or a call request from MPANL, ***callRequest***: waiting for the call connected from MPANL, ***callIndication***: waiting for the call packet from MPANL, ***callBlockPresent***: waiting for the Raccept packet from the subnet, ***active***: relaying packets between the subnet and MPANL, ***discInitiated***: not used by the DCE JVC, ***discPktPresent***: not used by the DCE JVC, ***callDisconnected***: waiting for the termination request from MPANL, ***callTerminated***: waiting for the termination by MPANL.

Mib	MpaNetworkLink
Values	null callRequest callIndication callBlockPresent active discInitiated discPktPresent callDisconnected callTerminated
Default	No default

ATTRIBUTE Mpanl Dlci Jvc previousState (ps)

Access	Read only
Description	This attribute indicates the previous state of the JVC process. The state can be one of: ***null***: waiting for an incoming call or a call request from MPANL, ***callRequest***: waiting for the call connected from MPANL, ***callIndication***: waiting for the call packet from MPANL, ***callBlockPresent***: waiting for the Raccept packet from the subnet, ***active***: relaying packets between the subnet and MPANL, ***discInitiated***: not used by the DCE JVC, ***discPktPresent***: not used by the DCE JVC, ***callDisconnected***: waiting for the termination request from MPANL, ***callTerminated***: waiting for the termination by MPANL.
Mib	MpaNetworkLink
Values	null callRequest callIndication callBlockPresent active discInitiated discPktPresent callDisconnected callTerminated

Default	No default

ATTRIBUTE Mpanl Dlci Jvc callingNpi (clgNpi)

Access	Read only
Description	This attribute contains the numbering plan indicator of the calling address. This attribute value is retrieved from the call packet.
Mib	MpaNetworkLink
Values	x121 e164
Default	No default

ATTRIBUTE Mpanl Dlci Jvc callingAddress (clgDna)

Access	Read only
Description	This attribute contains the calling *DataNetworkAddress* of the interface. It includes the DNIC (first 4 digits) for X.121, and the CC (Country Code) for the E.164 address of the calling end. The maximum length of this attribute is 15 digits. This attribute value is retrieved from the call packet.
Mib	MpaNetworkLink
Values	BCD (1..15)
Default	No default

ATTRIBUTE Mpanl Dlci Jvc callingLcn (clgLcn)

Access	Read only
Description	This attribute contains the calling LCN (logical channel number) of the interface. This number is assigned to the call request at the calling end. This attribute value is retrieved from the call packet.
Mib	MpaNetworkLink
Values	Decimal (1..4095)
Default	No default

ATTRIBUTE Mpanl Dlci Jvc calledNpi (cldNpi)

Access	Read only
Description	This attribute contains the numbering plan indicator of the called address. This attribute value is retrieved from the call packet.
Mib	MpaNetworkLink
Values	x121 e164
Default	No default

ATTRIBUTE Mpanl Dlci Jvc calledAddress (cldDna)

Access	Read only
Description	This attribute contains the called *DataNetworkAddress* of the interface. It includes the DNIC (first 4 digits) for X.121, and the CC (Country Code) for the E.164 address of the called end. The maximum length of this attribute is 15 digits. This attribute value is retrieved from the Raccept packet.
Mib	MpaNetworkLink
Values	BCD (1..15)
Default	No default

ATTRIBUTE Mpanl Dlci Jvc calledLcn (cldLcn)

Access	Read only
Description	This attribute contains the called LCN (logical channel number) of the interface. This number is assigned to the call request at the called end. This attribute value is retrieved from the Raccept packet.
Mib	MpaNetworkLink
Values	Decimal (1..4095)
Default	No default

GROUP Mpanl Dlci Jvc Statisticsl (Stat)

Properties	Operational

Description	This group contains the statistics collected by the *Jvc* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Dlci Jvc packetsFromSubnet (pfs)

Access	Read only
Description	This attribute counts all packets including control packets received from the subnet. This number reflects also the packets sent to the MPANL process since the JVC does not drop or generate packets in this direction.The value of this attribute wraps to 0 when the maximum value is reached.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Dlci Jvc packetsToSubnet (pts)

Access	Read only
Description	This attribute counts all packets including control packets sent into the subnet. This number includes Renew Call Timer Packets that are generated by the JVC. The value of this attribute wraps to 0 when the maximum value is reached.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Dlci Jvc packetsDiscarded (pdis)

Access	Read only
Description	This attribute counts discarded packets that can not be forwarded into the subnet because of subnet congestion. This attribute is increased when packet forwarding fails to forward a packet into the subnet.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Mpanl Dlci Jvc protocolErrors (err)

Access	Read only
Description	This attribute counts the number of protocol errors detected by the JVC in both the MPANL and the subnet directions. A protocol error is counted in the following cases: - reception of a packet from MPANL while waiting for a Raccept packet from the subnet, - reception of a packet from the subnet following a call packet and before the callAccepted is received from MPANL, - reception of a packet from the subnet or from MPANL that is shorter than the subnet header. The value of this attribute wraps to 0 when the maximum value is reached.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Mpanl Signaling (Sig)

Groups	"GROUP Mpanl Sig SystemParameters (SysParms)" "GROUP Mpanl Sig LapfSystemParameters (LapfSys)" "GROUP Mpanl Sig FrsSvcAcc (Svcacc)" "GROUP Mpanl Sig OsiState (State)" "GROUP Mpanl Sig Statistics (Stats)" "GROUP Mpanl Sig LapfStatus (LapfStatus)" "GROUP Mpanl Sig LapfStatistics (LapfStats)"
Scope	Network

Description	*Mpanl/<n> Signaling* This component defines the Q.933 and Q.922 (LAPF) parameters for Frame Relay switched virtual circuits at the *Mpanl* interface.
Mib	MpaNetworkLink
Common Verbs	Help List Display

GROUP Mpanl Sig SystemParameters (SysParms)

Properties	Provisioned
Description	This group contains the provisionable Q.933 system parameters.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Sig callSetupTimer (t303)

Access	Read and write
Description	This attribute specifies the time the network will wait for a response to the SETUP message sent to the called user. Upon timer expiry, the SETUP message is retransmitted. The second expiry of this timer causes the call to be cleared. This value is specified in seconds.
Mib	MpaNetworkLink
Values	Decimal (1..255)
Units	seconds
Default	4

ATTRIBUTE Mpanl Sig disconnectTimer (t305)

Access	Read and write
Description	This attribute specifies the time the network will wait for a response to the DISCONNECT message sent to the user. Upon

	timer expiry, the RELEASE message is sent. This value is specified in seconds.
Mib	MpaNetworkLink
Values	Decimal (1..255)
Units	seconds
Default	30

ATTRIBUTE Mpanl Sig releaseTimer (t308)

Access	Read and write
Description	This attribute specifies the time the network will wait for a response to the RELEASE message sent to the user. Upon timer expiry, the RELEASE message is retransmitted. The second expiry of the timer causes the call to be released. This value is specified in seconds.
Mib	MpaNetworkLink
Values	Decimal (1..255)
Units	seconds
Default	4

ATTRIBUTE Mpanl Sig callProceedingTimer (t310)

Access	Read and write
Description	This attribute specifies the time the network will wait for the CONNECT message from the called user after the network has received the optional CALL PROCEEDING message from the called user. Upon timer expiry, the call is cleared. This value is specified in seconds.
Mib	MpaNetworkLink
Values	Decimal (1..255)
Units	seconds

Default	10

ATTRIBUTE Mpanl Sig networkType (type)

Access	Read and write
Description	This attribute specifies whether this Frame Relay service is running on a public or a private network. This value is used solely in populating applicable information elements within those Q.933 messages that require a public or private network indication.
Mib	MpaNetworkLink
Values	private public
Default	private

ATTRIBUTE Mpanl Sig restartReqTimer (t316)

Access	Read and write
Description	This attribute specifies the time the network waits for the RESTART ACKNOWLEDGE message from the adjacent network after sending a first RESTART message. Upon timer expiry, another RESTART message is sent. After the second expiry, the interface is treated as idle. If the *restartReqTimer* attribute is set to the default value, then the interface is treated as idle when it receives an indication that the link is up and does not send a RESTART message.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Units	seconds
Default	0

ATTRIBUTE Mpanl Sig restartRcvTimer (t317)

Access	Read and write

Description	This attribute specifies the time the local network waits for the processing of a RESTART message received by the interface. Upon expiry of this timer, an alarm will be displayed to report the problem. The timer value must be less than the *restartReqTimer* provisioned value at the other end.
Mib	MpaNetworkLink
Values	Decimal (1..255)
Units	seconds
Default	110

GROUP Mpanl Sig LapfSystemParameters (LapfSys)

Properties	Provisioned
Description	This group contains the provisionable attributes for the SVC data link layer. The data link layer is governed primarily through ITU specification Q.922, and operates over DLCI 0.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Sig windowSize (ws)

Access	Read and write
Description	This attribute specifies the window size. This is the maximum number of unacknowledged sequenced frames that may be outstanding from or to this interface at any one time.
Mib	MpaNetworkLink
Values	Decimal (1..127)
Default	7

ATTRIBUTE Mpanl Sig retransmitLimit (rtl)

Access	Read and write
Description	This attribute specifies the number of times a frame can be

	retransmitted by the SVC data link layer before appropriate recovery action is taken.
Mib	MpaNetworkLink
Values	Decimal (0..20)
Default	3

ATTRIBUTE Mpanl Sig ackTimer (at)

Access	Read and write
Description	This attribute specifies the period in milliseconds that the network will wait for an acknowledgment to a sent frame. The value set for *ackTimer* must be less than the value set for *idleProbeTimer*.
Mib	MpaNetworkLink
Values	Decimal (1000..10000)
Units	msec
Default	1500

ATTRIBUTE Mpanl Sig ackDelayTimer (adt)

Access	Read and write
Description	This attribute specifies the maximum period in milliseconds that the network will wait before sending an acknowledgment for a received in-sequence I-frame. A value of 0 means there will be no delay in acknowledgment.
Mib	MpaNetworkLink
Values	Decimal (0..10000)
Units	msec
Default	0

ATTRIBUTE Mpanl Sig idleProbeTimer (ipt)

Access	Read and write

Description

This attribute specifies the time period in milliseconds the link will be permitted to remain idle (that is, no frames are exchanged on the data link). Upon expiry of this timer, the network's side link layer polls its peer for status. The value set for *idleProbeTimer* must be greater than the value set for *ackTimer.*

Mib MpaNetworkLink

Values Decimal (1000..65535000)

Units msec

Default 30000

GROUP Mpanl Sig FrsSvcAcc (Svcacc)

Properties Provisioned

Description

This group contains the provisionable attribute to define the defaultAccounting attribute..

Mib MpaNetworkLink

ATTRIBUTE Mpanl Sig defaultAccounting (defAcc)

Access Read and write

Criticality Process

Description

This attribute specifies whether accounting data collection and record generation is turned on at this DLCI. For accounting data collection and record generation to be turned on, the ***defaultAccounting*** bit and at least one of the ***accountCollection*** bits in the ***FrsDataNetworkAddress*** component must be set to on.

Mib MpaNetworkLink

Values off
on

Default on

GROUP Mpanl Sig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Sig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	MpaNetworkLink
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Mpanl Sig operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	MpaNetworkLink
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Mpanl Sig usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	MpaNetworkLink
Values	idle active (activ) busy

Default	idle

GROUP Mpanl Sig Statistics (Stats)

Properties	Operational
Description	This group contains the statistics related to the SVC signaling layer at the interface level.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Sig currentNumberOfSvcCalls (ncall)

Access	Read only
Description	This attribute shows the number of Frame Relay SVCs currently existing on this interface.
Mib	MpaNetworkLink
Values	Decimal (0..991)
Default	No default

ATTRIBUTE Mpanl Sig inCalls (incall)

Access	Read only
Description	This attribute indicates the current number of incoming SVCs on this interface (that is, the number of SVCs for which this interface represents the destination end of the call).
Mib	MpaNetworkLink
Values	Decimal (0..991)
Default	No default

ATTRIBUTE Mpanl Sig inCallsRefused (icr)

Access	Read only
Description	This attribute counts the number of incoming SVC call requests

that are rejected by either this interface or by the called user. When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Mpanl Sig outCalls (outcall)

Access Read only

Description

This attribute shows the current number of outgoing SVCs on this interface (that is, the number of SVCs for which this interface represents the source end of the call).

Mib MpaNetworkLink

Values Decimal (0..991)

Default No default

ATTRIBUTE Mpanl Sig outCallsFailed (ocf)

Access Read only

Description

This attribute counts the number of outgoing SVC call requests that are rejected by either this interface, or by the network side of the destination end, or by the called user. When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Mpanl Sig protocolErrors (pe)

Access Read only

Description

This attribute counts the number of times a Q.933 protocol error has occurred. Any one of the following events constitutes a

protocol error:
1. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, *Cir*, *Bc* and *Be* are all zero;
2. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, *Cir* is zero but *Bc* is non-zero, or *Bc* is zero but *Cir* is non-zero;
3. In the user-signaled *Link Layer Core Parameters* IE within the SETUP or CONNECT messages, the *minimum acceptable Cir* is greater than *Cir*;
4. At the destination end, any of the destination to source direction
link layer core parameters has been increased in the CONNECT message from the called user;
5. At the destination end, the destination to source direction *Cir* in the CONNECT message is smaller than the corresponding *minimum acceptable Cir* signaled to the called user;
6. At the source end, any of the source to destination direction link layer core parameters in the CONNECT message from the destination end has been increased;
7. At the source end, the source to destination direction *Cir*, after negotiation, is smaller than the corresponding *minimum acceptable Cir*;
8. The network has received a STATUS message from the user with an incompatible Q.933 state.

When this count reaches maximum, it wraps to zero.

Mib: MpaNetworkLink

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Mpanl Sig qualityOfServiceNotAvailable (qosna)

Access: Read only

Description

This attribute counts the number of incoming and outgoing SVCs that are rejected because the quality of service requested cannot be met by the network. When this count reaches maximum, it wraps to zero.

Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig setupTimeout (setupt)

Access	Read only
Description	This attribute counts the number of times the T303 setup timer has expired. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig lastCauseInStatusMsgReceived (lcis)

Access	Read only
Description	This attribute shows the cause value in the last received user's STATUS message to an existing call. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is **0** which means that no STATUS message has been received for an existing call.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Mpanl Sig lastStateInStatusMsgReceived (lsis)

Access	Read only
Description	This attribute shows the state value in the last received user's STATUS message to an existing call. The DLCI to which this

STATUS message applies is specified in the *lastDlciReceivedStatus* attribute.

The initial value of this attribute is ***notApplicable***.

Mib: MpaNetworkLink

Values:
null
callInitiated
outgoingCallProceeding
callPresent
incomingCallProceeding
active
disconnectRequest
disconnectIndication
releaseRequest
notApplicable
2
4
5
7
8
13
14
15
16
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54
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56
57
58
59
60
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62
63

Default No default

ATTRIBUTE Mpanl Sig lastDlciReceivedStatus (ldrs)

Access Read only

Description

This attribute shows the value of the DLCI that has most recently received a STATUS message from the user.

The initial value of this attribute is **0**.

Mib	MpaNetworkLink
Values	Decimal (0; 17..1007)
Default	No default

ATTRIBUTE Mpanl Sig lastQ933StateReceivedStatus (lsrs)

Access	Read only
Description	This attribute shows the network Q.933 state of the DLCI that has most recently received a STATUS message from the user. The DLCI to which this STATUS message applies is specified in the *lastDlciReceivedStatus* attribute. The initial value of this attribute is ***notApplicable***.
Mib	MpaNetworkLink
Values	null callInitiated outgoingCallProceeding callPresent incomingCallProceeding active disconnectRequest disconnectIndication releaseRequest notApplicable
Default	No default

ATTRIBUTE Mpanl Sig lastTimeMsgBlockCongested (ltmbc)

Access	Read only
Description	This attribute displays the most recent time that an SVC DLCI has failed to get a message block due to message block congestion. Exceptional behavior can occur due to this. The DLCI that has most recently encountered this is indicated by the *lastDlciWithMsgBlockCongestion* attribute. However, all SVC DLCIs may be affected.

	The initial value of this attribute is **0000-00-00 00:00**.
Mib	MpaNetworkLink
Values	Time (DHM)
Default	No default

ATTRIBUTE Mpanl Sig lastDlciWithMsgBlockCongestion (ldmbc)

Access	Read only
Description	This attribute shows the value of the DLCI that has most recently failed to get a message block due to message block congestion. The initial value of this attribute is **0**.
Mib	MpaNetworkLink
Values	Decimal (0; 16..1007)
Default	No default

GROUP Mpanl Sig LapfStatus (LapfStatus)

Properties	Operational
Description	This group contains the Q.922 SVC data link layer status.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Sig currentState (currState)

Access	Read only
Description	This attribute shows the current state of the SVC data link layer interface.
Mib	MpaNetworkLink
Values	disconnected linkSetup disconnectRequest informationTransfer waitingAck

Default	No default

ATTRIBUTE Mpanl Sig lastStateChangeReason (lscr)

Access	Read only
Description	This attribute shows the reason for the most recent state change. ***notStarted*** - this is the default state after SVC data link has just been created. ***abmeEntered*** - SVC data link has entered Asynchronous Balanced Mode after SABME or UA has been received. ***abmeReset*** - the data link has been reset. ***dmReceived*** - DM response received. ***dmSent*** - DM sent. ***discReceived*** - DISC response received. ***discSent*** - DISC sent. ***frmrReceived*** - FRMR received. ***n200RetranTimeOut*** - *retransmitLimit* has been exceeded. ***other*** - unspecified state change reasons. The most likely reason for this is the transition from state **waitingAck** to state **informationTransfer**.
Mib	MpaNetworkLink
Values	notStarted abmeEntered abmeReset dmReceived dmSent discReceived discSent frmrReceived n200RetranTimeOut other
Default	No default

ATTRIBUTE Mpanl Sig frmrReceive (frmrr)

Access	Read only
Description	This attribute shows the information field of the FRMR most recently received.

Mib	MpaNetworkLink
Values	String (0..8, Hex)
Default	No default

ATTRIBUTE Mpanl Sig currentQueueSize (queues)

Access	Read only
Description	This attribute shows the current number of frames in the SVC data link layer transmit queue.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

GROUP Mpanl Sig LapfStatistics (LapfStats)

Properties	Operational
Description	This group contains the statistics for the SVC data link layer.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Sig stateChange

Access	Read only
Description	This attribute counts the number of times the SVC data link layer interface has changed state. Frequent state changes may indicate a problem with the line quality. While the data link layer is in **informationTransfer** state, this counter will increment on each expiry of *idleProbeTimer* as its state goes from **informationTransfer** to **waitingAck** and back. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig remoteBusy

Access	Read only
Description	This attribute counts the number of times transmission of an I-frame was unsuccessful due to a perceived remote busy condition (window closed or remote busy). When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig receiveRejectFrame

Access	Read only
Description	This attribute counts the number of REJ frames received by the interface. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig ackTimeout

Access	Read only
Description	This attribute counts the number of times the *ackTimer* has expired. Frequent increments of this counter indicate a problem at the link or improper values have been chosen for *ackTimer* and *ackDelayTimer* between the local and remote sides. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig iFramesTransmitted

Access	Read only
Description	This attribute counts the number of SVC I-frames transmitted to the interface on DLCI 0. An I-frame may be counted more than once if there are retransmissions at the SVC data link layer. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig iFramesTxDiscarded

Access	Read only
Description	This attribute counts the number of SVC I-frames that are bound for the link but have been discarded. Discard reasons may be one of the following: 1.the frame length is beyond allow limit. 2.the SVC data link layer is in **disconnected** state. 3. the transmit queue has been purged because the queue length has reached the *reset* threshold. 4.the transmit queue or the queue waiting for acknowledgment has been purged because the link cannot be re-established. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig iFramesReceived

Access	Read only
Description	This attribute counts the number of SVC I-frames received from the interface. When this count reaches maximum, it wraps to zero.

Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl Sig iFramesRcvdDiscarded

Access	Read only
Description	This attribute counts the number of SVC I-frames received but have been discarded. The discard reasons are: 1. incorrect frame size 2. frame is out of sequence 3. frame received while the network side of the SVC data link layer is not in the **informationTransfer** or **waitingAck** state. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Mpanl SignalingMpanl (SigMpanl)

Groups	"GROUP Mpanl SigMpanl OsiState (State)" "GROUP Mpanl SigMpanl Profile" "GROUP Mpanl SigMpanl Statistics (Stats)" "GROUP Mpanl SigMpanl LapfStatus (LapfStatus)" "GROUP Mpanl SigMpanl LapfStatistics (LapfStats)"
Scope	Network
Description	*Mpanl/<n> SignalingMpanl* This component contains attributes relating to the MPANL

signaling DLCI at the MPANL interface. This includes operational Q.922 (LAPF) information for this DLCI.

Mib: MpaNetworkLink

Common Verbs:
- Help
- List
- Display

GROUP Mpanl SigMpanl OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: MpaNetworkLink

ATTRIBUTE Mpanl SigMpanl adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	MpaNetworkLink
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Mpanl SigMpanl operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	MpaNetworkLink
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Mpanl SigMpanl usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	MpaNetworkLink
Values	idle active (activ) busy
Default	idle

GROUP Mpanl SigMpanl Profile

Properties	Operational
Description	This group contains attributes which are populated by the information received from the MPA in the Profile Association command of the MPANL protocol.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl SigMpanl dteCustomerId (dcid)

Access	Read only
Description	This attribute indicates the Customer ID of the MPA connected to this Mpanl interface.
Mib	MpaNetworkLink
Values	Decimal (0; 1..8191)
Default	No default

ATTRIBUTE Mpanl SigMpanl dteNodeId (dnid)

Access	Read only
Description	This attribute indicates the nodeId that uniquely identifies the MPA connected to this Mpanl interface.
Mib	MpaNetworkLink
Values	Decimal (1..4095)
Default	No default

ATTRIBUTE Mpanl SigMpanl dteComponentName (dcn)

Access	Read only
Description	This attribute indicates the component name provided by the MPA connected to this MPANL interface.
Mib	MpaNetworkLink
Values	String (1..255, ASCII)
Default	No default

ATTRIBUTE Mpanl SigMpanl highestDlci (hd)

Access	Read only
Description	This gives the highest DLCI that the Mpanl interface will assign to an SVC. This value is populated by information provided in the DLCI Range Information Element of the MPANL Profile Association command received from the MPA.
Mib	MpaNetworkLink
Values	Decimal (0; 17..1007)
Default	No default

GROUP Mpanl SigMpanl Statistics (Stats)

Properties	Operational
Description	This group contains the statistics related to the Mpanl signaling layer at the interface level.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl SigMpanl protocolErrors (pe)

Access	Read only
Description	This attribute counts the number of times an Mpanl protocol error has occurred. Any one of the following events constitutes a protocol error: 1. DNA association before profile association. 2. Mandatory IE absent in SAPcommands.

3. Invalid length of IE/sub-info fields in SAP command.
When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Mpanl SigMpanl sap0CommandsRx (sap0rx)

Access Read only

Description

This attribute counts the number of SAP-0 commands received on the MPANL DLCI 16. This counter wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Mpanl SigMpanl sap0CommandsTx (sap0tx)

Access Read only

Description

This attribute counts the number of SAP-0 commands sent on the MPANL DLCI 16. This counter wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Mpanl SigMpanl sapXCommandsRx (sapXrx)

Access Read only

Description

This attribute counts the number of SAP-X commands received on the MPANL DLCI 16. This counter wraps to zero.

Mib MpaNetworkLink

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl SigMpanl sapXCommandsTx (sapXtx)

Access	Read only
Description	This attribute counts the number of SAP-X commands sent on the MPANL DLCI 16. This counter wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

GROUP Mpanl SigMpanl LapfStatus (LapfStatus)

Properties	Operational
Description	This group contains the Q.922 SVC data link layer status.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl SigMpanl currentState (currState)

Access	Read only
Description	This attribute shows the current state of the SVC data link layer interface.
Mib	MpaNetworkLink
Values	disconnected linkSetup disconnectRequest informationTransfer waitingAck
Default	No default

ATTRIBUTE Mpanl SigMpanl lastStateChangeReason (lscr)

Access	Read only

Description	This attribute shows the reason for the most recent state change. ***notStarted*** - this is the default state after SVC data link has just been created. ***abmeEntered*** - SVC data link has entered Asynchronous Balanced Mode after SABME or UA has been received. ***abmeReset*** - the data link has been reset. ***dmReceived*** - DM response received. ***dmSent*** - DM sent. ***discReceived*** - DISC response received. ***discSent*** - DISC sent. ***frmrReceived*** - FRMR received. ***n200RetranTimeOut*** - *retransmitLimit* has been exceeded. ***other*** - unspecified state change reasons. The most likely reason for this is the transition from state **waitingAck** to state **informationTransfer**.
Mib	MpaNetworkLink
Values	notStarted abmeEntered abmeReset dmReceived dmSent discReceived discSent frmrReceived n200RetranTimeOut other
Default	No default

ATTRIBUTE Mpanl SigMpanl frmrReceive (frmrr)

Access	Read only
Description	This attribute shows the information field of the FRMR most recently received.
Mib	MpaNetworkLink
Values	String (0..8, Hex)
Default	No default

ATTRIBUTE Mpanl SigMpanl currentQueueSize (queues)

Access	Read only
Description	This attribute shows the current number of frames in the SVC data link layer transmit queue.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

GROUP Mpanl SigMpanl LapfStatistics (LapfStats)

Properties	Operational
Description	This group contains the statistics for the SVC data link layer.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl SigMpanl stateChange

Access	Read only
Description	This attribute counts the number of times the SVC data link layer interface has changed state. Frequent state changes may indicate a problem with the line quality. While the data link layer is in **informationTransfer** state, this counter will increment on each expiry of *idleProbeTimer* as its state goes from **informationTransfer** to **waitingAck** and back. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mpanl SigMpanl remoteBusy

Access	Read only
Description	This attribute counts the number of times transmission of an I-frame was unsuccessful due to a perceived remote busy condition

(window closed or remote busy). When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Mpanl SigMpanl receiveRejectFrame

Access Read only

Description

This attribute counts the number of REJ frames received by the interface. When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Mpanl SigMpanl ackTimeout

Access Read only

Description

This attribute counts the number of times the *ackTimer* has expired. Frequent increments of this counter indicate a problem at the link or improper values have been chosen for *ackTimer* and *ackDelayTimer* between the local and remote sides. When this count reaches maximum, it wraps to zero.

Mib MpaNetworkLink

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Mpanl SigMpanl iFramesTransmitted

Access Read only

Description This attribute counts the number of SVC I-frames transmitted to the interface on DLCI 0. An I-frame may be counted more than

once if there are retransmissions at the SVC data link layer. When this count reaches maximum, it wraps to zero.

Mib: MpaNetworkLink

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Mpanl SigMpanl iFramesTxDiscarded

Access: Read only

Description: This attribute counts the number of SVC I-frames that are bound for the link but have been discarded. Discard reasons may be one of the following:
1.the frame length is beyond allow limit.
2.the SVC data link layer is in **disconnected** state.
3. the transmit queue has been purged because the queue length has reached the *reset* threshold.
4.the transmit queue or the queue waiting for acknowledgment has been purged because the link cannot be re-established.

When this count reaches maximum, it wraps to zero.

Mib: MpaNetworkLink

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Mpanl SigMpanl iFramesReceived

Access: Read only

Description: This attribute counts the number of SVC I-frames received from the interface. When this count reaches maximum, it wraps to zero.

Mib: MpaNetworkLink

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Mpanl SigMpanl iFramesRcvdDiscarded

Access	Read only
Description	This attribute counts the number of SVC I-frames received but have been discarded. The discard reasons are: 1. incorrect frame size 2. frame is out of sequence 3. frame received while the network side of the SVC data link layer is not in the **informationTransfer** or **waitingAck** state. When this count reaches maximum, it wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Mpanl LocalManagementInterface (Lmi)

Groups	"GROUP Mpanl Lmi ProtocolParameters (Parms)" "GROUP Mpanl Lmi OsiState (State)"
Scope	Application
Description	*Mpanl/n Lmi* This component defines the parameters for implementing the Local Management Interface protocol.
Mib	MpaNetworkLink
Common Verbs	Help List Display

GROUP Mpanl Lmi ProtocolParameters (Parms)

Properties	Provisioned
Description	This group contains the provisionable attributes of the Local Management Interface component.

Mib	MpaNetworkLink

ATTRIBUTE Mpanl Lmi procedures (proc)

Access	Read only
Criticality	Process
Description	This attribute selects the procedures to be used for the Local Management Interface. For the MPANL service this attribute is always set to ***none***. ***none***: no Local Management Interface procedures are running on this interface. This accommodates MPANL user equipment that have not implemented any LMI procedures. The remaining attributes of this group will be ignored. ***vendorForum***:Local Management Interface procedures from the Vendor Forum specification are supported on this interface. *DLCI 1023* is used for the LMI protocol. ***ansi***: Local Management Interface procedures from the ANSI specification are supported. *DLCI 0* is used for the LMI protocol. ***ccitt***: Local Management Interface procedures from the CCITT specification are supported. *DLCI 0* is used for the LMI protocol.
Mib	MpaNetworkLink
Values	none vendorForum ansi ccitt
Default	none

GROUP Mpanl Lmi OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state

combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib MpaNetworkLink

ATTRIBUTE Mpanl Lmi adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib MpaNetworkLink

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Mpanl Lmi operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be

providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	MpaNetworkLink
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Mpanl Lmi usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	MpaNetworkLink
Values	idle active (activ) busy
Default	idle

COMPONENT Mpanl VoiceOverFrameRelay (VoFr)

Groups	"GROUP Mpanl VoFr Operational (Oper)" "GROUP Mpanl VoFr Statistics (Stats)"
Scope	Network

Description	*Mpanl/n VoiceOverFrameRelay* This component, when provisioned, provides VoFr link layer framing capability to the containing *Mpanl* instance.
Mib	MpaNetworkLink
Common Verbs	Help List Display

GROUP Mpanl VoFr Operational (Oper)

Properties	Operational
Description	This group contains operational attributes of the *VoFr* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl VoFr maximumFrameSize

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum size of VoFr frames transmitted to MPA. The size excludes HDLC flags and CRC octets. MPA signals the required value as part of the MPANL initial staging, which is then used to set the value of this attribute. Default value is used before MPANL staging is completed.
Mib	MpaNetworkLink
Values	Decimal (50..4100)
Units	octets
Default	4100

ATTRIBUTE Mpanl VoFr transmitInformationRate

Access	Read: All Write: Illegal

Description	This attribute indicates the maximum information rate towards MPA. Value may change over time, as signalled by MPA. Default value is used before MPANL staging is completed.
Mib	MpaNetworkLink
Values	Decimal (16000..4294967295)
Units	bit/s
Default	16000

GROUP Mpanl VoFr Statistics (Stats)

Properties	Operational
Description	This group contains statistics attributes of the *VoFr* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl VoFr fragmentedHighestPriorityFrames

Access	Read: All Write: Illegal
Description	This attribute counts egress frames with the highest priority, which had to be fragmented because they were larger than *maximumFrameSize*. This could happen when a data call is setup to use the highest emission priority, or MPA is provisioned with too low maximum frame size. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl VoFr lostFragmentsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts lost VoFr fragments from the interface. Presence of lost fragments indicates a link problem. Note that lost

	whole frames cannot be detected. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Mpanl VoFr protocolViolationsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts VoFr protocol violations detected in the data from the interface. When the maximum is reached the count wraps to zero.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

COMPONENT Mpanl FrMuxSetup

Groups	"GROUP Mpanl FrMuxSetup Operational (Op)"
Scope	Application
Description	*Mpanl/n FrMuxSetup* This component contains operational attributes for egress traffic shaping as well as the component name of the *FrMux Dlci* to which this *Mpanl/n* is associated.
Mib	MpaNetworkLink
Subcomponents	"COMPONENT Mpanl FrMuxSetup PvcSetup"
Common Verbs	Help List Display Add DELete

GROUP Mpanl FrMuxSetup Operational (Op)

Properties	Operational
Description	This group contains the following operational parameters: committedInformationRate of the PVC connection used for tunnelling the MPANL traffic, and the component name of the *Dlci* which carries the traffic for this MPANL.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl FrMuxSetup committedInformationRate (cir)

Access	Read only
Description	This attribute specifies, in bit/s, the committed information rate (CIR) to which the traffic transmitted towards the interface is shaped.
Mib	MpaNetworkLink
Values	Decimal (16000..4294967295)
Units	bit/s
Default	16000

ATTRIBUTE Mpanl FrMuxSetup dlciCompName

Access	Read only
Description	This attribute specifies the component name of the *Dlci* with which the application using this *FrMuxSetup* component is associated. The name is a string *FrMux/n Dlci/m*. For a PVC this is the same component name as provisioned under the subcomponent *FrMuxPvcSetup*.
Mib	MpaNetworkLink
Values	The name of the component
Default	No default

COMPONENT Mpanl FrMuxSetup PvcSetup

Groups	"GROUP Mpanl FrMuxSetup PvcSetup Provisioned (Prov)"
Scope	Application
Description	*Mpanl/n FrMuxSetup PvcSetup* This component contains provisionable attributes for setting up a *Dlci* associated with the application using this component. The *Dlci* is of a PVC type.
Mib	MpaNetworkLink
Common Verbs	Help List Display

GROUP Mpanl FrMuxSetup PvcSetup Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for setting up a *Dlci* associated with the application using the *FrMuxSetup* component. The *Dlci* is of the PVC type.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl FrMuxSetup PvcSetup dlciName

Access	Read and write
Criticality	Process
Description	This attribute is the link to the *Dlci* which is associated with the application using the *FrMuxSetup* component.
Mib	MpaNetworkLink
Values	Link (Hardware, applicationName)
Default	No default

COMPONENT Mpanl Isdn

Groups	"GROUP Mpanl Isdn Provisioned (Prov)" "GROUP Mpanl Isdn Operational (Oper)"
Scope	Network
Description	*Mpanl/n Isdn* This component defines the parameters associated with the ISDN B- Channel interface. Adding this component makes the *Mpanl* behave as an ISDN access to the MPA.
Mib	MpaNetworkLink
Common Verbs	Help List Display Add DELete

GROUP Mpanl Isdn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Isdn* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Isdn t320

Access	Read and write
Criticality	Process
Description	This attribute specifies the waiting time for a silent B-Channel (no active VCs associated with the *Mpanl*) to be disconnected and made available. A value of 0 means t320 never times out.
Mib	MpaNetworkLink
Values	Decimal (0..255)

Units	seconds
Default	60

ATTRIBUTE Mpanl Isdn addressSignalling (asig)

Access	Read and write
Criticality	Process
Description	This attribute defines whether the ISDN Calling Party Number is to be signaled to the remote DTE during an SVC call establishment. Otherwise, no changes to the current behavior of SVC call establishment (that is, the DNA is used in the calling party number information element).
Mib	MpaNetworkLink
Values	IsdnDna normalBehavior
Default	normalBehavior

GROUP Mpanl Isdn Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Isdn* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Isdn dataSigChan

Access	Read only
Description	This attribute indicates the instance number of the *dataSigChan* component controlling the allocation of this *Mpanl Isdn* component.
Mib	MpaNetworkLink
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Mpanl Isdn bChannelState (bState)

Access	Read only
Description	This attribute indicates the state of the B-Channel. If the value is ***idle*** it means that no VCs are connected and this B-Channel is available. If the value is ***busy*** it means this B-Channel has been allocated and is not available. If the value is ***disabled*** it means the application interface or the port is locked or disabled.
Mib	MpaNetworkLink
Values	idle busy disabled
Default	No default

ATTRIBUTE Mpanl Isdn lastUsedCgpn (lucgpn)

Access	Read only
Description	This attribute indicates the calling party number currently using the B-Channel. When the B-Channel is free, the value of this attribute is an empty string.
Mib	MpaNetworkLink
Values	BCD (0..15)
Default	No default

ATTRIBUTE Mpanl Isdn bChanIntState (bInt)

Access	Read only
Description	Debug information
Mib	MpaNetworkLink
Values	isdnInit waitAccEnable waitLnsResponse waitFramerData enabling waitAccRegAck

	up down releasing
Default	No default

ATTRIBUTE Mpanl Isdn activeVirtualCircuitsCount (vcCount)

Access	Read only
Description	Current number of virtual circuits (switched and permanent) in data transfer.
Mib	MpaNetworkLink
Values	Decimal (0..4294967295)
Default	0

COMPONENT Mpanl Voice

Groups	"GROUP Mpanl Voice Provisioned (Prov)"
Scope	Device
Description	*Mpanl/n Vcp* This component defines the Voice Control Point characteristics of an instance of the *Mpanl* top level component. This includes SAP-x control message tracing for the MPANL and accounting for Voice Calls over this instance of *Mpanl*.
Mib	MpaNetworkLink
Subcomponents	"COMPONENT Mpanl Voice MpaVoiceAccounting (Acct)"
Common Verbs	Help List Display

GROUP Mpanl Voice Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attribute used for SPO connections.

Mib	MpaNetworkLink

ATTRIBUTE Mpanl Voice useSpo (spo)

Access	Read: All Write: All
Description	ATM Adaptation Layer Short Path Oriented (AALSPO) is used to optimize the voice traffic over ATM interfaces encapsulating a voice packet of an exact 45 byte size in a single ATM cell. Using AAL5, two cells are required to transport 45 byte packet because an 8 byte AAL5 trailer is needed by the protocol. AALSPO optimizes the disassembly/reassembly mechanism performed at AAL level by replacing the AAL5 trailer with a small sized 3 byte LRC field. By setting this attribute to ***yes*** the voice call will be routed on a AALSPO connection (specific to voice or video traffic) if a circuit of this type is properly provisioned. If not properly provisioned the system defaults to AAL5. The frame size for this virtual circuit will be 45 bytes, regardless of the frame size signaled by the MPA side. If no ATM interfaces are used it is recommended that this attribute be set to the default value (***no***).
Mib	MpaNetworkLink
Values	no yes
Default	no

COMPONENT Mpanl Voice MpaVoiceAccounting (Acct)

Groups	"GROUP Mpanl Voice Acct Provisioned (Prov)"
Scope	Application
Description	*Mpanl/n Voice MpaVoiceAccounting* The *VoiceAccounting* component defines the operational characteristics of the accounting system of the *Mpanl Voice*

component. Accounting record generation for calls on the *Mpanl* is managed by this component.

Mib	MpaNetworkLink
Common Verbs	Help List Display

GROUP Mpanl Voice Acct Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of a *VoiceAccounting* component.
Mib	MpaNetworkLink

ATTRIBUTE Mpanl Voice Acct accountCollection (aco)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies that accounting records are to be collected for the various reasons: ***bill***, ***test***, ***study***, ***audit***. If none of these reasons is set, then accounting is suppressed.
Mib	MpaNetworkLink
Set of	bill test study audit
Default	No default

ATTRIBUTE Mpanl Voice Acct accountClass (acl)

Access	Read: All Write: All
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting

	record in the local and remote service type attributes. The use of this attribute is decided by the network operator.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	0

ATTRIBUTE Mpanl Voice Acct serviceExchange (sre)

Access	Read: All Write: All
Description	This attribute specifies a user defined value, Data Service Exchange, as entered by the network operator and reported in the accounting record.
Mib	MpaNetworkLink
Values	Decimal (0..255)
Default	0

ATTRIBUTE Mpanl Voice Acct digitsSuppressed (ds)

Access	Read: All Write: All
Description	This attribute specifies the number of trailing digits which will be suppressed in the *calledNumber* in the accounting records. Each of the specified number of trailing digits are replaced with an “X”. This option exists to satisfy privacy requirements in a number of countries.
Mib	MpaNetworkLink
Values	Decimal (0..8)
Default	0

ATTRIBUTE Mpanl Voice Acct accountingOptions (ao)

Access	Read: All Write: All

Description	This attribute specifies optional settings for the voice networking accounting system. The option is: ***suppressTerminatingEndRecords*** **-** setting this option suppresses the generation of accounting records at the destination node. This reduces the volume of accounting data. This option has local significance only. It only suppresses the generation of accounting records for calls received by this node.
Mib	MpaNetworkLink
Set of	suppressTerminatingEndRecords (ster)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Mpanl

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Mtp3

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Mtp3

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COMPONENT MessageTransferPartLayer3 (Mtp3)

Instance	Decimal (0..255)
Groups	"GROUP Mtp3 Provisioned (Prov)" "GROUP Mtp3 OsiState (State)" "GROUP Mtp3 Operational (Oper)" "GROUP Mtp3 WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS MessageTransferPartLayer3"

Scope	Application
Description	MessageTransferPartLayer3 This component represents an MTP 3 layer of the SS7 stack.
Mib	Ss7Mtp3
Subcomponents	"COMPONENT Mtp3 Linkset (Ls)"
Opt. Subcomp.	"COMPONENT Mtp3 ServiceIndicator (ServInd)"
Common Verbs	Help List Display Add DELete

GROUP Mtp3 Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes of this component.
Mib	Ss7Mtp3

ATTRIBUTE Mtp3 linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor that this component and its subcomponents are provisioned on.
Mib	Ss7Mtp3
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Mtp3 linkToPort (lToPort)

Access	Read: All Write: All
Description	This attribute specifies a link to *Gips IpAddr UDP Port* on an IP Server. This determines the IP Address and UDP port that all MTP layer 3 users use to address this MTP layer 3 component. Changing this value can cause outstanding transactions to be affected. *Check Prov* will fail if this attribute does not specify a *Gips IpAddr Udp Port* component.
Mib	Ss7Mtp3
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Mtp3 mtpType

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the type of MTP3. The possible values for *mtpType* are: ***mtp3*** - This is the standard MTP layer 3 from Q.704 that supports signalling units up to 272 octets in length. ***mtp3b*** - This is the MTP layer 3 broadband variant that supports signalling units up to 4096 octets in length. For the SS7 stack on the Iu interface this attribute must be set to ***mtp3b***. For the SS7 stack on the Call Server interface this attribute must be set to ***mtp3***. Changing the value of this attribute causes all the linksets associated with the MTP3 layer to be restarted.
Mib	Ss7Mtp3
Values	mtp3 mtp3b
Default	mtp3

ATTRIBUTE Mtp3 origPointCode (opc)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the point code of the node that the MTP3 layer manages. The point code must be provisioned in one of the following formats: basic***:*** The point code is provisioned as a decimal number in the range ***1***..***16383***. A value of ***0*** is not valid. segmented: The point code is provisioned as three integers, separated by dots. The first integer must be in the range ***0***..***7***, the second integer must be in the range ***0***..***255***, and the third integer must be in the range ***0***..***7***. A value of ***0.0.0*** is not valid.

	This attribute must not specify a point code identical to that specified by *adjPointCode*. Changing the value of this attribute causes all the linksets associated with this MTP3 layer to be restarted.
Mib	Ss7Mtp3
Values	Integer Sequence
Default	No default

ATTRIBUTE Mtp3 networkIndicator (netInd)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the network is a national network, or an international network. This attribute determines the value that is filled in the Network Indicator field of the messages sent to the remote end. This attribute must match what the peer MTP3 layer on the remote end expects in the messages. Changing the value of this attribute causes all the linksets associated with this MTP3 layer to be restarted. Each meaning of each valid value for *networkIndicator* is described in SS7 Mtp3 specification Q.704. ***international*** - MTP3 node is a member of an “International” network. ***internationalSpare*** - MTP3 node is a member of an “International Spare” network. ***national*** - MTP3 node is a member of a “National” network.

nationalSpare - MTP3 node is a member of a “National Spare” network.

Mib	Ss7Mtp3
Values	international internationalSpare national nationalSpare
Default	international

ATTRIBUTE Mtp3 changeoverHoldoffTimer (t1)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T1 defined in ITU-T recommendation Q.704. This timer value determines how long to wait for a failed link to become available when changeover is required, but there is no alternate link. It is used to avoid message mis-sequencing on changeover. This timer is started when a link goes down and a changeover is required, but changeover messages cannot be exchanged on an alternate link. This timer is stopped when the failed link becomes available. Upon timer expiration, it sends all the retrieved (layer 2) and buffered (layer 3) messages down the new link and marks changeover as complete.
Mib	Ss7Mtp3
Values	Decimal (500..1200)
Units	msec
Default	500

ATTRIBUTE Mtp3 changeoverAckTimer (t2)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T2 defined in ITU-T recommendation Q.704. This timer is started when MTP layer 3 receives a Backward Sequence Number of the next signalling unit to be Transmitted (BSNT) from a link in the changeover process. This timer is stopped when the link becomes available, or when a changeover message is received while waiting for an ack. Upon timer expiration, the link is released. The number of expiries of this timer is indicated by the attribute *changeoverAckTimeouts*.
Mib	Ss7Mtp3
Values	Decimal (700..2000)
Units	msec
Default	700

ATTRIBUTE Mtp3 changebackDiversionDelayTimer (t3)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T3 defined in ITU-T recommendation Q.704. It provides time controlled diversion-delay to avoid mis-sequencing on changeback. This timer is started when a link is in changeback and the signalling point at the remote end of newly available link is not accessible via an alternative link. Upon timer expiry, traffic is restarted on the link.
Mib	Ss7Mtp3

Values	Decimal (500..1200)
Units	msec
Default	500

ATTRIBUTE Mtp3 firstAttemptChangebackAckTImer (t4)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T4 defined in ITU-T recommendation Q.704. This timer is started when a link is in changeback and the Signalling Point (SP) at the remote end of the newly available link is accessible via an alternative link. This timer is stopped when a link has attempted changeback for the first time and receives a changeback ack for every changeback declaration sent. Upon timer expiration, *secondAttemptChangebackAckTimer* is started and all the unacknowledged changeback declarations are re-sent. The number of resends of the changeback declarations is indicated by the attribute *changebackDeclarationTimeouts*.
Mib	Ss7Mtp3
Values	Decimal (500..1200)
Units	msec
Default	500

ATTRIBUTE Mtp3 secondAttemptChangebackAckTimer (t5)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T5 defined in ITU-T recommendation Q.704. It creates a delay to avoid oscillation of initial alignment failure and link restart.

	The timer is started when a link does not changeback in the first attempt with *firstAttemptChangeBackAckTimer*. The timer is stopped when a link is in the second attempt of changeback and receives a changeback ack for every changeback declaration sent. Upon timer expiration, changeback is terminated. The number of expiries of this timer is indicated by the attribute *secondAttemptChangebackAckTimeouts*.
Mib	Ss7Mtp3
Values	Decimal (500..1200)
Units	msec
Default	500

ATTRIBUTE Mtp3 uninhibitAckTimer (t12)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T12 defined in ITU-T recommendation Q.704. The timer is started every time a link *Uninhibit* command is executed. The timer is stopped when the link uninhibit is acknowledged by the remote end. Upon timer expiry, the uninhibit is started again for a maximum of one more time. If it fails this time, the uninhibit is cancelled. The number of expiries of this timer is indicated by the attribute *uninhibitAckTimeouts*.
Mib	Ss7Mtp3
Values	Decimal (800..1500)

Units	msec
Default	800

ATTRIBUTE Mtp3 forceUninhibitTimer (t13)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T13 defined in ITU-T recommendation Q.704. The timer is started when this end initiates a link force uninhibit. The timer is stopped when the signalling link uninhibit is acknowledged. Upon timer expiry, the uninhibit is started again one more time. If it fails this time, the uninhibit is cancelled. The number of expiries of this timer is indicated by the attribute *forceUninhibitTimeouts*.
Mib	Ss7Mtp3
Values	Decimal (800..1500)
Units	msec
Default	800

ATTRIBUTE Mtp3 inhibitAckTimer (t14)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T14 defined in ITU-T recommendation Q.704. This timer waits for inhibition acknowledgement. The timer is started when an *Inhibit* command is executed. The timer is stopped when the local link inhibit is denied or successful.

	Upon expiry, the local link inhibit request is cancelled.
Mib	Ss7Mtp3
Values	Decimal (2..3)
Units	seconds
Default	2

ATTRIBUTE Mtp3 initialAlignmentDelayTimer (t17)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T17 defined in ITU-T recommendation Q.704. It creates a delay to avoid oscillation of initial alignment failure and link restart. This timer is started when a signalling link is started. Upon timer expiry, it sends a START message to layer 2.
Mib	Ss7Mtp3
Values	Decimal (800..1500)
Units	msec
Default	800

ATTRIBUTE Mtp3 localInhibitTestTimer (t22)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T22 (Local inhibit test timer) defined in ITU-T recommendation Q.704. This timer is started when a link becomes locally inhibited. Upon timer expiry, if the link is still unavailable and locally inhibited, the timer is restarted, and a local inhibit test message is sent to the remote end.
Mib	Ss7Mtp3

Values	Decimal (180..360)
Units	seconds
Default	180

ATTRIBUTE Mtp3 remoteInhibitTestTimer (t23)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T23 (Remote inhibit test timer) defined in ITU-T recommendation Q.704. This timer is started when a link becomes remote inhibited. Upon timer expiry, if the link is still unavailable and remotely inhibited, the timer is restarted, and a remote inhibit test message is sent to the remote end
Mib	Ss7Mtp3
Values	Decimal (180..360)
Units	seconds
Default	180

ATTRIBUTE Mtp3 sltAckTimer (tQ707T1)

Access	Read: All Write: All
Description	This attribute specifies the value of the Supervision timer to wait for a signalling link test acknowledgement message. This timer is started every time a Signalling Link Test Controller (SLTC) sends out a test message. The timer is stopped when the SLTC receives an acknowledge message from the peer MTP3 layer. Upon timer expiration, if this is the first attempt, this timer is restarted and a second attempt is made. If the timer expires after the second attempt, the MTP3 layer is informed of a broken link.

Mib	Ss7Mtp3
Values	Decimal (4..12)
Units	seconds
Default	4

ATTRIBUTE Mtp3 sltIntervalTimer (tQ707T2)

Access	Read: All Write: All
Description	This attribute specifies the value of the Interval timer defined in ITU-T recommendation Q.707 for sending signalling link test messages. The timer is started when a link comes in service, and each time the timer expires if the link is still good. The timer is stopped when the link fails, as determined by the *sltAckTimer*. Upon timer expiry, another test message is sent to the peer and the timer is restarted.
Mib	Ss7Mtp3
Values	Decimal (30..90)
Units	seconds
Default	30

GROUP Mtp3 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	Ss7Mtp3

ATTRIBUTE Mtp3 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ss7Mtp3
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Mtp3 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ss7Mtp3

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Mtp3 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Ss7Mtp3

Values: idle
active (activ)
busy

Default: idle

GROUP Mtp3 Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of this component.

Mib: Ss7Mtp3

ATTRIBUTE Mtp3 changeoverAckTimeouts (t2Tmouts)

Access: Read: All
Write: Illegal

Description	This attribute counts the timeouts of timer T2, specified by the attribute *changeoverAckTimer*. The counter wraps to zero when its maximum value is exceeded.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 firstAttemptChangebackAckTmouts (t4Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of timer T4, specified by the attribute *firstAttemptChangebackAckTimer*. The counter wraps to zero when its maximum value is exceeded.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 secondAttemptChangebackAckTmouts (t5Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of timer T5, specified by the attribute *secondAttemptChangebackAckTimer*. The counter wraps to zero when its maximum value is exceeded.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 forceUninhibitAckTimeouts (t13Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of timer T13, specified by the attribute *forceUninhibitAckTimer*. The counter wraps to zero when its maximum value is exceeded.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

GROUP Mtp3 WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7Mtp3

ATTRIBUTE Mtp3 customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 customCounter2 (customCntr2)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS MessageTransferPartLayer3

Description	The statistics record generated by the MessageTransferPartLayer3 component.

ATTRIBUTE Mtp3 linkSetsUnavailable (lsUnavail)

Description	This attribute indicates the number of linkset unavailable conditions over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Mtp3 Linkset (Ls)

Instance	Decimal (0..0)
Groups	"GROUP Mtp3 Ls Provisoned (Prov)" "GROUP Mtp3 Ls OsiState (State)" "GROUP Mtp3 Ls WlcCustomCounters (WlcCustomCntr)"

Scope	Application
Description	Mtp3/n Linkset/n This component represents an MTP3 linkset. A linkset is a grouping of signalling links that are used to transfer signalling between this node and a specific adjacent signalling point.
Mib	Ss7Mtp3
Subcomponents	"COMPONENT Mtp3 Ls Link"
Common Verbs	Help List Display Add DELete

GROUP Mtp3 Ls Provisoned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of this component.
Mib	Ss7Mtp3

ATTRIBUTE Mtp3 Ls adjPointCode (apc)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the point code of the node that this node directly connects to through this linkset. The point code must be provisioned in one of the following formats: basic***:*** The point code is provisioned as a decimal number in the range ***1***..***16383***. A value of ***0*** is not valid. segmented: The point code is provisioned as three integers, separated by dots. The first integer must be in the range ***0***..***7***, the

second integer must be in the range ***0..255***, and the third integer must be in the range ***0***..***7***. A value of ***0.0.0*** is not valid.

This attribute must not specify a point code identical to that specified by *origPointCode*.

Changing the value of this attribute causes all the linksets associated with the MTP3 layer to be restarted.

Mib	Ss7Mtp3
Values	Integer Sequence
Default	No default

GROUP Mtp3 Ls OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7Mtp3

ATTRIBUTE Mtp3 Ls adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

	The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ss7Mtp3
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Mtp3 Ls operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ss7Mtp3
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Mtp3 Ls usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Ss7Mtp3

Values: idle
active (activ)
busy

Default: idle

GROUP Mtp3 Ls WlcCustomCounters (WlcCustomCntr)

Properties: Operational

Description: This group contains the spare counters that can be dynamically patched.

Mib: Ss7Mtp3

ATTRIBUTE Mtp3 Ls customCounter1 (customCntr1)

Access: Read: All
Write: Illegal

Description: This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib: Ss7Mtp3

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Mtp3 Ls customCounter2 (customCntr2)

Access: Read: All
Write: Illegal

Description: This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 Ls customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Mtp3 Ls Link

Instance	Decimal (0..15)
Groups	"GROUP Mtp3 Ls Link Provisoned (Prov)" "GROUP Mtp3 Ls Link OsiState (State)" "GROUP Mtp3 Ls Link Operational (Oper)" "GROUP Mtp3 Ls Link WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS MessageTransferPartLayer3 Linkset Link"

Scope	Application
Description	Mtp3/n Linkset/n Link/n

This component represents a SS7 signalling link that conveys signalling information between two signalling points.

Mib: Ss7Mtp3

Common Verbs:

- Help
- List
- Display
- Add
- DELete
- Unlock

VERB INHIBIT Mtp3 Ls Link

Impact: Service

Description: *Inhibit Mtp3/n Linkset/n Link/n*

This command requests that the signalling link represented by this component be locally inhibited, as per the ITU-T recommendation Q.704.

The *Inhibit* will be denied locally if the requested link is the last available link in the linkset, or if an uninhibit on the requested is in progress. The *Inhibit* can also be denied by the remote end.

If the link is inhibited successfully, all the traffic carried on the linkset will be distributed among the other links in the linkset.

VERB UNINHIBIT Mtp3 Ls Link

Impact	Service
Description	*Uninhibit Mtp3/n Linkset/n Link/n* This command requests that the signalling link represented by this component be uninhibited, as per the ITU-T recommendation Q.704. The *Uninhibit* will be denied locally if the requested link has not been inhibited from this end, or if an inhibit on the link is in progress. If the link is uninhibited successfully, the link will be made available for traffic.

VERB LOCK Mtp3 Ls Link

Impact	Service
Description	*Lock [-force] Mtp3/n Linkset/n Link/n* This verb causes the specified *Link* component to immediately enter the OSI ***locked*** administrative state. Traffic flow ceases on the newly locked *Link* and is diverted to the remaining unlocked *Links* of the *LinkSet.* The *Lock* command fails if executed on the last ***unlocked*** *Link* of a *LinkSet*. The last ***unlocked*** *Link* of a *LinkSet* must be locked using the *force* option. **Options:** *-force* If this option is specified, the *Link* is locked even if it is the only unlocked *Link* in the *LinkSet*.

GROUP Mtp3 Ls Link Provisoned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of this component.

Mib	Ss7Mtp3

ATTRIBUTE Mtp3 Ls Link remoteIpAddress (remIpAddr)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the remote IP address of the link layer entity that provides data link layer services for this link. Any IP address is valid except ***0.0.0.0***. Changing the value specified by this attribute causes a loss of service for this component.
Mib	Ss7Mtp3
Values	IP address
Default	No default

ATTRIBUTE Mtp3 Ls Link remoteUdpPort (remUdpPort)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the UDP port of the remote link layer entity that provides data link layer services for this link. Changing the value specified by this attribute causes a loss of service for this component.
Mib	Ss7Mtp3
Values	Decimal (1..65535)
Default	No default

GROUP Mtp3 Ls Link OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7Mtp3

ATTRIBUTE Mtp3 Ls Link adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ss7Mtp3
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Mtp3 Ls Link operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Ss7Mtp3
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Mtp3 Ls Link usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ss7Mtp3
Values	idle active (activ) busy
Default	idle

GROUP Mtp3 Ls Link Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of this component.

Mib	Ss7Mtp3

ATTRIBUTE Mtp3 Ls Link pdusRx

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) received from layer 2. This includes the PDUs with and without user payload. The counter wraps to 0 when it exceeds the maximum value.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 Ls Link payloadPdusRx (plPdusRx)

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) with payload received from layer 2. The counter wraps to 0 when it exceeds the maximum value.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 Ls Link pdusTx

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units sent to layer 2. This includes the PDUs with and without user payload. The counter wraps to 0 when it exceeds the maximum value.

Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 Ls Link payloadPdusTx (plPdusTx)

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) with payload sent to layer 2. The counter wraps to 0 when it exceeds the maximum value.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 Ls Link invalidPdusRx (invPdusRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of invalid Protocol Data Units received from Layer 2. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

GROUP Mtp3 Ls Link WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7Mtp3

ATTRIBUTE Mtp3 Ls Link customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 Ls Link customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 Ls Link customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)

Default No default

COLLECTED STATS MessageTransferPartLayer3 Linkset Link

Description The statistics record generated by the MessageTransferPartLayer3 Linkset Link component.

ATTRIBUTE Mtp3 Ls Link pdusRx

Description This attribute indicates the number of Protocol Data Units (PDUs) received from layer 2 over the collection interval.

This includes the PDUs with and without user payload.

Values Decimal (0..4294967295)

ATTRIBUTE Mtp3 Ls Link payloadPdusRx

Description This attribute indicates the number of Protocol Data Units (PDUs) with payload received from layer 2 over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Mtp3 Ls Link pdusTx

Description This attribute indicates the number of Protocol Data Units (PDUs) sent to layer 2 over the collection interval.

This includes PDUs with and without user payload.

Values Decimal (0..4294967295)

ATTRIBUTE Mtp3 Ls Link payloadPdusTx

Description This attribute indicates the number of Protocol Data Units (PDUs) with payload sent to layer 2 over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Mtp3 Ls Link invalidPdusRx

Description This attribute indicates the number of number of invalid Protocol Data Units received over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Mtp3 Ls Link sltFailures

Description	This attribute indicates the number of signalling link test message failure conditions over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Mtp3 Ls Link changeovers

Description	This attribute indicates the number of link changeover conditions over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Mtp3 ServiceIndicator (ServInd)

Instance	Decimal (3; 12)
Groups	"GROUP Mtp3 ServInd Provisioned (Prov)" "GROUP Mtp3 ServInd WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Mtp3/n ServiceIndicator/<service indicator>* This component represents an MTP layer 3 service indicator. A service indicator is a logical identifier that represents a particular user of MTP layer 3 services. The SS7 specifications define which users are required to use a given service indicator. Only one application can use a particular MTP layer 3 service indicator.
Mib	Ss7Mtp3
Common Verbs	Help List Display Add DELete

GROUP Mtp3 ServInd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of this component.
Mib	Ss7Mtp3

ATTRIBUTE Mtp3 ServInd linkToMtp3Connection (lToMtp3Conn)

Access	Read: All Write: All
Description	This attribute specifies a link to the application using the service represented by this service indicator. This attribute must specify either *Sccp Mtp3Connection* or *Vmg Mtp3Connection*. *SccpMtp3Connection* must be used for *Mtp3/n ServiceIndicator/3* and *Vmg Mtp3Connection* must be used for *Mtp3/n ServiceIndicator/12*.
Mib	Ss7Mtp3
Values	Link (Service, linkToServiceIndicator)
Default	No default

GROUP Mtp3 ServInd WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7Mtp3

ATTRIBUTE Mtp3 ServInd customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 ServInd customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Mtp3 ServInd customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Mtp3
Values	Decimal (0..4294967295)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Mtp3

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Nmis

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Nmis

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COMPONENT NetworkManagementInterfaceSystem (Nmis)

Scope	Device
Description	*Nmis* The Network Management Interface System (NMIS) is the collection of on-swicth software interfaces provided to administer the node. NMIS offers Telnet (server and client) and FTP (server) access, a directly-connected Local operator capability, and a proprietary FMIP Interface for use by MDM. The *Nmis* component is a placeholder component to collect all the Network Management Interface components below it.
Mib	MgmtInterfaces
Subcomponents	"COMPONENT Nmis Local" "COMPONENT Nmis Telnet"
Dyn. Subcomp.	"COMPONENT Nmis Fmip" "COMPONENT Nmis Ftp"
Common Verbs	Help List Display

COMPONENT Nmis Local

Groups	"GROUP Nmis Local OsiState (State)" "GROUP Nmis Local Operational (Oper)" "GROUP Nmis Local Provisioned (Prov)"

Scope	Device
Description	*Nmis Local* This network management interface is supported on the V.24 DCE port on the Control Processors. A VT-100 ASCII terminal must be connected to the V.24 DCE port to log in to the Local Operator Interface. The Local Operator Interface is otherwise identical to the Telnet operator interface.
Mib	MgmtInterfaces
Dyn. Subcomp.	"COMPONENT Nmis Local Session"
Common Verbs	Help List Display

GROUP Nmis Local OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Local adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is

administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	MgmtInterfaces
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nmis Local operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	MgmtInterfaces
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nmis Local usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	MgmtInterfaces
Values	idle active (activ) busy
Default	idle

GROUP Nmis Local Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an NMIS manager. This group is common to all NMIS managers.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Local maxAllowedSessions

Access	Read only
Description	This attribute indicates the maximum number of simultaneous sessions the manager will allow.
Mib	MgmtInterfaces
Values	Decimal (2..35)
Default	No default

ATTRIBUTE Nmis Local activeSessions

Access	Read only
Description	For FMIP, FTP, and Telnet interface, this attribute indicates the number of simultaneous sessions currently active under the manager of the particular interface. Note that there may be fewer

Session components than what is shown here, since an active session could be in the midst of logging in and may not yet be fully up.

For Local Operator interface, this attribute indicates the number of users actually logged in at that particular instant.

Mib	MgmtInterfaces
Values	Decimal (0..35)
Default	No default

GROUP Nmis Local Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Local* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Local timeoutPeriod

Access	Read: System_admin Write: System_admin
Description	This attribute specifies the time-out period applicable to all Local sessions. When changed, the new value takes effect only for sessions created after the changes are activated. Setting this attribute to a value between ***5*** and ***120*** minutes forces sessions that are left idle to be automatically terminated after the specified amount of time. Using shorter time-out values, while increasing security, forces operators to monitor sessions more closely. This time-out period can be disabled for particular users by setting the value of the *timeoutProtocol* attribute of the *AccessControl Userid* component to ***disabled***.
Mib	MgmtInterfaces
Values	Decimal (5..120) disabled

Units	minutes
Default	disabled

COMPONENT Nmis Local Session

Instance	Decimal (1..2)
Groups	"GROUP Nmis Local Session Operational (Oper)"
Scope	Application
Description	*Nmis Local Session/n* This *Session* component supports a single local operator logged in to a V.24 DCE port of a control processor.
Mib	MgmtInterfaces
Common Verbs	Help List Display

GROUP Nmis Local Session Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for a *Local Session* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Local Session userid

Access	Read only
Description	This attribute indicates the ID of the user associated with the session.
Mib	MgmtInterfaces
Values	String (1..8, ASCII)
Default	No default

ATTRIBUTE Nmis Local Session dataStreams

Access	Read: Passive Write: Passive
Description	This attribute indicates which data streams will be transmitted back to the operator through this session. Only a user with a command impact of system administration may register for logs.
Mib	MgmtInterfaces
Set of	alarm (ala) debug (deb) log scn rtStats (rts)
Default	No default

ATTRIBUTE Nmis Local Session hostCard (card)

Access	Read only
Description	This attribute holds the name of the host control processor *Card* component servicing the local operator session.
Mib	MgmtInterfaces
Values	The name of the component
Default	No default

ATTRIBUTE Nmis Local Session screenWidth (width)

Access	Read and write
Description	This attribute indicates the maximum width (in characters) of operator command responses. Beyond this maximum, responses are either truncated or wrapped onto the next line, as appropriate. Asynchronous responses, such as alarms, are always displayed using a 79 character width.
Mib	MgmtInterfaces
Values	Decimal (79..2000)
Default	79

ATTRIBUTE Nmis Local Session loginTime

Access	Read: Passive Write: Illegal
Description	This attribute indicates the time at which the user logged in.
Mib	MgmtInterfaces
Values	Time (DHMS)
Default	No default

ATTRIBUTE Nmis Local Session idleTime

Access	Read: All Write: Illegal
Description	This attribute indicates the period of time the session has remained idle.
Mib	MgmtInterfaces
Values	Decimal (0..4294967295)
Units	minutes
Default	No default

ATTRIBUTE Nmis Local Session role

Access	Read: System_admin Write: Illegal
Description	This attribute indicates the *Role* component associated with the user of this local session. A role is associated with a set of access privileges that is used for authorization.
Mib	MgmtInterfaces
Values	String (0..128, ASCII)
Default	No default

COMPONENT Nmis Telnet

Groups	"GROUP Nmis Telnet OsiState (State)" "GROUP Nmis Telnet Operational (Oper)" "GROUP Nmis Telnet Provisioned (Prov)"
Scope	Device
Description	*Nmis Telnet* Both the Telnet server and client are supported. The *Session* subcomponent corresponds to the server connection, while the *Session*'s *Client* subcomponent corresponds to the client connection. The server (that is, the network management interface) is accessed from a remote computer using the Telnet protocol. The Telnet operator interface is otherwise identical to the local operator interface. Each server can set up a single client connection. Note that Telnet clients are accessible only from a Telnet session, not from Local, FMIP, or FTP sessions.
Mib	MgmtInterfaces
Dyn. Subcomp.	"COMPONENT Nmis Telnet Session"
Common Verbs	Help List Display LOCK : System_admin Unlock : System_admin

GROUP Nmis Telnet OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Telnet adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	MgmtInterfaces
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nmis Telnet operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: MgmtInterfaces

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nmis Telnet usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: MgmtInterfaces

Values: idle
active (activ)
busy

Default: idle

GROUP Nmis Telnet Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for an NMIS manager. This group is common to all NMIS managers.

Mib: MgmtInterfaces

ATTRIBUTE Nmis Telnet maxAllowedSessions

Access: Read only

Description	This attribute indicates the maximum number of simultaneous sessions the manager will allow.
Mib	MgmtInterfaces
Values	Decimal (2..35)
Default	No default

ATTRIBUTE Nmis Telnet activeSessions

Access	Read only
Description	For FMIP, FTP, and Telnet interface, this attribute indicates the number of simultaneous sessions currently active under the manager of the particular interface. Note that there may be fewer *Session* components than what is shown here, since an active session could be in the midst of logging in and may not yet be fully up. For Local Operator interface, this attribute indicates the number of users actually logged in at that particular instant.
Mib	MgmtInterfaces
Values	Decimal (0..35)
Default	No default

GROUP Nmis Telnet Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Telnet* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Telnet timeoutPeriod

Access	Read: System_admin Write: System_admin
Description	This attribute specifies the time-out period applicable to all Telnet sessions. When changed, the new value takes effect only for sessions created after the changes are activated.

Setting this attribute to a value between ***5*** and ***120*** minutes forces sessions that are left idle to be automatically terminated after the specified amount of time. Using shorter time-out values, while increasing security, forces operators to monitor sessions more closely.

This time-out period can be disabled for particular users by setting the value of the *timeoutProtocol* attribute of the *AccessControl Userid* component to ***disabled***.

Mib	MgmtInterfaces
Values	Decimal (5..120) disabled
Units	minutes
Default	disabled

COMPONENT Nmis Telnet Session

Instance	Decimal (1..16)
Groups	"GROUP Nmis Telnet Session Operational (Oper)"
Scope	Application
Description	*Nmis Telnet Session/n* This component supports a single remote Telnet operator logged in using the Telnet protocol. Optionally, a single outgoing Telnet client connection can be established from here. On a CP, the maximum number of concurrent telnet sessions supported is 8; on a CP2, it is 12; on a CP3, it is 16.
Mib	MgmtInterfaces
Dyn. Subcomp.	"COMPONENT Nmis Telnet Session Client"
Common Verbs	Help List Display

VERB CLEAR Nmis Telnet Session

Impact	System_admin
Description	*Clear Nmis Telnet Session/n* This command terminates the session connection as well as the client connection if it was up.

GROUP Nmis Telnet Session Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for a *Telnet Session* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Telnet Session userid

Access	Read only
Description	This attribute indicates the ID of the user associated with the session.
Mib	MgmtInterfaces
Values	String (1..8, ASCII)
Default	No default

ATTRIBUTE Nmis Telnet Session dataStreams

Access	Read: Passive Write: Passive
Description	This attribute indicates which data streams (alarm, debug, log, scn and rtStats) will be transmitted back to the operator through this session. Only a user with a command impact of system administration may register for logs. When a client connection is up through this interface, all of the values are turned off. This means that this data is discarded when the session has a Telnet client connection set up. When the client connection terminates, the data which was being received prior to the client being set up is requested again.

Mib	MgmtInterfaces
Set of	alarm (ala) debug (deb) log scn rtStats (rts)
Default	No default

ATTRIBUTE Nmis Telnet Session remoteIpAddr (address)

Access	Read only
Description	This attribute indicates the IP address of the remote device connected to the session.
Mib	MgmtInterfaces
Values	IP address
Default	No default

ATTRIBUTE Nmis Telnet Session remoteTcpPort (port)

Access	Read only
Description	This attribute indicates the TCP port number of the Telnet client being used on the remote device connected to the session.
Mib	MgmtInterfaces
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nmis Telnet Session screenWidth (width)

Access	Read and write
Description	This attribute indicates the maximum width (in characters) of operator command responses. Beyond this maximum, responses are either truncated or wrapped onto the next line, as appropriate. Asynchronous responses, such as alarms, are always displayed using a 79 character width.

Mib	MgmtInterfaces
Values	Decimal (79..2000)
Default	79

ATTRIBUTE Nmis Telnet Session loginTime

Access	Read: Passive Write: Illegal
Description	This attribute indicates the time at which the user logged in.
Mib	MgmtInterfaces
Values	Time (DHMS)
Default	No default

ATTRIBUTE Nmis Telnet Session idleTime

Access	Read: All Write: Illegal
Description	This attribute indicates the period of time the session has remained idle.
Mib	MgmtInterfaces
Values	Decimal (0..4294967295)
Units	minutes
Default	No default

ATTRIBUTE Nmis Telnet Session role

Access	Read: System_admin Write: Illegal
Description	This attribute indicates the *Role* component associated with the user of this telnet session. A role is associated with a set of access privileges that is used for authorization.
Mib	MgmtInterfaces
Values	String (0..128, ASCII)

Default	No default

COMPONENT Nmis Telnet Session Client

Groups	"GROUP Nmis Telnet Session Client Operational (Oper)"
Scope	Application
Description	*Nmis Telnet Session/n Client* This component represents a client connection to a remote node through this session. The client connection is established by invoking the *Telnet* command of a *Vr* component.
Mib	MgmtInterfaces
Common Verbs	Help List Display

GROUP Nmis Telnet Session Client Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for a *Telnet Client* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Telnet Session Client virtualRouter (vr)

Access	Read only
Description	This attribute indicates the VR instance that determines which address space the remote IP address belongs to.
Mib	MgmtInterfaces
Values	The name of the component
Default	No default

ATTRIBUTE Nmis Telnet Session Client remoteIpAddr (address)

Access	Read only

Description	This attribute indicates the IP address of the remote side of the client connection.
Mib	MgmtInterfaces
Values	IP address
Default	No default

ATTRIBUTE Nmis Telnet Session Client remoteTcpPort (port)

Access	Read only
Description	This attribute indicates the TCP port number of the remote side of the client connection.
Mib	MgmtInterfaces
Values	Decimal (0..65535)
Default	No default

COMPONENT Nmis Fmip

Groups	"GROUP Nmis Fmip OsiState (State)" "GROUP Nmis Fmip Operational (Oper)"
Scope	Device
Description	*Nmis Fmip* This network management interface is accessed by an MDM calling the node for management purposes using the proprietary FMIP protocol.
Mib	MgmtInterfaces
Dyn. Subcomp.	"COMPONENT Nmis Fmip Session"
Common Verbs	Help List Display LOCK : System_admin Unlock : System_admin

GROUP Nmis Fmip OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Fmip adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	MgmtInterfaces
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nmis Fmip operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	MgmtInterfaces
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nmis Fmip usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	MgmtInterfaces
Values	idle active (activ) busy

Default	idle

GROUP Nmis Fmip Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an NMIS manager. This group is common to all NMIS managers.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Fmip maxAllowedSessions

Access	Read only
Description	This attribute indicates the maximum number of simultaneous sessions the manager will allow.
Mib	MgmtInterfaces
Values	Decimal (2..35)
Default	No default

ATTRIBUTE Nmis Fmip activeSessions

Access	Read only
Description	For FMIP, FTP, and Telnet interface, this attribute indicates the number of simultaneous sessions currently active under the manager of the particular interface. Note that there may be fewer *Session* components than what is shown here, since an active session could be in the midst of logging in and may not yet be fully up. For Local Operator interface, this attribute indicates the number of users actually logged in at that particular instant.
Mib	MgmtInterfaces
Values	Decimal (0..35)
Default	No default

COMPONENT Nmis Fmip Session

Instance	Decimal (1..35)

Groups	"GROUP Nmis Fmip Session Operational (Oper)"
Scope	Application
Description	*Nmis Fmip Session/n* This Session component supports a single FMIP connection from a remote MDM.
Mib	MgmtInterfaces
Common Verbs	Help List Display

VERB CLEAR Nmis Fmip Session

Impact	System_admin
Description	*Clear Nmis Fmip Session/n* This command terminates the session and clears the TCP connection.

GROUP Nmis Fmip Session Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an *Fmip Session* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Fmip Session userid

Access	Read only
Description	This attribute indicates the ID of the user associated with the session.
Mib	MgmtInterfaces
Values	String (1..8, ASCII)
Default	No default

ATTRIBUTE Nmis Fmip Session dataStreams

Access	Read: Passive Write: Passive
Description	This attribute indicates which data streams will be transmitted back to the operator through this session. Only a user with a command impact of system administration may register for logs.
Mib	MgmtInterfaces
Set of	alarm (ala) debug (deb) log scn rtStats (rts)
Default	No default

ATTRIBUTE Nmis Fmip Session remoteIpAddr (address)

Access	Read only
Description	This attribute indicates the IP address of the remote device connected to the session.
Mib	MgmtInterfaces
Values	IP address
Default	No default

ATTRIBUTE Nmis Fmip Session remoteTcpPort (port)

Access	Read only
Description	This attribute indicates the TCP port number of the FMIP client being used on the remote device connected to the session.
Mib	MgmtInterfaces
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nmis Fmip Session screenWidth (width)

Access	Read and write

Description	This attribute indicates the maximum width (in characters) of operator command responses. Beyond this maximum, responses are either truncated or wrapped onto the next line, as appropriate. Asynchronous responses, such as alarms, are always displayed using a 79 character width.
Mib	MgmtInterfaces
Values	Decimal (79..2000)
Default	79

ATTRIBUTE Nmis Fmip Session loginTime

Access	Read: Passive Write: Illegal
Description	This attribute indicates the time at which the user logged in.
Mib	MgmtInterfaces
Values	Time (DHMS)
Default	No default

ATTRIBUTE Nmis Fmip Session role

Access	Read: System_admin Write: Illegal
Description	This attribute indicates the *Role* component associated with the user of this FMIP session. A role is associated with a set of access privileges that is used for authorization.
Mib	MgmtInterfaces
Values	String (0..128, ASCII)
Default	No default

COMPONENT Nmis Ftp

Groups	"GROUP Nmis Ftp OsiState (State)" "GROUP Nmis Ftp Operational (Oper)"
Scope	Device

Description	*Nmis Ftp* This network management interface is accessed from a remote computer using the FTP protocol.
Mib	MgmtInterfaces
Dyn. Subcomp.	"COMPONENT Nmis Ftp Session"
Common Verbs	Help List Display LOCK : System_admin Unlock : System_admin

GROUP Nmis Ftp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Ftp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

	The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	MgmtInterfaces
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nmis Ftp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	MgmtInterfaces
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nmis Ftp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

	The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	MgmtInterfaces
Values	idle active (activ) busy
Default	idle

GROUP Nmis Ftp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an NMIS manager. This group is common to all NMIS managers.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Ftp maxAllowedSessions

Access	Read only
Description	This attribute indicates the maximum number of simultaneous sessions the manager will allow.
Mib	MgmtInterfaces
Values	Decimal (2..35)
Default	No default

ATTRIBUTE Nmis Ftp activeSessions

Access	Read only
Description	For FMIP, FTP, and Telnet interface, this attribute indicates the number of simultaneous sessions currently active under the manager of the particular interface. Note that there may be fewer *Session* components than what is shown here, since an active session could be in the midst of logging in and may not yet be fully up.

	For Local Operator interface, this attribute indicates the number of users actually logged in at that particular instant.
Mib	MgmtInterfaces
Values	Decimal (0..35)
Default	No default

COMPONENT Nmis Ftp Session

Instance	Decimal (1..16)
Groups	"GROUP Nmis Ftp Session Operational (Oper)"
Scope	Application
Description	*Nmis Ftp Session/n* This component supports a single remote FTP client logged in using the FTP protocol.
Mib	MgmtInterfaces
Common Verbs	Help List Display

VERB CLEAR Nmis Ftp Session

Impact	System_admin
Description	*Clear Nmis Ftp Session/n* This command terminates the session and clears the TCP connection.

GROUP Nmis Ftp Session Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an *Ftp Session* component.
Mib	MgmtInterfaces

ATTRIBUTE Nmis Ftp Session userid

Access	Read only
Description	This attribute indicates the ID of the user associated with the session.
Mib	MgmtInterfaces
Values	String (1..8, ASCII)
Default	No default

ATTRIBUTE Nmis Ftp Session remoteIpAddr (address)

Access	Read only
Description	This attribute indicates the IP address of the remote device connected to the session.
Mib	MgmtInterfaces
Values	IP address
Default	No default

ATTRIBUTE Nmis Ftp Session remoteTcpPort (port)

Access	Read only
Description	This attribute indicates the TCP port number of the FTP control connection being used on the remote device connected to the session.
Mib	MgmtInterfaces
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nmis Ftp Session role

Access	Read: System_admin Write: Illegal
Description	This attribute indicates the *Role* component associated with the user of this FTP session. A role is associated with a set of access privileges that is used for authorization.

Mib	MgmtInterfaces
Values	String (0..128, ASCII)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Nmis

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Npi

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Nortel Networks Multiservice Switch 7400/15000/20000

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COMPONENT NumberingPlanIndicator (Npi)

Instance	x121 e164
Groups	"GROUP Npi Statistics (Stats)"
Scope	Device
Description	*NumberingPlanIndicator / <x121,e164>* This component collects all DNAs for a particular numbering plan indicator e.g., X.121.
Mib	BaseRouting
Dyn. Subcomp.	"COMPONENT Npi Dna"
Common Verbs	Help List Display

GROUP Npi Statistics (Stats)

Properties	Provisioned
Description	*Npi/<x121,e164> Statistics* This group of attributes contains the statistics kept for a particular numbering plan indicator. The only statistic present is the total number of DNAs provisioned for the numbering plan.
Mib	BaseRouting

ATTRIBUTE Npi totalDnas

Access	Read only
Description	This attribute holds the total number of Dnas that are in the numbering plan. If this attribute is displayed in provisioning mode, the number includes the Dnas that have been added/deleted in that provisioning session, otherwise the number only includes the Dnas that have been activated.
Mib	BaseRouting
Values	Decimal (0..4294967295)
Default	0

COMPONENT Npi Dna

Instance	BCD (1..15)
Groups	"GROUP Npi Dna Information (Info)"
Scope	Application
Description	*Npi/<x121,e164> Dna/<BCD(1..15)>* This component is a dynamic subcomponent of *NumberingPlanIndicator*. This subcomponent represents a DNA in the numbering plan.
Mib	BaseRouting
Common Verbs	Help List Display

GROUP Npi Dna Information (Info)

Properties	Provisioned
Description	*Npi/<x121,e164> Dna/<BCD(1..15)> Information* This group of attributes contains the attributes for a DNA in the numbering plan.
Mib	BaseRouting

ATTRIBUTE Npi Dna destinationName

Access	Read only
Description	This attribute holds the Component Name of the application to which the DNA belongs.
Mib	BaseRouting
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Npi

Release 6.1

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Component Nsta

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Component Nsta

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COMPONENT NarrowbandServicesTrunkOverATM (Nsta)

Instance	Decimal (0..15999)
Groups	"GROUP Nsta Provisioned (Prov)" "GROUP Nsta OsiState (State)" "GROUP Nsta Statistics (Stats)"
Scope	Device
Description	*NarrowbandServicesTrunkOverATM/n* This component represents the application which is responsible for managing voice services on a Voice Services Processor (VSP) card. This component manages all *Connection* components provisioned on a single VSP card. The maximum number of *Connection* subcomponents is limited to 64.
Mib	Nsta
Opt. Subcomp.	"COMPONENT Nsta Connection (Conn)" "COMPONENT Nsta VoiceGateway (Vgs)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Nsta* Component.
Mib	Nsta

ATTRIBUTE Nsta linkToServer (l2s)

Access	Read and write
Criticality	Process
Description	This attribute specifies a hardware link to a *Vsp* component on a Voice Services Processor FP.
Mib	Nsta
Values	Link (Hardware, linkToApplication)
Default	No default

ATTRIBUTE Nsta idlePattern (iPattern)

Access	Read and write
Criticality	Process
Description	This attribute specifies the pattern that is transmitted on the TDM interface when a particular timeslot is not used.
Mib	Nsta
Values	Hex (H.0..H.ff)
Default	H.7f

GROUP Nsta OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Nsta

ATTRIBUTE Nsta adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Nsta

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Nsta operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Nsta
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Nsta
Values	idle active (activ) busy
Default	idle

GROUP Nsta Statistics (Stats)

Properties	Operational
Description	This group contains aggregate statistical data incorporating statistics from all *Nsta Connection*s.
Mib	Nsta

ATTRIBUTE Nsta aal2PacketsDropped (pktsDrop)

Access	Read only
Description	This attribute counts the number of packets received on unconfigured CIDs. The *Brag cidList* holds all valid CIDs. Any packets received on a CID which is not valid will be dropped and counted. The counter wraps to 0 when it exceeds its maximum value. This attribute is not displayed if there is a *Vgs* component under the *Nsta* component.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta aal2LastDroppedPacketId (lastDropPktId)

Access	Read only
Description	This attribute indicates the VPI, VCI and CID (AAL2 Channel ID) of the last dropped AAL2 packet received on an unprovisioned CID. The value is displayed in the format vpi.vci.cid. This attribute is not displayed if there is a *Vgs* component under the *Nsta* component.
Mib	Nsta
Values	Integer Sequence (0..65535; 0..255; 0..255)
Default	No default

COMPONENT Nsta Connection (Conn)

Instance	Decimal (1..128)
Groups	"GROUP Nsta Conn CustomerIdentifierData (CidData)" "GROUP Nsta Conn Provisioned (Prov)" "GROUP Nsta Conn OsiState (State)"

	"GROUP Nsta Conn Operational (Oper)" "GROUP Nsta Conn Statistics (Stats)"
Scope	Device
Description	*Nsta/n Connection/n* This component represents an *Nsta* connection. When AAL5 is used there are two ATM VCCs associated with each *Nsta* connection. One ATM VCC is used to carry voice and one is used to carry CCS information. When AAL2 is used the CCS information can either be transported over the same ATM VCC as the voice data or transported over a separate ATM VCC. User provisionable basic rate services are defined in the *BasicRateGroup (Brag)* component. There is only one instance of *Brag* per *Conn*.
Mib	Nsta
Subcomponents	"COMPONENT Nsta Conn BasicRateGroup (Brag)"
Opt. Subcomp.	"COMPONENT Nsta Conn NailedUpAdaptionPoint (Nap)" "COMPONENT Nsta Conn ActiveAccessPoint (Aap)" "COMPONENT Nsta Conn PassiveAccessPoint (Pap)" "COMPONENT Nsta Conn SpvcAccessPoint (SpvcAp)"
Dyn. Subcomp.	"COMPONENT Nsta Conn AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Conn CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib	Nsta

ATTRIBUTE Nsta Conn customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Nsta
Values	Decimal (0; 1..8191)
Default	0

GROUP Nsta Conn Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Connection*.
Mib	Nsta

ATTRIBUTE Nsta Conn holdOverTime (hoTime)

Access	Read and write
Criticality	Process

Description	This attribute specifies the maximum period of time before a partially filled ATM cell is scheduled for transmission. It is also referred to as “combined use timer” (Timer_CU), in the ITU-T I.363.2. The holdover time affects the packet delay and the bandwidth used by the connection. The longer the delay the higher the bandwidth efficiency of the ATM connection and vice versa. The holdover time is rounded to the nearest multiple of 0.125 milliseconds.
Mib	Nsta
Values	Decimal (0.500..15.875)
Units	msec
Default	2.000

ATTRIBUTE Nsta Conn pcrHighCongThreshold (phct)

Access	Read and write
Description	This attribute specifies the cell rate above which the most severe congestion management measures are invoked. This threshold is defined as a percentage of PCR defined in *AtmIf Vcc Tm*. The PCR and SCR thresholds are combined to give an overall congestion state which is used to determine a congestion management measure. The value of this threshold must be set to a higher value than *pcrLowCongThreshold*.
Mib	Nsta
Values	Decimal (50..100)
Units	%
Default	90

ATTRIBUTE Nsta Conn pcrLowCongThreshold (plct)

Access	Read and write

Description	This attribute specifies the upper cell rate threshold of normally acceptable operation for the PCR-based congestion control mechanism. In the region between this threshold and *pcrHighCongThreshold* mild congestion management measures are invoked. This threshold is defined as a percentage of PCR defined in *AtmIf Vcc Tm*. The PCR and SCR thresholds are combined to give an overall congestion state which is used to determine a congestion management measure. The value of this threshold must be set to a lower value than *pcrHighCongThreshold*.
Mib	Nsta
Values	Decimal (10..100)
Units	%
Default	80

ATTRIBUTE Nsta Conn scrHighCongThreshold (shct)

Access	Read and write
Description	This attribute specifies the lower threshold of the upper region of operation relative to SCR defined in *AtmIf Vcc Tm*. This attribute is defined as a percentage of the expected number of cells received in *scrTrafficManagementInterval* at SCR. The PCR and SCR thresholds are combined to give an overall congestion state which is used to determine a congestion management measure, for example down speeding. The value of this threshold must be set to a higher value than *scrLowCongThreshold*.
Mib	Nsta
Values	Decimal (100..150)
Units	%
Default	125

ATTRIBUTE Nsta Conn scrLowCongThreshold (slct)

Access	Read and write
Description	This attribute specifies the upper threshold of the lowest region of operation relative to SCR defined in *AtmIf Vcc Tm*. This attribute is defined as a percentage of the expected number of cells received in *scrTrafficManagementInterval* at SCR. The PCR and SCR thresholds are combined to give an overall congestion state which is used to determine a congestion management measure, for example down speeding. This threshold must be set to a lower value than *scrHighCongThreshold*.
Mib	Nsta
Values	Decimal (50..100)
Units	%
Default	75

ATTRIBUTE Nsta Conn scrHighBurstCongestionThreshold (shbct)

Access	Read and write
Description	This attribute specifies the lower threshold of the upper region for accumulated SCR burst count. It is defined as a percentage of the cell burst limit which is defined in *AtmIf Vcc Tm*. The PCR and SCR thresholds are combined to give an overall congestion state which is used to determine a congestion management measure, for example down speeding. This threshold must be set to a higher value than *scrLowBurstCongestionThreshold.*
Mib	Nsta
Values	Decimal (50..100)
Units	%
Default	90

ATTRIBUTE Nsta Conn scrLowBurstCongestionThreshold (slbct)

Access	Read and write
Description	This attribute specifies the upper threshold for the normally safe region for accumulated SCR burst count. It is defined as a percentage of the cell burst limit defined in *AtmIf Vcc Tm*. The PCR and SCR thresholds are combined to give an overall congestion state which is used to determine a congestion management measure, for example down speeding. This threshold must be set to a lower value than *scrHighBurstCongestionThreshold*.
Mib	Nsta
Values	Decimal (0..100)
Units	%
Default	70

ATTRIBUTE Nsta Conn basicTrafficManagementInterval (basTrafManInt)

Access	Read and write
Description	This attribute specifies how often the cell rate is sampled by the PCR congestion management algorithm. The time interval should be short enough so that the system responds quickly to PCR violation. It must however be long enough to allow the voice system to react to changes and for those changes to stabilize before the next sample. If the specified value is not a multiple of 50, the nearest multiple of 50 milliseconds is used as the sample interval.
Mib	Nsta
Values	Decimal (50..500)
Units	msec
Default	100

ATTRIBUTE Nsta Conn scrTrafficManagementInterval (scrTrafManInt)

Access	Read and write

Description	This attribute specifies the time interval over which the cell rate is sampled by the SCR congestion management algorithm. It is defined as a multiplier of *basicTrafficManagementInterval*. The time interval should be set low relative to the maximum permitted burst duration so that the system meets SCR traffic criteria and maintains the required frame relay QOS on the link. It should however be long enough to avoid unnecessary downspeeding due to very transient load conditions.
Mib	Nsta
Values	Decimal (1..5)
Default	2

ATTRIBUTE Nsta Conn networkLogLaw (nLaw)

Access	Read and write
Description	This attribute specifies the G711 log law to use on the network wide side of an NSTA trunk. If set to ***autoConfigure***, then the value used is derived from the type of TDM interface: ***muLaw*** is used for *DS1* trunks, and ***aLaw*** is used for *E1* trunks. For *E1* trunks, ***muLaw*** is not permitted.
Mib	Nsta
Values	autoConfigure muLaw aLaw
Default	autoConfigure

GROUP Nsta Conn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	Nsta

ATTRIBUTE Nsta Conn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Nsta
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Conn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Nsta

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nsta Conn usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Nsta

Values: idle
active (activ)
busy

Default: idle

GROUP Nsta Conn Operational (Oper)

Properties: Operational

Description: This group contains status information about the *Connection*.

Mib: Nsta

ATTRIBUTE Nsta Conn aal2CpLossStatus (cpLossStatus)

Access: Read only

Description	This attribute indicates whether an AAL2 common part sublayer alarm has been raised. It is set to ***loss*** if start field errors persist for more than 2 seconds. It is set to ***noLoss*** when start field errors have been absent for at least 10 seconds.
Mib	Nsta
Values	noLoss loss
Default	No default

GROUP Nsta Conn Statistics (Stats)

Properties	Operational
Description	This group contains statistical data for a *Connection*.
Mib	Nsta

ATTRIBUTE Nsta Conn aal2StartFieldErrors (sfErr)

Access	Read only
Description	This attribute counts the cells received with an AAL2 Common Part Sublayer Protocol Data Unit (CPS-PDU) Start Field error. A Start Field error includes a cell with a parity error or a cell in which the packet pointed-to by the offset field (OSF) has a packet HEC error. The counter will wrap to zero when it reaches its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn aal2SequenceErrors (seqErr)

Access	Read only
Description	This attribute counts the cells received with an unexpected AAL2 Common Part Sublayer Protocol Data Unit (CPS-PDU) sequence number.

	The counter will wrap to zero when it reaches its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Conn BasicRateGroup (Brag)

Instance	Decimal (0..159999)
Groups	"GROUP Nsta Conn Brag Provisioned (Prov)" "GROUP Nsta Conn Brag Operational (Oper)" "GROUP Nsta Conn Brag OsiState (State)"
Scope	Device
Description	*Nsta/n Conn/n BasicRateGroup/n* This component defines a *BasicRateGroup* (*Brag*), comprising the 64k timeslots relayed either by a linked *Chan* component or a CES connection to a *Pap* subcomponent. All timeslots within a *Brag* have the same trunking services provisioned against them (for example, silence suppression). There is only one instance of *Brag* per *Conn*.
Mib	Nsta
Opt. Subcomp.	"COMPONENT Nsta Conn Brag ChannelAssocSignalingTransport (Cast)" "COMPONENT Nsta Conn Brag CommonChannelSignalingTransport (Ccst)" "COMPONENT Nsta Conn Brag PassiveAccessPoint (Pap)"
Dyn. Subcomp.	"COMPONENT Nsta Conn Brag BasicRateChannel (Brac)" "COMPONENT Nsta Conn Brag AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Conn Brag Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *BasicRateGroup* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag interfaceName (intName)

Access	Read and write
Criticality	Process
Description	This attribute specifies which *Chan* component contains the timeslots for the *Brag*. The *Chan* component must be provisioned on a 2pDS3cAal FP or a 32pE1Aal FP. This attribute must be empty if a *NstaBragPassiveAccessPoint* subcomponent is present.
Mib	Nsta
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Nsta Conn Brag ccdTimeslotList (ccdList)

Access	Read and write
Criticality	Process
Description	This attribute specifies the timeslots that will be transported as clear channel data when active within the *Brag* component. If the *interfaceName* attribute is not empty each timeslot specified in this list must be provisioned in the linked *Chan* component.
Mib	Nsta
Set of	Decimal (1..31)
Default	No default

ATTRIBUTE Nsta Conn Brag bufferSize (bufSize)

Access	Read and write
Criticality	Process
Description	This attribute specifies the capacity of the packet delay variation (PDV) buffer in milliseconds of data. To ensure that PDV can be tolerated, it is necessary to delay the transmission of initial packets received until a threshold is reached. When this threshold is reached packets are transmitted across the TDM network. The length of this delay is defined by *pdvt* and *bufferSize* attributes where the amount of data played out to the TDM network in the time specified by *pdvt* is equal to the time of the initial delay. There should be enough data in the reassembly buffer to allow transmission for a period of time defined by the *pdvt* before buffer underflow occurs due to the next delayed packet. The *bufferSize* is the number of milliseconds worth of buffer space that is allocated to accommodate packet delay variation (or jitter). A large buffer size reduces the probability of buffer overflow, thus reduces packet loss. The *bufferSize* attribute value and *pdvt* attribute value should be chosen appropriately to match the ATM network performance. The value must be greater than the value of *pdvt*, usually twice the value.
Mib	Nsta
Values	Decimal (5..100)
Units	msec
Default	40

ATTRIBUTE Nsta Conn Brag packetDelayVariationTolerance (pdvt)

Access	Read and write
Criticality	Process
Description	This attribute specifies the initial delay in milliseconds before any data is transmitted (normally set to be the mid-point of the reassembly buffer). This attribute, together with the *bufferSize* attribute, can be

	configured to optimize the jitter tolerance versus absolute delay performance.
Mib	Nsta
Values	Decimal (5..50)
Units	msec
Default	20

ATTRIBUTE Nsta Conn Brag silenceDetectionHangOverTime (silDetTime)

Access	Read and write
Criticality	Process
Description	This attribute specifies the time for which a silent timeslot's speech path is left on before being suppressed. This helps to prevent clipping at the end of words.
Mib	Nsta
Values	Decimal (30..500)
Units	msec
Default	200

ATTRIBUTE Nsta Conn Brag lossIntegrationPeriod (intPeriod)

Access	Read and write
Description	This attribute specifies the interval of time for which a loss of packet condition must persist before the *packetLossStatus* is set to ***loss*** on a *BasicRateChannel* component.
Mib	Nsta
Values	Decimal (1..60)
Units	seconds
Default	2

ATTRIBUTE Nsta Conn Brag lossClearPeriod (clrPeriod)

Access	Read and write

Description	This attribute specifies the interval of time for which a loss of packets condition must be absent before the *packetLossStatus* is set to ***noLoss*** on a *BasicRateChannel* component.
Mib	Nsta
Values	Decimal (1..600)
Units	seconds
Default	10

ATTRIBUTE Nsta Conn Brag ingressGain (iGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM ingress side to balance the network loss plan.
Mib	Nsta
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Nsta Conn Brag egressGain (eGain)

Access	Read and write
Description	This attribute is the gain applied on the TDM egress side to balance the network loss plan.
Mib	Nsta
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Nsta Conn Brag echoCancellation (eCan)

Access	Read and write
Description	This attribute enables or disables echo cancellation. The value of this attribute will determine whether echo

cancellation will be on or off when a 2100Hz tone is detected.
g165Mode - Enables echo cancellation except when a 2100Hz tone with phase reversal is detected.
alwaysOn - Enables echo cancellation regardless of whether a 2100Hz tone is detected.
g164Mode - Disables echo cancellation only when a 2100Hz tone is detected, regardless of phase reversal.
disabled - Disables echo cancellation.

Mib	Nsta
Values	g165Mode disabled alwaysOn g164Mode
Default	g165Mode

ATTRIBUTE Nsta Conn Brag minimumEchoReturnLoss (minEchoRetLoss)

Access	Read and write
Description	This attribute specifies the minimum echo return loss that can be expected on the line.
Mib	Nsta
Values	Decimal (0; 3; 6)
Units	dB
Default	6

ATTRIBUTE Nsta Conn Brag echoCancelComfortNoiseGeneration (eCanComNoiseGen)

Access	Read and write
Description	The attribute enables or disables comfort noise generation for the echo cancellation feature. This attribute has no effect if *echoCancellation* is ***disabled***.
Mib	Nsta
Values	enabled disabled

Default	enabled

ATTRIBUTE Nsta Conn Brag faxIdleSuppression (faxSup)

Access	Read and write
Description	This attribute enables or disables fax idle suppression.
Mib	Nsta
Values	enabled disabled
Default	enabled

ATTRIBUTE Nsta Conn Brag silenceSuppression (silSup)

Access	Read and write
Description	This attribute specifies when silence suppression is performed. A value of ***onCongestion*** indicates that silence suppression will be on only during periods of congestion on the ATM connection. A value of ***enabled*** indicates that silence suppression will be on at all times. A value of ***disabled*** indicates that silence suppression will never be on.
Mib	Nsta
Values	enabled disabled onCongestion
Default	enabled

ATTRIBUTE Nsta Conn Brag silenceSuppressionThreshold (silSupThresh)

Access	Read and write
Description	This attribute specifies the level in dBm0 above which silence suppression is not performed.
Mib	Nsta
Values	Signed (-60..-40)

Default	-40

ATTRIBUTE Nsta Conn Brag maxVoiceRate (maxVRate)

Access	Read and write
Description	This attribute selects the encoding algorithm to be used for voice channels within the *Brag* under normal conditions transmitted along the ATM connection, (when no 2100 Hz tone is detected, and there is no ATM connection congestion). This attribute must be set to a higher or equal bandwidth than the *minVoiceRate* attribute.
Mib	Nsta
Values	64kG711 32kG726 24kG726 16kG726 8kG729AB
Default	32kG726

ATTRIBUTE Nsta Conn Brag minVoiceRate (minVRate)

Access	Read and write
Description	This attribute selects the encoding algorithm to be used for voice channels within the *Brag* when the ATM capacity carrying the *Conn* component is congested. When the number of channels with voiceband data is less than or equal to *voicebandDataMaxChannels* then this attribute has no affect on those voiceband data channels. When the number of voiceband data channels exceeds *voicebandDataMaxChannels* this attributes rate will be applied to the excess channels during congestion. This attribute must be set to a lower or equal bandwidth than the *maxVoiceRate* attribute.
Mib	Nsta
Values	64kG711 32kG726 24kG726

	16kG726 8kG729AB
Default	16kG726

ATTRIBUTE Nsta Conn Brag tone2100Rate (toneRate)

Access	Read and write
Description	This attribute selects the encoding algorithm to be used for AAL2 channels within the *Brag* on which 2100Hz tone is detected (regardless of phase reversal).
Mib	Nsta
Values	64kG711 32kG726
Default	64kG711

ATTRIBUTE Nsta Conn Brag ccsClearDataMaxChannels (clrDataMaxChan)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of channels permitted to transport clear data during congestion.
Mib	Nsta
Values	Decimal (0..31)
Default	0

ATTRIBUTE Nsta Conn Brag voicebandDataMaxChannels (vbdMaxChan)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of voice band data channels permitted at modem rate during congestion.
Mib	Nsta
Values	Decimal (0..31)

Default	12

ATTRIBUTE Nsta Conn Brag tdmLogLaw (tLaw)

Access	Read and write
Description	This attribute specifies the G711 log law to use on the TDM side of an NSTA trunk. If set to ***autoConfigure***, then the actual value used is derived from the facility, namely ***muLaw*** would be used for *DS1* trunks, while ***aLaw*** would be used by *E1* trunks.
Mib	Nsta
Values	autoConfigure muLaw aLaw
Default	autoConfigure

ATTRIBUTE Nsta Conn Brag tdmResponseForFailures (tdmRsp)

Access	Read and write
Criticality	Process
Description	This attribute specifies how the *Brag* responds to ATM failures. The possible values are: ***tc*** - trunk conditioning is transmitted in the TDM egress direction, ***ais*** - AIS is transmitted in the TDM egress direction.
Mib	Nsta
Values	tc ais
Default	ais

ATTRIBUTE Nsta Conn Brag dtmfTransport (dtmf)

Access	Read and write
Description	This attribute specifies how DTMF tones are handled and is required because the ***8kG729AB*** rate cannot reliably transport DTMF tones. If the voice compression rate is ***8kG729AB*** then an attribute

value of ***upspeed*** will increase the rate to ***64kG711*** upon detection of DTMF tones.
If the voice compression rate is not ***8kG729AB*** then the attribute value should be ***disabled*** which causes DTMF tones to be treated as normal voice traffic and encoded at the current voice rate.

Mib	Nsta
Values	disabled upspeed
Default	No default

ATTRIBUTE Nsta Conn Brag trafficChannelIdentifierList (cidList)

Access	Read and write
Criticality	Process
Description	This attribute specifies AAL2 Channel Identifiers (CIDs) to be used for the timeslots within the *BasicRateGroup*. The lowest numbered timeslot corresponds to the first CID in the list, with further timeslots moving up the *cidList*. The *cidList* does not have to be in numerical order. The number of CIDs in the list must equal the number of bearer channel timeslots intended for user traffic. If the *Brag* component is linked to a *Chan* component, via the *interfaceName* attribute, then an empty list means that the value used is derived from the TDM trunk, namely: DS1 with CCS:8-30 DS1 without CCS:8-31 E1 with CCS:8-37 E1 without CCS:8-38 If a *PassiveAccessPoint* subcomponent is present under the *Brag* component then this attribute must be provisioned with a non empty value.
Mib	Nsta
List of	Decimal (8..255)

Default	No default

GROUP Nsta Conn Brag Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the causes of any *BasicRateGroup* failure.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag failureCause (failCause)

Access	Read only
Description	This attribute indicates the cause for a *Brag* failure. The failure cause messages are: ***serviceChanNotReady*** - this failure cause message occurs if the TDM connection is not present. ***atmConnectionNotReady*** - the ATM *Lp* is down, or waiting for it to establish communication. ***operatorLock*** - this failure message occurs when a dependent component is locked by the operator. ***internalError*** - an internal error, which can not be determined has occurred. ***outOfResource*** - not enough hardware resource to handle current capacity. ***vspNotReady*** - the VSP card is down, or waiting for it to establish communication. ***activating*** - component creation is currently in progress. ***farEndFailure*** - A far end failure has occurred that has been reported locally. ***none*** - no failure.
Mib	Nsta
Values	none serviceChanNotReady atmConnectionNotReady operatorLock internalError outOfResource vspNotReady

	activating farEndFailure
Default	none

ATTRIBUTE Nsta Conn Brag tdmResponse (tRsp)

Access	Read only
Description	This attribute indicates the current response to ATM failures. The possible values are: ***tc*** - trunk condition is transmitted in the TDM egress direction. ***ais*** - AIS is transmitted in the TDM egress direction. ***unknown*** - there is an error condition which can not be determined. ***none*** - there are currently no ATM failures. ***rai*** - RAI is transmitted in the TDM egress direction.
Mib	Nsta
Values	tc ais unknown none rai
Default	none

GROUP Nsta Conn Brag OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Nsta
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Conn Brag operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Nsta

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Conn Brag usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Nsta
Values	idle active (activ) busy
Default	idle

COMPONENT Nsta Conn Brag ChannelAssocSignalingTransport (Cast)

Groups	"GROUP Nsta Conn Brag Cast Provisioned (Prov)" "GROUP Nsta Conn Brag Cast Operational (Oper)"
Scope	Device
Description	*Nsta/n Conn/n Brag/n ChannelAssocSignalingTransport* This optional component handles the transport of the Channel Associated Signaling (CAS) for the *BasicRateGroup*. When a *Cast* component is provisioned beneath a *Brag*, CAS signaling bits for all timeslots in the group are transported within AAL2 packets via the *Brag*'s ATM connection.

	This component is mutually exclusive with the *CommonChannelSignalingTransport (Ccst*) component.
Mib	Nsta
Common Verbs	Help List Display Add DELete

GROUP Nsta Conn Brag Cast Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *ChannelAssocSignalingTransport* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Cast casMonitoring (casMonitor)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether or not the CAS signaling bits for the timeslots in the group will be monitored. If *casMonitoring* is ***disabled*** then idle channel suppression will not be performed.
Mib	Nsta
Values	enabled disabled
Default	enabled

ATTRIBUTE Nsta Conn Brag Cast signalingBits (sigBits)

Access	Read and write
Criticality	Process
Description	This attributes specifies whether AB or ABCD signaling is used.
Mib	Nsta

Values	AB ABCD
Default	ABCD

ATTRIBUTE Nsta Conn Brag Cast ingressIdle (iIdle)

Access	Read and write
Criticality	Process
Description	This attribute specifies the AB or ABCD bit pattern, received from the TDM interface direction, that is to be interpreted as an idle signal. For ***AB*** signaling the first two bits must be the same as the second two bits. If *casMonitoring* is ***disabled*** then the value set in this attribute is ignored. Each bit can either be 0, 1 or X, where X indicates no preference.
Mib	Nsta
Values	String (4, ASCII)
Default	0000

ATTRIBUTE Nsta Conn Brag Cast egressIdle (eIdle)

Access	Read and write
Criticality	Process
Description	This attribute specifies the AB or ABCD bit pattern, received from the ATM interface direction, that is to be interpreted as an idle signal. For ***AB*** signaling the first two bits must be the same as the second two bits. If *casMonitoring* is ***disabled*** then the value set in this attribute is ignored.

	Each bit can either be 0, 1 or X, where X indicates no preference.
Mib	Nsta
Values	String (4, ASCII)
Default	0000

ATTRIBUTE Nsta Conn Brag Cast disconnectTime (disTime)

Access	Read and write
Criticality	Process
Description	This attribute specifies the time in milliseconds for which the ingress idle and the egress idle pattern, provisioned in the *ingressIdle* and *egressIdle* attributes, must persist before they are interpreted as valid disconnect signals. If *casMonitoring* is ***disabled*** then the value set in this attribute is ignored. The value of this attribute is rounded to the nearest 100 ms.
Mib	Nsta
Values	Decimal (100..30000)
Units	msec
Default	500

GROUP Nsta Conn Brag Cast Operational (Oper)

Properties	Operational
Description	This group contains the status information for the *ChannelAssociatedSignalingTransport* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Cast signalingProcessingBlock (sigProcBlock)

Access	Read only

Description	This attribute indicates which *ProcessingBlock* is processing the AAL2 trunk CAS signaling bits.
Mib	Nsta
Values	The name of the component
Default	No default

COMPONENT Nsta Conn Brag CommonChannelSignalingTransport (Ccst)

Groups	"GROUP Nsta Conn Brag Ccst Provisioned (Prov)" "GROUP Nsta Conn Brag Ccst Aal2Statistics (Aal2Stats)" "GROUP Nsta Conn Brag Ccst Operational (Oper)"
Scope	Device
Description	*Nsta/n Conn/n Brag/n CommonChannelSignalingTransport* This optional component handles the transport of D Channel data for the basic rate group. When a *Ccst* component is provisioned beneath a *Brag*, all valid HDLC frames within the channel smaller than 512 octets in size are transported transparently. The adaptation layer type used is determined by the value provisioned with the *aalType* attribute. Since D channel data include Common Channel signaling (CCS) information this component is mutually exclusive with the *ChannelAssocSignalingTransport* (*Cast*) component.
Mib	Nsta
Opt. Subcomp.	"COMPONENT Nsta Conn Brag Ccst NailedUpAdaptionPoint (Nap)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Conn Brag Ccst Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisioning data for the *CommonChannelSignalingTransport* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Ccst timeslot (tSlot)

Access	Read and write
Criticality	Process
Description	This attribute specifies which timeslot in the *Chan* component linked to the parent *BasicRateGroup* transports Common Channel Signaling information. The value of ***autoConfigure*** indicates that the value should be determined by the type of TDM trunk, namely ***24*** for DS1 or ***16*** for E1.
Mib	Nsta
Values	Decimal (1..31) autoConfigure
Default	autoConfigure

ATTRIBUTE Nsta Conn Brag Ccst ccsMonitoring (ccsMonitor)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether or not the CCS N-ISDN signaling for the timeslots in the group will be monitored. When this is ***enabled***, idle channel suppression is activated and layer 2 status reporting is enabled. Note that ***enabled*** is not supported on E1 CCS trunks.
Mib	Nsta
Values	enabled disabled
Default	enabled

ATTRIBUTE Nsta Conn Brag Ccst aalType

Access	Read and write
Criticality	Process
Description	This attribute specifies which ATM Adaptation Layer type is used for Common Channel Signaling (CCS) information transport. If the AAL type provisioned is ***aal2*** then AAL2 will be used to transport CCS information and if the AAL type provisioned is ***aal5*** then AAL5 will be used to transport CCS information. When ***aal5*** is set then a different ATM VCC is used to transport CCS information from that of voice. When ***aal2*** is set then either the same or a separate ATM VCC can be used to transport the CCS information.
Mib	Nsta
Values	aal2 aal5
Default	aal5

GROUP Nsta Conn Brag Ccst Aal2Statistics (Aal2Stats)

Properties	Operational
Description	This group contains attributes with status information about AAL2 packets.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Ccst aal2TxPackets (txPkt)

Access	Read only
Description	This attribute counts the AAL2 packets transmitted since activation. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst aal2RxPackets (rxPkt)

Access	Read only

Description	This attribute counts the AAL2 packets received since the component was activated, including misinserted packets. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst aal2LostPackets (lostPkt)

Access	Read only
Description	This attribute counts the packets lost in the network prior to destination AAL2 packet header sequence number processing. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst aal2SequenceErrors (seqErr)

Access	Read only
Description	This attribute counts the AAL2 packets received which contained an unexpected sequence number. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst aal2SizeErrors (sizeErr)

Access	Read only
Description	This attribute counts the packets received with an unexpected AAL2 packet header length indicator. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta

Values	Decimal (0..4294967295)
Default	No default

GROUP Nsta Conn Brag Ccst Operational (Oper)

Properties	Operational
Description	This group contains the status information for the *CommonChannelSignalingTransport* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Ccst layer2Status (l2Stat)

Access	Read only
Description	This attribute indicates the status of CCS layer 2. When *ccsMonitoring* is ***enabled*** this attribute will indicate whether the layer 2 is ***up*** or ***down*** on the signaling channel. When *ccsMonitoring* is ***disabled*** then the value of this attribute is set to ***notMonitored***.
Mib	Nsta
Values	up down notMonitored
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst hdlcTxFrames (txFrm)

Access	Read only
Description	This attribute counts the number of High Level Data Link Control (HDLC) frames transmitted towards the TDM interface since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst hdlcRxFrames (rxFrm)

Access	Read only
Description	This attribute counts the number of High Level Data Link Control (HDLC) frames received from the TDM interface since the component was activated. This count includes frames with FCS errors. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst hdlcErroredFrames (errorFrm)

Access	Read only
Description	This attribute counts the number of High Level Data Link Control (HDLC) frames received from the TDM interface with FCS errors since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst atmRxMessages (atmRxMesg)

Access	Read only
Description	This attribute counts the number of signaling messages received from the ATM interface since the component was activated. This count includes messages with CRC errors. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst atmTxMessages (atmTxMesg)

Access	Read only

Description	This attribute counts the number of signaling messages transmitted towards the ATM interface since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst atmErroredMessages (atmErrorMesg)

Access	Read only
Description	This attribute counts the number of signaling messages received from the ATM interface with CRC errors since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Ccst signalingProcessingBlock (sigProcBlock)

Access	Read only
Description	This attribute indicates which *ProcessingBlock* is processing the AAL2 trunk's CCS information.
Mib	Nsta
Values	The name of the component
Default	No default

COMPONENT Nsta Conn Brag Ccst NailedUpAdaptionPoint (Nap)

Groups	"GROUP Nsta Conn Brag Ccst Nap Provisioned (Prov)"
Scope	Device
Description	*Nsta/n Conn/n NailedUpAdaptionPoint* *Nsta/n Conn/n Brag/n Ccst NailedUpAdaptionPoint*

Nsta/n Vgs AtmTConn/n NailedUpAdaptionPoint
Nsta/n Vgs Control/n NailedUpAdaptionPoint
Nsta/n Vgs IpMConn NailedUpAdaptionPoint

This component is used to provide access to a nailed-up ATM connection (an *Atmif Vcc Nep*).

Components in the *Nsta* component hierarchy which require access to such connections will have a *NailedUpAdaptionPoint* subcomponent.

Mib: Nsta

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Nsta Conn Brag Ccst Nap Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioning data for a *Nap* component.

Mib: Nsta

ATTRIBUTE Nsta Conn Brag Ccst Nap atmConnection (atmConn)

Access: Read and write

Criticality: Process

Description: This attribute specifies the link to the *AtmIf Vcc Nep* component that defines the access to the ATM network.

Mib: Nsta

Values: Link (Service, applicationName)

Default: No default

COMPONENT Nsta Conn Brag BasicRateChannel (Brac)

Instance: Decimal (8..255)

Groups	"GROUP Nsta Conn Brag Brac OsiState (State)" "GROUP Nsta Conn Brag Brac Operational (Oper)" "GROUP Nsta Conn Brag Brac Aal2Statistics (Aal2Stats)" "GROUP Nsta Conn Brag Brac BufferStatistics (Stats)"
Scope	Device
Description	*Nsta/n Conn/n Brag/n BasicRateChannel/<CID>* This dynamic component represents an individual AAL2 channel within an ATM connection. It contains operational information on the current state of the AAL2 channel, including which services provisioned for the *Brag* are currently enabled for this particular channel. The channel ID is selected from the *cidList* defined in the parent *Brag* component.
Mib	Nsta
Dyn. Subcomp.	"COMPONENT Nsta Conn Brag Brac ChannelAssocSignalingStatistics (CasStats)"
Common Verbs	Help List Display

GROUP Nsta Conn Brag Brac OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Brac adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Nsta
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Conn Brag Brac operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Nsta

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Conn Brag Brac usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Nsta
Values	idle active (activ) busy
Default	idle

GROUP Nsta Conn Brag Brac Operational (Oper)

Properties	Operational
Description	This group contains status information about the *BasicRateChannel*.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Brac timeslots (tSlots)

Access	Read only
Description	This attribute indicates the timeslots carried within the *Brac* on the AAL2 connection.

Mib	Nsta
Set of	Decimal (1..31)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac packetLossStatus (pktStat)

Access	Read only
Description	This attribute indicates packet loss status. The possible values are: ***loss*** - a state change notification is sent when a buffer underflow condition persists for the period defined by the *Brag* component *packetLossIntegrationPeriod* attribute. ***noLoss*** - the buffer underflow condition is absent for the period defined by the *Brag* component *packetLossClearPeriod* attribute. ***notApplicable*** - the connection is not established.
Mib	Nsta
Values	noLoss loss notApplicable
Default	No default

ATTRIBUTE Nsta Conn Brag Brac echoCancellationStatus (eCanStat)

Access	Read only
Description	This attribute indicates the status of echo cancellation. The possible values are: ***active*** - echo cancellation is currently being performed. ***inactive*** - echo cancellation is not currently being performed. ***disabled*** - the *echoCancellation* attribute in the *Brag* component is set to ***disabled***. ***notApplicable*** - the connection is not established.
Mib	Nsta
Values	active inactive disabled notApplicable

Default	No default

ATTRIBUTE Nsta Conn Brag Brac faxIdleSuppressionStatus (faxStat)

Access	Read only
Description	This attribute indicates the status of fax idle suppression. The possible values are: ***disabled*** - the *faxIdleSuppression* attribute in the *Brag* component is set to ***disabled***, or if the call using this *Brac* is not a fax call. If the *faxIdleSuppression* attribute in the *Brag* component is set to ***enabled*** and the call using this *Brac* is a fax call then it is set to ***active*** if fax idle suppression is currently being performed, so there is a fax idle period in the ingress direction. Otherwise it is set to ***inactive*** if fax idle suppression is not currently being performed, so there is a fax active period in the ingress direction. It displays ***notApplicable*** when the connection is not established and the *callStatus* attribute is set to ***idle***.
Mib	Nsta
Values	active inactive disabled notApplicable
Default	No default

ATTRIBUTE Nsta Conn Brag Brac silenceSuppressionStatus (silStat)

Access	Read only
Description	This attribute indicates the status of silence suppression. It is set to ***disabled*** if the *silenceSuppression* attribute in the *Brag* component is set to ***disabled***, or if the call using this *Brac* is not a voice call. It is set to ***active*** if the *silenceSuppression* attribute in the *Brag* component is set to ***enabled*** and the call using this *Brac* is a voice call. If the *silenceSuppression* attribute in the *Brag* component is set to ***onCongestion*** and the call using this *Brac* is a voice call then it is set to ***active*** if silence suppression feature is currently active for this *Brac*. Otherwise it is set to ***inactive***. When this attribute is set to ***active*** voice packets will not be

transmitted towards ATM network during silence periods. It displays ***notApplicable*** when the connection is not established and the *callStatus* attribute is set to ***idle***.

Mib: Nsta

Values:
active
inactive
disabled
notApplicable

Default: No default

ATTRIBUTE Nsta Conn Brag Brac callStatus (callStat)

Access: Read only

Description: This attribute indicates the status of this AAL2 channel.
It displays ***idle*** when the connection is not established or to ***ingressDisabled*** during the periods of TDM faults.
If there is a call using this *Brac* this attribute specifies the type of the call.
If there is a call using this *Brag* of a type other than ***voice***, ***voiceBandData***, ***voiceBandDataViolating***, ***clearChannelData*** or ***clearChannelDataViolating***, then this attribute is set to ***active.***

The value ***notMonitoring*** is no longer supported.

Mib: Nsta

Values:
idle
active
notMonitoring
ingressDisabled
voice
voiceBandData (vbd)
voiceBandDataViolating (vbdv)
clearChannelData (ccd)
clearChannelDataViolating (ccdv)

Default: No default

ATTRIBUTE Nsta Conn Brag Brac currentEncoding (coding)

Access: Read only

Description	This attribute indicates the encoding algorithm currently in use. It displays ***notApplicable*** when the connection is not established.
Mib	Nsta
Values	32kG726 24kG726 16kG726 notApplicable 64kG711MuLaw 64kG711ALaw 64kClearChannelData 8kG729AB
Default	No default

ATTRIBUTE Nsta Conn Brag Brac voiceProcessingBlocks (vpBlocks)

Access	Read only
Description	This attribute indicates which *Lp/n Vsp ProcessingBlock* components are processing the data for this *Brac*.
Mib	Nsta
List of	The name of the component
Default	No default

GROUP Nsta Conn Brag Brac Aal2Statistics (Aal2Stats)

Properties	Operational
Description	This group contains attributes with status information about AAL2 packets.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Brac aal2TxPackets (txPkt)

Access	Read only
Description	This attribute counts the AAL2 packets transmitted since activation. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac aal2RxPackets (rxPkt)

Access	Read only
Description	This attribute counts the AAL2 packets received since the component was activated, including misinserted packets. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac aal2LostPackets (lostPkt)

Access	Read only
Description	This attribute counts the packets lost in the network prior to destination AAL2 packet header sequence number processing. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac aal2SequenceErrors (seqErr)

Access	Read only
Description	This attribute counts the AAL2 packets received which contained an unexpected sequence number. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac aal2SizeErrors (sizeErr)

Access	Read only
Description	This attribute counts the packets received with an unexpected AAL2 packet header length indicator. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

GROUP Nsta Conn Brag Brac BufferStatistics (Stats)

Properties	Operational
Description	This group contains statistical information on the *BasicRateChannel*.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Brac aal2BufferUnderflows (buffUFlow)

Access	Read only
Description	This attribute counts the times the AAL2 reassembly buffer has underflowed. Buffer underflow may occur due to an ATM link failure, or excessive packet delay variation or due to AAL2 common part sublayer failure. This can be resolved by checking the operational condition of the ATM interface, increasing the *pdvt* attribute of the *Brag* component or checking the provisioning in the remote inter-working function. The counter wraps when it reaches its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac aal2BufferOverflows (buffOFlow)

Access	Read only
Description	This attribute counts the times the AAL2 reassembly buffer has overflowed.

	Buffer underflow may occur due to an ATM link failure, small buffer size, or due to AAL2 common part sublayer failure. This can be resolved by checking the operational condition of the ATM interface, increasing the *bufferSize* attribute of the *Brag* component or checking the provisioning in the remote inter-working function. The counter wraps when it reaches its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac aal2ReassembledPackets (reassPkt)

Access	Read only
Description	This attribute counts the packets played out on to the TDM service interface. This count excludes received packets that were discarded for any reason (for example, packets that were declared misinserted or discarded while the reassembler was waiting to achieve synchronization). The counter wraps when it reaches its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Conn Brag Brac ChannelAssocSignalingStatistics (CasStats)

Groups	"GROUP Nsta Conn Brag Brac CasStats Aal2Statistics (Aal2Stats)"
Scope	Device
Description	*Nsta/n Conn/n Brag/n Brac/n ChannelAssocSignalingStatistics* This dynamic component provides Channel Associated Signaling (CAS) statistics for an individual channel. When a *Cast*

component is provisioned beneath a *Brag*, an instance of this component will appear under each of the *Brag*'s *Brac*s.

Mib: Nsta

Common Verbs:
- Help
- List
- Display
- LOCK
- Unlock

GROUP Nsta Conn Brag Brac CasStats Aal2Statistics (Aal2Stats)

Properties: Operational

Description: This group contains attributes with status information about AAL2 packets.

Mib: Nsta

ATTRIBUTE Nsta Conn Brag Brac CasStats aal2TxPackets (txPkt)

Access: Read only

Description: This attribute counts the AAL2 packets transmitted since activation.
The counter wraps to zero when it exceeds its maximum value.

Mib: Nsta

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Conn Brag Brac CasStats aal2RxPackets (rxPkt)

Access: Read only

Description: This attribute counts the AAL2 packets received since the component was activated, including misinserted packets.
The counter wraps to zero when it exceeds its maximum value.

Mib: Nsta

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Conn Brag Brac CasStats aal2LostPackets (lostPkt)

Access	Read only
Description	This attribute counts the packets lost in the network prior to destination AAL2 packet header sequence number processing. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac CasStats aal2SequenceErrors (seqErr)

Access	Read only
Description	This attribute counts the AAL2 packets received which contained an unexpected sequence number. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Conn Brag Brac CasStats aal2SizeErrors (sizeErr)

Access	Read only
Description	This attribute counts the packets received with an unexpected AAL2 packet header length indicator. The counter wraps to zero when it exceeds its maximum value.
Mib	Nsta
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Conn Brag PassiveAccessPoint (Pap)

Groups	"GROUP Nsta Conn Brag Pap Provisioned (Prov)" "GROUP Nsta Conn Brag Pap Operational (Oper)"
Scope	Device

Description	*Nsta/n Conn/n Brag/n PassiveAccessPoint* This component defines ATM SVC terminating information pertinent to an AAL1 CES connection used by a *Brag* component.
Mib	Nsta
Common Verbs	Help List Display Add DELete

GROUP Nsta Conn Brag Pap Provisioned (Prov)

Properties	Provisioned
Description	This group contains NSAP address provisioning data.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Pap expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the expected remote address information for an incoming connection setup request. If the *expectedRemoteAddress* attribute is empty, the component processes connection requests from any remote address. If the *expectedRemoteAddress* attribute is 40 characters long, the remote address must match exactly to be accepted. If the *expectedRemoteAddress* attribute is less than 40 characters long, the remote address must match the value of the *expectedRemoteAddress* attribute to be accepted.
Mib	Nsta
Values	String (0..40, ASCII)

Default	""

ATTRIBUTE Nsta Conn Brag Pap localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If the *nodePrefix* attribute of the *ModuleData* component has not been provisioned, the *localAddress* attribute will be empty. In that case the operator must either provision a value for the *localAddress* attribute, or provision a value for the *nodePrefix* attribute and then delete and re-add this *Pap* component.
Mib	Nsta
Values	String (1..44, AESANsapAddress)
Default	No default

GROUP Nsta Conn Brag Pap Operational (Oper)

Properties	Operational
Description	This group indicates the status information for the *PassiveAccessPoint* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag Pap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established.

When this attribute has the value ***connected***, it indicates that a connection has been established.

When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component.

Mib	Nsta
Values	connecting connected idle
Default	No default

ATTRIBUTE Nsta Conn Brag Pap remoteAddress (address)

Access	Read only
Description	This attribute indicates the ATM address of the remote AAL1 CES endpoint. If a connection is not established, the attribute value is blank.
Mib	Nsta
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Nsta Conn Brag Pap remoteChannelDetail (channelDetail)

Access	Read only
Description	This attribute indicates the configuration of the remote AAL1 CES endpoint. If a connection is not established, the attribute value is blank.
Mib	Nsta
Values	String (0..81, ASCII)
Default	No default

ATTRIBUTE Nsta Conn Brag Pap remoteChannelStatus (rCStatus)

Access	Read only
Description	This attribute indicates the operational status of the remote AAL1 CES endpoint. The ***up*** status indicates that there are no TDM ingress fault conditions. The ***down*** status indicates the TDM interface has detected an ingress fault condition. The ***rai*** status indicates an ingress RAI at the TDM interface. The ***unknown*** status indicates the AAL1 CES connection is not present.
Mib	Nsta
Values	up down rai unknown
Default	No default

ATTRIBUTE Nsta Conn Brag Pap lastTearDownCause

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. Under initial condition, a zero cause code is displayed.
Mib	Nsta
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Conn Brag Pap lastTearDownDiagnostic

Access	Read only

Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element. A diagnostic code is always accompanied by the cause code. Note that the call must have been successfully established before being torn down. Under initial condition, the value is empty.
Mib	Nsta
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Conn Brag AtmConnection (AtmCon)

Groups	"GROUP Nsta Conn Brag AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Nsta
Common Verbs	Help List Display

GROUP Nsta Conn Brag AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Brag AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.

Mib	Nsta
Values	The name of the component
Default	No default

COMPONENT Nsta Conn NailedUpAdaptionPoint (Nap)

Groups	"GROUP Nsta Conn Nap Provisioned (Prov)"
Scope	Device
Description	*Nsta/n Conn/n NailedUpAdaptionPoint* *Nsta/n Conn/n Brag/n Ccst NailedUpAdaptionPoint* *Nsta/n Vgs AtmTConn/n NailedUpAdaptionPoint* *Nsta/n Vgs Control/n NailedUpAdaptionPoint* *Nsta/n Vgs IpMConn NailedUpAdaptionPoint* This component is used to provide access to a nailed-up ATM connection (an *Atmif Vcc Nep*). Components in the *Nsta* component hierarchy which require access to such connections will have a *NailedUpAdaptionPoint* subcomponent.
Mib	Nsta
Common Verbs	Help List Display Add DELete

GROUP Nsta Conn Nap Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for a *Nap* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Nap atmConnection (atmConn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the link to the *AtmIf Vcc Nep* component that defines the access to the ATM network.
Mib	Nsta
Values	Link (Service, applicationName)
Default	No default

COMPONENT Nsta Conn ActiveAccessPoint (Aap)

Groups	"GROUP Nsta Conn Aap Provisioned (Prov)" "GROUP Nsta Conn Aap AapAddressessProv (AapAddrProv)" "GROUP Nsta Conn Aap Operational (Oper)" "GROUP Nsta Conn Aap AccessPointOper (ApOper)"
Scope	Device
Description	*Nsta/n Vgs Control/n ActiveAccessPoint* *Nsta/n Vgs IpMConn ActiveAccessPoint* *Nsta/n Conn/n ActiveAccessPoint* This component defines ATM SVC originating and terminating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information. An *Aap* is responsible for maintaining calls to a remote address in the ATM network.
Mib	Nsta
Common Verbs	Help List Display Add DELete

VERB Restart Nsta Conn Aap

Impact	Service
Description	*Restart Nsta/n Vgs Control/n ActiveAccessPoint* *Restart Nsta/n Vgs IpMConn ActiveAccessPoint* *Restart Nsta/n Conn/n ActiveAccessPoint* This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Conn Aap Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Aap* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Aap atmServiceCategory (service)

Access	Read and write
Criticality	Component
Description	This attribute specified the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of

bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections.

If the parent of the *Aap* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may not take the value ***rtVariableBitRate***. If the parent of the *Aap* is an *IpMConn* or *Conn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.

Mib	Nsta
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Conn Aap peakCellRate (pcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Nsta
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Conn Aap sustainedCellRate (scr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Nsta
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE Nsta Conn Aap maximumBurstSize (mbs)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.

Mib	Nsta
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Conn Aap retryLimit (limit)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Nsta
Values	Decimal (0..65535)
Default	0

GROUP Nsta Conn Aap AapAddressessProv (AapAddrProv)

Properties	Provisioned
Description	This group contains NSAP address provisioning data.
Mib	Nsta

ATTRIBUTE Nsta Conn Aap expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address information for an incoming setup request. If *expectedRemoteAddress* is not empty, only matching addresses in incoming setup are considered for acceptance.

	If *expectedRemoteAddress* is less than 40 characters long, the remote address must match the value in *expectedRemoteAddress* to be accepted. If *expectedRemoteAddress* is empty, connection requests are accepted from any remote address.
Mib	Nsta
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Nsta Conn Aap localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Nsta
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Conn Aap addressToCall (addrToCall)

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned.

For the *ControlConnection* component in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses.

The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established but fails at a later time, the system attempts to set up a connection to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to setup a connection to the first address in the list and then continues as before.

Mib	Nsta
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Conn Aap Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *Aap* component.
Mib	Nsta

ATTRIBUTE Nsta Conn Aap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup

requests are processed. A connection has been requested but not yet established.

When this attribute has the value ***connected***, it indicates that a connection has been established.

When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component.

When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* consecutive connection setup attempts have failed, and the connection procedure has been aborted.

When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a Delete request) while the component was in ***connecting*** state.

Mib: Nsta

Values:
initializing
connecting
connected
idle
retriesExhausted
failed

Default: No default

ATTRIBUTE Nsta Conn Aap lastSetupFailureCause (failCause)

Access: Read only

Description: This attribute indicates the cause code in the last call release message following an unsuccessful call setup attempt. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

If no call setup attempts have failed, this attribute has a value of 0.

Mib	Nsta
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Conn Aap lastSetupFailureDiagnostic (failDiag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message following an unsuccessful call setup attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If no call setup attempts have failed, this attribute is an empty string.
Mib	Nsta
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Conn Aap retryTimeRemaining (timer)

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches 0 an attempt will be made to establish the connection. When the timer is not running this attribute has a value of 0.
Mib	Nsta
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Conn Aap retryFailures (failures)

Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to 0 whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to zero when the maximum value is exceeded.
Mib	Nsta
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Conn Aap AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Nsta

ATTRIBUTE Nsta Conn Aap remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Nsta
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Conn Aap lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note

	that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Nsta
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Conn Aap lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Nsta
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Conn PassiveAccessPoint (Pap)

Groups	"GROUP Nsta Conn Pap PapAddressesProv (PapAddrProv)" "GROUP Nsta Conn Pap Operational (Oper)" "GROUP Nsta Conn Pap AccessPointOper (ApOper)"
Scope	Device
Description	*Nsta/n Vgs Control/n PassiveAccessPoint* *Nsta/n Vgs IpMConn/n PassiveAccessPoint* *Nsta/n Conn/n PassiveAccessPoint* This component defines ATM SVC terminating information pertinent to those subcomponents in the *Nsta* hierarchy which

	require dynamic links into the ATM network but have no addressing information.
Mib	Nsta
Common Verbs	Help List Display Add DELete

GROUP Nsta Conn Pap PapAddressesProv (PapAddrProv)

Properties	Provisioned
Description	This group contains NSAP address provisioning data.
Mib	Nsta

ATTRIBUTE Nsta Conn Pap expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address information for an incoming connection setup request. If *expectedRemoteAddress* is not empty, only matching connections are considered for acceptance. If *expectedRemoteAddress* is less than 40 characters long, the remote address must match the value in *expectedRemoteAddress* to be accepted. If *expectedRemoteAddress* is empty, the component processes connection requests from any remote address.
Mib	Nsta
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Nsta Conn Pap localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the ATM address of the access point. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default can not be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Nsta
Values	String (1..44, AESANsapAddress)
Default	No default

GROUP Nsta Conn Pap Operational (Oper)

Properties	Operational
Description	This group contains status information common to the *PassiveAccessPoint* and *AddresslessPassiveAccessPoint* components.
Mib	Nsta

ATTRIBUTE Nsta Conn Pap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup

requests are processed. A connection has been requested but not yet established.

When this attribute has the value ***connected***, it indicates that a connection has been established.

When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component.

When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.

Mib: Nsta

Values:
initializing
connecting
connected
idle
failed

Default: No default

GROUP Nsta Conn Pap AccessPointOper (ApOper)

Properties: Operational

Description: This group contains operational information regarding the end point of the connection. This group is common to all types of access points.

Mib: Nsta

ATTRIBUTE Nsta Conn Pap remoteAddress (rAddr)

Access: Read only

Criticality: Component

Description: This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP

	address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Nsta
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Conn Pap lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Nsta
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Conn Pap lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Nsta
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Conn SpvcAccessPoint (SpvcAp)

Groups	"GROUP Nsta Conn SpvcAp Provisioned (Prov)" "GROUP Nsta Conn SpvcAp SpvcApAddressessProv (SpvcApAddrProv)"

"GROUP Nsta Conn SpvcAp Operational (Oper)"
"GROUP Nsta Conn SpvcAp AccessPointOper (ApOper)"

Scope

Device

Description

Nsta/n Vgs Control/n SpvcAccessPoint
Nsta/n Vgs IpMConn SpvcAccessPoint
Nsta/n Conn/n SpvcAccessPoint

This component defines ATM SPVC originating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information.

Mib

Nsta

Common Verbs

Help
List
Display
Add
DELete

VERB Restart Nsta Conn SpvcAp

Impact	Service
Description	*Restart Nsta/n Vgs Control/n SpvcAccessPoint* *Restart Nsta/n Vgs IpMConn SpvcAccessPoint* *Restart Nsta/n Conn/n SpvcAccessPoint* This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Conn SpvcAp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *SpvcAp* component.
Mib	Nsta

ATTRIBUTE Nsta Conn SpvcAp atmServiceCategory (service)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video

applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections.

If the parent of the *SpvcAp* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may not take the value ***rtVariableBitRate***. If the parent of the *SpvcAp* is an *IpMConn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.

Mib	Nsta
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Conn SpvcAp peakCellRate (pcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Nsta
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Conn SpvcAp sustainedCellRate (scr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Nsta
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE Nsta Conn SpvcAp maximumBurstSize (mbs)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.

Mib	Nsta
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Conn SpvcAp retryLimit (limit)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Nsta
Values	Decimal (0..65535)
Default	0

GROUP Nsta Conn SpvcAp SpvcApAddressessProv (SpvcApAddrProv)

Properties	Provisioned
Description	This group contains NSAP address provisioning data for the *SpvcAp* component.
Mib	Nsta

ATTRIBUTE Nsta Conn SpvcAp localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is provided.

	If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Nsta
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Conn SpvcAp remoteVpiVci (rVpiVci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the remote VPI and VCI for an *SpvcAp* component.
Mib	Nsta
Values	Integer Sequence (0..255; 1..65535)
Default	No default

ATTRIBUTE Nsta Conn SpvcAp addressToCall (addrToCall)

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned. For the *ControlConnection* application in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses. The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established

	but fails at a later time, the system attempts to set up a connection to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to set up a connection to the first address in the list and then continues as before.
Mib	Nsta
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Conn SpvcAp Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *SpvcAp* component.
Mib	Nsta

ATTRIBUTE Nsta Conn SpvcAp svcStatus (status)

Access	Read only
Description	This attribute specifies the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of

the component.

When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* for consecutive connection set up attempts have failed, and the connection procedure has been aborted.

When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.

Mib: Nsta

Values:
initializing
connecting
connected
idle
retriesExhausted
failed

Default: No default

ATTRIBUTE Nsta Conn SpvcAp lastSetupFailureCause (failCause)

Access: Read only

Description: This attribute contains the cause code in the last call release message following an unsuccessful call set up attempt. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

Mib: Nsta

Values: Decimal (0..255)

Default: No default

ATTRIBUTE Nsta Conn SpvcAp lastSetupFailureDiagnostic (failDiag)

Access: Read only

Description: This attribute contains the diagnostic code in the last call release message following an unsuccessful call set up attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the

	signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Nsta
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Conn SpvcAp retryTimeRemaining (timer)

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches ***0*** an attempt will be made to establish the connection. When the timer is not running a value of ***0*** is returned.
Mib	Nsta
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Conn SpvcAp retryFailures (failures)

Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to ***0*** whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to ***0*** when the maximum value is exceeded.
Mib	Nsta
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Conn SpvcAp AccessPointOper (ApOper)

Properties	Operational

Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Nsta

ATTRIBUTE Nsta Conn SpvcAp remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Nsta
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Conn SpvcAp lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Nsta
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Conn SpvcAp lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is

	detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Nsta
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Conn AtmConnection (AtmCon)

Groups	"GROUP Nsta Conn AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Nsta
Common Verbs	Help List Display

GROUP Nsta Conn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Nsta

ATTRIBUTE Nsta Conn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Nsta
Values	The name of the component

Default	No default

COMPONENT Nsta VoiceGateway (Vgs)

Groups	"GROUP Nsta Vgs CustomerIdentifierData (CidData)" "GROUP Nsta Vgs Provisioned (Prov)" "GROUP Nsta Vgs Operational (Oper)" "GROUP Nsta Vgs Statistics (Stats)"
Scope	Device
Description	*Nsta/n VoiceGateway* The *Vgs* component provides an operational and maintenance interface for switched voice features.
Mib	Vgs
Subcomponents	"COMPONENT Nsta Vgs PacketNetworkProfile (PktProf)"
Opt. Subcomp.	"COMPONENT Nsta Vgs BasicRateGroup (Brag)" "COMPONENT Nsta Vgs ControlConnection (Ctrl)" "COMPONENT Nsta Vgs AtmTrunkConnection (AtmTConn)" "COMPONENT Nsta Vgs VgcpCtrlProt (Vgcp)" "COMPONENT Nsta Vgs IpMediaStreamConnection (IpMConn)" "COMPONENT Nsta Vgs SimpleGatewayCtrlProt (Sgcp)" "COMPONENT Nsta Vgs VoiceCallAdmissionControl (VCac)" "COMPONENT Nsta Vgs IsdnUserAdaption (Iua)" "COMPONENT Nsta Vgs LocalAnnouncements" "COMPONENT Nsta Vgs DigitCollection" "COMPONENT Nsta Vgs Aal2SvcService (Aal2Svc)" "COMPONENT Nsta Vgs AmrBasicRateGroup (AmrBrag)" "COMPONENT Nsta Vgs CsdBasicRateGroup (CsdBrag)" "COMPONENT Nsta Vgs V5UserAdaption (V5ua)" "COMPONENT Nsta Vgs BasicRateGroupServer (BragS)"

"COMPONENT Nsta Vgs FaxRelayOverIp (FaxR)"
"COMPONENT Nsta Vgs DebugIpAccess (DbgAccess)"
"COMPONENT Nsta Vgs IpInterface (IpIf)"
"COMPONENT Nsta Vgs MediaGatewayController (Mgc)"
"COMPONENT Nsta Vgs H248"
"COMPONENT Nsta Vgs TdmAccessGroup (Tag)"
"COMPONENT Nsta Vgs TdmNetworkProfile (TProf)"
"COMPONENT Nsta Vgs Q921"
"COMPONENT Nsta Vgs Q921Profile (Q921Prof)"
"COMPONENT Nsta Vgs TimeslotRelay (Tr)"
"COMPONENT Nsta Vgs ChannelAssocSignalingDefinition (CasDefn)"

Common Verbs

Help
List
Display
Add
DELete

GROUP Nsta Vgs CustomerIdentifierData (CidData)

Properties: Provisioned

Description: This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib: Vgs

ATTRIBUTE Nsta Vgs customerIdentifier (cid)

Access: Read and write

Description: This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only

the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.

Mib	Vgs
Values	Decimal (0; 1..8191)
Default	0

GROUP Nsta Vgs Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Vgs* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs gatewayAtmAddress (addr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM address of this gateway.

This address is used for identifying this gateway to remote gateways. A change in the value of this attribute causes all current calls to be dropped.

If the *nodePrefix* attribute has been provisioned in the *ModuleData* component, a default value for *gatewayAtmAddress* will be generated by the system, otherwise the *gatewayAtmAddress* will default to an empty string.

This attribute is only relevant when one of the following features is provisioned:

vgsAtm

	vgsAtmDc ***vgsAtmG729***
Mib	Vgs
Values	String (0..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs hostname (name)

Access	Read and write
Criticality	Component
Description	This attribute specifies the hostname to identify this gateway. The value provisioned for this gateway should match the value provisioned in its associated controller. This attribute must be unique within the group of gateways controlled by the controller. A change in the value of this attribute causes all current calls to be dropped. This attribute must have a maximum of fifteen characters if a *Vgcp* component exists under the *Vgs*.
Mib	Vgs
Values	String (1..255, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs defaultPacketLogLaw (muALaw)

Access	Read and write
Description	This attribute specifies whether the digitizing scheme is mu law or A law. For Voice over IP, this attribute defines the log law to use at call setup. For Voice over ATM, this attribute defines a default which can be overridden by the *packetLogLaw* attribute of individual *AtmTConn* components at call setup. This attribute may be changed without impacting existing calls.

	The value provisioned can be overridden by per call values signaled by the controller in the CRCX (create connection) and MDCX (modify connection) messages. There is no relationship between this attribute and the *tdmLogLaw* attribute of the *Brag* component.
Mib	Vgs
Values	muLaw aLaw
Default	aLaw

ATTRIBUTE Nsta Vgs defaultIpMediaDsf (defDsf)

Access	Read and write
Description	This attribute specifies the default Differentiated Service Field (DSF) value for all voice packets transmitted on all *IpMConn* components. This attribute is ignored by *CtrlConn* and *AtmTConn* components. The value provisioned can be overridden by per call values signaled in the IP header by the media gateway controller.
Mib	Vgs
Values	Decimal (0..63)
Default	46

ATTRIBUTE Nsta Vgs remoteMfDeviceIpAddress (remMfIp)

Access	Read and write
Description	This attribute specifies the IP address of an associated Remote SGCP/MF IWF to which SGCP commands (against endpoints provisioned as MF) will be relayed. This attribute is only applicable to *IpMConn* components and is ignored by *CtrlConn* and *AtmTConn* components.
Mib	Vgs

Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs remoteMfDeviceUdpPort (remMfUdp)

Access	Read and write
Description	This attribute specifies the UDP port of an associated Remote SGCP/MF IWF to which SGCP commands (against endpoints provisioned as MF) will be relayed. This attribute is only applicable to *IpMConn* components and is ignored by *CtrlConn* and *AtmTConn* components.
Mib	Vgs
Values	Decimal (1..65535)
Default	2427

ATTRIBUTE Nsta Vgs defaultToneset (defTone)

Access	Read and write
Description	This attribute specifies the default tone set for all *Brag* and *Tag* subcomponents. This value can be overwritten by the *toneset* attribute in the *Brag* and *Tag* components. The possible values are: ***argentina*** - Use the tone set for Argentina. ***australia*** - Use the tone set for Australia. ***austria*** - Use the tone set for Austria. ***belgium*** - Use the tone set for Belgium. ***brazil*** - Use the tone set for Brazil. ***canadaUsa*** - Use the tone set for Canada and the USA. ***chile*** - Use the tone set for Chile. ***china*** - Use the tone set for China. ***czech*** - Use the tone set for the Czech Republic. ***france*** - Use the tone set for France. ***germany*** - Use the tone set for Germany. ***greece*** - Use the tone set for Greece. ***hongKong*** - Use the tone set for Hong Kong.

india - Use the tone set for India.
ireland - Use the tone set for Ireland.
israel - Use the tone set for Israel.
italy - Use the tone set for Italy.
japan - Use the tone set for Japan.
jfpt - Use the tone set for Japanese Fire and Police trunks.
korea - Use the tone set for Korea.
malaysia - Use the tone set for Malaysia.
mexico - Use the tone set for Mexico.
netherlands - Use the tone set for The Netherlands.
newZealand - Use the tone set for New Zealand.
panama - Use the tone set for Panama.
philippines - Use the tone set for Philippines.
poland - Use the tone set for Poland.
portugal - Use the tone set for Portugal.
romania - Use the tone set for Romania.
russia - Use the tone set for Russia.
singapore - Use the tone set for Singapore.
spain - Use the tone set for Spain.
sweden - Use the tone set for Sweden.
switzerland - Use the tone set for Switzerland.
taiwan- Use the tone set for Taiwan.
thailand - Use the tone set for Thailand.
turkey - Use the tone set for Turkey.
uk - Use the tone set for the UK.
venezuela - Use the tone set for Venezuela.

Mib

Vgs

Values

canadaUsa
spain
uk
france
portugal
belgium
germany
netherlands
sweden
austria
italy
switzerland

australia
brazil
ireland
mexico
israel
romania
turkey
czech
china
taiwan
korea
japan
panama
argentina
greece
poland
newZealand
singapore
venezuela
chile
hongKong
malaysia
philippines
thailand
india
russia
jfpt

Default canadaUsa

GROUP Nsta Vgs Operational (Oper)

Properties Operational

Description This group contains operational data for the *Nsta Vgs* component.

Mib Vgs

ATTRIBUTE Nsta Vgs activeConnections (connActive)

Access Read only

Description	This attribute indicates the current number of active media connections.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs connectionsSetup (connSetup)

Access	Read only
Description	This attribute counts the media connections successfully established by this gateway *Vgs* component and acknowledged to the Controller. The value wraps to ***0*** when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs disabledAtmTrunks (disTrunks)

Access	Read only
Description	This attribute indicates the current number of *AtmTConn* components under the *Vgs* that are disabled. This attribute is only applicable when the ***vgsAtm***, ***vgsAtmDc*** or ***vgsAtmG729*** feature is provisioned. If any other feature is provisioned, this attribute is filtered.
Mib	Vgs
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Nsta Vgs remoteMfDeviceStatus (remMfStatus)

Access	Read only

Description	This attribute indicates the status of the connection to the remote MF signaling device. The value ***connected*** indicates that the connection is enabled. The value ***notConnected*** indicates that the connection is disabled.
Mib	Vgs
Values	connected notConnected
Default	notConnected

ATTRIBUTE Nsta Vgs faxConnectionsSetup (faxSetup)

Access	Read only
Description	This attribute counts the connections which are identified as carrying fax modem traffic. The counter wraps to ***0*** when it reaches its maximum value. The counter will also be reset to ***0*** if the *Vsp* component is locked. This attribute is filtered on the ***12mVspAal*** and ***Vsp2*** cards.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs nonFaxVbdConnectionsSetup (vbdSetup)

Access	Read only
Description	This attribute counts the connections which are identified as carrying non fax modem traffic. The counter wraps to ***0*** when it reaches its maximum value. The counter will also be reset to ***0*** if the *Vsp* component is locked. This attribute is filtered on the ***12mVspAal*** and ***Vsp2*** cards.
Mib	Vgs
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Nsta Vgs emergencyCalls (emCalls)

Access	Read only
Description	This attribute counts the emergency calls currently in progress. The controller determines whether a call is for emergency purposes, and instructs the gateway via the control protocol. This attribute is only relevant if the H.248 protocol is in use. If any other protocol is used, this attribute is filtered.
Mib	Vgs
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nsta Vgs congestedSeconds (congSec)

Access	Read only
Description	This attribute counts the seconds that new media connection requests have been rejected because the Gateway was busy. The counter wraps to ***0*** when it exceeds the maximum value. This attribute is filtered on the ***12mVspAal*** card.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs overloadRejectedCommands (olRejCom)

Access	Read only
Description	This attribute counts the control protocol commands that were rejected due to input message buffer overload. The counter wraps to ***0*** when it exceeds the maximum value.
Mib	Vgs

Values	Decimal (0..4294967295)
Default	No default

GROUP Nsta Vgs Statistics (Stats)

Properties	Operational
Description	This group stores the connection statistics for the *VGS* component. Note these attributes are filtered based on VSP card type as they are not applicable on ***12mVspAal*** and ***Vsp2*** cards.
Mib	Vgs

ATTRIBUTE Nsta Vgs connectionsLostToPacketNwLoss (clPkt)

Access	Read only
Description	This attribute counts the connections lost to Gateway-detectable network failures. This includes: - individual connection media integrity time-outs. - bulk connection loss due to *ATM VCC* failure or release or associated component deprovisioning. - bulk connection loss due to local IP media link failure or associated component deprovisioning.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs connectionsLostToTdmPortLoss (clTdm)

Access	Read only
Description	This attribute counts the connections lost to TDM port failure, internal failures or TDM port deletion since component creation. The counter wraps to ***0*** when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Nsta Vgs activeConnectionsAvg (connAvg)

Access	Read only
Description	This attribute counts the average number of connections over the time interval given by *Nsta/n Vgs timeInterval.*The values are sampled every 1 second.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs activeConnectionsMax (connMax)

Access	Read only
Description	This attribute counts the maximum number of connections at any point over the time interval given by *Nsta/n Vgs timeInterval*.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs activeConnectionsMin (connMin)

Access	Read only
Description	This attribute counts the minimum number of connections at any point over the time interval given by *Nsta/n Vgs timeInterval*.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs timeInterval

Access	Read only
Description	This attribute indicates the number of minutes into the statistical sampling period for which *activeConnectionsAvg*,

activeConnectionsMin and *activeConnectionsMax* are measured.

As per any time interval attribute, this resets to 0 on the quarter hour.

Mib	Vgs
Values	Decimal (0..15)
Default	No default

COMPONENT Nsta Vgs BasicRateGroup (Brag)

Instance	Decimal (0..127)
Groups	"GROUP Nsta Vgs Brag Provisioned (Prov)" "GROUP Nsta Vgs Brag OsiState (State)" "GROUP Nsta Vgs Brag Operational (Oper)" "GROUP Nsta Vgs Brag CommonOp (ComOp)"
Scope	Device
Description	*Nsta/n Vgs BasicRateAccessGroup/n*

This component represents a number of TDM connections from the Voice Services function processor to the TDM network. The TDM connections are all associated with the same TDM interface.

This component defines default processing for all TDM connections. For each connection, this default processing may be overridden by the controller.

The *V5Link* subcomponent is mutually exclusive of the *AnnouncementLanguage* subcomponent.

	The *V5Link*, *Q921* and *Cas* subcomponents are mutually exclusive of each other.
Mib	Vgs
Opt. Subcomp.	"COMPONENT Nsta Vgs Brag UdpHdlcTransport (Uht)" "COMPONENT Nsta Vgs Brag AnnouncementLanguage" "COMPONENT Nsta Vgs Brag Q921" "COMPONENT Nsta Vgs Brag V5Link (V5Link)" "COMPONENT Nsta Vgs Brag ChannelAssociatedSignaling (Cas)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Brag Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *BasicRateGroup* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag interfaceName (intName)

Access	Read and write
Criticality	Process
Description	This attribute specifies a link to a *Chan* component, which in turn specifies the timeslots for the *Brag*.
Mib	Vgs
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Nsta Vgs Brag tdmLogLaw (muALaw)

Access	Read and write
Criticality	Component
Description	This attribute specifies the G711 *tdmLogLaw* to use on the TDM side of an NSTA trunk. If set to ***aLaw***, Alaw companding is used. If set to ***autoConfigured***, then the actual value used is derived from the facility, namely ***muLaw*** would be used for *DS1* trunks, while ***aLaw*** would be used by *E1* trunks. For *E1* trunks, a value of ***muLaw*** is not recommended.
Mib	Vgs
Values	muLaw aLaw autoConfigured
Default	autoConfigured

ATTRIBUTE Nsta Vgs Brag bufferSize (bufSize)

Access	Read and write
Criticality	Process
Description	This attribute specifies the capacity of the packet delay variation (PDV) buffer in milliseconds of data. To ensure that PDV can be tolerated it is necessary to initialize the system with a reserve of information in the buffer used to reassemble data for transmission across the TDM network. The size of this reserve is defined by the *pdvt* and *bufferSize* attributes. The amount of data played out to the TDM network(in time equal to the value of the *pdvt* attribute*)* is equal to the size of the initialization reserve. There should be enough data in the reassembly buffer to allow transmission for a period of time defined by the *pdvt* attribute before buffer underflow due to the next delayed packet occurs.

If the ***VgsIp, VgsIpG729, VgsIpGe***, or ***VgsIpG729Ge*** feature have been provisioned the default *bufferSize* will be ***60ms*** otherwise the *bufferSize* will be ***50ms***.

The value should always be greater than two times the value of the *pdvt* attribute plus the maximum packet size, except on a ***2pGeMmSrVsp3*** card where it need only be greater than or equal to two times the *pdvt*. The maximum packet size is 20ms for ***VgsIp***, ***VgsIpG729*** and ***VgsIpG729Ge*** features and 10ms for all other features.

If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used.

If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

This attribute has no effect if the *packetDelayVariationTolerance* attribute is set to ***adaptive***.

Mib	Vgs
Values	Decimal (5..100) sameAsProfile
Units	msec
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag packetDelayVariationTolerance (pdvt)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum packet arrival jitter in milliseconds that the reassembly process will tolerate in the packet stream without producing errors on the TDM interface. This attribute together with the *bufferSize* attribute, can be configured to optimize the jitter versus absolute delay tradeoff in various network configurations.

The value should always be less than the value of the *bufferSize* attribute minus the maximum packet size divided by two, except on a ***2pGeMmSrVsp3*** card where it need only be less than or equal to the *bufferSize* divided by two. The maximum packet size is 20ms for ***VgsIp***, ***VgsIpG729, VgsIpGe*** and ***VgsIpG729Ge*** features and 10ms for all other features.

If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used.

If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

If set to ***adaptive***, the hardware attempts to minimise the absolute delay while allowing for the maximum packet arrival jitter encountered. This value is only supported on the following cards:

2pGeMmSrVsp3,
2pOC3ChSmIrVsp3.

Mib — Vgs

Values — Decimal (5..50)
sameAsProfile
adaptive

Units — msec

Default — sameAsProfile

ATTRIBUTE Nsta Vgs Brag lossIntegrationPeriod (intPeriod)

Access — Read and write

Description — This attribute specifies the interval of time in seconds for which a loss of packet condition must persist before the corresponding call is dropped. A value of ***0*** specifies that packet loss integration is disabled and therefore call connections are not suspended after packet loss.

If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used.

	If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	Decimal (0..50) sameAsProfile
Units	seconds
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag ingressGain (iGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM ingress side to balance the network loss plan.
Mib	Vgs
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Nsta Vgs Brag egressGain (eGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM egress side to balance the network loss plan.
Mib	Vgs
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Nsta Vgs Brag echoCancellation (eCan)

Access	Read and write
Description	This attribute specifies whether echo cancellation is enabled or disabled.

The value of this attribute will determine whether echo cancellation will be on or off when a 2100Hz tone is detected.

Note that the gateway controller may override this attribute on a call by call basis to activate or deactivate echo cancellation**.**

g165Mode - Enables echo cancellation except when a 2100Hz tone with phase reversal is detected.

alwaysOn - Enables echo cancellation regardless of whether a 2100Hz tone is detected.

g164Mode - Disables echo cancellation only when a 2100Hz tone is detected, regardless of phase reversal.

disabled - Disables echo cancellation.

The values ***alwaysOn*** and ***g164Mode*** are not permitted on a ***2pGeMmSrVsp3*** card.

Mib	Vgs
Values	g165Mode disabled alwaysOn g164Mode
Default	g165Mode

ATTRIBUTE Nsta Vgs Brag minimumEchoReturnLoss (minEchoRetLoss)

Access	Read and write
Description	This attribute specifies the minimum echo return loss that can be expected on the line.
Mib	Vgs
Values	Decimal (0; 3; 6)
Units	dB
Default	6

ATTRIBUTE Nsta Vgs Brag echoCancelComfortNoiseGeneration (eCanComNoiseGen)

Access	Read and write
Description	The attribute specifies whether comfort noise generation for the echo cancellation feature is enabled or disabled. This attribute has no effect if *echoCancellation* is ***disabled*** through provisioning or through 2100 Hz tone detection.
Mib	Vgs
Values	enabled disabled
Default	enabled

ATTRIBUTE Nsta Vgs Brag defaultVoiceRate (defVRate)

Access	Read and write
Description	This attribute specifies the default coding algorithm to be used under normal conditions (when no 2100 Hz tone is detected). For each connection, this default coding algorithm can be overridden by the controller. If the provisioned feature is ***vgsAtm*** or ***vgsAtmDc*** then either ***64kG711*** or ***32kG726*** may be provisioned. For the feature ***vgsIp*** or ***vgsIpGe*** only ***64kG711*** may be provisioned. For feature ***vgsIpG729*** or ***vgsIpG729Ge*** either ***64kG711*** or ***8kG729*** may be provisioned. For feature ***vgsAtmG729*** any of ***64kG711***,***32kG726*** and ***8kG729*** may be provisioned. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	64kG711 32kG726

	8kG729 sameAsProfile
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag tone2100Rate (toneRate)

Access	Read and write
Description	This attribute specifies the coding algorithm to be used for timeslots within the *Brag* component on which 2100 Hz tone is detected (phase reversal may or may not be detected). This attribute takes precedence over the *defaultVoiceRate* attribute. This attribute must be set to ***64kG711*** when using IP transport. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	64kG711 32kG726 sameAsProfile
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag silenceDetectionHangOverTime (silDetTime)

Access	Read and write
Description	This attribute specifies the time in milliseconds for which the speech path is left on before being suppressed when a timeslot is silent. This helps to prevent clipping at the end of words. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

Mib	Vgs
Values	Decimal (30..500) sameAsProfile
Units	msec
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag silenceSuppression (silSup)

Access	Read and write
Description	This attribute specifies whether silence suppression is performed. A value of ***enabled*** indicates that silence suppression is performed as default. For each connection this default can be overridden by the controller. A value of ***disabled*** indicates that silence suppression is not performed under any circumstances. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	enabled disabled sameAsProfile
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag silenceSuppressionThreshold (silSupThresh)

Access	Read and write
Description	This attribute specifies the level above which silence suppression is not performed. A value in the range -39 to -36 dBm0 is only permitted on a ***2pGeMmSrVsp3*** card. If ***sameAsProfile***, the equivalent value from the *PktProf*

subcomponent of the parent *Vgs* component is used.

If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

Mib	Vgs
Values	Signed (-60..-36) sameAsProfile
Units	dBm0
Default	sameAsProfile

ATTRIBUTE Nsta Vgs Brag signalingType (sigType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the signaling type of the trunks within the *Brag* component. ***unsignaled*** performs no additional signaling. ***mfRemote*** performs MF signaling to a remote call server. This attribute must be set to ***unsignaled*** when using ATM transport.
Mib	Vgs
Values	unsignaled mfRemote
Default	unsignaled

ATTRIBUTE Nsta Vgs Brag echoCancellationTailLength (eCanTail)

Access	Read and write
Description	This attribute specifies the echo cancellation tail length applied to all timeslots in this *Brag*. A value of 32ms should be used for networks with an echo round

trip delay of up to 32 ms, and a value of 48 ms should be used for networks with an echo round trip delay of 32 to 48 ms.
The use of 48 ms for round trip delays of less than 32 ms is not advised. The use of 64 ms is reserved for the ***2pGeMmSrVsp3*** card.

If set to ***autoConfigure*** the actual value used depends on card type. If the card type is ***12mVspAal*** or ***Vsp2***, the echo cancellation tail length is set to 32 ms. If the card type is ***2pGeMmSrVsp3***, the echo cancellation tail length is set to 64 ms.

This attribute must be set to ***32*** or ***autoConfigure*** when a *Nsta/n Conn/n BasicRateGroup/n* component is provisioned and when running on a ***12mVspAal*** card.

This attribute must be set to ***32***, ***48*** or ***autoConfigure*** when using a ***Vsp2*** card.

This attribute must be set to ***128*** or ***autoConfigure*** when using a ***2pGeMmSrVsp3*** card.

Mib	Vgs
Values	autoConfigure 32 48 64 128
Units	msec
Default	autoConfigure

ATTRIBUTE Nsta Vgs Brag toneset (toneset)

Access	Read and write
Description	This attribute specifies the tone set available to the controller. The possible values are: ***sameAsVgs*** - Use the *defaultToneset* attribute from the *Vgs* component

argentina - Use the tone set for Argentina.
australia - Use the tone set for Australia.
austria - Use the tone set for Austria.
belgium - Use the tone set for Belgium.
brazil - Use the tone set for Brazil.
canadaUsa - Use the tone set for Canada and the USA.
chile - Use the tone set for Chile.
china - Use the tone set for China.
czech - Use the tone set for the Czech Republic.
france - Use the tone set for France.
germany - Use the tone set for Germany.
greece - Use the tone set for Greece.
hongKong - Use the tone set for Hong Kong.
india - Use the tone set for India.
ireland - Use the tone set for Ireland.
israel - Use the tone set for Israel.
italy - Use the tone set for Italy.
japan - Use the tone set for Japan.
korea - Use the tone set for Korea.
malaysia - Use the tone set for Malaysia.
mexico - Use the tone set for Mexico.
netherlands - Use the tone set for The Netherlands.
newZealand - Use the tone set for New Zealand.
panama - Use the tone set for Panama.
philippines - Use the tone set for Philippines.
poland - Use the tone set for Poland.
portugal - Use the tone set for Portugal.
romania - Use the tone set for Romania.
russia - Use the tone set for Russia.
singapore - Use the tone set for Singapore.
spain - Use the tone set for Spain.
sweden - Use the tone set for Sweden.
switzerland - Use the tone set for Switzerland.
taiwan- Use the tone set for Taiwan.
thailand - Use the tone set for Thailand.
turkey - Use the tone set for Turkey.
uk - Use the tone set for the UK.
venezuela - Use the tone set for Venezuela.

Mib Vgs

Values	sameAsVgs canadaUsa spain uk france portugal belgium germany netherlands sweden austria italy switzerland australia brazil ireland mexico israel romania turkey czech china taiwan korea japan panama argentina greece poland newZealand singapore venezuela chile hongKong malaysia philippines thailand india russia
Default	sameAsVgs

ATTRIBUTE Nsta Vgs Brag minimumDtmfPowerLevel

Access	Read and write
Description	This attribute specifies the value of the minimum power level at which DTMF digits must be detected. This value is used to allow for different specification for different administrations. This attribute is ignored if the *DigitCollection* component is not present under the parent *Vgs*. This attribute must be a multiple of 3 on a ***2pGeMmSrVsp3*** card.
Mib	Vgs
Values	Signed (-30..-22)
Units	dBm0
Default	-27

ATTRIBUTE Nsta Vgs Brag digitTransport

Access	Read and write
Description	This attribute specifies the method by which digit tones are transported. If ***64kG711***, then G.729 voice channels will upspeed to send ***64kG711*** packets when DTMF is detected. If ***sendAsVoice***, DTMF is encoded using currently selected codec. If ***squelch,*** during the playback of a digit, silence is sent over the voice path, encoded at the current encoding rate. If ***relay***, this value enables negotiation of mutual support for the relay of DTMF tones as RFC2833 VoIP packets. Should this negotiation fail then behavior is the same as for ***64kG711***. A value of ***relay*** is only valid on a ***2pGeMmSrVsp3*** card. If the *Sw Lpt featureList* attribute contains ***vgsAtm***, ***vgsAtmDc*** or ***vgsIp*** and the card type is not ***2pGeMmSrVsp3***, this attribute is

ignored and ***sendAsVoice*** will be the digit tone transport method.

If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used.

If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

Mib: Vgs

Values:
sendAsVoice
64kG711
squelch
relay
sameAsProfile

Default: sameAsProfile

ATTRIBUTE Nsta Vgs Brag vbdTransport

Access: Read and write

Description: This attribute specifies the method by which voiceband data tones are transported.

If ***useTone2100Rate***, then G.729 voice channels will upspeed to send ***64kG711*** packets when VBD is detected regardless of whether or not the remote gateway has indicated support for this codec.

If ***useTone2100RateIfNegotiated***, then G.729 voice channels will upspeed to send ***64kG711*** packets when VBD is detected only when the remote gateway has indicated support for this codec.

If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used.

If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

Mib: Vgs

Values	useTone2100RateIfNegotiated useTone2100Rate sameAsProfile
Default	sameAsProfile

GROUP Nsta Vgs Brag OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs Brag operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs Brag usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs Brag Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the causes of any *Brag* component failure.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag failureCause (failCause)

Access	Read only
Description	This attribute indicates the cause for the *Brag*s failure. The failure cause messages are: ***serviceChanNotReady*** - this failure cause message occurs if the TDM *Lp* is down, or waiting for the *Chan* to establish communication. ***operatorLock*** - this failure message occurs when a dependent component is locked by the operator. ***internalError*** - an internal error, which can not be determined has occurred. ***outOfResource*** - not enough hardware resource to handle current capacity. ***vspNotReady*** - the VSP card is down, or waiting for it to establish communication. ***activating*** - component creation is currently in progress. ***casDefinitionNotReady*** - The *CasDefn* component, to which the

Cas subcomponent of the *Brag* component is linked to, is disabled.

none - no failure.

Mib: Vgs

Values:
none
serviceChanNotReady
operatorLock
internalError
outOfResource
vspNotReady
activating
casDefinitionNotReady

Default: none

ATTRIBUTE Nsta Vgs Brag echoCancellationTailLengthValue (eCanTailValue)

Access: Read only

Description: This attribute shows the echo cancellation tail length currently in use.

Mib: Vgs

Values:
32
48
64
128

Units: msec

Default: No default

GROUP Nsta Vgs Brag CommonOp (ComOp)

Properties: Operational

Description: This group contains operational attributes common to *Brag* and *DBrag*.

Mib: Vgs

ATTRIBUTE Nsta Vgs Brag outOfServiceTerminationsByMgc (oosTermsByMgc)

Access	Read only
Description	This attribute is a list of TDM terminations placed out of service by the controller. This does not include TDM terminations placed out of service by the gateway. This attribute is only relevant if the H.248 protocol is in use. If any other attribute is used, this attribute is filtered.
Mib	Vgs
List of	Decimal (1..31)
Default	No default

COMPONENT Nsta Vgs Brag UdpHdlcTransport (Uht)

Instance	Decimal (1..31)
Groups	"GROUP Nsta Vgs Brag Uht Provisioned (Prov)" "GROUP Nsta Vgs Brag Uht OsiState (State)" "GROUP Nsta Vgs Brag Uht HdlcStatistics (HdlcStats)" "GROUP Nsta Vgs Brag Uht Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs Brag/n UdpHdlcTransport/<timeslot>* This optional component provides the transport of HDLC D Channel data over UDP to a remote signaling device. When a *UdpHdlcTransport* component is provisioned under a *Brag*, all valid HDLC frames within the timeslot smaller than 512 octets in size are transported transparently over UDP. HDLC frames greater than 512 octets in size are discarded. The local address for UDP datagrams is provided by the *udpPortConnection* link to a *UdpPort* component. The destination address is provided by the controller over the relevant control protocol. All HDLC frames received are transmitted to the IP network when a destination address has been provided by the controller. Frames received before the controller has provided the

destination address are discarded.

All data received within UDP datagrams from the local IP address and UDP port are transmitted as HDLC frames.

The instance number of the *UdpHdlcTransport* component specifies the TDM timeslot within the basic rate group that is carrying the HDLC frames. This timeslot must be included in the *timeslots* attribute of the *Channel* component linked to the parent *Brag* component.

There is a maximum of one *UdpHdlcTransport* component per *Brag*, and a maximum of 10 *UdpHdlcTransport* components per *Vgs* component hierarchy.

The *UdpHdlcTransport* component is mutually exclusive with *V5Link* subcomponent of *Brag*.

Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Brag Uht Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *UdpHdlcTransport* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag Uht udpPortConnection (udpConn)

Access	Read and write
Description	This attribute specifies the link to the *Nsta/n Vgs Ctrl/n UdpPort/n* component that defines the access to the IP network.
Mib	Vgs

Values	Link (Service, applicationName)
Default	No default

GROUP Nsta Vgs Brag Uht OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag Uht adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs Brag Uht operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs Brag Uht usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs Brag Uht HdlcStatistics (HdlcStats)

Properties	Operational
Description	This group contains attributes with statistical information about HDLC frames.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag Uht txFrames (txFrm)

Access	Read only
Description	This attribute counts the High Level Data Link Control (HDLC) frames transmitted towards the TDM interface since the component was activated. The counter wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag Uht rxFrames (rxFrm)

Access	Read only
Description	This attribute counts the High Level Data Link Control (HDLC) frames received from the TDM interface since the component was activated. This count includes frames with FCS errors. The counter wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag Uht erroredFrames (errorFrm)

Access	Read only
Description	This attribute counts the High Level Data Link Control (HDLC) frames received from the TDM interface with errors (FCS, frame too long, non integral number of octets, or abort received) since

	the component was activated. The counter wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

GROUP Nsta Vgs Brag Uht Operational (Oper)

Properties	Operational
Description	This group contains the status information for the *UdpHdlcTransport* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag Uht remoteIpAddress (remIpAddr)

Access	Read only
Description	This attribute indicates the actual IP address of the remote device to which signaling packets associated with this component will be relayed. This address is provided by the controller via the control protocol. The value is set to ***0.0.0.0*** until the controller provides an IP address for the service.
Mib	Vgs
Values	IP address
Default	0.0.0.0

ATTRIBUTE Nsta Vgs Brag Uht remoteUdpPort (remUdpPort)

Access	Read only
Description	This attribute indicates the actual UDP port of the remote device to which signaling packets associated with this component will be relayed. This address is provided by the Service Manager via the control protocol.

	The value is set to ***0*** until the controller provides a UDP port for the service.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

COMPONENT Nsta Vgs Brag AnnouncementLanguage

Groups	"GROUP Nsta Vgs Brag AnnouncementLanguage Provisioned (Prov)"
Scope	Device
Description	*Nsta/n Vgs Brag/n AnnouncementLanguage.* *Nsta/n Vgs BragS/n AnnouncementLanguage* This component is used to specify an announcement language for this *Brag* or *BragS* component which differs from the *defaultLanguage* attribute specified in the *Vgs LocalAnouncements* component. The *AnnouncementLanguage* component is mutually exclusive of the *V5Link* subcomponent of *Brag* component. This restriction is not applicable to the *BragS* component.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Brag AnnouncementLanguage Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the Local Announcement facility.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag AnnouncementLanguage defaultLanguage

Access	Read and write
Description	This attribute specifies the language to be used on the announcement when no language is provided via the Media Gateway Controller. When a value is specified here, it overrides the value in the *AnnouncementLanguage* component. If the value is not empty, it must be a 3 character ASCII string (lower case a-z) for example "eng".
Mib	Vgs
Values	String (0..3, ASCII)
Default	""

COMPONENT Nsta Vgs Brag Q921

Instance	Decimal (1..31)
Groups	"GROUP Nsta Vgs Brag Q921 Provisioned (Prov)" "GROUP Nsta Vgs Brag Q921 OsiState (State)" "GROUP Nsta Vgs Brag Q921 Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs Brag/n Q921/<timeslot number>* This component holds the information for TDM Q.921 transport. The timeslot, used as the component instance, must be present in the *Brag*. The total number of instances for this component and the *Nsta/n Vgs Brag/n V5Link LapV5* component under the same *Vgs* component hierarchy must not exceed 40.

The *Q921* component is mutually exclusive with the *V5Link* subcomponent of the *Brag*.

Mib: Vgs

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Nsta Vgs Brag Q921 Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioning data for the *Q921* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs Brag Q921 t200

Access: Read and write

Description: This attribute specifies the maximum time between the transmission of a layer 2 frame and the receipt of an acknowledgement from the user. This is the acknowledgement timer (T200). The value is rounded to the nearest 0.5 second.

Mib: Vgs

Values: Decimal (0.5..5.0)

Units: seconds

Default: 1.0

ATTRIBUTE Nsta Vgs Brag Q921 t203

Access: Read and write

Description: This attribute specifies the maximum time without frame exchange during multiple frame operations.

Mib: Vgs

Values	Decimal (10..300)
Units	seconds
Default	10

ATTRIBUTE Nsta Vgs Brag Q921 n200

Access	Read and write
Description	This attribute specifies the maximum number of retransmissions of a layer 2 frame.
Mib	Vgs
Values	Decimal (1..8)
Default	3

ATTRIBUTE Nsta Vgs Brag Q921 n201

Access	Read and write
Description	This attribute specifies the maximum length of an information field.
Mib	Vgs
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE Nsta Vgs Brag Q921 outstandingFrames

Access	Read and write
Description	This attribute specifies the maximum number of sequentially numbered I frames (k) that may be unacknowledged at any given time after which no new frames are transmitted unless as part of an error recovery procedure.
Mib	Vgs
Values	Decimal (1..127)
Default	7

ATTRIBUTE Nsta Vgs Brag Q921 side

Access	Read and write
Criticality	Process
Description	This attribute specifies if this end of the PRI trunk is to be considered the network end or the user end. The possible values are: ***user***, ***network***.
Mib	Vgs
Values	user network
Default	network

GROUP Nsta Vgs Brag Q921 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag Q921 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users

only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Vgs

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Nsta Vgs Brag Q921 operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Vgs

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nsta Vgs Brag Q921 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in

use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs Brag Q921 Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the causes of any *Q921* component failure.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag Q921 txFrames

Access	Read only
Description	This attribute counts Q.921 frames transmitted towards the TDM interface since the component was activated. The following frames are counted: information frames, receive ready frames, receive not ready frames, reject frames, set asynchronous balanced mode frames, disconnect frames, unnumbered acknowledge frames, disconnect mode frames, frame reject frames, exchange id frames, unnumbered information frames The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Nsta Vgs Brag Q921 rxFrames

Access	Read only
Description	This attribute counts Q.921 frames received from the TDM interface since the component was activated. This includes HDLC errored frames. The following frames are counted: information frames, receive ready frames, receive not ready frames, reject frames, set asynchronous balanced mode frames, disconnect frames, unnumbered acknowledge frames, disconnect mode frames, frame reject frames, exchange id frames, unnumbered information frames. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag Q921 erroredFrames

Access	Read only
Description	This attribute counts Q.921 frames received from the TDM interface with errors since the component was activated. The following errors are counted: invalid frames received (FCS, overrun, or non-integral number of octets), SABM errors, DM frames Tx in response to a Rx SABME, frames with an information field that is not permitted or a supervisory unnumbered frame with an incorrect length, frame received with an invalid receive sequence, frames received with I field larger than *n201*. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Nsta Vgs Brag Q921 retriesCounter

Access	Read only
Description	This attribute counts the number of retransmission attempts. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag Q921 linkStatus

Access	Read only
Description	This attribute indicates the status of the link. The possible values are: ***up***, ***down***.
Mib	Vgs
Values	up down
Default	No default

COMPONENT Nsta Vgs Brag V5Link (V5Link)

Groups	"GROUP Nsta Vgs Brag V5Link Provisioned (Prov)" "GROUP Nsta Vgs Brag V5Link Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs Brag/n V5Link* The *V5Link* component provides the capability to send V5.2 link identification signaling to the TDM interface. It also provides attributes to store timer values and maximum values for counters required by the V5.2 protocol for any C-channel subcomponents (*LapV5* component). The *V5Link* component can be added when the TDM interface

named as the *Brag interfaceName* is to support any V5.2 signaling.
The *V5Link* component is mutually exclusive with the *Q921*, *AnnouncementLanguage* and *UdpHdlcTransport* subcomponents of the *Brag*. If *V5Link* is provisioned, none of the others may be provisioned on the same *Brag*. Another *Brag* on the same *Vgs* may support one of the other services.

The channel component specified as the *interfaceName* of the *Brag* which has a *V5Link* subcomponent must belong to an E1. Timeslots 1 to 31 must belong to the channel; none can be omitted.

If this component is provisioned, a *V5ua* component must also be provisioned under the same *Vgs*.

Mib	Vgs
Opt. Subcomp.	"COMPONENT Nsta Vgs Brag V5Link LapV5 (LapV5)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Brag V5Link Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the *Nsta/n Vgs Brag/n V5Link* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag V5Link t200

Access	Read and write
Description	This attribute specifies the maximum time allowed between the transmission of a layer 2 frame and the receipt of an acknowledgement from the user. This is the acknowledgement timer (T200). The value is rounded to the nearest 0.5 second.

Mib	Vgs
Values	Decimal (0.5..5.0)
Units	seconds
Default	1.0

ATTRIBUTE Nsta Vgs Brag V5Link t203

Access	Read and write
Description	This attribute specifies the maximum time without frame exchange during multiple frame operations. Expiry of this timer leads to a "keep-alive" polling RR or RNR frame being transmitted to ensure that the remote layer 2 entity is still active.
Mib	Vgs
Values	Decimal (10..300)
Units	seconds
Default	10

ATTRIBUTE Nsta Vgs Brag V5Link n200

Access	Read and write
Description	This attribute specifies the maximum number of retransmissions of a layer 2 frame.
Mib	Vgs
Values	Decimal (1..8)
Default	3

ATTRIBUTE Nsta Vgs Brag V5Link n201

Access	Read and write
Description	This attribute specifies the maximum length of an information field.
Mib	Vgs

Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE Nsta Vgs Brag V5Link maxOutstandingFrames

Access	Read and write
Description	This attribute specifies the maximum number of sequentially numbered I frames (k) that may be unacknowledged at any given time after which no new frames are transmitted unless as part of an error recovery procedure.
Mib	Vgs
Values	Decimal (1..127)
Default	7

GROUP Nsta Vgs Brag V5Link Operational (Oper)

Properties	Operational
Description	This group contains operational attributes of the *Nsta/n Vgs Brag/n V5Link* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag V5Link interfaceId

Access	Read only
Description	This attribute indicates the V5UA protocol link identifier for this *V5Link*. The value displayed here is the expected value of the V5UA interface identifier for this particular *Brag*. Any V5UA messages received by the *V5ua* with this specific interface identifier are processed by this *V5Link*. If the interface identifier received in a V5UA message does not match the interface identifier of any *V5Link* associated with this *Vgs*, the message is discarded. The value for this attribute is automatically generated.
Mib	Vgs
Values	Hex (H.0..H.ffffffff)

Default	No default

COMPONENT Nsta Vgs Brag V5Link LapV5 (LapV5)

Instance	Decimal (15; 16; 31)
Groups	"GROUP Nsta Vgs Brag V5Link LapV5 OsiState (State)" "GROUP Nsta Vgs Brag V5Link LapV5 Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs Brag/n V5Link LapV5/<timeslot number>* This component represents a Link Access Protocol (LAP) entity for the V5.2 C-channel. The instance value is the specific timeslot used by the C-channel on the associated E1. The *LapV5* is provisioned whenever the indicated timeslot is to be used either for carrying V5.2 messaging (as an active C-channel) or when it is to be in a “stand-by” mode to provide an alternate C-channel, used if the active C-channel fails. A *V5Link* does not need to have any C-channels, so it is legitimate to have a *V5Link* component with no *LapV5* subcomponents. However, there can be no more that three *LapV5* subcomponents, since the standards explicitly state that only timeslots 15, 16, and 31 may be used for C-channels.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Brag V5Link LapV5 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Vgs

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Vgs

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs Brag V5Link LapV5 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Nsta/n Vgs Brag/n V5Link LapV5/<timeslot>* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 interfaceId

Access	Read only
Criticality	Component
Description	This attribute indicates the V5UA protocol link identifier for this *LapV5*. The value displayed here is the expected value of the V5UA interface identifier for this particular C-channel. Any V5UA messages received by the *V5ua* with this specific interface identifier are processed by this *LapV5*. If the interface identifier received in a V5UA message does not match the interface identifier of any *LapV5* associated with this *Vgs*, the message is discarded. The format of the *LapV5* interface identifier and that of the *V5Link* interface identifier are closely related. The *LapV5* interface identifier is equal to the interface identifier of its parent *V5Link*, plus the timeslot number. Therefore, the lowest 5 bits of the interface identifier are either 0 (for the *V5Link*), 15, 16, or 31 (for the C-channels).
Mib	Vgs
Values	Hex (H.0..H.ffffffff)
Default	No default

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 txFrames

Access	Read only
Description	This attribute counts the frames transmitted towards the TDM interface since the component was activated. This includes retransmitted frames. The counter wraps to 0 when its maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 rxFrames

Access	Read only

Description	This attribute counts the frames received from the TDM interface since the component was activated. This includes errored frames. The counter wraps to 0 when its maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 erroredFrames

Access	Read only
Description	This attribute counts the frames received from the TDM interface with errors since the component was activated. Note that the errored frames counted here do not include all errors. According to V5.2 standards, short frames (under the minimum required length) and some other errors are discarded without reporting them to upper levels of the V5.2 stack. The counter wraps to 0 when its maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 retransmittedFrames

Access	Read only
Description	This attribute counts retransmission attempts. The peer layer 2 must respond to an I frame within the protocol timer interval provisioned as *t200* seconds. If the peer layer 2 fails to acknowledge a frame prior to the expiry of the timer and there have not been *n200* retransmissions yet, the *LapV5* retransmits the unacknowledged frame and increments *retransmittedFrames*. If there have been sufficient retransmission attempts to reach the provisioned *n200* limit, the C-channel attempts to re-establish,

and the *n200Exhausted* increments.

The counter wraps to 0 when its maximum value is exceeded.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 n200Exhausted

Access: Read only

Description: This attribute counts the number of times that the retransmission limit specified by the *n200* attribute was exceeded on this C-channel (*LapV5*). Each time the limit is reached, the counter is incremented and the *LapV5* re-establishes the C-channel.

The counter wraps to 0 when its maximum value is exceeded.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs Brag V5Link LapV5 activeDataLinkProtocols

Access: Read only

Description: This attribute indicates the set of V5.2 protocols currently established on C-channel.

The following protocols ate supported:
protection (***prot***) - This protocol provides the capability to enable stand-by C-channels when the active C-channels fail
link - This protocol provides the capability to enable and disable E1 links, as well as provide Link Identification procedure messaging.
control (***ctrl***) - This protocol provides the capability to enable and disable user terminals (sets).
bcc - This protocol provides the capability to allocate specific B channels on indicated E1 links t a call.
pstn - This protocol provides the capability to signla user

terminal events from the terminal to the network and responses back to the terminal.

Mib: Vgs

Set of:
protection (prot)
link (link)
control (ctrl)
bcc (bcc)
pstn (pstn)

Default: No default

COMPONENT Nsta Vgs Brag ChannelAssociatedSignaling (Cas)

Groups:
"GROUP Nsta Vgs Brag Cas Provisioned (Prov)"
"GROUP Nsta Vgs Brag Cas Operational (Oper)"

Scope: Device

Description:
Nsta/n Vgs Brag/n ChannelAssociatedSignaling
Nsta/n Vgs Tag/n ChannelAssociatedSignaling

This component represents the capability to terminate, process and redirect any Channel Associated Signaling information associated with the parent component.

Mib: Vgs

Common Verbs:
Help
List
Display
Add
DELete

GROUP Nsta Vgs Brag Cas Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioning data for the *Cas* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs Brag Cas channelAssocSignalingDefinition (casDefinition)

Access	Read and write
Criticality	Process
Description	This attribute specifies a link to an *Nsta/n Vgs CasDefn/n* component, which defines the CAS signaling details. This attribute must be supplied.
Mib	Vgs
Values	Link (Service, applicationList)
Default	No default

GROUP Nsta Vgs Brag Cas Operational (Oper)

Properties	Operational
Description	This group contains attributes that indicate the status of a *Cas* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Brag Cas txSignals

Access	Read only
Description	This attribute counts CAS line signals transmitted towards the TDM interface since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag Cas rxSignals

Access	Read only
Description	This attribute counts CAS line signals received from the TDM interface since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.

Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Brag Cas busyChannels

Access	Read only
Description	This attribute indicates the number of endpoints in answer or setup state for the *Chan* component specified in the *interfaceName* attribute of the parent component. This includes only the endpoints that are not in idle or blocked state.
Mib	Vgs
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Nsta Vgs Brag Cas blockedChannels

Access	Read only
Description	This attribute indicates the number of endpoints in blocked state for the *Chan* component specified in the *interfaceName* attribute of the parent component.
Mib	Vgs
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Nsta Vgs Brag Cas signalFailureIndications

Access	Read only
Description	This attribute counts the number of incoming line state changes that are not recognized as valid candidates for that stage in a call, and that are reported as a Signal Failure to the call server. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)

Default	No default

COMPONENT Nsta Vgs ControlConnection (Ctrl)

Instance	mediaGateway (mg) signalingGateway (sg)
Groups	"GROUP Nsta Vgs Ctrl Provisioned (Prov)" "GROUP Nsta Vgs Ctrl OsiState (State)" "GROUP Nsta Vgs Ctrl Statistics (Stats)" "GROUP Nsta Vgs Ctrl NstaVgsConnectionStatus (ConnStat)"
Scope	Device
Description	*Nsta/n Vgs ControlConnection/mediaGateway* *Nsta/n Vgs ControlConnection/signalingGateway* The ***mediaGateway*** instance of the *ControlConnection* component defines a communication path between the voice gateway and a Controller. The ***signalingGateway*** instance of the *ControlConnection*

component defines a communication path between a PRI signaling device attached to the voice gateway and a Controller.

Mib	Vgs
Opt. Subcomp.	"COMPONENT Nsta Vgs Ctrl SecurityPolicyDatabase (Spd)" "COMPONENT Nsta Vgs Ctrl NailedUpAdaptionPoint (Nap)" "COMPONENT Nsta Vgs Ctrl ActiveAccessPoint (Aap)" "COMPONENT Nsta Vgs Ctrl PassiveAccessPoint (Pap)" "COMPONENT Nsta Vgs Ctrl SpvcAccessPoint (SpvcAp)" "COMPONENT Nsta Vgs Ctrl UdpPort (UdpPort)" "COMPONENT Nsta Vgs Ctrl SctpPort" "COMPONENT Nsta Vgs Ctrl VirtualRouterAccessPoint (VrAp)"
Dyn. Subcomp.	"COMPONENT Nsta Vgs Ctrl AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *ControlConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl ipAddress (ipAddr)

Access	Read and write
Description	This attribute specifies the IP address of the media or signaling gateway. Control messages from the controller will be sent to this IP address to manage connections within this gateway. This address is used to advertise the gateway to the local IP router, and to filter incoming IP packets (only packets destined for this *ipAddress* attribute value are accepted; all other packets

	are silently dropped). This attribute may be changed without affecting existing calls. When the *ControlConnection* component is copied using the *Copy* command, this attribute is set to ***0.0.0.0*** to prevent a duplication of IP addresses.
Mib	Vgs
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs Ctrl dnsServers (dnsList)

Access	Read and write
Description	This attribute specifies the IP addresses of the DNS servers available to this media gateway. Each DNS server has one IP address associated with it. If the list is empty then no DNS lookup is attempted by the media gateway. The list has no implied ordering. If more than one entry is present then one entry is arbitrarily chosen as the first IP address to use for a DNS lookup.
Mib	Vgs
List of	IP address
List Size	2
Default	No default

GROUP Nsta Vgs Ctrl OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Vgs

ATTRIBUTE Nsta Vgs Ctrl adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Vgs

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Nsta Vgs Ctrl operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs Ctrl usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs Ctrl Statistics (Stats)

Properties	Operational
Description	This group contains attributes which indicate traffic load and error statistics.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl txMessages (txMsgs)

Access	Read only
Description	This attribute counts the messages transmitted since the component was activated. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl rxMessages (rxMsgs)

Access	Read only
Description	This attribute counts messages received without errors since the component was activated. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl aal5Failures (errs)

Access	Read only
Description	This attribute counts AAL5 errors over this control connection, where AAL5 errors represents the combined total of CRC, Length Field, and max_SDU_deliver_length errors. This attribute is filtered when the ***vgsIpGigE*** or the ***vgsIpG729GigE*** feature is provisioned, or the *VrAp* subcomponent is provisioned under this component. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)

Default	No default

GROUP Nsta Vgs Ctrl NstaVgsConnectionStatus (ConnStat)

Properties	Operational
Description	This group contains an attribute which provides information on the status of the VGS connections.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl currentStatus (cStat)

Access	Read only
Description	This attribute specifies the current status of a *Vgs AtmTConn*, *IpMConn* or *Ctrl* connection. ***enabled*** indicates that the component is enabled and available to transport traffic. ***activating*** indicates that the component is progressing through its expected sequence of activation and enabling actions, and that no errors having been reported. ***atmConnectionNotReady*** indicates that a problem has been reported with the ATM VCC linked to the component's *Nap*, *Aap* or *Pap* subcomponent, resulting in the component being in a disabled state. ***vspNotReady*** indicates that the *Vsp* component linked to the parent *Nsta* component is either disabled or locked. ***outOfResource*** indicates that no hardware resource is available on the VSP card to support the component. This means that the VSP card is inadequately equipped or has suffered some level of hardware failure. ***ipNetworkInaccessible*** indicates that a connection into the IP network cannot be created. This may be due to physical ports being disabled, or the inability of routing software to establish an appropriate connection.

Mib	Vgs
Values	enabled activating atmConnectionNotReady vspNotReady outOfResource ipNetworkInaccessible
Default	No default

COMPONENT Nsta Vgs Ctrl SecurityPolicyDatabase (Spd)

Instance	String (1..20, ASCII)
Groups	"GROUP Nsta Vgs Ctrl Spd Statistics (Stats)"
Scope	Application
Description	*Nsta/n Vgs Ctrl/n SecurityPolicyDatabase/n* The *SecurityPolicyDatabase* component represents a set of policies collectively known as the security policy database (SPD), which is used for applying and bypassing IPSec. There must be 2 through 6 *Policy* subcomponents. There must be no more than one *Mgc* or *H248* component in the same *Vgs* hierarchy. It is recommended that a *Ctrl/Sg* component is not provisioned in the same *Vgs* hierarchy.
Mib	Vgs
Opt. Subcomp.	"COMPONENT Nsta Vgs Ctrl Spd Policy" "COMPONENT Nsta Vgs Ctrl Spd IkePolicy (Ipol)" "COMPONENT Nsta Vgs Ctrl Spd SecurityAssociationProposal (SaProposal)" "COMPONENT Nsta Vgs Ctrl Spd IkeProposal (IProp)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Spd Statistics (Stats)

Properties	Operational
Description	This group contains statistics for the *SecurityPolicyDatabase* component. These attributes cannot be associated with individual security associations, so they are aggregated under the *SecurityPolicyDatabase* component. Counts that can be associated with a particular security association are defined under the *SecurityAssociation*, *ManualSecurityAssociation* or *IkeSecurityAssociation* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd outPackets (op)

Access	Read only
Description	This attribute counts the packets processed by all the outbound security policies under this component, including discarded packets. The value is obtained independently from the individual outbound policies. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd outSpdDiscards (osd)

Access	Read only
Description	This attribute counts the outbound packets discarded by the security policy database because there is no matching security policy. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd outPolicyDiscards (opd)

Access	Read only
Description	This attribute counts the outbound packets discarded by the security policy. This count includes packets that are discarded by policies defined as discard and policies which have discarded packets where there is no active security association. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd inPackets (ip)

Access	Read only
Description	This attribute counts the packets processed by all the inbound security policies under this component, including discarded packets. The value is aggregated from individual inbound policies. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd inSpdDiscards (isd)

Access	Read only
Description	This attribute counts the inbound packets discarded by the security policy database because there is no matching security policy. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd inPolicyDiscards (ipd)

Access	Read only
Description	This attribute counts the inbound packets discarded by any policy or associated security association. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd inSaLookupFailures (isl)

Access	Read only
Description	This attribute counts the packets discarded because the Security Parameter Index (SPI) in the packet is unknown. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs Ctrl Spd Policy

Instance	Decimal (1..6)
Groups	"GROUP Nsta Vgs Ctrl Spd Policy Selectors" "GROUP Nsta Vgs Ctrl Spd Policy Provisioned (Prov)" "GROUP Nsta Vgs Ctrl Spd Policy Statistics (Stats)"
Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n Policy/n* The *Policy* component represents an IPSec policy for a traffic stream.

	If a packet does not meet any policy, it is discarded.
Mib	Vgs
Dyn. Subcomp.	"COMPONENT Nsta Vgs Ctrl Spd Policy SecurityAssociation (Sa)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Spd Policy Selectors

Properties	Provisioned
Description	This group contains the selector attributes of the *Policy* component. These attributes specify the criteria that a packet must match for the policy to be applied.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Policy protocol (proto)

Access	Read and write
Description	This attribute specifies the layer 4 (transport) protocol to which the policy applies. The values are as follows: - ***any***: any protocol - ***icmp***: Internet Control Message Protocol - ***udp***: User Datagram Protocol
Mib	Vgs
Values	Decimal (2..16; 18..49; 52..255) any icmp udp
Default	any

ATTRIBUTE Nsta Vgs Ctrl Spd Policy srcPort (sPort)

Access	Read and write

Description	This attribute specifies the source UDP port number for traffic flows to which the policy applies. A value of ***any*** specifies that any port number matches the policy. If the *protocol* attribute value is not ***udp***, then this attribute must be set to ***any***.
Mib	Vgs
Values	Decimal (1..499; 501..65535) any
Default	any

ATTRIBUTE Nsta Vgs Ctrl Spd Policy dstPort (dPort)

Access	Read and write
Description	This attribute specifies the destination UDP port number for traffic flows to which the policy applies. A value of ***any*** specifies that any port number matches the policy. If the *protocol* attribute value is not ***udp***, then this attribute must be set to ***any***.
Mib	Vgs
Values	Decimal (1..499; 501..65535) any
Default	any

ATTRIBUTE Nsta Vgs Ctrl Spd Policy direction

Access	Read and write
Description	This attribute specifies the direction of the policy. The value can be one of the following: - ***inbound***: this policy corresponds to an entry in the inbound security policy database (SPD), as referred to in RFC 2401. IPSec traffic received is matched against inbound policies. - ***outbound***: this policy corresponds to an entry in the outbound SPD, as referred to in RFC 2401. Locally generated traffic is matched against outbound policies.
Mib	Vgs

Values	inbound outbound
Default	outbound

ATTRIBUTE Nsta Vgs Ctrl Spd Policy srcIpAddress (sAddr)

Access	Read and write
Description	This attribute specifies the source IPv4 address for traffic flows to which the policy applies. The address can be a host address, a range or a wildcard: - To specify a host address, specify one value, which is the host address. - To specify a range of IPv4 addresses, specify two values, which are the lower and upper bounds of the range. The order does not matter. - To specify a wildcard, leave the list empty. A value of ***0.0.0.0*** is not permitted.
Mib	Vgs
List of	IP address
List Size	2
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy dstIpAddress (dAddr)

Access	Read and write
Description	This attribute specifies the destination IPv4 address for traffic flows to which the policy applies. The address can be a host address, a range or a wildcard: - To specify a host address, specify one value, which is the host address. - To specify a range of IP addresses, specify two values, which are the lower and upper bounds of the range. The order does not matter. - To specify a wildcard, leave the list empty.

	A value of ***0.0.0.0*** is not permitted.
Mib	Vgs
List of	IP address
List Size	2
Default	No default

GROUP Nsta Vgs Ctrl Spd Policy Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Policy* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Policy action

Access	Read and write
Description	This attribute specifies the action to be taken when a packet is received that matches the selectors for this policy. The value can be one of the following: **- *discard***: the packet is to be discarded. **- *bypass***: no security is to be applied to the packet. Instead the packet is forwarded as usual. **- *apply***: the security service specified by the *Sa* subcomponent is applied to the packet. If this attribute takes the value of ***apply***, it is recommended that an instance of *Vr Ip Spd Policy* with the *action* attribute set to ***apply*** is also provisioned.
Mib	Vgs
Values	discard bypass apply
Default	bypass

ATTRIBUTE Nsta Vgs Ctrl Spd Policy description

Access	Read and write
Description	This attribute allows a name or description for the *Policy* instance.
Mib	Vgs
Values	String (0..20, ASCII)
Default	""

ATTRIBUTE Nsta Vgs Ctrl Spd Policy ikePolicy

Access	Read and write
Description	This attribute specifies the instance of *IkePolicy* component to which this instance of the *Policy* component is linked. When the *action* attribute is set to ***apply***, this attribute must specify an instance of *IkePolicy* component under the same *Spd* component as this *Policy* component.
Mib	Vgs
List of	Link (Service, associatedPolicies)
List Size	1
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy saProposal

Access	Read and write
Description	This attribute specifies the *SaProposal* component which is linked to this policy. When the *action* attribute is set to ***apply***, this attribute must specify an instance of *SaProposal* component under the same *Spd* component as this *Policy* component.
Mib	Vgs
List of	Link (Service, associatedPolicies)
List Size	1

Default	No default

GROUP Nsta Vgs Ctrl Spd Policy Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the *Policy* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Policy packetCount (pc)

Access	Read only
Description	This attribute counts the packets processed for all *Sa* components which have been associated with this *Policy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy policyDiscards (pd)

Access	Read only
Description	This attribute counts the packets discarded by this policy if the action is set to discard or the policy is discarding packets as there is no active SA when it is set to apply. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy authErrors (aErr)

Access	Read only
Description	This attribute counts the authentication errors encountered for all SAs which have been associated with this policy.

	The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy replayErrors (rErr)

Access	Read only
Description	This attribute counts the replay errors encountered for all *Sa* components which have been associated with this *Policy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy otherErrors (oErr)

Access	Read only
Description	This attribute counts the security packets received on all *Sa* components which have been associated with this *Policy* component for which an error is encountered other than those described previously. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs Ctrl Spd Policy SecurityAssociation (Sa)

Instance	Decimal (256..65535)
Groups	"GROUP Nsta Vgs Ctrl Spd Policy Sa Operational (Oper)" "GROUP Nsta Vgs Ctrl Spd Policy Sa Statistics (Stats)"

Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n Policy/n SecurityAssociation/n* This component represents a security association.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs Ctrl Spd Policy Sa Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *SecurityAssociation* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa upTime

Access	Read only
Description	This attribute indicates the time that has elapsed since this *SecurityAssociation* component was created.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa remainingTimeToLive

Access	Read only
Description	This attribute indicates the lifetime remaining for this *SecurityAssociation* component.
Mib	Vgs
Values	Decimal (0..4294967295)

Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa saTimeToLive

Access	Read only
Description	This attribute indicates the hard lifetime for the SA.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa perfectForwardSecrecy (pfs)

Access	Read only
Description	This attribute indicates if PFS has been negotiated.
Mib	Vgs
Values	off on
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa encryptAlgorithm

Access	Read only
Description	This attribute indicates which encryption algorithm has been negotiated. The possible values are: - ***null***:for ESP with null encryption, as described in RFC 2410.
Mib	Vgs
Values	null
Default	null

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa authAlgorithm

Access	Read only

Description	This attribute indicates which authentication algorithm has been negotiated. The possible enumerations are: - ***md5***: Message Digest; - ***sha1***: Secure Hash Algorithm.
Mib	Vgs
Values	sha1 md5
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa replayProtection

Access	Read only
Description	This attribute indicates if replay protection has been negotiated. Possible values are: - ***off***: replay protection will not be used; - ***on***: replay protection will be used.
Mib	Vgs
Values	off on
Default	No default

GROUP Nsta Vgs Ctrl Spd Policy Sa Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attributes of the *SecurityAssociation* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa packetCount

Access	Read only
Description	This attribute counts the packets processed for this *SecurityAssociation* component. The count wraps to zero when it exceeds the maximum value.

Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa decryptErrors

Access	Read only
Description	This attribute counts the packets for which decryption errors were encountered for this *SecurityAssociation* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa authErrors

Access	Read only
Description	This attribute counts the authentication errors encountered for this *SecurityAssociation* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa replayErrors

Access	Read only
Description	This attribute counts duplicate sequence numbers, as defined in RFC 2046, for this *SecurityAssociation* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Policy Sa otherErrors

Access	Read only
Description	This attribute counts the security packets received on this *SecurityAssociation* component for which an error is encountered but not counted by the other specific error count attributes. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs Ctrl Spd IkePolicy (Ipol)

Instance	Decimal (1..1)
Groups	"GROUP Nsta Vgs Ctrl Spd Ipol Selectors" "GROUP Nsta Vgs Ctrl Spd Ipol Provisioned (Prov)" "GROUP Nsta Vgs Ctrl Spd Ipol Operational (Oper)" "GROUP Nsta Vgs Ctrl Spd Ipol Statistics (Stats)"
Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n IkePolicy/n* The *IkePolicy* component represents the Internet Key Exchange (IKE) requirements for a specific IKE connection. The value of attribute *ikeResponseTimerValue* multiplied by the

	value of attribute *ikeRetryAttempts* must be less than 70% of the value of attribute *saTimeToLive*.
Mib	Vgs
Dyn. Subcomp.	"COMPONENT Nsta Vgs Ctrl Spd Ipol IkeSecurityAssociation (Isa)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Spd Ipol Selectors

Properties	Provisioned
Description	This group contains the selector attributes of the *IkePolicy* component. These attributes specify the criteria that a packet must match for the policy to be applied.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol remoteIpAddress (ria)

Access	Read and write
Description	This attribute specifies the remote IP address for the IKE key management traffic flow. This value should be set to equal the value of the *remoteMgcAddress* attribute in the *Mgc* component under the same parent *Vgs* component.
Mib	Vgs
Values	IP address
Default	No default

GROUP Nsta Vgs Ctrl Spd Ipol Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *IkePolicy* component.

Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol description (desc)

Access	Read and write
Description	This attribute allows a name or description for the *IkePolicy* instance.
Mib	Vgs
Values	String (0..20, ASCII)
Default	""

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol ikePresharedKey (ipk)

Access	Write only
Description	This attribute specifies the symmetric encryption key to be used in the IKE protocol. This is stored encrypted and cannot be read. It is recommended that the *ikePresharedKey* attribute is 10 or more characters in length.
Mib	Vgs
Values	String (0..255, ASCII)
Default	""

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol ikeResponseTimerValue (irtv)

Access	Read and write
Description	This attribute specifies the initial time the IKE waits for a reply from the peer IKE stack before attempting to resend the message.
Mib	Vgs
Values	Decimal (1000..10000)
Units	msec
Default	1000

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol ikeRetryAttempts (ira)

Access	Read and write

Description	This attribute specifies the number of retransmission attempts of any IKE message by the IKE stack. If a message has no response then the IKE will have failed to negotiate.
Mib	Vgs
Values	Decimal (0..10)
Default	2

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol ikeProposal (iPr)

Access	Read and write
Description	This attribute associates this *IkePolicy* to an *IkeProposal* component. The *ikeProposal* attribute must reference an *IkeProposal* component under the same *SecurityPolicyDatabase* component as this *IkePolicy.*
Mib	Vgs
Values	Link (Service, associatedIkePolicies)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol associatedPolicies

Access	Read only
Description	This attribute lists all the associated *Policy* components liked to this *IkePolicy.*
Mib	Vgs
List of	Link (Service, ikePolicy)
List Size	6
Default	No default

GROUP Nsta Vgs Ctrl Spd Ipol Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *IkePolicy* component.

Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol negotiationStatus

Access	Read only
Description	This attribute indicates the status of IKE negotiation. The possible values are: ***inactive***: no negotiation is in progress. ***initializing***: initial negotiation is in progress. ***failedPhase1***: negotiation failed during Phase 1. ***failedPhase2***: negotiation failed during Phase 2. ***passed***: negotiation passed**.**
Mib	Vgs
Values	inactive initializing failedPhase1 failedPhase2 passed
Default	No default

GROUP Nsta Vgs Ctrl Spd Ipol Statistics (Stats)

Properties	Operational
Description	This group contains the attributes of the *IkePolicy* component that count statistics.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol phase1NegotiationSuccesses (p1ns)

Access	Read only
Description	This attribute counts IKE phase 1 negotiation attempts made in association with this *IkePolicy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol phase1NegotiationFailures (p1nf)

Access	Read only
Description	This attribute counts IKE phase 1 negotiation attempts made in association with this *IkePolicy* component which have failed. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol phase2NegotiationSuccesses (p2ns)

Access	Read only
Description	This attribute counts IPSec security associations negotiated using IKE phase 2. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol phase2NegotiationFailures (p2nf)

Access	Read only
Description	This attribute counts IPSec security associations which failed to be negotiated using IKE phase 2. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol txPacketCount (txpc)

Access	Read only
Description	This attribute counts the packets transmitted using this *IkePolicy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol rxPacketCount (rxpc)

Access	Read only
Description	This attribute counts the packets received using this *IkePolicy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol decryptErrors (dErr)

Access	Read only
Description	This attribute counts the packets for which decryption errors were encountered using this *IkePolicy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol authErrors (aErr)

Access	Read only

Description	This attribute counts the authentication errors encountered using this *IkePolicy* component. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol otherErrors (oErr)

Access	Read only
Description	This attribute counts security packets received using this *IkePolicy* component for which an error is encountered other than those described previously. The count wraps to zero when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs Ctrl Spd Ipol IkeSecurityAssociation (Isa)

Instance	Decimal (1..1)
Groups	"GROUP Nsta Vgs Ctrl Spd Ipol Isa Operational (Oper)" "GROUP Nsta Vgs Ctrl Spd Ipol Isa Statistics (Stats)"
Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n IkePolicy/n IkeSecurityAssociation/n*
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs Ctrl Spd Ipol Isa Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *IkeSecurityAssociation* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa upTime

Access	Read only
Description	This attribute indicates the time that has elapsed since this *IkeSecurityAssociation* component was created.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa remainingTimeToLive

Access	Read only
Description	This attribute indicates the lifetime remaining for this *IkeSecurityAssociation* component.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa saTimeToLive

Access	Read only
Description	This attribute indicates the hard lifetime for the SA.
Mib	Vgs
Values	Decimal (0..4294967295)
Units	seconds

Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa activeSa

Access	Read only
Description	This attribute indicates the number of active *IkeSecurityAssociations* negotiated by IKE.
Mib	Vgs
Values	Decimal (0..6)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa encryptAlgorithm

Access	Read only
Description	This attribute indicates which encryption algorithm has been negotiated. The possible values are: - ***des***: data encryption standard (DES), - ***3des***: encryption using DES three times
Mib	Vgs
Values	des 3des
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa authAlgorithm

Access	Read only
Description	This attribute indicates which authentication algorithm has been negotiated. The possible enumerations are: - ***md5***: message digest - ***sha1***: secure hash algorithm - ***none***: no authentication.
Mib	Vgs
Values	none sha1 md5

Default	No default

GROUP Nsta Vgs Ctrl Spd Ipol Isa Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attributes of the *IkeSecurityAssociation* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa phase2Successes (p2s)

Access	Read only
Description	This attribute counts the security associations negotiated using IKE Phase 2. The count wraps to zero when it reaches the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa phase2Failures (p2f)

Access	Read only
Description	This attribute counts the security associations which failed to be negotiated using IKE Phase 2. The count wraps to zero when it reaches the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa txPacketCount (txpc)

Access	Read only
Description	This attribute counts the transmit packets associated with this *IkeSecurityAssociation* component. The count wraps to zero when it reaches the maximum value.
Mib	Vgs

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa rxPacketCount (rxpc)

Access	Read only
Description	This attribute counts the receive packets associated with this *IkeSecurityAssociation* component. The count wraps to zero when it reaches the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa decryptErrors (dErr)

Access	Read only
Description	This attribute counts the packets for which decryption errors were encountered for this *IkeSecurityAssociation* component. The count wraps to zero when it reaches the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa authErrors (aErr)

Access	Read only
Description	This attribute counts the authentication errors encountered for this *IkeSecurityAssociation* component. The count wraps to zero when it reaches the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Spd Ipol Isa otherErrors (oErr)

Access	Read only
Description	This attribute counts the security packets received on this *IkeSecurityAssociation* component for which an error is encountered but not counted by the other specific error count attributes. The count wraps to zero when it reaches the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs Ctrl Spd SecurityAssociationProposal (SaProposal)

Instance	Decimal (1..1)
Groups	"GROUP Nsta Vgs Ctrl Spd SaProposal Provisioned (Prov)"
Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n SecurityAssociationProposal/n* The *SecurityAssociationProposal* component represents the security parameters to be negotiated between two peers. This component must have a *SecurityAssociationTransform* subcomponent.
Mib	Vgs
Subcomponents	"COMPONENT Nsta Vgs Ctrl Spd SaProposal SecurityAssociationTransform (SaTrans)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Spd SaProposal Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes for the *SecurityAssociationProposal* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal softLifetime

Access	Read and write
Description	An SA is created with a fixed time to live, as specified by the *saTimeToLive* attribute of component *SecurityAssociation*. The SA must be renegotiated before that *saTimeToLive* value expires. This attribute specifies a percentage of the *SecurityAssociation saTimeToLive* attribute value. The corresponding time value (i.e., *saTimeToLive***softLifetime*/100 seconds) specifies when renegotiation of the SA should commence.
Mib	Vgs
Values	Decimal (75..95)
Units	%
Default	75

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal associatedPolicies

Access	Read only
Description	This attribute lists all the *Policy* components that are associated with this component.
Mib	Vgs
List of	Link (Service, saProposal)
Default	No default

COMPONENT Nsta Vgs Ctrl Spd SaProposal SecurityAssociationTransform (SaTrans)

Instance	Decimal (1..1)
Groups	"GROUP Nsta Vgs Ctrl Spd SaProposal SaTrans Provisioned (Prov)"
Scope	Application

Description	*Nsta/n Vgs Ctrl/n Spd/n SaProp/n SecurityAssociationTransform/n* The *SecurityAssociationTransform* component represents the transforms that can be negotiated for an IPsec SA.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Spd SaProposal SaTrans Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *SaTransform* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal SaTrans encryptAlgorithm

Access	Read and write
Description	This attribute specifies the encryption algorithm to be proposed. The only possible enumeration is: - ***null***: for ESP with no encryption.
Mib	Vgs
Values	null
Default	null

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal SaTrans authAlgorithm

Access	Read and write
Description	This attribute specifies the authentication algorithm to be proposed.

	The following authentication algorithms are supported: - ***md5***: Message Digest; - ***sha1***: Secure Hash Algorithm .
Mib	Vgs
Values	sha1 md5
Default	sha1

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal SaTrans replayProtection

Access	Read and write
Description	This attribute specifies whether replay protection is on or off.
Mib	Vgs
Values	off on
Default	on

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal SaTrans saTimeToLive

Access	Read and write
Description	This attribute specifies the proposed SA time-to-live period.
Mib	Vgs
Values	Decimal (1800..172800)
Units	seconds
Default	28800

ATTRIBUTE Nsta Vgs Ctrl Spd SaProposal SaTrans perfectForwardSecrecy

Access	Read and write
Description	This attribute specifies if PFS is on and if so, which DH group is used to compute the private session key. The parameters are: - ***gp1***: modulus of a 768 bit prime number;

- ***gp2***: modulus of a 1024 bit prime number;
- ***none***: specifies that no private session key is to be computed.

Mib: Vgs

Values:
none
gp1
gp2

Default: none

COMPONENT Nsta Vgs Ctrl Spd IkeProposal (IProp)

Instance: Decimal (1..1)

Groups: "GROUP Nsta Vgs Ctrl Spd IProp Provisioned (Prov)"

Scope: Application

Description: *Nsta/n Vgs Ctrl/n Spd/n IkeProposal/n*

The *IkeProposal* component represents the security parameters to be negotiated between two peers.

This component must have an *IkeTransform* subcomponent.

Mib: Vgs

Subcomponents: "COMPONENT Nsta Vgs Ctrl Spd IProp IkeTransform (ITrans)"

Common Verbs:
Help
List
Display
Add
DELete

GROUP Nsta Vgs Ctrl Spd IProp Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the *IkeProposal* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd IProp mode

Access	Read and write
Description	This attribute defines the method used in Phase One of the IKE negotiation. The only possible enumeration is: - ***main***: provides identity protection.
Mib	Vgs
Values	main
Default	main

ATTRIBUTE Nsta Vgs Ctrl Spd IProp softLifetime

Access	Read and write
Description	An SA is created with a fixed time to live, as specified by the *saTimeToLive* attribute of component *IkeSecurityAssociation*. The SA must be renegotiated before that *saTimeToLive* value expires. This attribute specifies a percentage of the *IkeSecurityAssociation saTimeToLive* attribute value. The corresponding time value (which is *softLifetime***saTimeToLive*/100 seconds) specifies when renegotiation of the SA should commence.
Mib	Vgs
Values	Decimal (75..95)
Units	%
Default	75

ATTRIBUTE Nsta Vgs Ctrl Spd IProp associatedIkePolicies

Access	Read only
Description	This attribute lists all the *IkePolicy* components that are associated with this component.

Mib	Vgs
List of	Link (Service, ikeProposal)
Default	No default

COMPONENT Nsta Vgs Ctrl Spd IProp IkeTransform (ITrans)

Instance	Decimal (1..1)
Groups	"GROUP Nsta Vgs Ctrl Spd IProp ITrans Provisioned (Prov)"
Scope	Application
Description	*Nsta/n Vgs Ctrl/n Spd/n IProp/n IkeTransform/n* The *IkeTransform* component represents information contained in the transform payload that is used during negotiation of the IKE SA. The information consists of specific security attributes that need to be negotiated with the IKE peer.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Spd IProp ITrans Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *IkeTransform* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Spd IProp ITrans authMethod

Access	Read and write
Description	This attribute specifies the authentication method used in IKE’s Phase One negotiation.

The only possible enumeration is:
- ***preshared***: pre-shared symmetric keys.

Mib: Vgs

Values: preshared

Default: preshared

ATTRIBUTE Nsta Vgs Ctrl Spd IProp ITrans encryptAlgorithm

Access: Read and write

Description: This attribute specifies the encryption algorithm proposed to be offered.

The following encryption algorithms are supported:
- ***des***: Data Encryption Standard (DES);
- ***3des***: encryption using DES three times.

Mib: Vgs

Values: des
3des

Default: des

ATTRIBUTE Nsta Vgs Ctrl Spd IProp ITrans hashAlgorithm

Access: Read and write

Description: This attribute specifies the hash algorithm to be used.

The following hash algorithms are supported:
- ***md5***: Message Digest;
- ***sha1***: Secure Hash Algorithm.

Mib: Vgs

Values: sha1
md5

Default: sha1

ATTRIBUTE Nsta Vgs Ctrl Spd IProp ITrans diffieHellmanGroup

Access: Read and write

Description	This attribute specifies the group within which the DH exchange is negotiated. There are two groups supported: - ***gp1***: uses modulus of a 768 bit prime number; - ***gp2***: uses modulus of a 1024 bit prime number.
Mib	Vgs
Values	gp1 gp2
Default	gp2

ATTRIBUTE Nsta Vgs Ctrl Spd IProp ITrans saTimeToLive

Access	Read and write
Description	This attribute specifies the time-to-live of an IKE SA negotiated using this transform.
Mib	Vgs
Values	Decimal (1800..172800)
Units	seconds
Default	86400

COMPONENT Nsta Vgs Ctrl NailedUpAdaptionPoint (Nap)

Groups	"GROUP Nsta Vgs Ctrl Nap Provisioned (Prov)"
Scope	Device
Description	*Nsta/n Conn/n NailedUpAdaptionPoint* *Nsta/n Conn/n Brag/n Ccst NailedUpAdaptionPoint* *Nsta/n Vgs AtmTConn/n NailedUpAdaptionPoint* *Nsta/n Vgs Control/n NailedUpAdaptionPoint* *Nsta/n Vgs IpMConn NailedUpAdaptionPoint* This component is used to provide access to a nailed-up ATM connection (an *Atmif Vcc Nep*). Components in the *Nsta* component hierarchy which require

access to such connections will have a *NailedUpAdaptionPoint* subcomponent.

Mib: Vgs

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Nsta Vgs Ctrl Nap Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioning data for a *Nap* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs Ctrl Nap atmConnection (atmConn)

Access: Read and write

Criticality: Process

Description: This attribute specifies the link to the *AtmIf Vcc Nep* component that defines the access to the ATM network.

Mib: Vgs

Values: Link (Service, applicationName)

Default: No default

COMPONENT Nsta Vgs Ctrl ActiveAccessPoint (Aap)

Groups:
"GROUP Nsta Vgs Ctrl Aap Provisioned (Prov)"
"GROUP Nsta Vgs Ctrl Aap AapAddressessProv (AapAddrProv)"
"GROUP Nsta Vgs Ctrl Aap Operational (Oper)"
"GROUP Nsta Vgs Ctrl Aap AccessPointOper (ApOper)"

Scope: Device

Description:
Nsta/n Vgs Control/n ActiveAccessPoint
Nsta/n Vgs IpMConn ActiveAccessPoint

Nsta/n Conn/n ActiveAccessPoint

This component defines ATM SVC originating and terminating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information. An *Aap* is responsible for maintaining calls to a remote address in the ATM network.

Mib: Vgs

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB Restart Nsta Vgs Ctrl Aap

Impact: Service

Description:

Restart Nsta/n Vgs Control/n ActiveAccessPoint
Restart Nsta/n Vgs IpMConn ActiveAccessPoint
Restart Nsta/n Conn/n ActiveAccessPoint

This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute.

This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached.

This command may also be used when a connection has been established, in which case the connection is released first.

This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs Ctrl Aap Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Aap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Aap atmServiceCategory (service)

Access	Read and write
Criticality	Component
Description	This attribute specified the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources. The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections. If the parent of the *Aap* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may

	not take the value ***rtVariableBitRate***. If the parent of the *Aap* is an *IpMConn* or *Conn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.
Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap peakCellRate (pcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap sustainedCellRate (scr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s

Default	0

ATTRIBUTE Nsta Vgs Ctrl Aap maximumBurstSize (mbs)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Vgs Ctrl Aap retryLimit (limit)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

GROUP Nsta Vgs Ctrl Aap AapAddressessProv (AapAddrProv)

Properties	Provisioned
Description	This group contains NSAP address provisioning data.

Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Aap expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address information for an incoming setup request. If *expectedRemoteAddress* is not empty, only matching addresses in incoming setup are considered for acceptance. If *expectedRemoteAddress* is less than 40 characters long, the remote address must match the value in *expectedRemoteAddress* to be accepted. If *expectedRemoteAddress* is empty, connection requests are accepted from any remote address.
Mib	Vgs
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Nsta Vgs Ctrl Aap localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Vgs

Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap addressToCall (addrToCall)

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned. For the *ControlConnection* component in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses. The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established but fails at a later time, the system attempts to set up a connection to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to setup a connection to the first address in the list and then continues as before.
Mib	Vgs
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Vgs Ctrl Aap Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *Aap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Aap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* consecutive connection setup attempts have failed, and the connection procedure has been aborted. When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a Delete request) while the component was in ***connecting*** state.
Mib	Vgs
Values	initializing connecting connected idle retriesExhausted failed
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap lastSetupFailureCause (failCause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message following an unsuccessful call setup attempt. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification. If no call setup attempts have failed, this attribute has a value of 0.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap lastSetupFailureDiagnostic (failDiag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message following an unsuccessful call setup attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If no call setup attempts have failed, this attribute is an empty string.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap retryTimeRemaining (timer)

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches 0 an attempt will be made to establish the connection. When the timer is not running this attribute has a value of 0.

Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap retryFailures (failures)

Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to 0 whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs Ctrl Aap AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Aap remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs

Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl Aap lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs Ctrl PassiveAccessPoint (Pap)

Groups	"GROUP Nsta Vgs Ctrl Pap PapAddressesProv (PapAddrProv)" "GROUP Nsta Vgs Ctrl Pap Operational (Oper)" "GROUP Nsta Vgs Ctrl Pap AccessPointOper (ApOper)"
Scope	Device
Description	*Nsta/n Vgs Control/n PassiveAccessPoint* *Nsta/n Vgs IpMConn/n PassiveAccessPoint* *Nsta/n Conn/n PassiveAccessPoint*

	This component defines ATM SVC terminating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl Pap PapAddressesProv (PapAddrProv)

Properties	Provisioned
Description	This group contains NSAP address provisioning data.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Pap expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address information for an incoming connection setup request. If *expectedRemoteAddress* is not empty, only matching connections are considered for acceptance. If *expectedRemoteAddress* is less than 40 characters long, the remote address must match the value in *expectedRemoteAddress* to be accepted. If *expectedRemoteAddress* is empty, the component processes connection requests from any remote address.
Mib	Vgs
Values	String (0..40, ASCII)

Default	""

ATTRIBUTE Nsta Vgs Ctrl Pap localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the ATM address of the access point. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default can not be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

GROUP Nsta Vgs Ctrl Pap Operational (Oper)

Properties	Operational
Description	This group contains status information common to the *PassiveAccessPoint* and *AddresslessPassiveAccessPoint* components.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Pap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a

connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established.

When this attribute has the value ***connected***, it indicates that a connection has been established.

When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component.

When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.

Mib	Vgs
Values	initializing connecting connected idle failed
Default	No default

GROUP Nsta Vgs Ctrl Pap AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl Pap remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP

address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.

Mib: Vgs

Values: String (7..40, ASCII)

Default: No default

ATTRIBUTE Nsta Vgs Ctrl Pap lastTearDownCause (cause)

Access: Read only

Description: This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

Mib: Vgs

Values: Decimal (0..255)

Default: No default

ATTRIBUTE Nsta Vgs Ctrl Pap lastTearDownDiagnostic (diag)

Access: Read only

Description: This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.

Mib: Vgs

Values: String (0..8, ASCII)

Default: No default

COMPONENT Nsta Vgs Ctrl SpvcAccessPoint (SpvcAp)

Groups: "GROUP Nsta Vgs Ctrl SpvcAp Provisioned (Prov)"
"GROUP Nsta Vgs Ctrl SpvcAp SpvcApAddressessProv (SpvcApAddrProv)"

	"GROUP Nsta Vgs Ctrl SpvcAp Operational (Oper)" "GROUP Nsta Vgs Ctrl SpvcAp AccessPointOper (ApOper)"
Scope	Device
Description	*Nsta/n Vgs Control/n SpvcAccessPoint* *Nsta/n Vgs IpMConn SpvcAccessPoint* *Nsta/n Conn/n SpvcAccessPoint* This component defines ATM SPVC originating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information.
Mib	Vgs
Common Verbs	Help List Display Add DELete

VERB Restart Nsta Vgs Ctrl SpvcAp

Impact	Service
Description	*Restart Nsta/n Vgs Control/n SpvcAccessPoint* *Restart Nsta/n Vgs IpMConn SpvcAccessPoint* *Restart Nsta/n Conn/n SpvcAccessPoint* This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs Ctrl SpvcAp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl SpvcAp atmServiceCategory (service)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video

applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections.

If the parent of the *SpvcAp* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may not take the value ***rtVariableBitRate***. If the parent of the *SpvcAp* is an *IpMConn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.

Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp peakCellRate (pcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp sustainedCellRate (scr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE Nsta Vgs Ctrl SpvcAp maximumBurstSize (mbs)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.

Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Vgs Ctrl SpvcAp retryLimit (limit)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

GROUP Nsta Vgs Ctrl SpvcAp SpvcApAddressessProv (SpvcApAddrProv)

Properties	Provisioned
Description	This group contains NSAP address provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl SpvcAp localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is provided.

	If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp remoteVpiVci (rVpiVci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the remote VPI and VCI for an *SpvcAp* component.
Mib	Vgs
Values	Integer Sequence (0..255; 1..65535)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp addressToCall (addrToCall)

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned. For the *ControlConnection* application in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses. The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established but fails at a later time, the system attempts to set up a connection

	to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to set up a connection to the first address in the list and then continues as before.
Mib	Vgs
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Vgs Ctrl SpvcAp Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl SpvcAp svcStatus (status)

Access	Read only
Description	This attribute specifies the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component.

When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* for consecutive connection set up attempts have failed, and the connection procedure has been aborted.

When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.

Mib: Vgs

Values:
initializing
connecting
connected
idle
retriesExhausted
failed

Default: No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp lastSetupFailureCause (failCause)

Access: Read only

Description: This attribute contains the cause code in the last call release message following an unsuccessful call set up attempt. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

Mib: Vgs

Values: Decimal (0..255)

Default: No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp lastSetupFailureDiagnostic (failDiag)

Access: Read only

Description: This attribute contains the diagnostic code in the last call release message following an unsuccessful call set up attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.

Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp retryTimeRemaining (timer)

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches ***0*** an attempt will be made to establish the connection. When the timer is not running a value of ***0*** is returned.
Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp retryFailures (failures)

Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to ***0*** whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to ***0*** when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs Ctrl SpvcAp AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.

Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl SpvcAp remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SpvcAp lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs

Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs Ctrl UdpPort (UdpPort)

Instance	Decimal (0..65535)
Groups	"GROUP Nsta Vgs Ctrl UdpPort Provisioned (Prov)"
Scope	Device
Description	*Nsta/n Vgs CtrlConn/n UdpPort/<UDP port number>* The *UdpPort* component is used to link a UDP port, within a control connection, to an application that sends and receives packets using the port.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl UdpPort Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for a *UdpPort* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl UdpPort linkToApplication

Access	Read and write
Description	This attribute specifies the application that sends and receives packets using the UDP port. The application must have a provisionable attribute called *udpPortConnection*. This attribute is typically set automatically when an application provides a value for its own *udpPortConnection* attribute.

	This attribute must be the name of a valid application within the same *Vgs* component hierarchy, otherwise a semantic check error will be generated.
Mib	Vgs
Values	Link (Service, udpPortConnection)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl UdpPort differentiatedServiceField (diffServ)

Access	Read and write
Description	This attribute specifies the Differentiated Service Field in IP packets transmitted using this UDP port. Refer to RFC 791 for service field types.
Mib	Vgs
Values	Decimal (0..63)
Default	40

COMPONENT Nsta Vgs Ctrl AtmConnection (AtmCon)

Groups	"GROUP Nsta Vgs Ctrl AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs Ctrl AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.

Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Vgs
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs Ctrl SctpPort

Instance	Decimal (0..65535)
Groups	"GROUP Nsta Vgs Ctrl SctpPort Provisioned (Prov)"
Scope	Device
Description	*Nsta/n Vgs Ctrl/n SctpPort/n* The *Simple Control Transmission Protocol (SCTP)* Port provides access to the IP network. Note that the instance number indicates the SCTP port number used. This component is mutually exclusive with *UdpPort*.
Mib	Vgs
Dyn. Subcomp.	"COMPONENT Nsta Vgs Ctrl SctpPort SctpLink"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Ctrl SctpPort Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisioning data for the *SctpPort* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl SctpPort diffServiceCodepoint (diffServ)

Access	Read and write
Description	This attribute specifies the Differentiated Service Codepoint field in IP datagrams from this port. Refer to RFC 2474. On changing, subsequent datagrams will use the new value.
Mib	Vgs
Values	Decimal (0..63)
Default	40

ATTRIBUTE Nsta Vgs Ctrl SctpPort rtoInitial (init)

Access	Read and write
Description	This attribute specifies the initial time-out value for the retransmission timer (RTO). This value is used until a Round Trip Time (RTT) measurement has been made for the destination transport address. The provisioned value must be between *rtoMin* and *rtoMax*.
Mib	Vgs
Values	Decimal (1..255)
Units	seconds
Default	3

ATTRIBUTE Nsta Vgs Ctrl SctpPort rtoMin (min)

Access	Read and write
Description	This attribute specifies the minimum permissible value for the recalculated retransmission timer (RTO). If the computed RTO value is less than *rtoMin*, the RTO value is set to the value of *rtoMin*.
Mib	Vgs

Values	Decimal (1..255)
Units	seconds
Default	1

ATTRIBUTE Nsta Vgs Ctrl SctpPort rtoAlpha (alpha)

Access	Read and write
Description	This attribute specifies the smoothing factor used in the computation and management of the retransmission timer (RTO) in steps of 0.125 (the entered value is rounded to the nearest multiple of 0.125). These values have been selected in the SCTP specification as being optimal for this application where Round Trip Time (RTT) measurements are made not more than once per round-trip.
Mib	Vgs
Values	Decimal (0.000..255.000)
Default	0.125

ATTRIBUTE Nsta Vgs Ctrl SctpPort rtoBeta (beta)

Access	Read and write
Description	This attribute specifies the delay variance factor used in the computation and management of the retransmission timer (RTO) in steps of 0.125 (the entered value is rounded to the nearest multiple of 0.125).
Mib	Vgs
Values	Decimal (0.000..255.000)
Default	0.250

ATTRIBUTE Nsta Vgs Ctrl SctpPort validCookieLife (life)

Access	Read and write
Description	This attribute specifies the message parameter indicating to the receiver how much increment the sender wishes the receiver to add to its default cookie life-span.

Mib	Vgs
Values	Decimal (1..255)
Units	seconds
Default	60

ATTRIBUTE Nsta Vgs Ctrl SctpPort associationMaxRetries (assocRetries)

Access	Read and write
Description	This attribute specifies the maximum number of retransmission attempts before the sender of data indicates the destination endpoint as unreachable.
Mib	Vgs
Values	Decimal (0..255)
Default	10

ATTRIBUTE Nsta Vgs Ctrl SctpPort rtoMax (max)

Access	Read and write
Description	This attribute specifies the maximum permissible value for the recalculated retransmission timer time-out (RTO). If the computed RTO value is more than *rtoMax*, the RTO value is set to the value of *rtoMax*.
Mib	Vgs
Values	Decimal (1..255)
Units	seconds
Default	60

ATTRIBUTE Nsta Vgs Ctrl SctpPort linkToApplication (link)

Access	Read and write
Description	This attribute specifies a link to the *Nsta/n Vgs Iua* or *Nsta/n Vgs V5ua* component that is making use of this port.
Mib	Vgs

Values	Link (Service, sctpPortConnection)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SctpPort heartbeatInterval (interval)

Access	Read and write
Description	An SCTP endpoint monitors the reachability of the idle destination transport addresses of its peer by sending a heartbeat chunk every *heartbeatInterval* to the destination transport address defined for the association.
Mib	Vgs
Values	Decimal (1..65535)
Units	seconds
Default	30

COMPONENT Nsta Vgs Ctrl SctpPort SctpLink

Instance	address [IP address] port [Decimal (1..65535)]
Groups	"GROUP Nsta Vgs Ctrl SctpPort SctpLink Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs Control/n SctpPort/n SctpLink/<ip address>,<sctp port>* This component represents an MGC link to the SCTP port. The IP address and SCTP port number used in the instance identifier refer to the remote connection. At most three instances may be provisioned.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs Ctrl SctpPort SctpLink Operational (Oper)

Properties	Operational
Description	This group contains attributes which describe the *SctpLink* component status.
Mib	Vgs

ATTRIBUTE Nsta Vgs Ctrl SctpPort SctpLink receivedChunks (rxChunks)

Access	Read only
Description	This attribute counts the chunks received on this *SctpLink*. The counter wraps to ***0*** when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SctpPort SctpLink transmittedChunks (txChunks)

Access	Read only
Description	This attribute counts the chunks transmitted on this *SctpLink*. It includes retransmitted chunks. The counter wraps to ***0*** when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SctpPort SctpLink retransmittedChunks (retransChunks)

Access	Read only
Description	This attribute counts the chunks retransmitted on this *SctpLink*. The counter wraps to ***0*** when it exceeds the maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SctpPort SctpLink outboundStreams (outbound)

Access	Read only
Description	This attribute indicates the current number of outbound streams for this SCTP association.
Mib	Vgs
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nsta Vgs Ctrl SctpPort SctpLink inboundStreams (inbound)

Access	Read only
Description	This attribute indicates the current number of inbound streams for this SCTP association.
Mib	Vgs
Values	Decimal (0..65535)
Default	No default

COMPONENT Nsta Vgs Ctrl VirtualRouterAccessPoint (VrAp)

Groups	"GROUP Nsta Vgs Ctrl VrAp Provisioned (Prov)"
Scope	Application
Description	*Nsta/n Vgs Ctrl/n VrAp* *Nsta/n Vgs IpMConn VrAp* *Nsta/n Vgs DbgAccess VrAp* This component represents a point of access to a *VirtualRouter* component, which provides an IP forwarding functionality to this *Nsta/n Vgs* component hierarchy. If at least one *VrAp* component is used within a *Nsta/n Vgs* component hierarchy, then all IP network access from within that hierarchy must be via *VrAp* components. In addition, a *VCac* component cannot be provisioned within a

Nsta/n Vgs component hierarchy which contains a *VrAp* component.

Mib: Vgs

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Nsta Vgs Ctrl VrAp Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioning data for the *VrAp* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs Ctrl VrAp subnetAccessName (subnet)

Access: Read and write

Description: This attribute specifies the *Vr/n Pp/m IpPort LogicalIf/x.y.z.u* component instance to be used by this *VrAp*.

The value of the *ipAddr* attribute defined by the parent of this *VrAp* must belong to the subnet defined by the specified *Vr/n Pp/m IpPort LogicalIf/x.y.z.u* component instance.

Mib: Vgs

Values: The name of the component

Default: No default

COMPONENT Nsta Vgs AtmTrunkConnection (AtmTConn)

Instance: Decimal (0..4095)

Groups:
"GROUP Nsta Vgs AtmTConn Provisioned (Prov)"
"GROUP Nsta Vgs AtmTConn OsiState (State)"
"GROUP Nsta Vgs AtmTConn Operational (Oper)"
"GROUP Nsta Vgs AtmTConn Statistics (Stats)"

	"GROUP Nsta Vgs AtmTConn NstaVgsConnectionStatus (ConnStat)"
Scope	Device
Description	*Nsta/n Vgs AtmTrunkConnection/n* This component represents an ATM connection from the Voice services function processor to the ATM network. The *Vgs* component allocates AAL2 streams to ATM connections as required by the controller. An ATM connection can carry several AAL2 streams concurrently. On a Nortel Networks Multiservice Switch 7400, a maximum of 1022 *AtmTrunkConnection* components may be provisioned for ***Vsp2*** cards and a maximum of 127 *AtmTrunkConnection* components may be provisioned for ***12mVspAal*** cards. On a Nortel Networks Multiservice Switch 15000 up to 1022 *AtmTrunkConnection* components may be provisioned.
Mib	Vgs
Opt. Subcomp.	"COMPONENT Nsta Vgs AtmTConn NailedUpAdaptionPoint (Nap)" "COMPONENT Nsta Vgs AtmTConn ActiveAccessPoint (Aap)" "COMPONENT Nsta Vgs AtmTConn PassiveAccessPoint (Pap)" "COMPONENT Nsta Vgs AtmTConn SpvcAccessPoint (SpvcAp)"
Dyn. Subcomp.	"COMPONENT Nsta Vgs AtmTConn AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs AtmTConn Provisioned (Prov)

Properties	Provisioned

Description	This group contains provisioning data for the *AtmTrunkConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn remoteAddress (rAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM address of the node that may be reached via this trunk. The *remoteAddress* attribute must be set to a valid ATM address. This address must not be the same as the value of the *gatewayAtmAddress* attribute of the *Nsta Vgs* component.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn vcci (vcci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the VCCI for this trunk. The *vcci* attribute must be set to a value to uniquely identify an ATM trunk between two nodes. Consequently all ATM trunks between any two nodes must have distinct *vcci* attribute values. The connection on the remote node must be configured with the same *vcci* attribute value. ATM trunks terminating on different remote nodes may share the same *vcci* attribute value. A *Check Prov* command will fail if the user tries to provision a value greater than 4095 for the *vcci* attribute of a *AtmTConn*

component, when its subcomponent is an *Aap*, a *Pap* or an *SpvcAp*.

Mib: Vgs

Values: Decimal (0..32767)

Default: No default

ATTRIBUTE Nsta Vgs AtmTConn packetLogLaw (muALaw)

Access: Read and write

Description

This attribute specifies whether the digitizing scheme is mu-law or A-law.

This attribute defines the default that is used by individual *AtmTConn* components at call setup unless an alternative value is provided by the controller. The default value ***sameAsGateway*** specifies that the *packetLogLaw* attribute will take the same value as the *defaultLogLaw* attribute of the *Vgs*.

This attribute may be changed without impacting existing calls.

The remote end of this connection should be provisioned with the same *packetLogLaw* attribute value.

Mib: Vgs

Values:
muLaw
aLaw
sameAsGateway

Default: sameAsGateway

ATTRIBUTE Nsta Vgs AtmTConn holdOverTime (hoTime)

Access: Read and write

Criticality: Process

Description

This attribute specifies the maximum period of time before a

	partially filled AAL2 packet is scheduled for transmission. It is also referred to as the combined use timer period (Timer_CU).
Mib	Vgs
Values	Decimal (0.500..15.875)
Units	msec
Default	2.000

ATTRIBUTE Nsta Vgs AtmTConn maxNumberAal2Trunks (trunks)

Access	Read and write
Description	This attribute specifies the maximum number of AAL2 trunks that may be allocated on this ATM trunk. The local node may allocate no more than this number of trunks.
Mib	Vgs
Values	Decimal (0..247)
Default	240

GROUP Nsta Vgs AtmTConn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Vgs

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Nsta Vgs AtmTConn operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Vgs

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nsta Vgs AtmTConn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs AtmTConn Operational (Oper)

Properties	Operational
Description	This group contains status information about the *AtmTrunkonnection*.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn aal2CpLossStatus (cpLossStatus)

Access	Read only
Description	This attribute indicates the status of the AAL2 common part sublayer alarm. It is set to ***loss*** when the alarm has been raised. It is set to ***noLoss*** when the alarm is cleared.
Mib	Vgs
Values	noLoss loss
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn activeAal2Trunks (activeTrunks)

Access	Read only
Description	This attribute indicates the current number of active AAL2 trunk connections for the *AtmTConn* component. This attribute is not displayed if the *cardType* is ***12mVspAal***.
Mib	Vgs
Values	Decimal (0..248)
Default	No default

GROUP Nsta Vgs AtmTConn Statistics (Stats)

Properties	Operational
Description	This group contains statistical data for an *AtmTConn*.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn aal2StartFieldErrors (sfErr)

Access	Read only
Description	This attribute counts the cells received with an AAL2 Common Part Sublayer Protocol Data Unit (CPS-PDU) Start Field error. The definition of a Start Field error includes a cell with a parity error or a cell in which the packet pointed-to by the offset field (OSF) has a packet HEC error. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn aal2SequenceErrors (seqErr)

Access	Read only

Description	This attribute counts the cells received with an unexpected AAL2 Common Part Sublayer Protocol Data Unit (CPS-PDU) sequence number. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

GROUP Nsta Vgs AtmTConn NstaVgsConnectionStatus (ConnStat)

Properties	Operational
Description	This group contains an attribute which provides information on the status of the VGS connections.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn currentStatus (cStat)

Access	Read only
Description	This attribute specifies the current status of a *Vgs AtmTConn*, *IpMConn* or *Ctrl* connection. ***enabled*** indicates that the component is enabled and available to transport traffic. ***activating*** indicates that the component is progressing through its expected sequence of activation and enabling actions, and that no errors having been reported. ***atmConnectionNotReady*** indicates that a problem has been reported with the ATM VCC linked to the component's *Nap*, *Aap* or *Pap* subcomponent, resulting in the component being in a disabled state. ***vspNotReady*** indicates that the *Vsp* component linked to the parent *Nsta* component is either disabled or locked.

outOfResource indicates that no hardware resource is available on the VSP card to support the component. This means that the VSP card is inadequately equipped or has suffered some level of hardware failure.

ipNetworkInaccessible indicates that a connection into the IP network cannot be created. This may be due to physical ports being disabled, or the inability of routing software to establish an appropriate connection.

Mib: Vgs

Values:
enabled
activating
atmConnectionNotReady
vspNotReady
outOfResource
ipNetworkInaccessible

Default: No default

COMPONENT Nsta Vgs AtmTConn NailedUpAdaptionPoint (Nap)

Groups: "GROUP Nsta Vgs AtmTConn Nap Provisioned (Prov)"

Scope: Device

Description:
Nsta/n Conn/n NailedUpAdaptionPoint
Nsta/n Conn/n Brag/n Ccst NailedUpAdaptionPoint
Nsta/n Vgs AtmTConn/n NailedUpAdaptionPoint
Nsta/n Vgs Control/n NailedUpAdaptionPoint
Nsta/n Vgs IpMConn NailedUpAdaptionPoint

This component is used to provide access to a nailed-up ATM connection (an *Atmif Vcc Nep*).

Components in the *Nsta* component hierarchy which require

	access to such connections will have a *NailedUpAdaptionPoint* subcomponent.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs AtmTConn Nap Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for a *Nap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn Nap atmConnection (atmConn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the link to the *AtmIf Vcc Nep* component that defines the access to the ATM network.
Mib	Vgs
Values	Link (Service, applicationName)
Default	No default

COMPONENT Nsta Vgs AtmTConn ActiveAccessPoint (Aap)

Groups	"GROUP Nsta Vgs AtmTConn Aap Provisioned (Prov)" "GROUP Nsta Vgs AtmTConn Aap Operational (Oper)" "GROUP Nsta Vgs AtmTConn Aap AccessPointOper (ApOper)"
Scope	Device
Description	*Nsta/n Vgs AtmTConn/n ActiveAccessPoint*

This component defines ATM SVC originating information pertinent to the *AtmTrunkConnection* component.

Mib: Vgs

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB Restart Nsta Vgs AtmTConn Aap

Impact: Service

Description: *Restart Nsta/n Vgs AtmTConn/n ActiveAccessPoint*

This command is used to restart the automatic connections procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset.

This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached.

This command may also be used when a connection has been established, in which case the connection is released first.

This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs AtmTConn Aap Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioning data for the *ActiveAccessPoint* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs AtmTConn Aap atmServiceCategory (service)

Access	Read and write
Criticality	Process
Description	This attribute specified the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources.
Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr)
Default	rtVariableBitRate

ATTRIBUTE Nsta Vgs AtmTConn Aap peakCellRate (pcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s

Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Aap sustainedCellRate (scr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE Nsta Vgs AtmTConn Aap maximumBurstSize (mbs)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE Nsta Vgs AtmTConn Aap retryLimit (limit)

Access	Read and write
Criticality	Component

Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

GROUP Nsta Vgs AtmTConn Aap Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *Aap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn Aap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component.

When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* consecutive connection setup attempts have failed, and the connection procedure has been aborted.

When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a Delete request) while the component was in ***connecting*** state.

Mib: Vgs

Values:
initializing
connecting
connected
idle
retriesExhausted
failed

Default: No default

ATTRIBUTE Nsta Vgs AtmTConn Aap lastSetupFailureCause (failCause)

Access: Read only

Description: This attribute indicates the cause code in the last call release message following an unsuccessful call setup attempt.The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

If no call setup attempts have failed, this attribute has a value of 0.

Mib: Vgs

Values: Decimal (0..255)

Default: No default

ATTRIBUTE Nsta Vgs AtmTConn Aap lastSetupFailureDiagnostic (failDiag)

Access: Read only

Description: This attribute contains the diagnostic code in the last call release message following an unsuccessful call setup attempt. The

	diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If no call setup attempts have failed, this attribute is an empty string.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Aap retryTimeRemaining (timer)

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches 0 an attempt will be made to establish the connection. When the timer is not running this attribute has a value of 0.
Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Aap retryFailures (failures)

Access	Read only
Description	This attribute counts consecutive failed connection attempts. This counter is reset to 0 whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs AtmTConn Aap AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn Aap remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Aap lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Aap lastTearDownDiagnostic (diag)

Access	Read only

Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs AtmTConn PassiveAccessPoint (Pap)

Groups	"GROUP Nsta Vgs AtmTConn Pap Operational (Oper)" "GROUP Nsta Vgs AtmTConn Pap AccessPointOper (ApOper)"
Scope	Device
Description	*Nsta/n Vgs AtmTConn/n PassiveAccessPoint* This component defines ATM SVC terminating information pertinent to the *AtmTrunkConnection* component.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs AtmTConn Pap Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *Pap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn Pap svcStatus (status)

Access	Read only

Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component. When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a Delete request) while the component was in ***connecting*** state.
Mib	Vgs
Values	initializing connecting connected idle failed
Default	No default

GROUP Nsta Vgs AtmTConn Pap AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn Pap remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Pap lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn Pap lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)

Default	No default

COMPONENT Nsta Vgs AtmTConn SpvcAccessPoint (SpvcAp)

Groups	"GROUP Nsta Vgs AtmTConn SpvcAp Provisioned (Prov)" "GROUP Nsta Vgs AtmTConn SpvcAp Operational (Oper)" "GROUP Nsta Vgs AtmTConn SpvcAp AccessPointOper (ApOper)"
Scope	Device
Description	*Nsta/n Vgs AtmTConn/n SpvcAccessPoint* This component defines ATM SVC originating information pertinent to the *AtmTrunkConnection* component.
Mib	Vgs
Common Verbs	Help List Display Add DELete

VERB Restart Nsta Vgs AtmTConn SpvcAp

Impact	Service
Description	*Restart Nsta/n Vgs AtmTConn/n SpvcAccessPoint* This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs AtmTConn SpvcAp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp atmServiceCategory (service)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by

	cellTransferDelay are assumed to have significantly reduced value for the application. The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources.
Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr)
Default	rtVariableBitRate

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp peakCellRate (pcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp sustainedCellRate (scr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value

	rtVariableBitRate, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp maximumBurstSize (mbs)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp retryLimit (limit)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)

Default	0

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp addressToCall (addrToCall)

Access	Read and write
Criticality	Process
Description	This attribute specifies the remote NSAP address which is called.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp remoteVpiVci (rVpiVci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the remote VPI and VCI for the component.
Mib	Vgs
Values	Integer Sequence (0..255; 1..65535)
Default	No default

GROUP Nsta Vgs AtmTConn SpvcAp Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *Aap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be

processed.

When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established.

When this attribute has the value ***connected***, it indicates that a connection has been established.

When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component.

When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* consecutive connection setup attempts have failed, and the connection procedure has been aborted.

When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.

Mib: Vgs

Values:
initializing
connecting
connected
idle
retriesExhausted
failed

Default: No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp lastSetupFailureCause (failCause)

Access: Read only

Description: This attribute indicates the cause code in the last call release message following an unsuccessful call setup attempt.The values

	are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp lastSetupFailureDiagnostic (failDiag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message following an unsuccessful call setup attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp retryTimeRemaining (timer)

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches 0 an attempt will be made to establish the connection. When the timer is not running a value of 0 is returned.
Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp retryFailures (failures)

Access	Read only

Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to 0 whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs AtmTConn SpvcAp AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being

	torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs AtmTConn SpvcAp lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs AtmTConn AtmConnection (AtmCon)

Groups	"GROUP Nsta Vgs AtmTConn AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs AtmTConn AtmCon Operational (Oper)

Properties	Operational

Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs AtmTConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Vgs
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs VgcpCtrlProt (Vgcp)

Groups	"GROUP Nsta Vgs Vgcp Provisioned (Prov)" "GROUP Nsta Vgs Vgcp Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs VgcpCtrlProt* The *Vgcp* component provides an interface to a controller using the Voice Gateway Control Protocol.
Mib	Vgs
Opt. Subcomp.	"COMPONENT Nsta Vgs Vgcp MgIfController (MgIfCtrl)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Vgcp Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisioning data for the *Vgcp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Vgcp udpPortConnection (udpConn)

Access	Read and write
Description	This attribute specifies the link to the *Nsta/n Vgs Ctrl/n UdpPort/n* component that defines the UDP port access to the IP network for the VGCP protocol.
Mib	Vgs
Values	Link (Service, linkToApplication)
Default	No default

GROUP Nsta Vgs Vgcp Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *Vgcp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Vgcp controllerName (name)

Access	Read only
Criticality	Component
Description	This attribute indicates the name of the last controller to send an IP message. At startup the name is null. When either the ***wgAmr*** or ***wgAmrCsd*** feature is provisioned, this attribute is not applicable and is not displayed.
Mib	Vgs
Values	String (0..32, ASCII)
Default	""

ATTRIBUTE Nsta Vgs Vgcp controllerAddress (addr)

Access	Read only
Criticality	Component
Description	This attribute indicates the IP address of the last controller to send an IP message. The *controllerAddress* is ***0.0.0.0*** until the first packet is received from the controller. When either the ***wgAmr*** or ***wgAmrCsd*** feature is provisioned, this attribute is not applicable and is not displayed.
Mib	Vgs
Values	IP address
Default	0.0.0.0

ATTRIBUTE Nsta Vgs Vgcp controllerType (type)

Access	Read only
Criticality	Component
Description	This attribute indicates the type of the last controller to send an IP message. At startup the *controllerType* is ***none***. When either the ***wgAmr*** or ***wgAmrCsd*** feature is provisioned, this attribute is not applicable and is not displayed.
Mib	Vgs
Values	none primary secondary tertiary
Default	none

COMPONENT Nsta Vgs Vgcp MgIfController (MgIfCtrl)

Instance	Decimal (1..480)
Groups	"GROUP Nsta Vgs Vgcp MgIfCtrl Operational (Oper)"
Scope	Device

Description *Nsta/n Vgs Vgcp MgIfController/n*

This component represents a Media Gateway (MG) Controller. The number of *MgIfCtrl* components that are added under a *Vgcp* component indicates how many different *MgIf* components are allowed to use the resources of this MG. Adding and deleting *MgIfCtrl* components allows the operator to control the number of *MgIf* components that will share this MG.

As *MgIf* components claim the resources they are provisioned to claim, the operational attributes of the *MgIfCtrl* components are populated with the IP address and UDP port of the controlling *MgIf* components. If a request for resources arrives after the last *MgIfCtrl* component was assigned, the request will be declined. The operator must guarantee enough *MgIfCtrl* components are added to support the number of *MgIf* components provisioned to use this MG.

Mib AmrBrag

Common Verbs
- Help
- List
- Display
- Add
- DELete

GROUP Nsta Vgs Vgcp MgIfCtrl Operational (Oper)

Properties Operational

Description This group contains the operational data for the *NstaVgsVgcpWgMgIfController* component.

Mib AmrBrag

ATTRIBUTE Nsta Vgs Vgcp MgIfCtrl controllerAddress (addr)

Access Read: All
Write: Illegal

Description This attribute indicates the IP address of an *MgIf* which has claimed control of some DS0 timeslots on a Voice Service Processor. When the component is initially activated, this

attribute indicates an IP address of 0.0.0.0.

When the VSP receives its first message from a given *MgIf*, the next unclaimed *MgIfCtrl* component is assigned to it and the IP address of the *MgIf* component that originated the message is stored and indicated by this attribute. The *MgIf* indicates the DSO timeslots it desires to control. Those timeslots are reserved for the use of the given *MgIf*.

When messages are received from the *MgIf* to which this *MgIfCtrl* component is assigned indicating that it no longer controls any DS0 timeslots, the *MgIfCtrl* component is marked as unclaimed and the value indicated by this attribute is 0.0.0.0. Other *MgIf* components can claim the newly freed DS0 timeslots and be assigned to this *MgIfCtrl* component.

If no *MgIfCtrl* components are provisioned, no *MgIf* will be able to claim resources on this VSP.

The operator can display the *Ds0* components under each *AmrBrag* and *CsdBrag* to determine which timeslots are contolled by each *MgIfCtrl*.

Mib	AmrBrag
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs Vgcp MgIfCtrl controllerUdpPort (udp)

Access	Read: All Write: Illegal
Description	This attribute indicates the UDP Port of an *MgIf* which has claimed control of some DS0 timeslots on a Voice Service Processor. When the component is initially activated, this attribute indicates an UDP port number of 0. When the VSP receives its first message from a given *MgIf*, the next unclaimed *MgIfCtrl* component is assigned to it and the UDP port number of the *MgIf* component that originated the message is stored and indicated by this attribute. The *MgIf*

indicates the DSO timeslots it desires to control. Those timeslots are reserved for the use of the given *MgIf*.

When messages are received from the *MgIf* to which this *MgIfCtrl* component is assigned indicating that it no longer controls any DS0 timeslots, the *MgIfCtrl* component is marked as unclaimed and the value indicated by this attribute is 0. Other *MgIf* components can claim the newly freed DS0 timeslots and be assigned to this *MgIfCtrl* component.

If no *MgIfCtrl* components are provisioned, no *MgIf* is allowed to claim resources on this VSP.

The operator can display the *Ds0* components under each *AmrBrag* and *CsdBrag* to determine which timeslots are contolled by each *MgIfCtrl*.

Mib	AmrBrag
Values	Decimal (0..65535)
Default	No default

COMPONENT Nsta Vgs IpMediaStreamConnection (IpMConn)

Groups	"GROUP Nsta Vgs IpMConn Provisioned (Prov)" "GROUP Nsta Vgs IpMConn OsiState (State)" "GROUP Nsta Vgs IpMConn Statistics (Stats)" "GROUP Nsta Vgs IpMConn NstaVgsConnectionStatus (ConnStat)"
Scope	Device
Description	*Nsta/n Vgs IpMediaStreamConnection*

	This component represents the IP media termination of the Voice over IP function.
Mib	Vgs
Opt. Subcomp.	"COMPONENT Nsta Vgs IpMConn NailedUpAdaptionPoint (Nap)" "COMPONENT Nsta Vgs IpMConn ActiveAccessPoint (Aap)" "COMPONENT Nsta Vgs IpMConn PassiveAccessPoint (Pap)" "COMPONENT Nsta Vgs IpMConn SpvcAccessPoint (SpvcAp)" "COMPONENT Nsta Vgs IpMConn VirtualRouterAccessPoint (VrAp)"
Dyn. Subcomp.	"COMPONENT Nsta Vgs IpMConn AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs IpMConn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *IpMConn* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn ipAddress (ipAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the IP address of this IP connection and must be unique to the IP network. When the *IpMConn* component is copied using the *Copy* command, this attribute is set to ***0.0.0.0*** to prevent a duplication of IP addresses.

Mib	Vgs
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs IpMConn udpPortBase (udpBase)

Access	Read and write
Criticality	Process
Description	This attribute specifies the low end of the range of UDP port numbers which will be assigned to media stream connections using this *IpMConn* component.The high end of the range is equal to *udpPortBase* + ((2 * 24) - 1). The value provisioned is allocated by the network operating company according to the numbering plan. If the *cardType* is ***2pGeMmSrVsp3*** or ***2pOC3ChSmIrVsp3***, this attribute may only take the value ***16384***, ***32768*** or ***49152***. In addition, if IP access is via a Gigabit Ethernet port on the ***2pGeMmSrVsp3*** card, the value may only be ***49152***.
Mib	Vgs
Values	Decimal (8192; 16384; 24576; 32768; 40960; 49152; 57344)
Default	49152

GROUP Nsta Vgs IpMConn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs IpMConn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs IpMConn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs IpMConn Statistics (Stats)

Properties	Operational
Description	This group contains the statistics for the *IpMConn* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn txPackets (txPkt)

Access	Read only
Description	This attribute counts the packets transmitted since the component was activated. The value wraps to zero when the maximum value is exceeded.

Mib	Vgs
Values	Long Integer
Default	No default

ATTRIBUTE Nsta Vgs IpMConn rxPackets (rxPkt)

Access	Read only
Description	This attribute counts all packets received (including errored packets) since the component was activated. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Long Integer
Default	No default

ATTRIBUTE Nsta Vgs IpMConn erroredRxPackets (errRxPkt)

Access	Read only
Description	This attribute counts the errored packets since the component was activated. Errors may occur due to: - packets discarded on buffer full, - destination voice processing hardware is not functioning, - no IP address yet available, If the IP packets are transferred using AAL5 cells, this count will also contain any AAL5 CRC errors. The value wraps to zero when the maximum value is exceeded. This attribute is filtered when the ***vspIpGigE*** or the ***vgpIpG729GigE*** feature is provisioned.
Mib	Vgs
Values	Long Integer
Default	No default

ATTRIBUTE Nsta Vgs IpMConn pingRequestsReceived (rxPing)

Access	Read only
Description	This attribute counts the ICMP Echo request (ping) packets received since the component was activated. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Long Integer
Default	No default

ATTRIBUTE Nsta Vgs IpMConn atmarpPacketsReceived (rxAtmArp)

Access	Read only
Description	This attribute counts the ATMARP (request or response) packets received since the component was activated. The value wraps to zero when the maximum value is exceeded. This attribute is filtered when the ***vspIpGigE*** or the ***vgpIpG729GigE*** feature is provisioned, or the *VrAp* subcomponent is provisioned under this component.
Mib	Vgs
Values	Long Integer
Default	No default

ATTRIBUTE Nsta Vgs IpMConn receivedPacketsDiscarded (rxDiscPkt)

Access	Read only
Description	This attribute counts the packets received but discarded due to lack of internal buffer space. The value wraps to zero when the maximum value is exceeded. This attribute is filtered when the card type is ***2pGeMmSrVsp3*** or ***2pOC3ChSmIrVsp3***.

Mib	Vgs
Values	Long Integer
Default	No default

ATTRIBUTE Nsta Vgs IpMConn unsupportedPacketsReceived (rxUnsupPkt)

Access	Read only
Description	This attribute counts the packets received that are not IP or ICMP datagrams attributable to particular voice channels. This attribute does not include packets that are counted in *pingRequestsReceived*, *atmarpPacketsReceived* or *receivedPacketsDiscarded* attributes. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Long Integer
Default	No default

GROUP Nsta Vgs IpMConn NstaVgsConnectionStatus (ConnStat)

Properties	Operational
Description	This group contains an attribute which provides information on the status of the VGS connections.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn currentStatus (cStat)

Access	Read only
Description	This attribute specifies the current status of a *Vgs AtmTConn*, *IpMConn* or *Ctrl* connection. ***enabled*** indicates that the component is enabled and available to transport traffic. ***activating*** indicates that the component is progressing through its expected sequence of activation and enabling actions, and that no errors having been reported.

atmConnectionNotReady indicates that a problem has been reported with the ATM VCC linked to the component's *Nap, Aap* or *Pap* subcomponent, resulting in the component being in a disabled state.

vspNotReady indicates that the *Vsp* component linked to the parent *Nsta* component is either disabled or locked.

outOfResource indicates that no hardware resource is available on the VSP card to support the component. This means that the VSP card is inadequately equipped or has suffered some level of hardware failure.

ipNetworkInaccessible indicates that a connection into the IP network cannot be created. This may be due to physical ports being disabled, or the inability of routing software to establish an appropriate connection.

Mib: Vgs

Values:
enabled
activating
atmConnectionNotReady
vspNotReady
outOfResource
ipNetworkInaccessible

Default: No default

COMPONENT Nsta Vgs IpMConn NailedUpAdaptionPoint (Nap)

Groups: "GROUP Nsta Vgs IpMConn Nap Provisioned (Prov)"

Scope: Device

Description:
Nsta/n Conn/n NailedUpAdaptionPoint
Nsta/n Conn/n Brag/n Ccst NailedUpAdaptionPoint
Nsta/n Vgs AtmTConn/n NailedUpAdaptionPoint
Nsta/n Vgs Control/n NailedUpAdaptionPoint
Nsta/n Vgs IpMConn NailedUpAdaptionPoint

This component is used to provide access to a nailed-up ATM

connection (an *Atmif Vcc Nep*).

Components in the *Nsta* component hierarchy which require access to such connections will have a *NailedUpAdaptionPoint* subcomponent.

Mib: Vgs

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Nsta Vgs IpMConn Nap Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisioning data for a *Nap* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs IpMConn Nap atmConnection (atmConn)

Access: Read and write

Criticality: Process

Description: This attribute specifies the link to the *AtmIf Vcc Nep* component that defines the access to the ATM network.

Mib: Vgs

Values: Link (Service, applicationName)

Default: No default

COMPONENT Nsta Vgs IpMConn ActiveAccessPoint (Aap)

Groups:
"GROUP Nsta Vgs IpMConn Aap Provisioned (Prov)"
"GROUP Nsta Vgs IpMConn Aap AapAddressessProv (AapAddrProv)"
"GROUP Nsta Vgs IpMConn Aap Operational (Oper)"
"GROUP Nsta Vgs IpMConn Aap AccessPointOper (ApOper)"

Scope	Device
Description	*Nsta/n Vgs Control/n ActiveAccessPoint* *Nsta/n Vgs IpMConn ActiveAccessPoint* *Nsta/n Conn/n ActiveAccessPoint* This component defines ATM SVC originating and terminating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information. An *Aap* is responsible for maintaining calls to a remote address in the ATM network.
Mib	Vgs
Common Verbs	Help List Display Add DELete

VERB Restart Nsta Vgs IpMConn Aap

Impact	Service
Description	*Restart Nsta/n Vgs Control/n ActiveAccessPoint* *Restart Nsta/n Vgs IpMConn ActiveAccessPoint* *Restart Nsta/n Conn/n ActiveAccessPoint* This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs IpMConn Aap Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Aap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Aap atmServiceCategory (service)

Access	Read and write
Criticality	Component
Description	This attribute specified the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of

bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections.

If the parent of the *Aap* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may not take the value ***rtVariableBitRate***. If the parent of the *Aap* is an *IpMConn* or *Conn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.

Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap peakCellRate (pcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap sustainedCellRate (scr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE Nsta Vgs IpMConn Aap maximumBurstSize (mbs)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.

Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Vgs IpMConn Aap retryLimit (limit)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

GROUP Nsta Vgs IpMConn Aap AapAddressessProv (AapAddrProv)

Properties	Provisioned
Description	This group contains NSAP address provisioning data.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Aap expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address information for an incoming setup request. If *expectedRemoteAddress* is not empty, only matching addresses in incoming setup are considered for acceptance.

	If *expectedRemoteAddress* is less than 40 characters long, the remote address must match the value in *expectedRemoteAddress* to be accepted. If *expectedRemoteAddress* is empty, connection requests are accepted from any remote address.
Mib	Vgs
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Nsta Vgs IpMConn Aap localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap addressToCall (addrToCall)

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned.

For the *ControlConnection* component in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses.

The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established but fails at a later time, the system attempts to set up a connection to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to setup a connection to the first address in the list and then continues as before.

Mib	Vgs
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Vgs IpMConn Aap Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *Aap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Aap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established.

When this attribute has the value ***connected***, it indicates that a connection has been established.

When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component.

When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* consecutive connection setup attempts have failed, and the connection procedure has been aborted.

When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a Delete request) while the component was in ***connecting*** state.

Mib: Vgs

Values:
initializing
connecting
connected
idle
retriesExhausted
failed

Default: No default

ATTRIBUTE Nsta Vgs IpMConn Aap lastSetupFailureCause (failCause)

Access: Read only

Description: This attribute indicates the cause code in the last call release message following an unsuccessful call setup attempt. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

If no call setup attempts have failed, this attribute has a value of 0.

Mib: Vgs

Values: Decimal (0..255)

Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap lastSetupFailureDiagnostic (failDiag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message following an unsuccessful call setup attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If no call setup attempts have failed, this attribute is an empty string.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap retryTimeRemaining (timer)

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches 0 an attempt will be made to establish the connection. When the timer is not running this attribute has a value of 0.
Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap retryFailures (failures)

Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to 0 whenever a connection is successfully established or the connection is restarted using the

	Restart verb. The counter wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs IpMConn Aap AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Aap remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs

Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Aap lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs IpMConn PassiveAccessPoint (Pap)

Groups	"GROUP Nsta Vgs IpMConn Pap PapAddressesProv (PapAddrProv)" "GROUP Nsta Vgs IpMConn Pap Operational (Oper)" "GROUP Nsta Vgs IpMConn Pap AccessPointOper (ApOper)"
Scope	Device
Description	*Nsta/n Vgs Control/n PassiveAccessPoint* *Nsta/n Vgs IpMConn/n PassiveAccessPoint* *Nsta/n Conn/n PassiveAccessPoint* This component defines ATM SVC terminating information pertinent to those subcomponents in the *Nsta* hierarchy which

	require dynamic links into the ATM network but have no addressing information.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs IpMConn Pap PapAddressesProv (PapAddrProv)

Properties	Provisioned
Description	This group contains NSAP address provisioning data.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Pap expectedRemoteAddress (expectedAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the expected remote address information for an incoming connection setup request. If *expectedRemoteAddress* is not empty, only matching connections are considered for acceptance. If *expectedRemoteAddress* is less than 40 characters long, the remote address must match the value in *expectedRemoteAddress* to be accepted. If *expectedRemoteAddress* is empty, the component processes connection requests from any remote address.
Mib	Vgs
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Nsta Vgs IpMConn Pap localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the ATM address of the access point. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default can not be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

GROUP Nsta Vgs IpMConn Pap Operational (Oper)

Properties	Operational
Description	This group contains status information common to the *PassiveAccessPoint* and *AddresslessPassiveAccessPoint* components.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Pap svcStatus (status)

Access	Read only
Description	This attribute indicates the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established.

When this attribute has the value ***connected***, it indicates that a connection has been established.

When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component.

When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.

Mib	Vgs
Values	initializing connecting connected idle failed
Default	No default

GROUP Nsta Vgs IpMConn Pap AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn Pap remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.

Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Pap lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn Pap lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs IpMConn SpvcAccessPoint (SpvcAp)

Groups	"GROUP Nsta Vgs IpMConn SpvcAp Provisioned (Prov)" "GROUP Nsta Vgs IpMConn SpvcAp SpvcApAddressessProv (SpvcApAddrProv)" "GROUP Nsta Vgs IpMConn SpvcAp Operational (Oper)" "GROUP Nsta Vgs IpMConn SpvcAp AccessPointOper (ApOper)"

Scope	Device
Description	*Nsta/n Vgs Control/n SpvcAccessPoint* *Nsta/n Vgs IpMConn SpvcAccessPoint* *Nsta/n Conn/n SpvcAccessPoint* This component defines ATM SPVC originating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information.
Mib	Vgs
Common Verbs	Help List Display Add DELete

VERB Restart Nsta Vgs IpMConn SpvcAp

Impact	Service
Description	*Restart Nsta/n Vgs Control/n SpvcAccessPoint* *Restart Nsta/n Vgs IpMConn SpvcAccessPoint* *Restart Nsta/n Conn/n SpvcAccessPoint* This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection is released first. This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs IpMConn SpvcAp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn SpvcAp atmServiceCategory (service)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM service category for SVCs. The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video

applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections.

If the parent of the *SpvcAp* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may not take the value ***rtVariableBitRate***. If the parent of the *SpvcAp* is an *IpMConn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.

Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp peakCellRate (pcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp sustainedCellRate (scr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s
Default	0

ATTRIBUTE Nsta Vgs IpMConn SpvcAp maximumBurstSize (mbs)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.

Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Vgs IpMConn SpvcAp retryLimit (limit)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

GROUP Nsta Vgs IpMConn SpvcAp SpvcApAddressessProv (SpvcApAddrProv)

Properties	Provisioned
Description	This group contains NSAP address provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn SpvcAp localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is provided.

	If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp remoteVpiVci (rVpiVci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the remote VPI and VCI for an *SpvcAp* component.
Mib	Vgs
Values	Integer Sequence (0..255; 1..65535)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp addressToCall (addrToCall)

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned. For the *ControlConnection* application in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses. The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established but fails at a later time, the system attempts to set up a connection

	to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to set up a connection to the first address in the list and then continues as before.
Mib	Vgs
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Vgs IpMConn SpvcAp Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn SpvcAp svcStatus (status)

Access	Read only
Description	This attribute specifies the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed. When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established. When this attribute has the value ***connected***, it indicates that a connection has been established. When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component.

When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* for consecutive connection set up attempts have failed, and the connection procedure has been aborted.

When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.

Mib: Vgs

Values:
initializing
connecting
connected
idle
retriesExhausted
failed

Default: No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp lastSetupFailureCause (failCause)

Access: Read only

Description: This attribute contains the cause code in the last call release message following an unsuccessful call set up attempt. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

Mib: Vgs

Values: Decimal (0..255)

Default: No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp lastSetupFailureDiagnostic (failDiag)

Access: Read only

Description: This attribute contains the diagnostic code in the last call release message following an unsuccessful call set up attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.

Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp retryTimeRemaining (timer)

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches ***0*** an attempt will be made to establish the connection. When the timer is not running a value of ***0*** is returned.
Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp retryFailures (failures)

Access	Read only
Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to ***0*** whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to ***0*** when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs IpMConn SpvcAp AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.

Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn SpvcAp remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs IpMConn SpvcAp lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs

Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs IpMConn AtmConnection (AtmCon)

Groups	"GROUP Nsta Vgs IpMConn AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs IpMConn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Vgs
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs IpMConn VirtualRouterAccessPoint (VrAp)

Groups	"GROUP Nsta Vgs IpMConn VrAp Provisioned (Prov)"

Scope	Application
Description	*Nsta/n Vgs Ctrl/n VrAp* *Nsta/n Vgs IpMConn VrAp* *Nsta/n Vgs DbgAccess VrAp* This component represents a point of access to a *VirtualRouter* component, which provides an IP forwarding functionality to this *Nsta/n Vgs* component hierarchy. If at least one *VrAp* component is used within a *Nsta/n Vgs* component hierarchy, then all IP network access from within that hierarchy must be via *VrAp* components. In addition, a *VCac* component cannot be provisioned within a *Nsta/n Vgs* component hierarchy which contains a *VrAp* component.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs IpMConn VrAp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *VrAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpMConn VrAp subnetAccessName (subnet)

Access	Read and write
Description	This attribute specifies the *Vr/n Pp/m IpPort LogicalIf/x.y.z.u* component instance to be used by this *VrAp*. The value of the *ipAddr* attribute defined by the parent of this

VrAp must belong to the subnet defined by the specified *Vr/n Pp/m IpPort LogicalIf/x.y.z.u* component instance.

Mib: Vgs

Values: The name of the component

Default: No default

COMPONENT Nsta Vgs SimpleGatewayCtrlProt (Sgcp)

Groups: "GROUP Nsta Vgs Sgcp Provisioned (Prov)"

Scope: Device

Description: *Nsta/n Vgs SimpleGatewayCtrlProt*

This component provides an interface to an SGCP based media gateway controller using the SGCP protocol.

Mib: Vgs

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Nsta Vgs Sgcp Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioning data for the *Sgcp* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs Sgcp rsipMessages (rsipM)

Access: Read and write

Description: This attribute specifies if RSIP message generation is enabled or disabled. When a value of ***disabled*** is provisioned then no RSIP messages are generated. When a value of ***enabled*** is provisioned then RSIP messages are generated.

	The value to be provisioned is determined by the ability of the media gateway controller to receive RSIP messages. Incorrect provisioning of this value (to ***disabled***) could cause failure conditions to be wrongly diagnosed. Incorrect provisioning of this value (to ***enabled***) causes RSIP messages to be discarded by the media gateway controller.
Mib	Vgs
Values	disabled enabled
Default	disabled

ATTRIBUTE Nsta Vgs Sgcp defaultServiceMgrName (defSmn)

Access	Read and write
Description	This attribute specifies the default remote name for all SGCP messages when no other remote name can be determined (from the Notified Entity or the source address of the last message received). (Note: The Notified Entity is a host name or IP address). This attribute is also used for all RSIP messages. A remote name does not need to be provisioned, but if it is, it is used to look up an IP address on a DNS server.
Mib	Vgs
Values	String (0..255, ASCII)
Default	""

ATTRIBUTE Nsta Vgs Sgcp defaultServiceMgrPort (defSmp)

Access	Read and write
Description	This attribute specifies the default remote UDP port for all SGCP messages transmitted if no other remote port can be determined (from the notified entity or the source address of the last message received). This attribute is also used for all RSIP messages.
Mib	Vgs
Values	Decimal (1..65535)

Default	2427

ATTRIBUTE Nsta Vgs Sgcp maxTxRetries (maxTxRetries)

Access	Read and write
Description	This attribute specifies the maximum number of retransmissions of an SGCP protocol message. If no reply is received following the transmission of an SGCP protocol message, it is retransmitted according to the number of times specified by this attribute, to the same IP address. If a reply is still not received, a different IP address may be attempted which is obtained from (and in the following order): - the Notified Entity - the source address of the last message received or - the *defaultServiceMgrName* attribute. A value of ***0*** indicates no retransmissions.
Mib	Vgs
Values	Decimal (0..5)
Default	2

ATTRIBUTE Nsta Vgs Sgcp initialTxRetryTime (initTxRetryTime)

Access	Read and write
Description	This attribute specifies the initial retry time for an SGCP protocol message. If no reply is received following the transmission of an SGCP protocol message, the first retransmission (subject to the number of retransmissions specified by the *maxTxRetries* attribute) occurs after the time-out specified by this attribute. Subsequent retransmission time-outs randomly increase, subject to the maximum value specified by the *maxTxRetryTime* attribute. The initial retry time is rounded down to the nearest multiple of 100 milliseconds. This value is ignored if the *maxTxRetries* attribute is set to ***0***.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec

Default	300

ATTRIBUTE Nsta Vgs Sgcp maxTxRetryTime (mTxRetryTime)

Access	Read and write
Description	This attribute specifies the maximum retransmission time for an SGCP protocol message. If no reply is received following the transmission of an SGCP protocol message, the time-outs between retransmissions randomly increase, subject to the maximum value specified by this attribute. This value is ignored if the value of the *maxTxRetries* attribute is ***0*** or ***1***. The maximum retransmission time is rounded down to the nearest multiple of 100 milliseconds. This value must be greater than, or equal to, the value of the *initialTxRetryTime* attribute.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	1000

ATTRIBUTE Nsta Vgs Sgcp mfInitialTxRetryTime (mfInitTxRetryTime)

Access	Read and write
Description	This attribute specifies the initial retry time for an MF SGCP protocol message. If no reply is received following the transmission of an MF SGCP protocol message, the first retransmission (subject to the number of retransmissions specified by the *maxTxRetries* attribute) occurs after the time-out specified by this attribute. Subsequent retransmission time-outs randomly increase, subject to the maximum value specified by the *mfMaxTxRetryTime* attribute. This value is ignored if the *maxTxRetries* attribute is set to ***0***.
Mib	Vgs
Values	Decimal (1..20)

Units	seconds
Default	3

ATTRIBUTE Nsta Vgs Sgcp mfMaxTxRetryTime (mfMaxTxRetryTime)

Access	Read and write
Description	This attribute specifies the maximum retransmission time for an MF SGCP protocol message. If no reply is received following the transmission of an MF SGCP protocol message, the time-outs between retransmissions randomly increase, subject to the maximum value specified by this attribute. This value is ignored if the value of the *maxTxRetries* attribute is ***0*** or ***1***. This value must be greater than, or equal to, the value of the *mfInitialTxRetryTime* attribute.
Mib	Vgs
Values	Decimal (1..20)
Units	seconds
Default	5

ATTRIBUTE Nsta Vgs Sgcp udpPortConnection (udpConn)

Access	Read and write
Description	This attribute specifies the link to the *Nsta/n Vgs CtrlConn/n UdpPort/n* component that defines the UDP port access to the IP network for the SGCP protocol.
Mib	Vgs
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Nsta Vgs Sgcp mfMaxTxRetries (mfMaxTxRetries)

Access	Read and write

Description	This attribute specifies the maximum number of retransmissions of an MF SGCP protocol message. If no reply is received following the transmission of an MF SGCP protocol message, it is retransmitted the number of times specified by this attribute, to the same IP address. If a reply is still not received, a different IP address may be attempted which is obtained from (and in the following order): - the Notified Entity - the source address of the last message received or - the *defaultServiceMgrName* attribute. A value of ***0*** indicates no retransmissions.
Mib	Vgs
Values	Decimal (0..5)
Default	2

COMPONENT Nsta Vgs VoiceCallAdmissionControl (VCac)

Groups	"GROUP Nsta Vgs VCac Provisioned (Prov)" "GROUP Nsta Vgs VCac Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs VoiceCallAdmissionControl* This component provides the voice Call Admission Control function for the media gateway. The voice call admission control function actively refuses and deletes calls requested by the controller based on the resources allocated to the media gateway. The resources allocated consist of the internal resources of the media gateway hardware, the quality of service provided by the ATM trunk used for the call and the backplane bandwidth within the shelf allocated to the media gateway.

If this component is not present then the voice Call Admission Control function is not performed by the media gateway.

Mib: Vgs

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Nsta Vgs VCac Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioning data for the *Nsta Vgs VCac* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs VCac packetLossProbabilityIndex (plpIndex)

Access: Read and write

Description: This attribute specifies the target packet loss probability for the media gateway, and is an input to the Call Admission Control algorithm.

10 to the power of the *packetLossProbabilityIndex* is the packet loss probability used in the algorithm, for example if the attribute is provisioned to -3, then 10 to the power of -3 is 0.001, or 1 in 1000.

Mib: Vgs

Values: Signed (-6..-2)

Default: -3

ATTRIBUTE Nsta Vgs VCac averageActiveDuration (avActive)

Access: Read and write

Description	This attribute specifies the average duration of the active voice period (also known as talk-spurt) for the media gateway, and is an input to the Call Admission Control algorithm.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	400

ATTRIBUTE Nsta Vgs VCac sourceActiveTime (srcActive)

Access	Read and write
Description	This attribute specifies the percentage of time that the source is active for the media gateway, and is an input to the Call Admission Control algorithm.
Mib	Vgs
Values	Decimal (20..100)
Units	%
Default	40

ATTRIBUTE Nsta Vgs VCac allocatedShelfBandwidth (shBw)

Access	Read and write
Description	This attribute specifies the percentage of shelf backplane bandwidth allocated to the media gateway, and is an input to the Call Admission Control algorithm. The attribute is used by the Call Admission Control algorithm as a limit for the anticipated use of shelf backplane bandwidth resources. The purpose of this attribute is to limit the amount of shelf backplane resources available to a media gateway, and is dependent on the number of VSP cards inserted into a shelf. Reducing this value will have no effect on existing calls, but it

will prevent any further calls being made until existing calls clear and release their bandwidth.

The total sum of all *VCac* component *allocatedShelfBandwidth* attributes within a shelf may not exceed 100%.

Mib	Vgs
Values	Decimal (10..100)
Units	%
Default	25

ATTRIBUTE Nsta Vgs VCac deleteCallsOnVbd (delOnVbd)

Access	Read and write
Description	This attribute specifies whether calls that autonomously transition from voice to voice band data (VBD) are deleted if the new bandwidth requirements of the call exceed the bandwidth available to the voice CAC function. A value of ***enabled*** will delete violating transitioning calls. A value of ***disabled*** will not delete transitioning calls.
Mib	Vgs
Values	disabled enabled
Default	enabled

GROUP Nsta Vgs VCac Operational (Oper)

Properties	Operational
Description	This group contains operational data for the *Nsta Vgs VCac* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs VCac refusedNetworkBw (nbRef)

Access	Read only

Description	This attribute counts the connection requests that have been refused by the voice CAC function due to network bandwidth limitations since the component was activated. The attribute wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs VCac refusedInternalResources (irRef)

Access	Read only
Description	This attribute counts the connection requests that have been refused by the voice CAC function due to internal resource limitations since the component was activated. Increases in this counter indicate that either the provisioned attribute *allocatedShelfBandwidth* is too low for the network engineering model applied, or that the network has been incorrectly engineered such that the maximum bandwidth required by on-net calls (that is AAL2-AAL2 switched calls) exceeds the voice gateway bandwidth available. The attribute wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs VCac deletedNetworkBw (nbDel)

Access	Read only
Description	This attribute counts the connection requests that have been deleted by the voice CAC function due to network bandwidth limitations since the component was activated. The attribute wraps to 0 when it exceeds its maximum value.

Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs VCac deletedInternalResources (irDel)

Access	Read only
Description	This attribute counts the connection requests received that have been deleted by the voice CAC function due to internal resource limitations since the component was activated. The attribute wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs VCac shelfUsage (shUsage)

Access	Read only
Description	This attribute indicates the current estimated percentage of the shelf backplane capacity that is being utilized by the media gateway. The value may go down as well as up.
Mib	Vgs
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Nsta Vgs VCac peakShelfUsage (pShUsage)

Access	Read and write
Description	This attribute indicates the maximum percentage of the allocated shelf backplane capacity that has been reached since the component was activated.
Mib	Vgs

Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Nsta Vgs VCac internalUsage (intUsage)

Access	Read only
Description	This attribute indicates the current percentage of the internal media gateway capacity that is being utilized by the media gateway. The value may go down as well as up.
Mib	Vgs
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Nsta Vgs VCac peakinternalUsage (pIntUsage)

Access	Read and write
Description	This attribute indicates the maximum percentage of the internal media gateway capacity that has been reached since the component was activated.
Mib	Vgs
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Nsta Vgs IsdnUserAdaption (Iua)

Groups	"GROUP Nsta Vgs Iua Provisioned (Prov)" "GROUP Nsta Vgs Iua OsiState (State)" "GROUP Nsta Vgs Iua Operational (Oper)"
Scope	Device

Description	*Nsta/n Vgs IsdnUserAdaption* This component provides an optional ISDN User Adaptation Layer for the transporting of PRI signaling over SCTP.
Mib	Vgs
Dyn. Subcomp.	"COMPONENT Nsta Vgs Iua ApplicationServerProcess (Asp)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Iua Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Iua* component, which provides access to the IP network.
Mib	Vgs

ATTRIBUTE Nsta Vgs Iua sctpPortConnection

Access	Read and write
Description	This attribute specifies a link to an *Nsta/n Vgs Ctrl/n SctpPort/n* component, which provides transport over the IP network. The linked *Nsta/n Vgs Ctrl/n SctpPort/n* must be under the same *Nsta/n Vgs* as this *Iua* subcomponent.
Mib	Vgs
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Nsta Vgs Iua recoveryTimer

Access	Read and write

Description	This attribute specifies how long incoming messages are buffered while the Application Server is recovering from a failure (indicated by an *asStatus* value of ***pending***).
Mib	Vgs
Values	Decimal (1..5)
Units	seconds
Default	3

GROUP Nsta Vgs Iua OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs Iua adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is

	administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs Iua operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs Iua usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs Iua Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the *Iua* component status.
Mib	Vgs

ATTRIBUTE Nsta Vgs Iua asStatus

Access	Read only
Criticality	Process
Description	This attribute indicates the status of the Application Server. The possible values are: ***active*** - the ASP is available and is serving as the primary instance (handling traffic) ***up*** - the ASP is available and is serving as the standby instance (not handling traffic) ***down*** - the ASP is unavailable ***pending*** - the currently active ASP became inactive or the SCTP association was lost. A recovery process is in operation.
Mib	Vgs
Values	up down active pending

Default	No default

COMPONENT Nsta Vgs Iua ApplicationServerProcess (Asp)

Instance	address [IP address] port [Decimal (1..65535)]
Groups	"GROUP Nsta Vgs Iua Asp Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs Iua ApplicationServerProcess/<ip address>,<sctp port>* This component represents an Application Server Process (Media Gateway Controller) linked to the Signaling Gateway. The IP address and SCTP port number used in the instance value refer to the remote connection.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs Iua Asp Operational (Oper)

Properties	Operational
Description	This group contains attributes which describe the *Asp* component status.
Mib	Vgs

ATTRIBUTE Nsta Vgs Iua Asp status

Access	Read only
Description	This attribute indicates the status of the Application Server Process. The possible values are: ***active*** - the ASP is available and application traffic is flowing (serving as the primary instance)

up - the ASP is available but application traffic is not flowing
down - the ASP is unavailable

Mib: Vgs

Values:
up
down
active

Default: No default

COMPONENT Nsta Vgs LocalAnnouncements

Groups:
"GROUP Nsta Vgs LocalAnnouncements Provisioned (Prov)"
"GROUP Nsta Vgs LocalAnnouncements OsiState (State)"
"GROUP Nsta Vgs LocalAnnouncements Operational (Oper)"

Scope: Device

Description: *Nsta/n Vgs LocalAnnouncements*

This component provides the control and status of the Local Announcement facility.

Mib: Vgs

Common Verbs:
Help
List
Display
Add
DELete

VERB Zero Nsta Vgs LocalAnnouncements

Impact: Service

Description: *Zero Nsta/n Vgs LocalAnnouncements*
This verb is used to re-initialize attributes which record peak values.

GROUP Nsta Vgs LocalAnnouncements Provisioned (Prov)

Properties: Provisioned

Description	This group contains the provisioning data for the Local Announcement facility.
Mib	Vgs

ATTRIBUTE Nsta Vgs LocalAnnouncements fileName

Access	Read and write
Description	The attribute specifies the filename (without extension) of the announcement fileset which is used for the *LocalAnnouncements* component. The files are located in /user/pvg/announcements/. Changing the value will not affect announcements in progress. The specified fileset is automatically transferred from the CP to the FP before it is used and the file currently being used can be determined from the *currentFileName* attribute. This attribute must be supplied.
Mib	Vgs
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Nsta Vgs LocalAnnouncements defaultLanguage

Access	Read and write
Description	This attribute specifies the language to be used on the announcement when no language is provided via the Media Gateway Controller. This value may be overridden on a per *Brag* component basis in the *Nsta/n Vgs Brag/n AnnouncementLanguage* component. Possible values: any 3 character ASCII string (lower case a-z) for example "eng", or an empty string. If the value is empty, no language is specified when looking up announcements. When the Media Gateway Controller specifies a language value, it overrides the provisioned values in the Media Gateway.

Mib	Vgs
Values	String (0..3, ASCII)
Default	""

GROUP Nsta Vgs LocalAnnouncements OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs LocalAnnouncements adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs LocalAnnouncements operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Vgs
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs LocalAnnouncements usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has

spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Vgs

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Nsta Vgs LocalAnnouncements availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Vgs
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Nsta Vgs LocalAnnouncements proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Vgs

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Nsta Vgs LocalAnnouncements controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Vgs

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Nsta Vgs LocalAnnouncements alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Vgs

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Nsta Vgs LocalAnnouncements standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Vgs

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Nsta Vgs LocalAnnouncements unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Vgs
Values	false true
Default	false

GROUP Nsta Vgs LocalAnnouncements Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the causes of any *LocalAnnouncements* component failure.
Mib	Vgs

ATTRIBUTE Nsta Vgs LocalAnnouncements currentFileName

Access	Read only
Description	This attribute indicates the name (without path or extension) of the current announcement file which *LocalAnnouncements* is using for new announcements. The value may be different from that specified by the *fileName* attribute if the value of *fileTransferStatus* attribute is not ***complete***.

If no file has been transferred, then this attribute is an empty string.

Mib: Vgs

Values: String (0..40, ASCII)

Default: No default

ATTRIBUTE Nsta Vgs LocalAnnouncements fileTransferStatus

Access: Read only

Description: This attribute indicates the status of the transfer of the announcement file from the CP to the FP.

Possible values are:

inProgress: The file as specified in *fileName* is being transferred. Any announcement request are serviced using the file specified in *currentFileName*.

complete: The file transfer is complete. The file as specified in *fileName* is the same as the file specified in *currentFileName.*

missing: The system cannot find the complete fileset specified in *fileName* on the CP. The current file is left as is. An alarm is raised in this state. The FP will poll for files until transfer can commence.

fileTooLong: The current fileset as defined in *fileName* on the CP is too long to be loaded successfully. The current file is left as is. An alarm is raised in this state. The FP will poll to look for changes in file length or timestamp. Reduction of file length to within the acceptable limit, causes automatic download to occur once it is deemed that the file is stable.

fileError: The current fileset as defined in *fileName* on the CP has failed sanity checks after download, and is not to be used as an active load. The current file is left as is. An alarm is raised in this state. The FP will poll to look for changes in file length or timestamp. This causes automatic download to occur once it is deemed that the file is stable.

cpNotResponding: The CP is not responding. The CP may be busy or the disk may be locked. The FP will poll to check for CP availability.

Mib: Vgs

Values:
inProgress
complete
missing
fileTooLong
fileError
cpNotResponding

Default: No default

ATTRIBUTE Nsta Vgs LocalAnnouncements unknownNameRequests

Access: Read only

Description: This attribute counts the announcement requests rejected due to unknown name or unsupported name or language combination. The value is reset to zero whenever a new announcement file is transferred or the Supplementary Services Module is reset.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs LocalAnnouncements blockedRequests

Access: Read only

Description: This attribute counts the announcement requests rejected due to insufficient resource. The value is reset to zero whenever the Supplementary Services Module is reset.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs LocalAnnouncements announcementResourceInUse

Access	Read only
Description	This attribute indicates the instantaneous percentage of the local announcement resource in use.
Mib	Vgs
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Nsta Vgs LocalAnnouncements peakAnnouncementResourceUsed

Access	Read only
Description	This attribute indicates the peak announcement resource used since this attribute was last reset. The value of this attribute can be reset to 0 by the *Zero* command.
Mib	Vgs
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Nsta Vgs DigitCollection

Groups	"GROUP Nsta Vgs DigitCollection Provisioned (Prov)" "GROUP Nsta Vgs DigitCollection Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs DigitCollection* This component represents the digit collection capabilities of the PVG switched voice application. These capabilities include detection of digits on the TDM circuit side, to collate such digits in accordance with digit maps provided by the Call Server, and to report such digit strings to the Call Server when the digit maps completion criteria are met. If no DigitCollection component is provisioned for a given Vgs,

digit collection is disabled for that Vgs. The DigitCollection component must not be provisioned for a Vgs which has an Sgcp subcomponent.

Mib	Vgs
Common Verbs	Help List Display Add DELete

VERB Zero Nsta Vgs DigitCollection

Impact	Service
Description	*Zero Nsta/n Vgs DigitCollection* This verb is used to re-initialize attributes which record peak values.

GROUP Nsta Vgs DigitCollection Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Vgs DigitCollection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DigitCollection initialDigitTimer

Access	Read and write
Description	This attribute specifies the value of the Initial Digit Time-out to be used in digit collection. This is the time-out value between request and entering the first number. On expiring of this time a notification is sent to the Media Gateway Controller. The value of this attribute is used when no value is supplied by the controller.
Mib	Vgs
Values	Decimal (1..99)
Units	seconds

Default	16

ATTRIBUTE Nsta Vgs DigitCollection shortInterDigitTimer

Access	Read and write
Description	This attribute specifies the value of the short Inter-Digit Time-out to be used in digit collection. This timer is reset after each digit key depressed is received. On expiring of this time a notification is sent to the Media Gateway Controller. The value of this attribute is used when no value is supplied by the controller.
Mib	Vgs
Values	Decimal (1..99)
Units	seconds
Default	4

ATTRIBUTE Nsta Vgs DigitCollection longInterDigitTimer

Access	Read and write
Description	This attribute specifies the value of the long Inter-Digit Time-out to be used in digit collection. This timer is reset after each digit key depressed is received. On expiring of this time a notification is sent to the Media Gateway Controller. The value of this attribute is used when no value is supplied by the controller.
Mib	Vgs
Values	Decimal (1..99)
Units	seconds
Default	16

ATTRIBUTE Nsta Vgs DigitCollection longDigitTimerDuration

Access	Read and write
Description	This attribute specifies the duration after which a digit (* or #) will be recognized as ‘long’. The value used is dependent on the Media Gateway Controller. This attribute defines a default value to be used when a value is not supplied by the controller.

Mib	Vgs
Values	Decimal (0.1..9.9)
Units	seconds
Default	2.0

GROUP Nsta Vgs DigitCollection Operational (Oper)

Properties	Operational
Description	This group contains operational data for the *Nsta Vgs* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DigitCollection rejectedCollectionRequests

Access	Read only
Description	This attribute counts the number of digit collection requests rejected due to lack of resources. A persistent increase indicates an engineered mismatch between demand for and capacity of the digit collection resources. This counter wraps to zero when its maximum is reached.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs DigitCollection peakCollectionsInProgress

Access	Read only
Description	This attribute indicates the peak of the proportion of digit collection resources (in percentage terms) that have been used at any point since this figure was last reset. Endpoints that have only been requested to collect mid-call triggers are excluded from this figure.
Mib	Vgs
Values	Decimal (0..100)

Units	%
Default	No default

COMPONENT Nsta Vgs Aal2SvcService (Aal2Svc)

Groups	"GROUP Nsta Vgs Aal2Svc Provisioned (Prov)" "GROUP Nsta Vgs Aal2Svc Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs Aal2SvcService* This component creates and enables the AAL2 SVC service.
Mib	Vgs
Opt. Subcomp.	"COMPONENT Nsta Vgs Aal2Svc Profile (Prof)"
Dyn. Subcomp.	"COMPONENT Nsta Vgs Aal2Svc TrunkConnection (TConn)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Aal2Svc Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Aal2SvcService* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Aal2Svc svcSetupTimeout (timeout)

Access	Read and write
Description	This attribute specifies the length of time allowed for an SVC setup before calls waiting for that SVC are cleared. This attribute is used when trunks are created and does not affect existing trunks.

Mib	Vgs
Values	Decimal (50..50000)
Units	msec
Default	1000

ATTRIBUTE Nsta Vgs Aal2Svc svcPreCreation (preCreation)

Access	Read and write
Description	This attribute specifies whether pre-creation of SVCs is enabled. If *svcPreCreation* is ***enabled*** then an SVC setup is initiated when the bandwidth available in existing VCCs between two NSAP addresses is down to a level such that a new SVC would be required for the next call.
Mib	Vgs
Values	enabled disabled
Default	enabled

ATTRIBUTE Nsta Vgs Aal2Svc autocalcTrafficPrms (autocalc)

Access	Read and write
Description	This attribute specifies whether the ATM traffic parameters are automatically calculated based on the value of the *maxNumberOfAal2Trunks* attribute of the *Aal2SvcProfile* component. When the *autocalcTrafficPrms* is set to ***enabled*** any provisioned values of the ATM traffic parameters of the *Aal2SvcProfile* subcomponent are ignored and the values are calculated automatically based on an assumption of G.711 CODECs and no silence suppression. When the *autocalcTrafficPrms* is set to ***disabled*** the values specified in the attributes of the *Aal2SvcProfile* component are used.

	This attribute is used when trunks are created and does not affect existing trunks.
Mib	Vgs
Values	enabled disabled
Default	enabled

GROUP Nsta Vgs Aal2Svc Operational (Oper)

Properties	Operational
Description	This group contains operational data for the *Aal2SvcService* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Aal2Svc activeOriginatedSvcs (activeOrig)

Access	Read only
Description	This attribute indicates the number of currently active SVCs originated by this gateway.
Mib	Vgs
Values	Decimal (0..500)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc activeTerminatedSvcs (activeTerm)

Access	Read only
Description	This attribute indicates the number of currently active SVCs terminated by this gateway.
Mib	Vgs
Values	Decimal (0..500)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc originatedSvcs (origin)

Access	Read only

Description	This attribute counts the number of SVCs originated by the gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc terminatedSvcs (term)

Access	Read only
Description	This attribute counts the number of SVCs terminated by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc activeSvcsDeleted (activeDel)

Access	Read only
Description	This attribute counts the number of SVCs deleted while in the active state carrying traffic. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc svcsPending (pending)

Access	Read only
Description	This attribute indicates the number of SVC creation requests currently requested but not yet established.

Mib	Vgs
Values	Decimal (0..500)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc emptySvcCount (empty)

Access	Read only
Description	This attribute indicates the number of SVCs that are enabled but not carrying narrowband calls.
Mib	Vgs
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc networkReleaseCount (releaseCount)

Access	Read only
Description	This attribute counts the number of ATM network releases received by the *Aal2SvcService* component. This provides an indication of the total number of SVCs or SVC attempts that failed due to ATM network conditions. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc neverUsedSvcsDeleted (neverUsedDel)

Access	Read only
Description	This attribute counts the number of SVCs that were created by this gateway and deleted without carrying any traffic. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc unavailableSvcCount (unavail)

Access	Read only
Description	This attribute indicates the number of SVCs currently unavailable to trunk selection.
Mib	Vgs
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc narrowbandConnectionsRefused (connsRefused)

Access	Read only
Description	This attribute counts the narrowband connections rejected due to failure of the SVC creation process. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc svcSetupTimeoutCount (timeoutCount)

Access	Read only
Description	This attribute counts the number of times the SVC setup timeout expired. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc overloadedSvcCount (overloaded)

Access	Read only
Description	This attribute counts the number of times an SVC was overloaded. An SVC is overloaded when narrowband calls are simultaneously placed on the SVC at both its originating and terminating ends, causing the *activeConnections* attribute of the *TConn* component to exceed the *maxNumberAal2Trunks* specified in the *Profile* component. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc lastSvcSetupTimeoutNsap (lastTimeoutNsap)

Access	Read only
Description	This attribute indicates the NSAP address of the last SVC attempt for which the SVC setup timeout attribute expired. If the string is empty, then such a timeout has never occurred.
Mib	Vgs
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc lastSvcSetupFailureNsap (supFailNsap)

Access	Read only
Description	This attribute indicates the remote NSAP address of the last SVC attempt for which the setup request failed. If the string is empty, SVC setup failures have occurred.
Mib	Vgs
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc lastSvcSetupFailureCause (supCause)

Access	Read only
Description	This attribute indicates the cause of the the last SVC setup failure, as defined in the ATM Forum ATM User-Network Interface Specification. This attribute is only meaningful if the *lastSvcSetupFailureNsap* attribute is not empty.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc lastSvcSetupFailureDiagnostic (supDiag)

Access	Read only
Description	This attribute indicates the diagnostic code associated with the last SVC setup failure, as defined in the ATM Forum ATM User-Network Interface Specification. This attribute is only meaningful if the *lastSvcSetupFailureNsap* attribute is not empty.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc lastSvcAbnormalTearDownNsap (tdNsap)

Access	Read only
Description	This attribute indicates the remote NSAP address of the last SVC which did not experience a normal tear down. If the string is empty, an abnormal SVC tear down has not occurred.
Mib	Vgs
Values	String (0..40, ASCII)

Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc lastSvcAbnormalTearDownCause (tdCause)

Access	Read only
Description	This attribute indicates the tear down cause for the last SVC that did not experience a normal tear down, as defined in the ATM Forum ATM User-Network Interface Specification. This attribute is only meaningful if the *lastSvcAbnormalTearDownNsap* attribute is not empty.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc lastSvcAbnormalTearDownDiagnostic (tdDiag)

Access	Read only
Description	This attribute indicates the tear down diagnostic code associated with the last SVC which did not experience a normal tear down, as defined in the ATM Forum ATM User-Network Interface Specification. This attribute is only meaningful if the *lastSvcAbnormalTearDownNsap* attribute is not empty.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs Aal2Svc Profile (Prof)

Instance	Decimal (1..1)
Groups	"GROUP Nsta Vgs Aal2Svc Prof Provisioned (Prov)"
Scope	Device

Description	*Nsta/n Vgs Aal2Svc Aal2SvcProfile/n* This component provides the parameters for automatically created SVCs. The attributes of this component are only used when SVCs are created and do not affect values used by an existing trunk.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Aal2Svc Prof Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Aal2SvcProfile* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Aal2Svc Prof holdOverTime (hoTime)

Access	Read and write
Description	This attribute specifies the maximum period of time before a partially filled AAL2 packet is scheduled for transmission. It is also referred to as "combined use timer" (Timer_CU), in the ITU-T I.363.2. A value of ***0*** specifies that an ATM cell is transmitted as soon as an AAL2 packet is placed in the cell. Each ATM cell therefore contains one AAL2 packet. The *holdOverTime* affects the packet delay and the bandwidth used by the connection. The longer the delay the higher the bandwidth efficiency of the ATM connection and vice versa. The *holdOverTime* is rounded to the nearest multiple of 0.125 milliseconds.

Mib	Vgs
Values	Decimal (0.000..15.875)
Units	msec
Default	2.000

ATTRIBUTE Nsta Vgs Aal2Svc Prof maxNumberAal2Trunks (maxTrunks)

Access	Read and write
Description	This attribute specifies the maximum number of AAL2 trunks that may be allocated on this ATM trunk. The local node may allocate no more than this number of trunks. The number of currently active trunks is indicated by the *activeConnections* attribute of the *Aal2SvcConnection* component.
Mib	Vgs
Values	Decimal (1..247)
Default	4

ATTRIBUTE Nsta Vgs Aal2Svc Prof svcPersistence (persistence)

Access	Read and write
Description	This attribute specifies the length of time that an AAL2 SVC is kept up after the last narrowband call to use it has been deleted. This attribute is used to modify the SVC caching system. Longer values result in larger caches of SVCs.
Mib	Vgs
Values	Decimal (0..600)
Units	seconds
Default	180

ATTRIBUTE Nsta Vgs Aal2Svc Prof atmServiceCategory (service)

Access	Read and write
Description	This attribute specifies the ATM Service Category for SVCs.

The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". The real-time variable bit rate service may support statistical multiplexing of real time sources.

Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr)
Default	rtVariableBitRate

ATTRIBUTE Nsta Vgs Aal2Svc Prof peakCellRate (pcr)

Access	Read and write
Description	This attribute specifies the peak cell rate of the ATM connection. The value is ignored if the *autoCalcTrafficPrms* attribute has the value ***enabled***. Otherwise, the value must be non-zero.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s
Default	800

ATTRIBUTE Nsta Vgs Aal2Svc Prof sustainedCellRate (scr)

Access	Read and write
Description	This attribute specifies the sustained cell rate of the ATM connection.

The value is ignored if the *autoCalcTrafficPrms* attribute has the value ***enabled***. Otherwise, the value must be non-zero if the *atmServiceCategory* attribute is ***rtVariableBitRate***, and zero if the atmServiceCategory is ***constantBitRate***.

Mib	Vgs
Values	Decimal (0..2147483647)
Units	cell/s
Default	800

ATTRIBUTE Nsta Vgs Aal2Svc Prof maximumBurstSize (mbs)

Access	Read and write
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. The value is ignored if the *autoCalcTrafficPrms* attribute has the value ***enabled***. Otherwise, the value must be non-zero if the *atmServiceCategory* attribute is ***rtVariableBitRate***, and zero if the atmServiceCategory is ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	1

COMPONENT Nsta Vgs Aal2Svc TrunkConnection (TConn)

Instance	Decimal (0..4095)
Groups	"GROUP Nsta Vgs Aal2Svc TConn Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs Aal2Svc Aal2SvcTrunkConnectionl/n* This dynamic component provides visibility for all automatically created SVCs.

	This component is present if and only if the corresponding ATM trunk is available for use by narrowband calls. It is thus present immediately after the SVC is established. It is also present after the SVC has been released from the network for as long as the hold-off timer is running, as indicated by the *holdOverTime* attribute. On expiry of the hold-off timer, the VCC is deleted in the SPM, and this component instance is removed.
Mib	Vgs
Dyn. Subcomp.	"COMPONENT Nsta Vgs Aal2Svc TConn AtmConnection (AtmCon)"
Common Verbs	Help List Display

GROUP Nsta Vgs Aal2Svc TConn Operational (Oper)

Properties	Operational
Description	This group contains operational data for the *Aal2SvcTConn* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Aal2Svc TConn remoteAddress (rAddr)

Access	Read only
Description	This attribute indicates the ATM address of the node at the remote end of this trunk.
Mib	Vgs
Values	String (1..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc TConn vcci

Access	Read only
Description	This attribute indicates the VCCI for this VCC.

	The *vcci* attribute value uniquely identifies a VCC between two nodes in a given direction. ATM trunks terminating on different remote nodes may share the same *vcci* attribute value.
Mib	Vgs
Values	Decimal (4096..8191)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc TConn type

Access	Read only
Description	This attribute indicates whether this ATM VCC was originated or terminated by this AAL2 SVC Service.
Mib	Vgs
Values	originated terminated
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc TConn activeConnections (active)

Access	Read only
Description	This attribute indicates the number of active narrowband connections on this ATM VCC.
Mib	Vgs
Values	Decimal (0..247)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc TConn aal2CpLossStatus (lossStatus)

Access	Read only
Description	This attribute indicates whether an AAL2 common part (CP) loss condition exists. When the condition exists, this attribute is set to ***loss***, otherwise it is set to ***noLoss***.

	An AAL2 CP loss condition exists if no valid media traffic is being received.
Mib	Vgs
Values	noLoss loss
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc TConn aal2StartFieldErrors (sfErr)

Access	Read only
Description	This attribute counts the number of cells received with an AAL2 Common Part Sublayer Protocol Data Unit (CPS-PDU) Start Field error. A Start Field error includes a cell with a parity error or a cell in which the packet pointed to by the offset field (OSF) has a packet HEC error. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Aal2Svc TConn aal2SequenceErrors (seqErr)

Access	Read only
Description	This attribute counts the number of cells received with an unexpected AAL2 Common Part Sublayer Protocol Data Unit (CPS-PDU) sequence number. The counter wraps to zero when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs Aal2Svc TConn AtmConnection (AtmCon)

Groups	"GROUP Nsta Vgs Aal2Svc TConn AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs Aal2Svc TConn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Aal2Svc TConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Vgs
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs AmrBasicRateGroup (AmrBrag)

Instance	Decimal (0..127)
Groups	"GROUP Nsta Vgs AmrBrag Provisioned (Prov)" "GROUP Nsta Vgs AmrBrag OsiState (State)" "GROUP Nsta Vgs AmrBrag Operational (Oper)"

Scope	Device
Description	*Nsta/n Vgs AmrBasicRateGroup/n* This component represents a number of TDM connections from the Voice Services Processor (VSP) to the TDM network. The TDM connections are all associated with the same TDM interface. A particular *AmrBrag* is associated with a single E1 channel. Connections on this channel are used to transport AMR-encoded speech. This component defines default processing for all TDM connections on this channel. For each connection, this default processing may be overridden by the controller.
Mib	AmrBrag
Opt. Subcomp.	"COMPONENT Nsta Vgs AmrBrag Mtp2"
Dyn. Subcomp.	"COMPONENT Nsta Vgs AmrBrag WgBragDs0 (Ds0)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs AmrBrag Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *AmrBrag* component.
Mib	AmrBrag

ATTRIBUTE Nsta Vgs AmrBrag interfaceName (intName)

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies a link to a *Chan* component, which in turn specifies the timeslots for the *AmrBrag*. The attribute must specify an *Lp/n E1/n Chan/n* component. *Lp/n DS1/n Chan/n* components are not supported.
Mib	AmrBrag
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag defaultRate (defRate)

Access	Read: All Write: All
Description	This attribute specifies the AMR encoding rate to be used for a voice call when no rate is defined during call setup via the call setup protocol.
Mib	AmrBrag
Values	Decimal (12.20)
Units	kbit/s
Default	12.20

ATTRIBUTE Nsta Vgs AmrBrag tdmLogLaw (muALaw)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the G.711 *tdmLogLaw* to use on the TDM side of an NSTA trunk. If set to ***autoConfigured***, then the value used is derived from the facility, namely ***muLaw*** is used for *DS1* trunks, while ***aLawEbi*** would be used by *E1* trunks. For *E1* trunks, ***muLaw*** is not permitted. ***muLaw*** - use muLaw companding, not supported on E1 trunks ***aLawEbi*** - use aLawEbi companding

aLawAbi - use aLawAbi companding
autoConfigured - use companding law appropriate for facility

Mib: AmrBrag

Values:
muLaw
aLawEbi
autoConfigured
aLawAbi

Default: autoConfigured

ATTRIBUTE Nsta Vgs AmrBrag lossIntegrationPeriod (intPeriod)

Access:
Read: All
Write: All

Description: This attribute specifies the interval of time for which a loss of packet condition must persist before the corresponding call is dropped.

A value of ***disabled*** specifies that packet loss integration is disabled and therefore call connections will not be dropped due to packet loss.

Mib: AmrBrag

Values:
Decimal (1..50)
disabled

Units: seconds

Default: 5

ATTRIBUTE Nsta Vgs AmrBrag uplinkGain (uGain)

Access:
Read: All
Write: All

Description: This attribute specifies the gain or loss to be applied to the TDM uplink. Uplink refers to the connection from the RNC to the MSC.

Mib: AmrBrag

Values: Signed (-15..15)

Units	dB
Default	0

ATTRIBUTE Nsta Vgs AmrBrag downlinkGain (dGain)

Access	Read: All Write: All
Description	This attribute specifies the gain or loss to be applied to the TDM downlink. Downlink refers to the connection from the MSC to the RNC.
Mib	AmrBrag
Values	Signed (-15..15)
Units	dB
Default	0

ATTRIBUTE Nsta Vgs AmrBrag echoCancellation (eCan)

Access	Read: All Write: All
Description	This attribute enables or disables G.168 echo cancellation. The operator may desire to disable this feature if external third-party echo canceller equipment is used in the network. Enabling two echo cancellers within the same network path is not recommended as it may adversely affect voice quality.
Mib	AmrBrag
Values	disabled enabled
Default	enabled

ATTRIBUTE Nsta Vgs AmrBrag minimumEchoReturnLoss (minEchoRetLoss)

Access	Read: All Write: All

Description	This attribute specifies the minimum echo return loss that can be expected on the line. This attribute has no effect if *echoCancellation* is ***disabled.***
Mib	AmrBrag
Values	Decimal (3; 6)
Units	dB
Default	3

ATTRIBUTE Nsta Vgs AmrBrag echoCancelComfortNoiseGeneration (eCanComNoiseGen)

Access	Read: All Write: All
Description	This attribute enables or disables comfort noise generation for the echo cancellation feature. This attribute has no effect if *echoCancellation* is ***disabled***.
Mib	AmrBrag
Values	disabled enabled
Default	enabled

ATTRIBUTE Nsta Vgs AmrBrag echoCancellationTailLength (eCanTail)

Access	Read: All Write: All
Description	This attribute specifies the echo cancellation tail length applied to all timeslots. This attribute has no effect if *echoCancellation* is ***disabled***.
Mib	AmrBrag
Values	Decimal (64)
Units	msec
Default	64

ATTRIBUTE Nsta Vgs AmrBrag backgroundNoiseConditioning (bnc)

Access	Read: All Write: All
Description	This attribute enables or disables background noise conditioning and low-pass filtering. ***disabled*** - background noise conditioning is disabled ***enabled*** - background noise conditioning is enabled. ***enabledLowPass*** - background noise conditioning and low-pass filtering are enabled. The background noise conditioning algorithm has an optional post-processing feature that performs low-pass filtering on the noise conditioned signal. Depending on the presence of any other third-part voice quality devices within the network, the operator may desire to disable low-pass filtering to prevent any voice quality degradation due to feature interaction.
Mib	AmrBrag
Values	disabled enabled enabledLowPass
Default	disabled

ATTRIBUTE Nsta Vgs AmrBrag uplinkAutomaticGainControl (upAgc)

Access	Read: All Write: All
Description	This attribute enables or disables Automatic Gain Control (AGC) in the uplink direction. This voice quality feature should be enabled if the operator desires to control variations in call volume in the uplink direction.
Mib	AmrBrag
Values	disabled enabled
Default	disabled

ATTRIBUTE Nsta Vgs AmrBrag uplinkAgcTargetLevel (upAgcTargLev)

Access	Read: All Write: All
Description	This attribute specifies the target signal power level of the automatic gain control feature in the uplink direction. Automatic Gain Control (AGC) attempts to maintain a consistent call volume at the specified target level. AGC is performed on the signal using this target value before *uplinkGain* is applied.
Mib	AmrBrag
Values	Signed (-30..-9)
Units	dBm0
Default	-19

ATTRIBUTE Nsta Vgs AmrBrag uplinkAgcMaximumLoss (upAgcMaxLoss)

Access	Read: All Write: All
Description	This attribute specifies the maximum loss that can be applied to any uplink frame by the Automatic Gain Control (AGC) feature. By specifying the maximum loss that AGC can apply to any given frame, this value affects how quickly variations in call volume can be adjusted toward the *upAgcTargLev* when a signal power loss is required for the adjustment.
Mib	AmrBrag
Values	Signed (-14..-1)
Units	dB
Default	-10

ATTRIBUTE Nsta Vgs AmrBrag uplinkAgcMaximumGain (upAgcMaxGain)

Access	Read: All Write: All

Description	This attribute specifies the maximum gain that can be applied to any uplink frame by the Automatic Gain Control (AGC) feature. By specifying the maximum gain that AGC can apply to any given frame, this value affects how quickly variations in call volume can be adjusted toward the *upAgcTargLev* when a signal power gain is required for the adjustment.
Mib	AmrBrag
Values	Decimal (1..14)
Units	dB
Default	10

ATTRIBUTE Nsta Vgs AmrBrag downlinkAutomaticGainControl (dnAgc)

Access	Read: All Write: All
Description	This attribute enables or disables Automatic Gain Control (AGC) in the downlink direction. This voice quality feature should be enabled if the operator desires to control variations in call volume in the downlink direction.
Mib	AmrBrag
Values	disabled enabled
Default	disabled

ATTRIBUTE Nsta Vgs AmrBrag downlinkAgcTargetLevel (dnAgcTargLev)

Access	Read: All Write: All
Description	This attribute specifies the target signal power level of the automatic gain control feature in the downlink direction. Automatic Gain Control (AGC) attempts to maintain a consistent call volume at the specified target level. AGC is performed on the signal using this target value before *downlinkGain* is applied.

Mib	AmrBrag
Values	Signed (-30..-9)
Units	dBm0
Default	-19

ATTRIBUTE Nsta Vgs AmrBrag downlinkAgcMaximumLoss (dnAgcMaxLoss)

Access	Read: All Write: All
Description	This attribute specifies the maximum loss that can be applied to any downlink frame by the Automatic Gain Control (AGC) feature. By specifying the maximum loss that AGC can apply to any given frame, this value affects how quickly variations in call volume can be adjusted toward the *dnAgcTargLev* when a signal power loss is required for the adjustment.
Mib	AmrBrag
Values	Signed (-14..-1)
Units	dB
Default	-10

ATTRIBUTE Nsta Vgs AmrBrag downlinkAgcMaximumGain (dnAgcMaxGain)

Access	Read: All Write: All
Description	This attribute specifies the maximum gain that can be applied to any downlink frame by the Automatic Gain Control (AGC) feature. By specifying the maximum gain that AGC can apply to any given frame, this value affects how quickly variations in call volume can be adjusted toward the *dnAgcTargLev* when a signal power gain is required for the adjustment.
Mib	AmrBrag
Values	Decimal (1..14)
Units	dB

Default 10

ATTRIBUTE Nsta Vgs AmrBrag disContinuousTransmission (dtx)

Access
Read: All
Write: All

Description

This attribute enables or disables the DTX feature of the AMR speech encoder in the downlink direction. In the uplink direction, the AMR speech decoder is capable of handling DTX SID and No Data frames.

DTX should be enabled only if it is supported by the RNC. When enabled, two modes are supported. These modes specify how to handle the scenario that occurs when no data is being transmitted.

disabled - disable DTX

enabledSilent - enable DTX and transmit nothing when no data is being transmitted.

enabledIuNoData - enable DTX and transmit empty IuUP frames when no data is being transmitted.

Mib AmrBrag

Values
disabled
enabledSilent
enabledIuNoData

Default disabled

ATTRIBUTE Nsta Vgs AmrBrag backgroundNoiseReduction (bnr)

Access
Read: All
Write: All

Description

This attribute enables or disables background noise reduction.

The operator may desire to disable this feature if external third-party voice quality equipment that performs a a similar function is used in the network. Performing background noise reduction more than once may degrade voice quality.

Mib	AmrBrag
Values	disabled enabled
Default	disabled

ATTRIBUTE Nsta Vgs AmrBrag mobileEchoControl (mec)

Access	Read: All Write: All
Description	This attribute enables or disables mobile echo control. The operator may desire to disable this feature if external third-party voice quality equipment that performs a a similar function is used in the network. Performing mobile echo control more than once may degrade voice quality.
Mib	AmrBrag
Values	disabled enabled
Default	disabled

ATTRIBUTE Nsta Vgs AmrBrag echoCancellationFixedDelay (eCanFixDel)

Access	Read: All Write: All
Description	This attribute specifies the fixed delay offset for the echo cancellation tail length applied to all timeslots. This attribute has no effect if *echoCancellation* is ***disabled***.
Mib	AmrBrag
Values	Decimal (0..16)
Units	msec
Default	0

ATTRIBUTE Nsta Vgs AmrBrag mobileEchoControlFixedDelay (mecFixDel)

Access	Read: All Write: All
Description	This attribute specifies the fixed delay offset for the mobile echo control tail length applied to all timeslots. The value specified must be a multiple of 20 msec. This attribute has no effect if *mobileEchoControl* is ***disabled***.
Mib	AmrBrag
Values	Decimal (100; 120; 140; 160; 180; 200; 220; 240; 260; 280; 300; 320)
Units	msec
Default	220

ATTRIBUTE Nsta Vgs AmrBrag tandemFreeOperation (tfo)

Access	Read: All Write: All
Description	This attribute enables or disables the Tandem Free Operation (TFO) feature of the Transcoding and Rate Adaptation Unit (TRAU). The operator may desire to enable this feature if he wants to avoid a voice quality degradation introduced by the speech encoding and decoding processes in the Core Networks and improve the end-to-end voice quality. When TFO is enabled, the TRAU operates in TFO mode when the terminating network supports it. The operator may desire to disable this feature if the originating or terminating Core Networks does not support Tandem Free Operation.
Mib	AmrBrag
Values	disabled enabled
Default	disabled

ATTRIBUTE Nsta Vgs AmrBrag downlinkAutomaticGainControlTfo (dnAgcTfo)

Access	Read: All Write: All
Description	This attribute enables or disables Automatic Gain Control (AGC) in the downlink direction for Tandem Free Operation (TFO) mode. AGC in the downlink may be turned off for TFO mode and still on for the normal operations. This voice quality feature should be enabled if the operator desires to control variations in call volume in the downlink direction for TFO mode. This attribute has no effect if *tandemFreeOperation* is ***disabled***. ***disabled*** - downlink AGC is disabled for TFO mode ***enabled*** - downlink AGC is enabled for TFO mode ***sameAsNormalMode*** - downlink AGC is enabled for TFO mode if it is enabled for normal mode; otherwise, it is disabled.
Mib	AmrBrag
Values	disabled enabled sameAsNormalMode
Default	sameAsNormalMode

ATTRIBUTE Nsta Vgs AmrBrag uplinkAutomaticGainControlTfo (upAgcTfo)

Access	Read: All Write: All
Description	This attribute enables or disables Automatic Gain Control (AGC) in the uplink direction for Tandem Free Operation (TFO) mode. AGC in the uplink may be turned off for TFO mode and still on for the normal operations. This voice quality feature should be enabled if the operator desires to control variations in call volume in the uplink direction for TFO mode. This attribute has no effect if *tandemFreeOperation* is ***disabled***. ***disabled*** - uplink AGC is disabled for TFO mode ***enabled*** - uplink AGC is enabled for TFO mode

sameAsNormalMode - uplink AGC is enabled for TFO mode if it is enabled for normal mode; otherwise, it is disabled.

Mib: AmrBrag

Values:
disabled
enabled
sameAsNormalMode

Default: sameAsNormalMode

ATTRIBUTE Nsta Vgs AmrBrag mobileEchoControlTfo (mecTfo)

Access:
Read: All
Write: All

Description: This attribute enables or disables mobile echo control in Tandem Free Operation (TFO) mode. Mobile Echo Control uplink may be turned off for TFO mode and still on for the normal operations.

The operator may desire to enable this feature if it wants to detect and suppress acoustic echoes originating from the mobile user equipment.

The operator may desire to disable this feature if external third-party voice quality equipment that performs a similar function is used in the network. Performing mobile echo control more than once may degrade voice quality. This attribute has no effect if *tandemFreeOperation* is ***disabled***.

disabled - mobile echo control is disabled for TFO mode
enabled - mobile echo control is enabled for TFO mode
sameAsNormalMode - mobile echo control is enabled for TFO mode if it is enabled for normal mode; otherwise, it is disabled.

Mib: AmrBrag

Values:
disabled
enabled
sameAsNormalMode

Default: sameAsNormalMode

ATTRIBUTE Nsta Vgs AmrBrag iuTimeAlignment (iuTimeAlig)

Access	Read: All Write: All
Description	This attribute enables or disables the time alignment algorithm for the Iu-User Plane (Iu-UP) feature of the Transcoding and Rate Adaptation Unit (TRAU). The operator may desire to enable this feature to minimize the buffer delay in the Radio Network Controller (RNC) by controlling the downlink transmission timing in the peer Iu-UP protocol layer entity. The proper operation of this feature may be hindered by the standards interpretation of the RNC vendor. The operator may desire to leave this feature disabled if Iu Time Alignment standards interpretation differences are discovered with the RNC vendor.
Mib	AmrBrag
Values	disabled enabled
Default	disabled

ATTRIBUTE Nsta Vgs AmrBrag bufferSize (bufSize)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the capacity of the packet delay variation (PDV) buffer. The PDV buffer is sized to store the amount of data that can be transmitted to the TDM network in the specified period of time. To ensure end-to-end voice quality, a PDV buffer is provided at the output of the uplink RNC-TRAU network to filter out ATM AAL2 packet jitter and maintain the isochronous nature of the voice traffic. To ensure that PDV can be tolerated, it is necessary to initialize this buffer with a reserve of transmitted data. The size of this reserve is defined by the *pdvt* attribute, and the size of the

buffer that holds this reserve is specified by the *bufSize* attribute.

The size of the initialization reserve is set to the amount of data that can be transmitted to the TDM network in the time specified by the *pdvt* attribute. There should be enough data in the PDV buffer to allow transmission for the period of time specified by the *pdvt* attribute before buffer underflow due to packet delay occurs. When packets experience excessive delay, the buffer underflows, causing idle or comfort noise to be transmitted. When packets arrive more quickly, the buffer capacity above the initialization reserve determines the amount of data that can be stored before buffer overflow occurs.

This attribute must be at least 20 msec greater than the value specified by the *pdvt* attribute. Typically the *bufSize* is twice that of the *pdvt* value.

Mib	AmrBrag
Values	Decimal (40..80)
Units	msec
Default	80

ATTRIBUTE Nsta Vgs AmrBrag packetDelayVariationTolerance (pdvt)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the packet delay variation tolerance. Packet delay variation tolerance specifies the maximum packet arrival jitter that the reassembly process tolerates in the packet stream without producing errors on the TDM interface. This attribute, together with the *bufSize* attribute, can be configured to optimize the jitter against absolute delay trade-off in various network configurations. Increasing the value of this attribute will increase the delay while optimizing the jitter.
Mib	AmrBrag

Values	Decimal (10..60)
Units	msec
Default	25

ATTRIBUTE Nsta Vgs AmrBrag echoCancelHybridDetector (eCanHybDet)

Access	Read: All Write: All
Description	This attribute enables or disables the hybrid detector for the echo cancellation feature. The hybrid detector will temporarily disable the echo canceller when a digital call is detected. This attribute normally specifies enabled and should be changed only on the advice of Nortel support personnel.
Mib	AmrBrag
Values	disabled enabled
Default	enabled

ATTRIBUTE Nsta Vgs AmrBrag backgroundNoiseConditioningTfo (bncTfo)

Access	Read: All Write: All
Description	This attribute enables or disables background noise conditioning and low-pass filtering for Tandem Free Operation (TFO) mode. The background noise conditioning algorithm has an optional post-processing feature that performs low-pass filtering on the noise conditioned signal. Depending on the presence of any other third-party voice quality devices within the network, the operator may desire to disable low-pass filtering to prevent any voice quality degradation due to feature interaction. This attribute has no effect if *tandemFreeOperation* attribute is set to ***disabled***. This attribute supports the following modes:

disabled - The background noise conditioning is disabled for TFO mode.
enabled - The background noise conditioning is enabled for TFO mode.
enabledLowPass - The background noise conditioning and low-pass filtering are enabled for TFO mode.
sameAsNormalMode - The background noise conditioning is enabled for TFO mode if it is enabled for normal mode; otherwise, it is disabled.

Mib: AmrBrag

Values:
disabled
enabled
enabledLowPass
sameAsNormalMode

Default: sameAsNormalMode

ATTRIBUTE Nsta Vgs AmrBrag dejitterBuffAdaptWindow (djBuffAdptWndw)

Access:
Read: All
Write: All

Description: This attribute specifies the window size over which the UTRAN jitter is estimated for de-jitter buffer level adaptation.

A value of 0 seconds specifies that de-jitter buffer level adaptation is disabled. The value of this attribute is rounded to the nearest multiple of 0.25.

Mib: AmrBrag

Values:
Decimal (0.25..30.00)
disabled

Units: seconds

Default: 1.50

ATTRIBUTE Nsta Vgs AmrBrag dejitterBuffAdaptMargin (djBuffAdptMarg)

Access:
Read: All
Write: All

Description	This attribute specifies the margin for the dynamic de-jitter buffer level target. The de-jitter buffer level is adjusted whenever it exceeds the target level by the specified margin. The value of this attribute is rounded to the nearest multiple of 0.5 ms. This attribute has no effect if *dejitterBuffAdaptWindow* attribute is set to ***disabled***.
Mib	AmrBrag
Values	Decimal (0.5..25.0)
Units	msec
Default	1.0

GROUP Nsta Vgs AmrBrag OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AmrBrag

ATTRIBUTE Nsta Vgs AmrBrag adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: AmrBrag

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Nsta Vgs AmrBrag operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: AmrBrag

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nsta Vgs AmrBrag usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: AmrBrag

Values:
idle
active (activ)
busy

Default: idle

GROUP Nsta Vgs AmrBrag Operational (Oper)

Properties: Operational

Description: This group contains attributes which indicate the causes of *AmrBrag* or *CsdBrag* component failure.

Mib: AmrBrag

ATTRIBUTE Nsta Vgs AmrBrag failureCause (failCause)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the cause for failure.

The failure cause values are:

serviceChanNotReady - the TDM LP is down, or waiting for the CHAN to establish communication.
atmConnectionNotReady - the ATM LP is down, or has not established communication.
operatorLock - a component on which this *Brag* depends is locked by the operator.
internalError - an internal error, which can not be determined has occurred.
outOfResource - the current demand has exceeded the capacity of the hardware resources.
vspNotReady - the VSP card is down, or has not established

communication.
activating - component creation is currently in progress.
none - no failure.

Mib AmrBrag

Values
none
serviceChanNotReady
atmConnectionNotReady
operatorLock
internalError
outOfResource
vspNotReady
activating

Default none

COMPONENT Nsta Vgs AmrBrag Mtp2

Instance Decimal (1..31)

Groups
"GROUP Nsta Vgs AmrBrag Mtp2 Provisioned (Prov)"
"GROUP Nsta Vgs AmrBrag Mtp2 OsiState (State)"
"GROUP Nsta Vgs AmrBrag Mtp2 Operational (Oper)"

"COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway AmrBasicRateGroup Mtp2"

Scope Device

Description
Nsta/n Vgs AmrBrag Mtp2/<timeslot>
Nsta/n Vgs CsdBrag Mtp2/<timeslot>

This component represents the MTP2 transport layer between the Call Server and the Signalling Gateway.

The instance of the component represents the signalling timeslot on the TDM connection.

	No more than six *Mtp2* components may be provisioned under a given *Nsta Vgs* hierarchy.
Mib	AmrBrag
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs AmrBrag Mtp2 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the *Mtp2* component.
Mib	AmrBrag

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 layer3IpAddress (l3IpAddr)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the remote IP address of the layer 3 entity that owns this link. This address must match the IP address provisioned in the corresponding *Mtp3* component specified by its *linkToPort* attribute. Changing this attribute will cause the link to be restarted.
Mib	AmrBrag
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 layer3Port (l3Port)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the remote UDP port of the layer 3 entity that owns this link. This port must match the UDP port provisioned in the corresponding *Mtp3* component specified by its *linkToPort* attribute. Changing this attribute will cause the link to be restarted.
Mib	AmrBrag
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 udpPortConnection (udpConn)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the link to the *Nsta Vgs CtrlConn UdpPort* component that defines the UDP port access to the IP network for connection to the layer 3 user. It should match the UDP port provisioned in the corresponding *Mtp3 Linkset Link* component specified by its *remoteUdpPort* attribute. A port must be specified for *Check Prov* to succeed. Within a single *Nsta Vgs* hierarchy, at most three *Mtp2* components can link to *UdpPort* components under the *Ctrl/mg* component, and at most three *Mtp2* components can link to *UdpPort* components under the *Ctrl/sg* component. Changing this attribute will cause the link to be restarted.
Mib	AmrBrag
Values	Link (Service, linkToApplication)

Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 alignmentReadyTimer (t1)

Access	Read: All Write: All
Description	This attribute specifies the value of the Alignment Ready timer defined in ITU-T recommendation Q.703. This timer is started when the link reaches the “Alignment Ready” state. This timer stops upon entering the “In Service” state. Reception of a FISU or MSU while in the “Alignment Ready” state causes the state transition to the “In Service” state. A timer expiry causes the state to transition to the “Idle” state. The number of expiries of this timer is counted by the attribute *alignmentReadyTimeouts*.
Mib	AmrBrag
Values	Decimal (40..50)
Units	seconds
Default	45

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 notAlignedTimer (t2)

Access	Read: All Write: All
Description	This attribute specifies the value of the “Not Aligned “timer defined in ITU-T recommendation Q.703. It is used during initial alignment. This timer is started when the link enters the “Not Aligned” state which begins sending status indication “O”. If the timer expires before receiving a status indication “O”, “N” or “E”, alignment is stopped and the “Idle” state is entered.

Otherwise the link proceeds to the “Aligned” state.

The number of expiries of this timer is counted by the attribute *notAlignedTimeouts*.

Mib	AmrBrag
Values	Decimal (5..150)
Units	seconds
Default	60

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 alignedTimer (t3)

Access	Read: All Write: All
Description	This attribute specifies the value of the Timer “aligned” defined in ITU-T recommendation Q.703. It is used during initial alignment. This timer is started when the link enters the “Aligned” state which begins sending status indication “N” or “E”, depending on whether the link is in normal or emergency alignment mode respectively. If the timer expires before a status indication “N” or “E” is received, alignment is stopped and the “Idle” state is entered. Otherwise the link proceeds to the “Proving” state. The number of expiries of this timer is counted by the attribute *alignedTimeouts.*
Mib	AmrBrag
Values	Decimal (1000..2000)
Units	msec
Default	1500

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 normalProvingTimer (t4n)

Access	Read: All Write: All
Description	This attribute specifies the value of the proving period timer for normal alignment as defined in ITU-T recommendation Q.703. It is used during initial alignment. It is started when the link enters the “Proving” state. In normal alignment mode, proving must last for a period specified by this timer before the link can enter the “Aligned Ready” state. Expiry of this timer indicates a successful proving period unless the proving period has been previously aborted up to four times. A higher value for this timer ensures a more stable link, but increases the time taken to bring the link in service.
Mib	AmrBrag
Values	Decimal (7500..9500)
Units	msec
Default	8500

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 emergencyProvingTimer (t4e)

Access	Read: All Write: All
Description	This attribute specifies the value of the proving period timer for emergency alignment as defined in ITU-T recommendation Q.703. It is used during initial alignment. It is started when the link enters the “Proving” state. In emergency alignment mode, proving must last for a period specified by this timer before the link can enter the “Aligned Ready” state. Expiry of this timer indicates a successful proving period unless the proving period has been previously aborted up to four times. A higher value for this timer ensures a more stable link, but increases the time taken to bring the link in service.

Mib	AmrBrag
Values	Decimal (1000..2000)
Units	msec
Default	1500

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 sendingSibTimer (t5)

Access	Read: All Write: All
Description	This attribute specifies the value of the “Sending SIB” timer defined in ITU-T recommendation Q.703. It is used for congestion control. The value of this timer determines the interval at which the receiving end of a signalling link, which detects a congestion situation returns a status indication “B” to the remote transmitting end of the link. This causes the remote end of the link to stop sending messages until the congestion condition goes away. The number of times a status indication “B”, that is, a congestion indication is sent is counted by the attribute *congestionIndicationTx*. The number of times a congestion situation is detected is counted by the attribute *congestionDetects*.
Mib	AmrBrag
Values	Decimal (80..120)
Units	msec
Default	100

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 remoteCongestionTimer (t6)

Access	Read: All Write: All
Description	This attribute specifies the value of the remote congestion timer defined in ITU-T recommendation Q.703. This timer begins when a status indication “B” is received,

indicating congestion at the remote end.

This timer is stopped when the congestion abates at the signalling point, as indicated by a message in the retransmit buffer being acknowledged.

Upon timer expiration, a link failure indication is generated.

The number of times a status indication “B” is received, indicating congestion at the remote end, is counted by the attribute *remoteCongestionIndicationsRx.*

Mib	AmrBrag
Values	Decimal (3000..6000)
Units	msec
Default	4500

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 ackTimer (t7)

Access	Read: All Write: All
Description	This attribute specifies the value of the “Excessive delay of acknowledgment” timer defined in ITU-T recommendation Q.703. It is used during normal sending and receiving of MSUs. This timer starts when the first MSU is placed in the retransmit buffer and is pending acknowledgment. This timer is stopped after the last MSU in the retransmit buffer is acknowledged. This timer is restarted after each acknowledgment when the retransmit buffer is non-empty. It is also restarted each time a link status indication unit “B” is received. If the timer expires, a link failure indication is generated. The number of expiries of this timer is counted by the attribute *ackTimeouts.*

Mib	AmrBrag
Values	Decimal (500..2000)
Units	msec
Default	1250

GROUP Nsta Vgs AmrBrag Mtp2 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	AmrBrag

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	AmrBrag

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	AmrBrag
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	AmrBrag

Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs AmrBrag Mtp2 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Mtp2* component.
Mib	AmrBrag

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 alignmentReadyTimeouts (t1Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the Alignment Ready timer (T1) represented by the attribute *alignmentReadyTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 notAlignedTimeouts (t2Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the “Not Aligned “timer (T2) represented by the attribute *notAlignedTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 alignedTimeouts (t3Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the Aligned Timer (T3) represented by the attribute *alignedTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 congestionDetects (congDet)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times congestion was detected at the local end of the signalling link. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 congestionIndicationsTx (congIndTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of congestion indications transmitted. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 remoteCongestionIndicationsRx (remCongIndRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of congestion indications received from the remote end. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 ackTimeouts (t7Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the T7 Timer represented by the attribute *ackTimer*. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 insvFailures (insvFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of in-service link outages. It does not include failures which occur during the alignment process. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of message signal units transmitted. This includes the number of message signal units retransmitted, indicated by the attribute *msuRetransmits*. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuRetransmits (msuReTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of message signal units retransmitted because of negative acknowledgments. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of message signal units received. This includes the MSUs with errors, indicated by the attribute *msuErrors*. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuErrors (msuErrs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of ingress signal units discarded because of sequence number, length or CRC errors. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuOctetsTx (octTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of layer 3 payload octets transmitted. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuOctetsRx (octRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of layer 3 payload octets received. The counter wraps to 0 when it exceeds its maximum value.
Mib	AmrBrag

Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway AmrBasicRateGroup Mtp2
Description	The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway AmrBasicRateGroup Mtp2 component.

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 insvFailures

Description	This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msusTx

Description	This attribute indicates the number of message signal units transmitted over the collection interval. This includes the MSUs retransmitted, indicated by the attribute *msuRetransmits.*
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuRetransmits (msuReTx)

Description	This attribute indicates the number of message signal units retransmitted because of negative acknowledgments over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msusRx

Description	This attribute indicates the number of message signal units received over the collection interval. This includes the MSUs with errors, indicated by the attribute *msuErrors.*
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuErrors

Description	This attribute indicates the number of message signal units discarded because of sequence number, length or CRC errors over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuOctetsTx

Description	This attribute indicates the number of payload MSU octets transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuOctetsRx

Description	This attribute indicates the number of payload MSU octets received over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Nsta Vgs AmrBrag WgBragDs0 (Ds0)

Instance	Decimal (1..31)
Groups	"GROUP Nsta Vgs AmrBrag Ds0 Operational (Oper)"
Scope	Device
Description	This component represents a DS0 timeslot.
Mib	AmrBrag
Common Verbs	Help List Display

GROUP Nsta Vgs AmrBrag Ds0 Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *NstaVgsWgBragDs0* component.
Mib	AmrBrag

ATTRIBUTE Nsta Vgs AmrBrag Ds0 timeslotController (controller)

Access	Read: All Write: Illegal
Description	This attribute indicates the current timeslot controller. If the DS0 is used as a bearer channel, it indicates the associated *MgIfCtrl* component. If the DS0 is used for signalling, this attribute indicates the *Mtp2* component used for signalling. If the DS0 is not in use, this attribute is empty.
Mib	AmrBrag
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs CsdBasicRateGroup (CsdBrag)

Instance	Decimal (0..127)
Groups	"GROUP Nsta Vgs CsdBrag Provisioned (Prov)" "GROUP Nsta Vgs CsdBrag OsiState (State)" "GROUP Nsta Vgs CsdBrag Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs CsdBasicRateGroup/n* This component represents a number of TDM connections from the Voice Services Processor (VSP) to the TDM network. The TDM connections are all associated with the same TDM interface. A particular *CsdBrag* is associated with a single E1 channel. Connections on this channel are used to transport CSD. This component defines default processing for all TDM connections

on this channel. For each connection, this default processing may be overridden by the controller.

Mib	CsdBrag
Opt. Subcomp.	"COMPONENT Nsta Vgs CsdBrag Mtp2"
Dyn. Subcomp.	"COMPONENT Nsta Vgs CsdBrag WgBragDs0 (Ds0)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs CsdBrag Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *NstaVgsWgCsdBasicRateGroup* component.
Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag interfaceName (intName)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies a link to a *Chan* component, which in turn specifies the timeslots for the *CsdBrag*. This attribute must specify an *Lp/n E1/n Chan/n* component. *Lp/n DS1/n Chan/n* components are not supported.
Mib	CsdBrag
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag defaultMode (defMode)

Access	Read: All Write: All
Description	This attribute specifies the operational mode to be used for a CSD call when no mode is defined during call setup via the call setup protocol. ***transparent*** - operate in transparent CSD mode when no mode is defined. ***nonTransparent*** - operate in non-transparent CSD mode when no mode is defined.
Mib	CsdBrag
Values	transparent nonTransparent
Default	transparent

ATTRIBUTE Nsta Vgs CsdBrag defaultRate (defRate)

Access	Read: All Write: All
Description	This attribute specifies the encoding rate to be used for a CSD call when no rate is defined during call setup via the call setup protocol. Transparent mode only supports a rate of ***64.0*** kbit/s, and nontransparent mode only supports ***14.4*** kbit/s.
Mib	CsdBrag
Values	Decimal (14.40; 64.00)
Units	kbit/s
Default	64.00

ATTRIBUTE Nsta Vgs CsdBrag lossIntegrationPeriod (intPeriod)

Access	Read: All Write: All

Description	This attribute specifies the interval of time for which a loss of packet condition must persist before the corresponding call is dropped. A value of ***disabled*** specifies that packet loss integration is disabled, and therefore call connections will not be dropped due to packet loss.
Mib	CsdBrag
Values	Decimal (1..50) disabled
Units	seconds
Default	5

ATTRIBUTE Nsta Vgs CsdBrag bufferSize (bufSize)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the capacity of the packet delay variation (PDV) buffer. The PDV buffer will be sized to store the amount of data that can be transmitted to the TDM network in the specified period of time. To ensure end-to-end voice quality, a PDV buffer is provided at the output of the uplink RNC-TRAU network to filter out ATM AAL2 packet jitter. To ensure that PDV can be tolerated, it is necessary to initialize this buffer with a reserve of transmitted data. The size of this reserve is defined by the *pdvt* attribute, and the size of the buffer that holds this reserve is specified by the *bufSize* attribute. The size of the initialization reserve is set to the amount of data that can be transmitted to the TDM network in the time specified by the *pdvt* attribute. There should be enough data in the PDV buffer to allow transmission for the period of time specified by the *pdvt* attribute before buffer underflow due to packet delay occurs. When packets experience excessive delay, the buffer

	underflows, causing fill sequences to be transmitted. When packets arrive more quickly, the buffer capacity above the initialization reserve determines the amount of data that can be stored before buffer overflow occurs. This attribute must be at least 40 msec greater than the value of the *pdvt* attribute. Typically the *bufSize* is twice that of the *pdvt* value.
Mib	CsdBrag
Values	Decimal (40..160)
Units	msec
Default	100

ATTRIBUTE Nsta Vgs CsdBrag packetDelayVariationTolerance (pdvt)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the packet delay variation tolerance. Packet delay variation tolerance specifies the maximum packet arrival jitter that the reassembly process tolerates in the packet stream without producing errors on the TDM interface. This attribute, together with the *bufSize* attribute, can be configured to optimize the jitter against absolute delay trade-off in various network configurations.
Mib	CsdBrag
Values	Decimal (10..120)
Units	msec
Default	50

GROUP Nsta Vgs CsdBrag OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	CsdBrag
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs CsdBrag operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	CsdBrag
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs CsdBrag usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	CsdBrag
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs CsdBrag Operational (Oper)

Properties	Operational

Description	This group contains attributes which indicate the causes of *AmrBrag* or *CsdBrag* component failure.
Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag failureCause (failCause)

Access	Read: All Write: Illegal
Description	This attribute indicates the cause for failure. The failure cause values are: ***serviceChanNotReady*** - the TDM LP is down, or waiting for the CHAN to establish communication. ***atmConnectionNotReady*** - the ATM LP is down, or has not established communication. ***operatorLock*** - a component on which this *Brag* depends is locked by the operator. ***internalError*** - an internal error, which can not be determined has occurred. ***outOfResource*** - the current demand has exceeded the capacity of the hardware resources. ***vspNotReady*** - the VSP card is down, or has not established communication. ***activating*** - component creation is currently in progress. ***none*** - no failure.
Mib	CsdBrag
Values	none serviceChanNotReady atmConnectionNotReady operatorLock internalError outOfResource vspNotReady activating
Default	none

COMPONENT Nsta Vgs CsdBrag Mtp2

Instance	Decimal (1..31)
Groups	"GROUP Nsta Vgs CsdBrag Mtp2 Provisioned (Prov)" "GROUP Nsta Vgs CsdBrag Mtp2 OsiState (State)" "GROUP Nsta Vgs CsdBrag Mtp2 Operational (Oper)"

"COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway CsdBasicRateGroup Mtp2"

Scope	Device
Description	Nsta/n Vgs AmrBrag Mtp2/<timeslot> Nsta/n Vgs CsdBrag Mtp2/<timeslot> This component represents the MTP2 transport layer between the Call Server and the Signalling Gateway. The instance of the component represents the signalling timeslot on the TDM connection. No more than six *Mtp2* components may be provisioned under a given *Nsta Vgs* hierarchy.
Mib	CsdBrag
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs CsdBrag Mtp2 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes for the *Mtp2* component.
Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 layer3IpAddress (l3IpAddr)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the remote IP address of the layer 3 entity that owns this link. This address must match the IP address provisioned in the corresponding *Mtp3* component specified by its *linkToPort* attribute. Changing this attribute will cause the link to be restarted.
Mib	CsdBrag
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 layer3Port (l3Port)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the remote UDP port of the layer 3 entity that owns this link. This port must match the UDP port provisioned in the corresponding *Mtp3* component specified by its *linkToPort* attribute. Changing this attribute will cause the link to be restarted.
Mib	CsdBrag
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 udpPortConnection (udpConn)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the link to the *Nsta Vgs CtrlConn UdpPort* component that defines the UDP port access to the IP network for connection to the layer 3 user. It should match the UDP port provisioned in the corresponding *Mtp3 Linkset Link* component specified by its *remoteUdpPort* attribute. A port must be specified for *Check Prov* to succeed. Within a single *Nsta Vgs* hierarchy, at most three *Mtp2* components can link to *UdpPort* components under the *Ctrl/mg* component, and at most three *Mtp2* components can link to *UdpPort* components under the *Ctrl/sg* component. Changing this attribute will cause the link to be restarted.
Mib	CsdBrag
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 alignmentReadyTimer (t1)

Access	Read: All Write: All
Description	This attribute specifies the value of the Alignment Ready timer defined in ITU-T recommendation Q.703. This timer is started when the link reaches the “Alignment Ready” state. This timer stops upon entering the “In Service” state. Reception of a FISU or MSU while in the “Alignment Ready” state causes the state transition to the “In Service” state. A timer expiry causes the state to transition to the “Idle” state.

The number of expiries of this timer is counted by the attribute *alignmentReadyTimeouts*.

Mib: CsdBrag

Values: Decimal (40..50)

Units: seconds

Default: 45

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 notAlignedTimer (t2)

Access: Read: All
Write: All

Description: This attribute specifies the value of the “Not Aligned “timer defined in ITU-T recommendation Q.703. It is used during initial alignment.

This timer is started when the link enters the “Not Aligned” state which begins sending status indication “O”.

If the timer expires before receiving a status indication “O”, “N” or “E”, alignment is stopped and the “Idle” state is entered. Otherwise the link proceeds to the “Aligned” state.

The number of expiries of this timer is counted by the attribute *notAlignedTimeouts*.

Mib: CsdBrag

Values: Decimal (5..150)

Units: seconds

Default: 60

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 alignedTimer (t3)

Access: Read: All
Write: All

Description: This attribute specifies the value of the Timer “aligned” defined in ITU-T recommendation Q.703. It is used during initial alignment.

This timer is started when the link enters the “Aligned” state which begins sending status indication “N” or “E”, depending on whether the link is in normal or emergency alignment mode respectively.

If the timer expires before a status indication “N” or “E” is received, alignment is stopped and the “Idle” state is entered. Otherwise the link proceeds to the “Proving” state.

The number of expiries of this timer is counted by the attribute *alignedTimeouts.*

Mib: CsdBrag

Values: Decimal (1000..2000)

Units: msec

Default: 1500

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 normalProvingTimer (t4n)

Access: Read: All
Write: All

Description: This attribute specifies the value of the proving period timer for normal alignment as defined in ITU-T recommendation Q.703. It is used during initial alignment.

It is started when the link enters the “Proving” state. In normal alignment mode, proving must last for a period specified by this timer before the link can enter the “Aligned Ready” state.

Expiry of this timer indicates a successful proving period unless the proving period has been previously aborted up to four times.

A higher value for this timer ensures a more stable link, but increases the time taken to bring the link in service.

Mib: CsdBrag

Values: Decimal (7500..9500)

Units	msec
Default	8500

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 emergencyProvingTimer (t4e)

Access	Read: All Write: All
Description	This attribute specifies the value of the proving period timer for emergency alignment as defined in ITU-T recommendation Q.703. It is used during initial alignment. It is started when the link enters the “Proving” state. In emergency alignment mode, proving must last for a period specified by this timer before the link can enter the “Aligned Ready” state. Expiry of this timer indicates a successful proving period unless the proving period has been previously aborted up to four times. A higher value for this timer ensures a more stable link, but increases the time taken to bring the link in service.
Mib	CsdBrag
Values	Decimal (1000..2000)
Units	msec
Default	1500

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 sendingSibTimer (t5)

Access	Read: All Write: All
Description	This attribute specifies the value of the “Sending SIB” timer defined in ITU-T recommendation Q.703. It is used for congestion control. The value of this timer determines the interval at which the receiving end of a signalling link, which detects a congestion situation returns a status indication “B” to the remote transmitting end of the link. This causes the remote end of the link to stop

sending messages until the congestion condition goes away.

The number of times a status indication “B”, that is, a congestion indication is sent is counted by the attribute *congestionIndicationTx*. The number of times a congestion situation is detected is counted by the attribute *congestionDetects*.

Mib	CsdBrag
Values	Decimal (80..120)
Units	msec
Default	100

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 remoteCongestionTimer (t6)

Access	Read: All Write: All
Description	This attribute specifies the value of the remote congestion timer defined in ITU-T recommendation Q.703. This timer begins when a status indication “B” is received, indicating congestion at the remote end. This timer is stopped when the congestion abates at the signalling point, as indicated by a message in the retransmit buffer being acknowledged. Upon timer expiration, a link failure indication is generated. The number of times a status indication “B” is received, indicating congestion at the remote end, is counted by the attribute *remoteCongestionIndicationsRx*.
Mib	CsdBrag
Values	Decimal (3000..6000)
Units	msec
Default	4500

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 ackTimer (t7)

Access	Read: All Write: All
Description	This attribute specifies the value of the “Excessive delay of acknowledgment” timer defined in ITU-T recommendation Q.703. It is used during normal sending and receiving of MSUs. This timer starts when the first MSU is placed in the retransmit buffer and is pending acknowledgment. This timer is stopped after the last MSU in the retransmit buffer is acknowledged. This timer is restarted after each acknowledgment when the retransmit buffer is non-empty. It is also restarted each time a link status indication unit “B” is received. If the timer expires, a link failure indication is generated. The number of expiries of this timer is counted by the attribute *ackTimeouts.*
Mib	CsdBrag
Values	Decimal (500..2000)
Units	msec
Default	1250

GROUP Nsta Vgs CsdBrag Mtp2 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	CsdBrag
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	CsdBrag

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	CsdBrag
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs CsdBrag Mtp2 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Mtp2* component.
Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 alignmentReadyTimeouts (t1Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the Alignment Ready timer (T1) represented by the attribute *alignmentReadyTimer*. The counter wraps to zero when it exceeds the maximum value.

Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 notAlignedTimeouts (t2Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the “Not Aligned “timer (T2) represented by the attribute *notAlignedTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 alignedTimeouts (t3Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the Aligned Timer (T3) represented by the attribute *alignedTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 congestionDetects (congDet)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times congestion was detected at the local end of the signalling link. The counter wraps to 0 when it exceeds its maximum value.

Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 congestionIndicationsTx (congIndTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of congestion indications transmitted. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 remoteCongestionIndicationsRx (remCongIndRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of congestion indications received from the remote end. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 ackTimeouts (t7Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the T7 Timer represented by the attribute *ackTimer*. The counter wraps to 0 when it exceeds its maximum value.

Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 insvFailures (insvFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of in-service link outages. It does not include failures which occur during the alignment process. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuTx

Access	Read: All Write: Illegal
Description	This attribute counts the number of message signal units transmitted. This includes the number of message signal units retransmitted, indicated by the attribute *msuRetransmits*. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuRetransmits (msuReTx)

Access	Read: All Write: Illegal

Description	This attribute counts the number of message signal units retransmitted because of negative acknowledgments. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuRx

Access	Read: All Write: Illegal
Description	This attribute counts the number of message signal units received. This includes the MSUs with errors, indicated by the attribute *msuErrors*. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuErrors (msuErrs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of ingress signal units discarded because of sequence number, length or CRC errors. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuOctetsTx (octTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of layer 3 payload octets transmitted. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuOctetsRx (octRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of layer 3 payload octets received. The counter wraps to 0 when it exceeds its maximum value.
Mib	CsdBrag
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway CsdBasicRateGroup Mtp2
Description	The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway CsdBasicRateGroup Mtp2 component.

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 insvFailures

Description	This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msusTx

Description	This attribute indicates the number of message signal units transmitted over the collection interval. This includes the MSUs retransmitted, indicated by the attribute *msuRetransmits.*
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuRetransmits (msuReTx)

Description	This attribute indicates the number of message signal units retransmitted because of negative acknowledgments over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msusRx

Description	This attribute indicates the number of message signal units received over the collection interval. This includes the MSUs with errors, indicated by the attribute *msuErrors.*
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuErrors

Description	This attribute indicates the number of message signal units discarded because of sequence number, length or CRC errors over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuOctetsTx

Description	This attribute indicates the number of payload MSU octets transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuOctetsRx

Description	This attribute indicates the number of payload MSU octets received over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Nsta Vgs CsdBrag WgBragDs0 (Ds0)

Instance	Decimal (1..31)

Groups	"GROUP Nsta Vgs CsdBrag Ds0 Operational (Oper)"
Scope	Device
Description	This component represents a DS0 timeslot.
Mib	CsdBrag
Common Verbs	Help List Display

GROUP Nsta Vgs CsdBrag Ds0 Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *NstaVgsWgBragDs0* component.
Mib	CsdBrag

ATTRIBUTE Nsta Vgs CsdBrag Ds0 timeslotController (controller)

Access	Read: All Write: Illegal
Description	This attribute indicates the current timeslot controller. If the DS0 is used as a bearer channel, it indicates the associated *MgIfCtrl* component. If the DS0 is used for signalling, this attribute indicates the *Mtp2* component used for signalling. If the DS0 is not in use, this attribute is empty.
Mib	CsdBrag
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs V5UserAdaption (V5ua)

Groups	"GROUP Nsta Vgs V5ua Provisioned (Prov)" "GROUP Nsta Vgs V5ua OsiState (State)" "GROUP Nsta Vgs V5ua Operational (Oper)"
Scope	Device

Description	*Nsta/n Vgs V5ua* This component represents the V5.2 User Adaptation Layer for the transport of V5.2 signaling over Stream Control Transmission Protocol (SCTP).
Mib	Vgs
Dyn. Subcomp.	"COMPONENT Nsta Vgs V5ua ApplicationServerProcess (Asp)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs V5ua Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Iua* component, which provides access to the IP network.
Mib	Vgs

ATTRIBUTE Nsta Vgs V5ua sctpPortConnection

Access	Read and write
Description	This attribute specifies a link to an *Nsta/n Vgs Ctrl/n SctpPort/n* component, which provides transport over the IP network. The linked *Nsta/n Vgs Ctrl/n SctpPort/n* must be under the same *Nsta/n Vgs* as this *Iua* subcomponent.
Mib	Vgs
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Nsta Vgs V5ua recoveryTimer

Access	Read and write

Description	This attribute specifies how long incoming messages are buffered while the Application Server is recovering from a failure (indicated by an *asStatus* value of ***pending***).
Mib	Vgs
Values	Decimal (1..5)
Units	seconds
Default	3

GROUP Nsta Vgs V5ua OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs V5ua adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Vgs

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Nsta Vgs V5ua operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Vgs

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nsta Vgs V5ua usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Vgs

Values:
idle
active (activ)
busy

Default: idle

GROUP Nsta Vgs V5ua Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *Nsta/n Vgs V5ua* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs V5ua applicationServerStatus

Access: Read only

Description: This attribute indicates the status of the Application Server.

The possible values are:

active - The Application Server (AS) is available and application traffic is active. This state implies that at least one Application Server Process (ASP) is in active state.
up - The AS is available but no application traffic is active (one or more related ASPs are in the inactive state, but none in the active state). The recovery timer is not running or has expired.
down - The AS is unavailable. This state implies that all related ASPs are in the down state for this AS. The recovery timer is not running or has expired.
pending - The ASP has transitioned from active to inactive or down and it was the last remaining active ASP in the AS. A recovery timer starts, and any incoming SCN messages after that will be queued by the SG. If an ASP becomes active before a recovery timer expires, the AS will move to active state and all the queued messages will be sent to the active ASP.

Mib	Vgs
Values	up down active pending
Default	down

COMPONENT Nsta Vgs V5ua ApplicationServerProcess (Asp)

Instance	address [IP address] port [Decimal (1..65535)]
Groups	"GROUP Nsta Vgs V5ua Asp Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs Iua ApplicationServerProcess/<ip address>,<sctp port>* This component represents an Application Server Process (Media Gateway Controller) linked to the Signaling Gateway. The IP address and SCTP port number used in the instance value refer to the remote connection.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs V5ua Asp Operational (Oper)

Properties	Operational
Description	This group contains attributes which describe the *Asp* component status.
Mib	Vgs

ATTRIBUTE Nsta Vgs V5ua Asp status

Access	Read only

Description	This attribute indicates the status of the Application Server Process. The possible values are: ***active*** - the ASP is available and application traffic is flowing (serving as the primary instance) ***up*** - the ASP is available but application traffic is not flowing ***down*** - the ASP is unavailable
Mib	Vgs
Values	up down active
Default	No default

COMPONENT Nsta Vgs BasicRateGroupServer (BragS)

Instance	Decimal (0..15)
Groups	"GROUP Nsta Vgs BragS Provisioned (Prov)" "GROUP Nsta Vgs BragS Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs BasicRateGroupServer/n* This component represents a common server for a set of dynamic basic rate groups (*DBrag*). An instance of this component should be provisioned for each group of AAL1 TDM connections with the same service parameters. This component defines the default processing for all associated *DBrag* components. For each connection, this default processing may be overridden by the controller.

	The *Cas* subcomponent is mutually exclusive of the *Q921* subcomponent.
Mib	Vgs
Opt. Subcomp.	"COMPONENT Nsta Vgs BragS AnnouncementLanguage" "COMPONENT Nsta Vgs BragS Q921" "COMPONENT Nsta Vgs BragS ChannelAssociatedSignaling (Cas)"
Dyn. Subcomp.	"COMPONENT Nsta Vgs BragS NstaVgsDynamicBasicRateGroup (DBrag)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs BragS Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *BasicRateGroupServer* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS localAddress

Access	Read and write
Criticality	Process
Description	This attribute specifies the NSAP address of the *BragS*. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default value can not be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this *BragS* component then deleted and readded.

Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs BragS tdmLogLaw (muALaw)

Access	Read and write
Criticality	Process
Description	This attribute specifies the G.711 companding law to use on the TDM service stream. If set to ***aLaw***, Alaw companding is used. If set to ***muLaw***, Mulaw companding is used. If set to ***autoConfigured***, then the actual value used is derived from the facility, namely ***muLaw*** would be used for *DS1* stream, while ***aLaw*** would be used by *E1* stream.
Mib	Vgs
Values	muLaw aLaw autoConfigured
Default	autoConfigured

ATTRIBUTE Nsta Vgs BragS bufferSize (bufSize)

Access	Read and write
Criticality	Process
Description	This attribute specifies the capacity of the packet delay variation (PDV) buffer in milliseconds of data. To ensure that PDV can be tolerated it is necessary to initialize the system with a reserve of information in the buffer used to reassemble data for transmission across the TDM network. The size of this reserve is defined by the *pdvt* and *bufferSize* attributes. The amount of data played out to the TDM network (in time equal to the value of the *pdvt* attribute) is equal to the size of the initialization reserve. There should be enough data in the

reassembly buffer to allow transmission for a period of time defined by the *pdvt* attribute before buffer underflow due to the next delayed packet occurs.

If the ***vgsIp, vsIpG729, vgsIpGe***, or ***vgsIpG729Ge*** feature have been provisioned the default *bufferSize* will be ***60ms*** otherwise the *bufferSize* will be ***50ms***.

The value should always be greater than two times the value of the *pdvt* attribute plus the maximum packet size, except on a ***2pGeMmSrVsp3*** card where it need only be greater than or equal to two times the *pdvt*. The maximum packet size is 20ms for ***vgsIp***, ***vgsIpG729, vgsIpGe*** and ***vgsIpG729Ge*** features and 10ms for all other features.

If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used.

If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

This attribute has no effect if the *packetDelayVariationTolerance* attribute is set to ***adaptive***.

Mib	Vgs
Values	Decimal (5..100) sameAsProfile
Units	msec
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS packetDelayVariationTolerance (pdvt)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum packet arrival jitter in milliseconds that the reassembly process will tolerate in the packet stream without producing errors on the TDM interface.

This attribute together with the *bufferSize* attribute, can be configured to optimize the jitter versus absolute delay tradeoff in various network configurations.

The value should always be less than the value of the *bufferSize* attribute minus the maximum packet size divided by two, except on a ***2pGeMmSrVsp3*** card where it need only be less than or equal to the *bufferSize* divided by two. The maximum packet size is 20ms for ***vgsIp, vgsIpG729, vgsIpGe*** and ***vgsIpG729Ge*** features and 10ms for all other features.

If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used.

If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

If set to ***adaptive***, the hardware attempts to minimise the absolute delay while allowing for the maximum packet arrival jitter encountered. This value is only supported on the following cards:

2pGeMmSrVsp3,
2pOC3ChSmIrVsp3.

Mib	Vgs
Values	Decimal (5..50) sameAsProfile adaptive
Units	msec
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS lossIntegrationPeriod (intPeriod)

Access	Read and write
Description	This attribute specifies the interval of time in seconds for which a loss of packet condition must persist before the corresponding call is dropped. A value of ***0*** specifies that packet loss integration is disabled and therefore call connections are not suspended after packet loss.

	If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	Decimal (0..50) sameAsProfile
Units	seconds
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS ingressGain (iGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM ingress side to balance the network loss plan.
Mib	Vgs
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Nsta Vgs BragS egressGain (eGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM egress side to balance the network loss plan.
Mib	Vgs
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Nsta Vgs BragS echoCancellation (eCan)

Access	Read and write
Description	This attribute specifies whether echo cancellation is enabled or disabled. The value of this attribute will determine whether echo cancellation will be on or off when a 2100Hz tone is detected. Note that the controller may override this attribute on a call by call basis to activate or deactivate echo cancellation. ***g165Mode*** - Enables echo cancellation except when a 2100Hz tone with phase reversal is detected. ***alwaysOn*** - Enables echo cancellation regardless of whether a 2100Hz tone is detected. ***g164Mode*** - Disables echo cancellation only when a 2100Hz tone is detected, regardless of phase reversal. ***disabled*** - Disables echo cancellation. The values ***alwaysOn*** and ***g164Mode*** are not permitted on a ***2pGeMmSrVsp3*** card.
Mib	Vgs
Values	g165Mode disabled alwaysOn g164Mode
Default	g165Mode

ATTRIBUTE Nsta Vgs BragS minimumEchoReturnLoss (minEchoRetLoss)

Access	Read and write
Description	This attribute specifies the minimum echo return loss that can be expected on the line.
Mib	Vgs
Values	Decimal (0; 3; 6)

Units	dB
Default	6

ATTRIBUTE Nsta Vgs BragS echoCancelComfortNoiseGeneration (eCanComNoiseGen)

Access	Read and write
Description	The attribute specifies whether comfort noise generation for the echo cancellation feature is enabled or disabled. This attribute has no effect if *echoCancellation* is ***disabled*** through provisioning or through 2100 Hz tone detection.
Mib	Vgs
Values	enabled disabled
Default	enabled

ATTRIBUTE Nsta Vgs BragS defaultVoiceRate (defVRate)

Access	Read and write
Description	This attribute specifies the default coding algorithm to be used under normal conditions (when no 2100 Hz tone is detected). For each connection, this default coding algorithm can be overridden by the controller. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	64kG711 32kG726 8kG729 sameAsProfile
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS tone2100Rate (toneRate)

Access	Read and write
Description	This attribute specifies the coding algorithm to be used for timeslots within all the *DBrag* subcomponents of this *BragS* component on which 2100 Hz tone is detected (phase reversal may or may not be detected). This attribute takes precedence over the *defaultVoiceRate* attribute. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	64kG711 32kG726 sameAsProfile
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS silenceDetectionHangOverTime (silDetTime)

Access	Read and write
Description	This attribute specifies the time in milliseconds for which the speech path is left on before being suppressed when a timeslot is silent. This helps to prevent clipping at the end of words. This attribute specifies the silence detection hang over time for all voice packets transmitted on IP and is ignored by AAL2 transmission. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs

Values	Decimal (30..500) sameAsProfile
Units	msec
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS silenceSuppression (silSup)

Access	Read and write
Description	This attribute specifies whether silence suppression is performed. A value of ***enabled*** indicates that silence suppression is performed as default. For each connection this default can be overridden by the controller. A value of ***disabled*** indicates that silence suppression is not performed under any circumstances. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used. If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	enabled disabled sameAsProfile
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS silenceSuppressionThreshold (silSupThresh)

Access	Read and write
Description	This attribute specifies the level above which silence suppression is not performed. A value in the range -39 to -36 dBm0 is only permitted on a ***2pGeMmSrVsp3*** card. If ***sameAsProfile***, the equivalent value from the *PktProf* component is used.

	If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.
Mib	Vgs
Values	Signed (-60..-36) sameAsProfile
Units	dBm0
Default	sameAsProfile

ATTRIBUTE Nsta Vgs BragS signalingType (sigType)

Access	Read and write
Criticality	Process
Description	This attribute specifies the signaling type of the trunks within all the *DBrag* components of this *BragS*. ***unsignaled*** performs no additional signaling. ***mfRemote*** performs MF signaling to a remote call server. This attribute must be set to ***unsignaled*** when using ATM transport.
Mib	Vgs
Values	unsignaled mfRemote
Default	unsignaled

ATTRIBUTE Nsta Vgs BragS echoCancellationTailLength (eCanTail)

Access	Read and write
Description	This attribute specifies the Echo Cancellation tail length applied to all timeslots within all the *DBrag* components of this *BragS*. A value of 32ms should be used for networks with a round trip delay of 0 to 28 ms, and a value of 48 ms should be used for

networks with a round trip delay of 28 to 44 ms. The use of 48 ms for round trip delays of less than 32 ms is not advised. The use of 64 ms is reserved for the ***2pGeMmSrVsp3*** card.

If set to ***autoConfigure*** the actual value used depends on card type. If the card type is ***12mVspAal*** or ***Vsp2***, the echo cancellation tail length is set to 32 ms. If the card type is ***2pGeMmSrVsp3***, the echo cancellation tail length is set to 64 ms.

This attribute must be set to ***32,*** or ***autoConfigure*** for the non switched voice over ATM service and when running on a ***12mVspAal*** card.

This attribute must be set to ***32***, ***48*** or ***autoConfigure*** when using a ***Vsp2*** card.

This attribute must be set to ***128*** or ***autoConfigure*** when using a ***2pGeMmSrVsp3*** card.

Mib	Vgs
Values	autoConfigure 32 48 64 128
Units	msec
Default	autoConfigure

ATTRIBUTE Nsta Vgs BragS toneset (toneset)

Access	Read and write
Description	This attribute specifies the tone set available to the controller. The possible values are: ***sameAsVgs*** - Use the *defaultToneset* attribute from the *Vgs* component ***argentina*** - Use the tone set for Argentina. ***australia*** - Use the tone set for Australia.

austria - Use the tone set for Austria.
belgium - Use the tone set for Belgium.
brazil - Use the tone set for Brazil.
canadaUsa - Use the tone set for Canada and the USA.
chile - Use the tone set for Chile.
china - Use the tone set for China.
czech - Use the tone set for the Czech Republic.
france - Use the tone set for France.
germany - Use the tone set for Germany.
greece - Use the tone set for Greece.
hongKong - Use the tone set for Hong Kong.
india - Use the tone set for India.
ireland - Use the tone set for Ireland.
israel - Use the tone set for Israel.
italy - Use the tone set for Italy.
japan - Use the tone set for Japan.
korea - Use the tone set for Korea.
malaysia - Use the tone set for Malaysia.
mexico - Use the tone set for Mexico.
netherlands - Use the tone set for The Netherlands.
newZealand - Use the tone set for New Zealand.
panama - Use the tone set for Panama.
philippines - Use the tone set for Philippines.
poland - Use the tone set for Poland.
portugal - Use the tone set for Portugal.
romania - Use the tone set for Romania.
russia - Use the tone set for Russia.
singapore - Use the tone set for Singapore.
spain - Use the tone set for Spain.
sweden - Use the tone set for Sweden.
switzerland - Use the tone set for Switzerland.
taiwan- Use the tone set for Taiwan.
thailand - Use the tone set for Thailand.
turkey - Use the tone set for Turkey.
uk - Use the tone set for the UK.
venezuela - Use the tone set for Venezuela.

Mib: Vgs

Values: sameAsVgs
canadaUsa

spain
uk
france
portugal
belgium
germany
netherlands
sweden
austria
italy
switzerland
australia
brazil
ireland
mexico
israel
romania
turkey
czech
china
taiwan
korea
japan
panama
argentina
greece
poland
newZealand
singapore
venezuela
chile
hongKong
malaysia
philippines
thailand
india
russia

Default sameAsVgs

ATTRIBUTE Nsta Vgs BragS minimumDtmfPowerLevel (minDtmfPwr)

Access	Read and write
Description	This attribute specifies the value of the minimum power level at which DTMF digits must be detected. This value is used to allow for different specification for different administrations. This attribute is ignored if the *DigitCollection* component is not present under the parent *Vgs*. This attribute must be a multiple of 3 on a ***2pGeMmSrVsp3*** card.
Mib	Vgs
Values	Signed (-30..-22)
Units	dBm0
Default	-27

ATTRIBUTE Nsta Vgs BragS digitTransport

Access	Read and write
Description	This attribute specifies the method by which digit tones are transported. If ***64kG711***, then G.729 voice channels will upspeed to send ***64kG711*** packets when DTMF is detected. If ***sendAsVoice***, DTMF is encoded using currently selected codec. If ***squelch,*** during the playback of a digit, silence is sent over the voice path, encoded at the current encoding rate. If ***relay***, this value enables negotiation of mutual support for the relay of DTMF tones as RFC2833 VoIP packets. Should this negotiation fail then behavior is the same as for ***64kG711***. A value of ***relay*** is only valid on a ***2pGeMmSrVsp3*** card. If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used.

If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

Mib: Vgs

Values:
sendAsVoice
64kG711
squelch
relay
sameAsProfile

Default: sameAsProfile

ATTRIBUTE Nsta Vgs BragS vbdTransport

Access: Read and write

Description: This attribute specifies the method by which voiceband data tones are transported.

If ***useTone2100Rate***, then G.729 voice channels will upspeed to send ***64kG711*** packets when VBD is detected regardless of whether or not the remote gateway has indicated support for this codec.

If ***useTone2100RateIfNegotiated***, then G.729 voice channels will upspeed to send ***64kG711*** packets when VBD is detected only when the remote gateway has indicated support for this codec.

If ***sameAsProfile***, the equivalent value from the *PktProf* subcomponent of the parent *Vgs* component is used.

If an *H248* component is provisioned, then this attribute must be set to ***sameAsProfile***.

Mib: Vgs

Values:
useTone2100RateIfNegotiated
useTone2100Rate
sameAsProfile

Default: sameAsProfile

GROUP Nsta Vgs BragS Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the states of the *BragS* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS activeConnections (actConn)

Access	Read only
Description	This attribute indicates the number of *DBrag* components.
Mib	Vgs
Values	Decimal (0..2048)
Default	No default

ATTRIBUTE Nsta Vgs BragS lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the most recent call release message received that contained the CAUSE information element. Note that the call must have been successfully established before being torn down.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs BragS lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the most recent call release message received. The diagnostic code is contained in the CAUSE information element. A diagnostic code is always accompanied by the cause code. Note that the call must have been successfully established before being torn down.
Mib	Vgs

Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs BragS successfulConnections (succConn)

Access	Read only
Description	This attribute counts the total number of successful connection setup requests. The counter wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs BragS rejectedConnections (rejConn)

Access	Read only
Description	This attribute counts the total number of rejected connection setup requests. The counter wraps to 0 when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs BragS echoCancellationTailLengthValue (eCanTailValue)

Access	Read only
Description	This attribute indicates the echo cancellation tail length currently in use.
Mib	Vgs
Values	32 48 64 128

Units	msec
Default	No default

COMPONENT Nsta Vgs BragS AnnouncementLanguage

Groups	"GROUP Nsta Vgs BragS AnnouncementLanguage Provisioned (Prov)"
Scope	Device
Description	*Nsta/n Vgs Brag/n AnnouncementLanguage.* *Nsta/n Vgs BragS/n AnnouncementLanguage* This component is used to specify an announcement language for this *Brag* or *BragS* component which differs from the *defaultLanguage* attribute specified in the *Vgs LocalAnouncements* component. The *AnnouncementLanguage* component is mutually exclusive of the *V5Link* subcomponent of *Brag* component. This restriction is not applicable to the *BragS* component.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs BragS AnnouncementLanguage Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the Local Announcement facility.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS AnnouncementLanguage defaultLanguage

Access	Read and write

Description	This attribute specifies the language to be used on the announcement when no language is provided via the Media Gateway Controller. When a value is specified here, it overrides the value in the *AnnouncementLanguage* component. If the value is not empty, it must be a 3 character ASCII string (lower case a-z) for example "eng".
Mib	Vgs
Values	String (0..3, ASCII)
Default	""

COMPONENT Nsta Vgs BragS Q921

Groups	"GROUP Nsta Vgs BragS Q921 Provisioned (Prov)"
Scope	Device
Description	*Nsta/n Vgs BragS/n Q921* This component defines the Q.921 Layer service parameters for the PVG PRI Backhaul service.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs BragS Q921 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the Q.921 Layer service associated with the parent *BragS* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS Q921 dChanTimeslot

Access	Read and write
Criticality	Process
Description	This attribute specifies the timeslot that carries the D-channel. This must match the external TDM equipment.
Mib	Vgs
Values	Decimal (1..31)
Default	16

ATTRIBUTE Nsta Vgs BragS Q921 t200

Access	Read and write
Description	This attribute specifies the maximum time allowed between the transmission of a Layer 2 frame and the receipt of an acknowledgement from the user side. This is the acknowledgement timer (T200). The value is rounded to the nearest 0.5 second. On expiry the frame is retransmitted. Retransmissions are counted in the *retriesCounter* of *DBrag/n Q921* component).
Mib	Vgs
Values	Decimal (0.5..5.0)
Units	seconds
Default	1.0

ATTRIBUTE Nsta Vgs BragS Q921 n200

Access	Read and write
Description	This attribute specifies the maximum number of retransmissions of a Layer 2 frame before link re-establishment is initiated.
Mib	Vgs
Values	Decimal (1..8)
Default	3

ATTRIBUTE Nsta Vgs BragS Q921 t203

Access	Read and write
Description	This attribute specifies the maximum time without frame exchange during multiple frame operations. On expiry a Q.921 supervisory frame is transmitted.
Mib	Vgs
Values	Decimal (10..300)
Units	seconds
Default	10

ATTRIBUTE Nsta Vgs BragS Q921 n201

Access	Read and write
Description	This attribute specifies the maximum length of an information field in the I frame.
Mib	Vgs
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE Nsta Vgs BragS Q921 outstandingFrames (frames)

Access	Read and write
Description	This attribute specifies the maximum number of sequentially numbered I frames (k) that may be unacknowledged at any given time after which no new frames are transmitted unless as part of an error recovery procedure.
Mib	Vgs
Values	Decimal (1..127)
Default	7

ATTRIBUTE Nsta Vgs BragS Q921 side

Access	Read and write
Criticality	Process
Description	This attribute specifies if this end of the PRI trunk is to be considered the network end or the user end. The possible values are: ***user***, ***network***.
Mib	Vgs
Values	user network
Default	network

COMPONENT Nsta Vgs BragS NstaVgsDynamicBasicRateGroup (DBrag)

Instance	Decimal (0..127)
Groups	"GROUP Nsta Vgs BragS DBrag Operational (Oper)" "GROUP Nsta Vgs BragS DBrag CommonOp (ComOp)"
Scope	Device
Description	*Nsta/n Vgs BragS/n DynamicBasicRateGroup/n* This component represents a dynamic basic rate group. This component appears whenever an AAL1 TDM SVC connection is successfully set up to the ATM address of the parent *BragS* component. All TDM trunks within this group have the same default narrowband service attribute values, as provisioned in the parent *BragS* component.

	A *DBrag* component is present when an AAL1 CES connection is established and it disappears when the connection is torn down.
Mib	Vgs
Dyn. Subcomp.	"COMPONENT Nsta Vgs BragS DBrag AtmConnection (AtmCon)" "COMPONENT Nsta Vgs BragS DBrag Q921" "COMPONENT Nsta Vgs BragS DBrag ChannelAssociatedSignaling (Cas)"
Common Verbs	Help List Display

GROUP Nsta Vgs BragS DBrag Operational (Oper)

Properties	Operational
Description	This group contains the operational data for the *NstaVgsDynamicBasicRateGroup* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS DBrag endPointGroupName (name)

Access	Read only
Description	This attribute indicates the basic rate group endpoint name. This is the name used by the PVG control protocol, ASPEN. The value of this attribute is derived from the information contained within the AAL1 CES SVC setup.
Mib	Vgs
Values	String (1..80, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag remoteAddress (address)

Access	Read only
Description	This attribute indicates the ATM address of the remote AAL1 CES endpoint.

Mib	Vgs
Values	String (40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag remoteChannelDetail (channelDetail)

Access	Read only
Description	This attribute indicates the configuration of the remote AAL1 CES endpoint.
Mib	Vgs
Values	String (0..81, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag remoteChannelStatus (status)

Access	Read only
Description	This attribute indicates the operational status of the remote AAL1 CES endpoint. The ***up*** status indicates that there are no TDM ingress fault conditions. The ***down*** status indicates the TDM interface has detected an ingress fault condition. The ***rai*** status indicates an ingress RAI at the remote TDM interface.
Mib	Vgs
Values	up down rai
Default	No default

GROUP Nsta Vgs BragS DBrag CommonOp (ComOp)

Properties	Operational

Description	This group contains operational attributes common to *Brag* and *DBrag*.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS DBrag outOfServiceTerminationsByMgc (oosTermsByMgc)

Access	Read only
Description	This attribute is a list of TDM terminations placed out of service by the controller. This does not include TDM terminations placed out of service by the gateway. This attribute is only relevant if the H.248 protocol is in use. If any other attribute is used, this attribute is filtered.
Mib	Vgs
List of	Decimal (1..31)
Default	No default

COMPONENT Nsta Vgs BragS DBrag AtmConnection (AtmCon)

Groups	"GROUP Nsta Vgs BragS DBrag AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs BragS DBrag AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS DBrag AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Vgs
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs BragS DBrag Q921

Groups	"GROUP Nsta Vgs BragS DBrag Q921 Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs BragS/n DBrag/n Q921* This component will be present when the parent *BragS* component has a *Q921* subcomponent present.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs BragS DBrag Q921 Operational (Oper)

Properties	Operational
Description	This group contains attributes which indicate the causes of any *Q921* component failure.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS DBrag Q921 txFrames

Access	Read only
Description	This attribute counts Q.921 frames transmitted towards the TDM interface since the component was activated.

The following frames are counted: information frames, receive ready frames, receive not ready frames, reject frames, set asynchronous balanced mode frames, disconnect frames, unnumbered acknowledge frames, disconnect mode frames, frame reject frames, exchange id frames, unnumbered information frames

The counter wraps to ***0*** when it exceeds its maximum value.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs BragS DBrag Q921 rxFrames

Access: Read only

Description: This attribute counts Q.921 frames received from the TDM interface since the component was activated. This includes HDLC errored frames.

The following frames are counted: information frames, receive ready frames, receive not ready frames, reject frames, set asynchronous balanced mode frames, disconnect frames, unnumbered acknowledge frames, disconnect mode frames, frame reject frames, exchange id frames, unnumbered information frames.

The counter wraps to ***0*** when it exceeds its maximum value.

Mib: Vgs

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Nsta Vgs BragS DBrag Q921 erroredFrames

Access: Read only

Description: This attribute counts Q.921 frames received from the TDM interface with errors since the component was activated.

	The following errors are counted: invalid frames received (FCS, overrun, or non-integral number of octets), SABM errors, DM frames Tx in response to a Rx SABME, frames with an information field that is not permitted or a supervisory unnumbered frame with an incorrect length, frame received with an invalid receive sequence, frames received with I field larger than *n201*. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag Q921 retriesCounter

Access	Read only
Description	This attribute counts the number of retransmission attempts. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag Q921 linkStatus

Access	Read only
Description	This attribute indicates the status of the link. The possible values are: ***up***, ***down***.
Mib	Vgs
Values	up down
Default	No default

COMPONENT Nsta Vgs BragS DBrag ChannelAssociatedSignaling (Cas)

Groups	"GROUP Nsta Vgs BragS DBrag Cas Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs BragS/n DBrag/n ChannelAssociatedSignaling* This component is present when the parent *BragS* component has a *Cas* subcomponent.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs BragS DBrag Cas Operational (Oper)

Properties	Operational
Description	This group contains attributes that indicate the status of a *Cas* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS DBrag Cas txSignals

Access	Read only
Description	This attribute counts CAS line signals transmitted towards the TDM interface since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag Cas rxSignals

Access	Read only
Description	This attribute counts CAS line signals received from the TDM interface since the component was activated.

	The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag Cas busyChannels

Access	Read only
Description	This attribute indicates the number of endpoints in answer or setup state for the *Chan* component specified in the *interfaceName* attribute of the parent component. This includes only the endpoints that are not in idle or blocked state.
Mib	Vgs
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag Cas blockedChannels

Access	Read only
Description	This attribute indicates the number of endpoints in blocked state for the *Chan* component specified in the *interfaceName* attribute of the parent component.
Mib	Vgs
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Nsta Vgs BragS DBrag Cas signalFailureIndications

Access	Read only
Description	This attribute counts the number of incoming line state changes that are not recognized as valid candidates for that stage in a call, and that are reported as a Signal Failure to the call server. The counter wraps to ***0*** when it exceeds its maximum value.

Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs BragS ChannelAssociatedSignaling (Cas)

Groups	"GROUP Nsta Vgs BragS Cas Provisioned (Prov)"
Scope	Device
Description	*Nsta/n Vgs BragS/n ChannelAssociatedSignaling* This component represents the capability to terminate, process and redirect any Channel Associated Signaling information associated with *DBrag* subcomponents of the parent *BragS* component.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs BragS Cas Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Cas* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs BragS Cas channelAssocSignalingDefinition (casDefinition)

Access	Read and write
Criticality	Process
Description	This attribute specifies a link to an *Nsta/n Vgs CasDefn/n* component, which defines the CAS signaling details. This attribute must be supplied.

Mib	Vgs
Values	Link (Service, applicationList)
Default	No default

COMPONENT Nsta Vgs FaxRelayOverIp (FaxR)

Groups	"GROUP Nsta Vgs FaxR Provisioned (Prov)" "GROUP Nsta Vgs FaxR OperationalT38 (OperT38)"
Scope	Device
Description	*Nsta/n Vgs FaxRelayOverIp* This component provides the capability to transport fax using the T.38 method of demodulating and extracting fax data and relaying it across the network. This introduces greater resilience to potentially lossy IP networks through a more robust transportation method and also through provisionable protection through redundancy. This component is restricted to the ***2pGeMmSrVsp3*** and ***2pOC3ChSmIrVsp3*** cards, where an *IpMConn* component is provisioned under the *Vgs*.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs FaxR Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the IP Fax Relay facility.
Mib	Vgs

ATTRIBUTE Nsta Vgs FaxR v34OverVbd (v34)

Access	Read and write
Description	This attribute specifies how the system transports V.8/V.34 fax data. If ***enabled***, V.8/V.34 fax data will be transported using Voice Band Data modes through upspeed to G.711 rather than directly transitioning to T.38 mode. If ***disabled***, transition to T.38 will occur on detection of V.8/V.34 fax data. This attribute should be set to ***enabled*** only if the underlying packet loss rate of the network is less than 0.05%. For a loss rate greater than this it is recommended that V.8/V.34 fax data be transported using T.38.
Mib	Vgs
Values	enabled disabled
Default	disabled

ATTRIBUTE Nsta Vgs FaxR t38FaxUdpRedundancyDepth (redundancy)

Access	Read and write
Description	This attribute specifies the depth of redundancy used in T.38 over UDP/IP. Note that this attribute will increase the bandwidth of a T.38 transmission by a factor equal to the redundancy depth specified.
Mib	Vgs
Values	Decimal (0..3)
Default	1

ATTRIBUTE Nsta Vgs FaxR t38PacketReorderDelay (delay)

Access	Read and write
Description	This attribute specifies how long T.38 packets are held on the receive buffer for reordering before passing to playout. This in turn determines how long out of order or late packets may be. A lower value will decrease the system's ability to reorder and playout contiguous fax data.

Mib	Vgs
Values	Decimal (0..400)
Units	msec
Default	200

GROUP Nsta Vgs FaxR OperationalT38 (OperT38)

Properties	Operational
Description	This group contains attributes which indicate attempted and actual fax relay connections.
Mib	Vgs

ATTRIBUTE Nsta Vgs FaxR t38AutonomousConnections (auto)

Access	Read only
Description	This attribute counts the connections which have negotiated autonomous transition into T38 mode. This attribute wraps to zero when it reaches its maximum value. It will also reset to zero when the *Vsp* component is locked.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs FaxR t38SuccessfulCalls (successful)

Access	Read only
Description	This attribute counts the connections that entered T.38 mode and completed successfully. This attribute wraps to zero when it reaches its maximum value. It will also reset to zero when the *Vsp* component is locked.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs FaxR t38MgcConnections (mgc)

Access	Read only
Description	This attribute counts the connections that were explicitly transitioned into T38 mode by the media gateway controller. This attribute wraps to zero when it reaches its maximum value. It will also reset to zero when the *Vsp* component is locked.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs DebugIpAccess (DbgAccess)

Groups	"GROUP Nsta Vgs DbgAccess Provisioned (Prov)" "GROUP Nsta Vgs DbgAccess OsiState (State)" "GROUP Nsta Vgs DbgAccess NstaVgsConnectionStatus (ConnStat)" "GROUP Nsta Vgs DbgAccess Statistics (Stats)"
Scope	Device
Description	*Nsta/n Vgs DbgIpAccess* The *DebugIpAccess* component defines an access connection from an external host to the Api Conversion Module (ACM) of the ***2pGeMmSrVsp3*** card for developer debug purposes only. This component cannot activate on any card other than the

	2pGeMmSrVsp3 card. This component can have only one subcomponent, either a *Nap*, *SpvcAp* or *VrAp*.
Mib	Vgs
Opt. Subcomp.	"COMPONENT Nsta Vgs DbgAccess NailedUpAdaptionPoint (Nap)" "COMPONENT Nsta Vgs DbgAccess SpvcAccessPoint (SpvcAp)" "COMPONENT Nsta Vgs DbgAccess VirtualRouterAccessPoint (VrAp)"
Dyn. Subcomp.	"COMPONENT Nsta Vgs DbgAccess AtmConnection (AtmCon)"
Common Verbs	Help List Display DELete

GROUP Nsta Vgs DbgAccess Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *DebugIpAccess* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess ipAddress (ipAddr)

Access	Read and write
Description	This attribute specifies the IP address of the debug capability on the Api Conversion Module (ACM) of the ***2pGeMmSrVsp3*** card. Control messages from the controller will be sent to this IP address to debug connections within this device. This address is used to advertise the gateway to the external hosts and to filter incoming IP packets (only packets destined for this *ipAddress* attribute value are accepted; all other packets are silently dropped). This attribute may be changed without affecting existing calls. This attribute may accept values in the range ***0.0.0.0*** to

255.255.255.255 though these limiting values themselves will be prevented by semantic check. A default value of ***0.0.0.0*** is set to ensure a legal address is provisioned.
When the *DbgIpAccess* component is copied using the *Copy* command, this attribute is set to ***0.0.0.0*** to prevent a duplication of IP addresses.

Mib: Vgs

Values: IP address

Default: 0.0.0.0

GROUP Nsta Vgs DbgAccess OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Vgs

ATTRIBUTE Nsta Vgs DbgAccess adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Vgs

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Nsta Vgs DbgAccess operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Vgs

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nsta Vgs DbgAccess usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Vgs

Values:
idle
active (activ)
busy

Default: idle

GROUP Nsta Vgs DbgAccess NstaVgsConnectionStatus (ConnStat)

Properties: Operational

Description: This group contains an attribute which provides information on the status of the VGS connections.

Mib: Vgs

ATTRIBUTE Nsta Vgs DbgAccess currentStatus (cStat)

Access: Read only

Description: This attribute specifies the current status of a *Vgs AtmTConn*, *IpMConn* or *Ctrl* connection.

enabled indicates that the component is enabled and available to transport traffic.

activating indicates that the component is progressing through its expected sequence of activation and enabling actions, and that no errors having been reported.

atmConnectionNotReady indicates that a problem has been reported with the ATM VCC linked to the component's *Nap*, *Aap* or *Pap* subcomponent, resulting in the component being in a disabled state.

vspNotReady indicates that the *Vsp* component linked to the parent *Nsta* component is either disabled or locked.

outOfResource indicates that no hardware resource is available

on the VSP card to support the component. This means that the VSP card is inadequately equipped or has suffered some level of hardware failure.

ipNetworkInaccessible indicates that a connection into the IP network cannot be created. This may be due to physical ports being disabled, or the inability of routing software to establish an appropriate connection.

Mib	Vgs
Values	enabled activating atmConnectionNotReady vspNotReady outOfResource ipNetworkInaccessible
Default	No default

GROUP Nsta Vgs DbgAccess Statistics (Stats)

Properties	Operational
Description	This group contains attributes which indicate traffic load and error statistics.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess txMessages (txMsgs)

Access	Read only
Description	This attribute counts the messages transmitted since the component was activated. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess rxMessages (rxMsgs)

Access	Read only

Description	This attribute counts messages received without errors since the component was activated. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess aal5Failures (errs)

Access	Read only
Description	This attribute counts AAL5 errors over this control connection, where AAL5 errors represents the combined total of CRC, Length Field, and max_SDU_deliver_length errors. This attribute is filtered when the ***vgsIpGigE*** or the ***vgsIpG729GigE*** feature is provisioned, or the *VrAp* subcomponent is provisioned under this component. The value wraps to zero when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs DbgAccess NailedUpAdaptionPoint (Nap)

Groups	"GROUP Nsta Vgs DbgAccess Nap Provisioned (Prov)"
Scope	Device
Description	*Nsta/n Conn/n NailedUpAdaptionPoint* *Nsta/n Conn/n Brag/n Ccst NailedUpAdaptionPoint* *Nsta/n Vgs AtmTConn/n NailedUpAdaptionPoint* *Nsta/n Vgs Control/n NailedUpAdaptionPoint* *Nsta/n Vgs IpMConn NailedUpAdaptionPoint* This component is used to provide access to a nailed-up ATM connection (an *Atmif Vcc Nep*).

	Components in the *Nsta* component hierarchy which require access to such connections will have a *NailedUpAdaptionPoint* subcomponent.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs DbgAccess Nap Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for a *Nap* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess Nap atmConnection (atmConn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the link to the *AtmIf Vcc Nep* component that defines the access to the ATM network.
Mib	Vgs
Values	Link (Service, applicationName)
Default	No default

COMPONENT Nsta Vgs DbgAccess SpvcAccessPoint (SpvcAp)

Groups	"GROUP Nsta Vgs DbgAccess SpvcAp Provisioned (Prov)" "GROUP Nsta Vgs DbgAccess SpvcAp SpvcApAddressessProv (SpvcApAddrProv)" "GROUP Nsta Vgs DbgAccess SpvcAp Operational (Oper)" "GROUP Nsta Vgs DbgAccess SpvcAp AccessPointOper (ApOper)"
Scope	Device

Description

Nsta/n Vgs Control/n SpvcAccessPoint
Nsta/n Vgs IpMConn SpvcAccessPoint
Nsta/n Conn/n SpvcAccessPoint

This component defines ATM SPVC originating information pertinent to those subcomponents in the *Nsta* hierarchy which require dynamic links into the ATM network but have no addressing information.

Mib

Vgs

Common Verbs

Help
List
Display
Add
DELete

VERB Restart Nsta Vgs DbgAccess SpvcAp

Impact

Service

Description

Restart Nsta/n Vgs Control/n SpvcAccessPoint
Restart Nsta/n Vgs IpMConn SpvcAccessPoint
Restart Nsta/n Conn/n SpvcAccessPoint

This command is used to restart the automatic connection procedure. The operational attributes *retryTimeRemaining* and *retryFailures* are also reset. The *Restart* verb restarts the connection procedure with the current active address as specified in the *addressToCall* attribute.

This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed as specified by *retryLimit*, or before the limit has been reached.

This command may also be used when a connection has been established, in which case the connection is released first.

This command fails if the *svcStatus* attribute has the value ***initializing*** or the value ***failed***.

GROUP Nsta Vgs DbgAccess SpvcAp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp atmServiceCategory (service)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM service category for SVCs.

The ***constantBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. The consistent availability of a fixed quantity of bandwidth is considered appropriate for constant bit rate service. Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to have significantly reduced value for the application.

The ***rtVariableBitRate*** service category is intended for real time applications, that is those requiring tightly constrained delay and delay variation, as would be appropriate for voice and video applications. Sources are expected to transmit at a rate which varies with time. Equivalently, the source can be described as "bursty". Cells which are delayed beyond the value specified by *cellTransferDelay* are assumed to be of significantly reduced value to the application. The real-time variable bit rate service may support statistical multiplexing of real time sources.

The ***nrtVariableBitRate*** service category is intended for non-real time applications which have bursty traffic characteristics and which can be characterized in terms of a *peakCellRate*, *sustainedCellRate*, and *maximumBurstSize*. For those cells which are transferred within the traffic contract, the application expects a low cell loss ratio. For all connections, it expects a bound on the mean cell transfer delay. The non real-time variable bit rate service may support statistical multiplexing of connections.

	If the parent of the *SpvcAp* is a *Ctrl* component then the default value of *atmServiceCategory* attribute is ***nrtVariableBitRate***; it may not take the value ***rtVariableBitRate***. If the parent of the *SpvcAp* is an *IpMConn* component then the default value of *atmServiceCategory* attribute is ***rtVariableBitRate***; it may not take the value ***nrtVariableBitRate***.
Mib	Vgs
Values	constantBitRate (cbr) rtVariableBitRate (rtVbr) nrtVariableBitRate (nrtVbr)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp peakCellRate (pcr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the peak cell rate of the ATM connection.
Mib	Vgs
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp sustainedCellRate (scr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the sustained cell rate of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)

Units	cell/s
Default	0

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp maximumBurstSize (mbs)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum burst size, at the peak cell rate, of the ATM connection. It must be provisioned with a non-zero value when the *atmServiceCategory* attribute has the value ***rtVariableBitRate*** or ***nrtVariableBitRate***, and it must be provisioned with zero value when it has the value ***constantBitRate***.
Mib	Vgs
Values	Decimal (0..2147483647)
Units	cells
Default	0

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp retryLimit (limit)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of consecutive unsuccessful setup attempts before further attempts are abandoned. If this limit is reached, management action is required (restart the connection attempts with the *Restart* verb). A value of zero indicates no limit; attempts will continue indefinitely until a successful connection is established.
Mib	Vgs
Values	Decimal (0..65535)
Default	0

GROUP Nsta Vgs DbgAccess SpvcAp SpvcApAddressessProv (SpvcApAddrProv)

Properties	Provisioned

Description	This group contains NSAP address provisioning data for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the access point's ATM address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) is provisioned, a default value for *localAddress* based on the *nodePrefix* is provided. If a default cannot be generated the operator is forced to set a value for this attribute. Alternatively, the *ModuleData nodePrefix* attribute may be provisioned, and this access point component then deleted and re-added.
Mib	Vgs
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp remoteVpiVci (rVpiVci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the remote VPI and VCI for an *SpvcAp* component.
Mib	Vgs
Values	Integer Sequence (0..255; 1..65535)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp addressToCall (addrToCall)

Access	Read and write
Criticality	Component
Description	This attribute specifies the list of remote NSAP addresses which this component can call. At least one address must be provisioned. For the *ControlConnection* application in switched VoATM and VoIP and for the *IpMediaStreamConnection* application the remote end is a router. It is required to be able to establish SVCs to different routers. Therefore, the *addressToCall* attribute is a list of remote addresses. The first SVC call is sent to the first address listed in the *addressToCall* attribute. If the setup fails or the call is established but fails at a later time, the system attempts to set up a connection to next address listed in the *addressToCall* attribute. If a failure occurs when using the last address in the list, the system attempts to set up a connection to the first address in the list and then continues as before.
Mib	Vgs
List of	String (1..44, AESANsapAddress)
List Size	3
Default	No default

GROUP Nsta Vgs DbgAccess SpvcAp Operational (Oper)

Properties	Operational
Description	This group contains operational status information for the *SpvcAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp svcStatus (status)

Access	Read only
Description	This attribute specifies the status of the SVC connection. When this attribute has the value ***initializing***, it indicates that the

component is initializing when first created; a connection has not been established, and no incoming setup requests will be processed.

When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests are processed. A connection has been requested but not yet established.

When this attribute has the value ***connected***, it indicates that a connection has been established.

When this attribute has the value ***idle***, it indicates that the connection has just been torn down and an attempt to re-establish the connection has not yet occurred. This is a transient state of the component.

When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* for consecutive connection set up attempts have failed, and the connection procedure has been aborted.

When this attribute has the value ***failed,*** it indicates that an error occurred while sending a release message to the network (as a consequence of a *Delete* request) while the component was in ***connecting*** state.

Mib: Vgs

Values:
initializing
connecting
connected
idle
retriesExhausted
failed

Default: No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp lastSetupFailureCause (failCause)

Access: Read only

Description: This attribute contains the cause code in the last call release message following an unsuccessful call set up attempt. The

values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp lastSetupFailureDiagnostic (failDiag)

Access	Read only
Description	This attribute contains the diagnostic code in the last call release message following an unsuccessful call set up attempt. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp retryTimeRemaining (timer)

Access	Read only
Description	This attribute indicates the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt is made. When the value reaches ***0*** an attempt will be made to establish the connection. When the timer is not running a value of ***0*** is returned.
Mib	Vgs
Values	Decimal (0..86400)
Units	seconds
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp retryFailures (failures)

Access	Read only

Description	This attribute counts the number of consecutive failed connection attempts. This counter is reset to ***0*** whenever a connection is successfully established or the connection is restarted using the *Restart* verb. The counter wraps to ***0*** when the maximum value is exceeded.
Mib	Vgs
Values	Decimal (0..2147483647)
Default	No default

GROUP Nsta Vgs DbgAccess SpvcAp AccessPointOper (ApOper)

Properties	Operational
Description	This group contains operational information regarding the end point of the connection. This group is common to all types of access points.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp remoteAddress (rAddr)

Access	Read only
Criticality	Component
Description	This attribute indicates the address of the remote end point. If a connection is currently established, it will contain the NSAP address of the remote end point. If a connection is not established, the *remoteAddress* attribute has the value ***unknown***.
Mib	Vgs
Values	String (7..40, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp lastTearDownCause (cause)

Access	Read only
Description	This attribute indicates the cause code in the last call release message that contained the CAUSE information element. Note that the call must have been successfully established before being

	torn down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	Vgs
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Nsta Vgs DbgAccess SpvcAp lastTearDownDiagnostic (diag)

Access	Read only
Description	This attribute indicates the diagnostic code in the last call release message. The diagnostic code is contained in the CAUSE information element and is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code.
Mib	Vgs
Values	String (0..8, ASCII)
Default	No default

COMPONENT Nsta Vgs DbgAccess AtmConnection (AtmCon)

Groups	"GROUP Nsta Vgs DbgAccess AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	Vgs
Common Verbs	Help List Display

GROUP Nsta Vgs DbgAccess AtmCon Operational (Oper)

Properties	Operational

Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	Vgs
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs DbgAccess VirtualRouterAccessPoint (VrAp)

Groups	"GROUP Nsta Vgs DbgAccess VrAp Provisioned (Prov)"
Scope	Application
Description	*Nsta/n Vgs Ctrl/n VrAp* *Nsta/n Vgs IpMConn VrAp* *Nsta/n Vgs DbgAccess VrAp* This component represents a point of access to a *VirtualRouter* component, which provides an IP forwarding functionality to this *Nsta/n Vgs* component hierarchy. If at least one *VrAp* component is used within a *Nsta/n Vgs* component hierarchy, then all IP network access from within that hierarchy must be via *VrAp* components. In addition, a *VCac* component cannot be provisioned within a

	Nsta/n Vgs component hierarchy which contains a *VrAp* component.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs DbgAccess VrAp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *VrAp* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs DbgAccess VrAp subnetAccessName (subnet)

Access	Read and write
Description	This attribute specifies the *Vr/n Pp/m IpPort LogicalIf/x.y.z.u* component instance to be used by this *VrAp*. The value of the *ipAddr* attribute defined by the parent of this *VrAp* must belong to the subnet defined by the specified *Vr/n Pp/m IpPort LogicalIf/x.y.z.u* component instance.
Mib	Vgs
Values	The name of the component
Default	No default

COMPONENT Nsta Vgs IpInterface (IpIf)

Groups	"GROUP Nsta Vgs IpIf IpIfProv (IpPr)" "GROUP Nsta Vgs IpIf IpIfOp (IpOp)"
Scope	Application
Description	*Nsta/n Vgs IpIf*

This component controls and monitors a single default router address on a logical IP network which provides access to the local subnet for the VGS IP applications when the ***vgsIpGigE*** or the ***vgpIpG729GigE*** feature is provisioned.

Mib: Vgs

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Nsta Vgs Iplf IpIfProv (IpPr)

Properties: Provisioned

Description: This group contains the provisionable data for the *NstaVgsIpInterface* component.

Mib: Vgs

ATTRIBUTE Nsta Vgs Iplf defaultRouterAddress (defRtr)

Access: Read and write

Description: This attribute specifies the IP address of the default router in the local subnet for *VspEth1000BaseSX* ports. IP packets destined for a device outside the local subnet are forwarded to this router by default.

Mib: Vgs

Values: IP address

Default: 0.0.0.0

ATTRIBUTE Nsta Vgs Iplf subnetMask (netMask)

Access: Read and write

Description: This attribute specifies the subnet mask of the network connected to the *VspEth1000BaseSX* ports. Any destination outside the subnet must be forwarded to a router.

Mib	Vgs
Values	IP address
Default	255.255.252.0

ATTRIBUTE Nsta Vgs Iplf switchoverOnFailure (swOver)

Access	Read and write
Description	This attribute specifies if a card switchover should occur if a steady state link failure is observed on all *VspEth1000BaseSX* ports on this card. A switchover to the standby card occurs only when all of the following apply: 1) The *switchoverOnFailure* attribute is enabled. 2) The *IpIf* component is without an active port for a continuous period specified in the *switchoverHoldoffTime* attribute 3) At least one of the *VspEth1000BaseSX* ports has been active since the card started up following a reboot or a switchover. 4) The standby card is available. Possible values are: ***enabled*** - a switchover will occur, subject to the conditions specified above. ***disabled*** - a switchover will not take place if a link failure is detected.
Mib	Vgs
Values	enabled disabled
Default	disabled

ATTRIBUTE Nsta Vgs Iplf switchoverHoldoffTime (holdoffTime)

Access	Read and write
Description	This attribute specifies how long a steady state link failure on all provisioned *VspEth1000BaseSX* ports can occur before a card switchover is triggered.

	This attribute only has meaning when the *switchoverOnFailure* attribute is ***enabled***.
Mib	Vgs
Values	Decimal (1..180)
Units	seconds
Default	30

GROUP Nsta Vgs IpIf IpIfOp (IpOp)

Properties	Operational
Description	This group contains the operational data for *Nsta Vgs IpInterface* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs IpIf unsupportedFramesReceived (rxUnsupFrm)

Access	Read only
Description	This attribute indicates the number of frames received with a protocol type which is neither IP nor ARP. This count does not include MAC control frames. This counter wraps to zero after it reaches its maximum value.
Mib	Vgs
Values	Long Integer
Default	No default

COMPONENT Nsta Vgs MediaGatewayController (Mgc)

Instance	String (1..20, ASCII)
Groups	"GROUP Nsta Vgs Mgc Provisioned (Prov)"
Scope	Device
Description	*Nsta/n Vgs MediaGatewayController/n*

	This component contains the H.248 attributes that are specific to a particular controller.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Mgc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Mgc* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Mgc initialMgcAddress (addr)

Access	Read and write
Description	This attribute specifies the controller IP address to which the gateway sends the initial H.248 registration message. The controller IP address to which the gateway sends subsequent H.248 transaction requests may be different from this attribute, depending on whether H.248 registration redirection, handoff, or failover procedures have been performed. The controller IP address currently in use is given by the *H248 mgcAddress* operational attribute. The values ***0.0.0.0*** and ***255.255.255.255*** are not permitted.
Mib	Vgs
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs Mgc initialMgcPort (port)

Access	Read and write
Description	This attribute specifies the controller UDP port to which the gateway sends the initial H.248 registration message. The controller UDP port to which the gateway sends subsequent H.248 transaction requests may be different from this attribute, depending on whether H.248 registration redirection, handoff, or failover procedures have been performed. The controller UDP port currently in use is given by the *H248 mgcPort* operational attribute.
Mib	Vgs
Values	Decimal (1..65535)
Default	2944

ATTRIBUTE Nsta Vgs Mgc encodingFormat (encFmt)

Access	Read and write
Description	This attribute specifies the encoding format used by the gateway to send H.248 messages to this controller. The format may be one of the following: - ***longText*** - a readable format, but longer to transfer. ***shortText*** - a short, space efficient format, suitable for machine transfer, but less readable.
Mib	Vgs
Values	shorttext longtext
Default	shorttext

ATTRIBUTE Nsta Vgs Mgc ds3Format

Access	Read and write
Criticality	Component

Description	This attribute specifies the DS3 physical termination identifier format used in the H.248 messages. DS3 physical termination identifier format is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)
Default	DS3/#2/#1/#2/#1

ATTRIBUTE Nsta Vgs Mgc e1Format

Access	Read and write
Criticality	Component
Description	This attribute represents the E1 physical termination identifier format used by the controller. E1 physical termination identifier format is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)
Default	E1/#2/#2/#1

ATTRIBUTE Nsta Vgs Mgc stmnVc4Vc12Format

Access	Read and write
Criticality	Component
Description	This attribute specifies the STM-n with VC4/VC12 physical termination identifier format used by the controller. STM-n with VC4/VC12 physical termination identifier format is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)

Default	STM/#1/#1/#1/VC4VC12/#1/#1/#1/#1/#1

ATTRIBUTE Nsta Vgs Mgc stsnOcnVt15Format

Access	Read and write
Criticality	Component
Description	This attribute specifies the STS-n/OC-n with VT15 physical termination identifier format used by the controller. STS-n/OC-n with VT15 physical termination identifier format is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)
Default	STS/#1/#1/#1/VT15/#1/#1/#1/#1

ATTRIBUTE Nsta Vgs Mgc ipFormat

Access	Read and write
Criticality	Component
Description	This attribute specifies the IP ephemeral termination identifier format being used by the controller. IP ephemeral termination identifier format is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)
Default	rtp/#1

ATTRIBUTE Nsta Vgs Mgc aal2Format

Access	Read and write
Criticality	Component
Description	This attribute specifies the AAL2 ephemeral termination identifier format used by the controller.

	AAL2 ephemeral termination identifier format is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)
Default	aal2/#1

ATTRIBUTE Nsta Vgs Mgc initialNormalMgExecutionTime (time)

Access	Read and write
Description	This attribute specifies the value of the H.248 MG property root/normalMGExecutionTime on H.248 cold boot. This is the initial value of the interval within which the controller expects a response, exclusive of network delay. The value is rounded to the nearest 100 milliseconds.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	500

ATTRIBUTE Nsta Vgs Mgc initialNormalMgcExecutionTime (cTime)

Access	Read and write
Description	This attribute specifies the value of the H.248 MG property root/normalMGCExecutionTime on H.248 cold boot. This is the initial value of the interval within which the gateway expects a response from the controller, exclusive of network delay. The value is rounded to the nearest 100 milliseconds.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	500

ATTRIBUTE Nsta Vgs Mgc initMgProvnlRespTimerValue

Access	Read and write
Description	This attribute specifies the value of the H.248 MG property root/MGProvisionalResponseTimerValue on H.248 cold boot. This is the initial value of the time within which the controller expects a Pending Response from the gateway if a Transaction cannot be completed. The value is rounded to the nearest 100 milliseconds.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	2000

ATTRIBUTE Nsta Vgs Mgc initMgcProvnlRespTimerValue

Access	Read and write
Description	This attribute specifies the value of the H.248 MG property root/MGCProvisionalResponseTimerValue on H.248 cold boot. This is the initial value of the time within which the gateway expects a Pending Response from the controller if a Transaction cannot be completed. The value is rounded to the nearest 100 milliseconds.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	500

ATTRIBUTE Nsta Vgs Mgc maximumTxRetries (ret)

Access	Read and write
Description	This attribute specifies the maximum number of retransmissions for an unacknowledged H.248 transaction request. If the gateway

	has not received a message from the controller after the maximum number of retries, then the gateway will perform the H.248 failover procedure.
Mib	Vgs
Values	Decimal (0..10)
Default	2

ATTRIBUTE Nsta Vgs Mgc maximumTxRetryTime (tRet)

Access	Read and write
Description	This attribute specifies the maximum time between retransmissions of an unacknowledged H.248 transaction request by the controller. The value is rounded to the nearest 100 milliseconds.
Mib	Vgs
Values	Decimal (100..10000)
Units	msec
Default	1000

ATTRIBUTE Nsta Vgs Mgc transactionQuarantineTimer (quar)

Access	Read and write
Description	This attribute is the H.248 long timer value (LONG-TIMER) used for quarantining H.248 responses sent to the controller. The gateway will keep H.248 response copies for at least this time.
Mib	Vgs
Values	Decimal (1..24)
Units	seconds
Default	24

ATTRIBUTE Nsta Vgs Mgc egressCotDuration

Access	Read and write

Description	This attribute specifies the default duration of the egress continuity test tone generated by the gateway. The value is rounded to the nearest 100 milliseconds.
Mib	Vgs
Values	Decimal (1..180000)
Units	msec
Default	20000

ATTRIBUTE Nsta Vgs Mgc highestVersion (hiVer)

Access	Read and write
Description	This attribute specifies the highest protocol version to be negotiated with the controller upon H.248 registration.
Mib	Vgs
Values	Decimal (1..1)
Default	1

ATTRIBUTE Nsta Vgs Mgc mgList

Access	Read only
Description	This attribute specifies a list of links to *H248* components that use this component.
Mib	Vgs
List of	Link (Service, mgcList)
List Size	1
Default	No default

COMPONENT Nsta Vgs H248

Instance	Decimal (0)

Groups	"GROUP Nsta Vgs H248 Provisioned (Prov)" "GROUP Nsta Vgs H248 Operational (Oper)" "GROUP Nsta Vgs H248 Statistics (Stats)"
Scope	Device
Description	*Nsta/n Vgs H248/n* This component represents an interface between a gateway and a controller using the H.248 (Megaco) Protocol.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs H248 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *H248* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs H248 mgMid

Access	Read and write
Criticality	Component
Description	This attribute specifies the Message Identifier that the gateway includes as part of every message sent to the controller. The format of this string is described in NTP NN10600-780.
Mib	Vgs
Values	String (1..64, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs H248 udpPortConnection (port)

Access	Read and write
Description	This attribute is a link to the *Nsta/n Vgs Ctrl/n UdpPort/n* component that defines the MG local UDP port for the H.248 protocol. The default UDP port for H.248 text format is 2944.
Mib	Vgs
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Nsta Vgs H248 sdpFormat

Access	Read and write
Description	This attribute specifies the Session Description Protocol (SDP) media line compliance for SDPs sent and received by the gateway. ***strictH248*** - force strict H.248 SDP media line compliance for both receiving and transmitting SDPs. ***h248*** - flexible when receiving SDP media lines. Complies with H.248 when sending SDP media lines. ***nonH248*** - flexible when receiving SDP media lines and may send multiple SDP media lines per SDP group when appropriate.
Mib	Vgs
Values	h248 strictH248 nonH248
Default	nonH248

ATTRIBUTE Nsta Vgs H248 atmSdpTransmitFormat

Access	Read and write
Description	This attribute indicates the Session Description Protocol (SDP) format that the gateway sends when establishing an AAL2

connection.

vgcp - Comply with the VGCP SDP format.

rfc3108 - Comply with the RFC-3108 SDP format.

Mib	Vgs
Values	vgcp rfc3108
Default	rfc3108

ATTRIBUTE Nsta Vgs H248 mgcList

Access	Read and write
Description	This attribute specifies an ordered list of links to associated *Mgc* components, which specify the provisioned attributes for use with the primary and (multiple) secondary controllers. The controller preference used by the gateway when registering is determined by the order of adding links (that is, the first is preferred). The list must contain at least one entry.
Mib	Vgs
List of	Link (Service, mgList)
List Size	3
Default	No default

GROUP Nsta Vgs H248 Operational (Oper)

Properties	Operational
Description	This group contains operational data for the *H248* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs H248 negotiatedVersion (vers)

Access	Read only

Description	This attribute is the current H.248 protocol version which the gateway sends in H.248 transaction requests and is therefore the negotiated version between the controller and the gateway. The attribute equals ***0*** when the gateway is registering.
Mib	Vgs
Values	Decimal (0..99)
Default	No default

ATTRIBUTE Nsta Vgs H248 maximumContexts (ctxts)

Access	Read only
Description	This attribute indicates the maximum number of H.248 contexts supported by the gateway.
Mib	Vgs
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nsta Vgs H248 normalMgExecutionTime (time)

Access	Read only
Description	This attribute indicates the current value of the interval within which the controller expects a response from the gateway, exclusive of network delay.
Mib	Vgs
Values	Decimal (0..10000)
Units	msec
Default	No default

ATTRIBUTE Nsta Vgs H248 normalMgcExecutionTime (cTime)

Access	Read only

Description	This attribute indicates the current value of the interval within which the gateway expects a response from the controller, exclusive of network delay.
Mib	Vgs
Values	Decimal (0..10000)
Units	msec
Default	No default

ATTRIBUTE Nsta Vgs H248 mgcProvisionalRespTimerValue

Access	Read only
Description	This attribute indicates the current value of the time within which the gateway expects a Pending Response from the controller if a Transaction cannot be completed.
Mib	Vgs
Values	Decimal (0..10000)
Units	msec
Default	No default

ATTRIBUTE Nsta Vgs H248 maximumInactivityTime (mit)

Access	Read only
Description	This attribute indicates the time the gateway will wait for an H.248 message from the controller before the gateway attempts to contact the controller to determine if it is still active. The value ***off*** indicates that the maximum inactivity timer is not enabled.
Mib	Vgs
Values	Decimal (0..655350) off
Units	msec
Default	No default

ATTRIBUTE Nsta Vgs H248 failovers

Access	Read only
Description	This attribute counts the number of times the gateway has performed failover procedures and attempted contact with another controller since the *H248* component was activated.
Mib	Vgs
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nsta Vgs H248 mgcMid

Access	Read only
Description	This attribute indicates the Message Identifier of the current controller being used. This value is obtained from the controller response to the gateway registration message. The attribute has zero length when the gateway is registering.
Mib	Vgs
Values	String (0..64, ASCII)
Default	No default

ATTRIBUTE Nsta Vgs H248 mgcAddress (addr)

Access	Read only
Description	This attribute indicates the current controller IP address to which the gateway sends H.248 transaction requests.
Mib	Vgs
Values	IP address
Default	No default

ATTRIBUTE Nsta Vgs H248 mgcPort

Access	Read only
Description	This attribute indicates the current controller UDP port to which the gateway sends H.248 transaction requests.

Mib	Vgs
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Nsta Vgs H248 mgcInUse

Access	Read only
Description	This attribute indicates the instance name of the *Mgc* component currently in use.
Mib	Vgs
Values	The name of the component
Default	No default

ATTRIBUTE Nsta Vgs H248 mgProvisionalRespTimerValue

Access	Read only
Description	This attribute indicates the current value of the time within which the controller expects a Pending Response from the gateway if a Transaction cannot be completed.
Mib	Vgs
Values	Decimal (0..10000)
Units	msec
Default	No default

GROUP Nsta Vgs H248 Statistics (Stats)

Properties	Operational
Description	This group contains statistics for the *H248* component. These are filtered on ***12mVspAal*** and ***Vsp2*** cards.
Mib	Vgs

ATTRIBUTE Nsta Vgs H248 txRetransmissions

Access	Read only

Description	This attribute counts the number of media gateway control protocol retransmissions sent by the Gateway. Each retransmission of a given message will be individually counted.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs H248 rxRetransmissions

Access	Read only
Description	This attribute counts the number of media gateway control protocol retransmissions sent by the Gateway. Each retransmission of a given message will be individually counted.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs PacketNetworkProfile (PktProf)

Instance	Decimal (0)
Groups	"GROUP Nsta Vgs PktProf Provisioned (Prov)"
Scope	Device
Description	*Nsta/n Vgs PacketNetworkProfile/n* The *PacketNetworkProfile* component represents a profile of the PVG packet side characteristics of narrowband calls.
Mib	Vgs
Common Verbs	Help List Display Add

GROUP Nsta Vgs PktProf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *PacketNetworkProfile* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs PktProf bufferSize (bufSize)

Access	Read and write
Criticality	Component
Description	This attribute represents the capacity of the packet delay variation (PDV) buffer in milliseconds of data. To ensure that PDV can be tolerated it is necessary to initialize the system with a reserve of information in the buffer used to reassemble data for transmission across the TDM network. The size of this reserve is defined by the *pdvt* and *bufferSize* attributes. The amount of data played out to the TDM network (a period of time defined by the *packetDelayVariationTolerance* attribute) is equal to the size of the initialization reserve. There should be enough data in the reassembly buffer to allow transmission for a period of time defined by the *pdvt* attribute before buffer underflow due to the next delayed packet occurs. If the ***VgsIp, VgsIpG729, VgsIpGe,*** or ***VgsIpG729Ge*** feature has been provisioned the default *bufferSize* will be ***60ms***; otherwise the *bufferSize* will be ***50ms***. The value should always be greater than the maximum packet size plus two times the value of the *pdvt* attribute, except on ***2pGeMmSrVsp3*** and ***2pOC3ChSmIrVsp3*** cards where it need only be greater than or equal to two times the value of the *pdvt* attribute. The maximum packet size is 20ms for ***VgsIp***, ***VgsIpG729, VgsIpGe*** and ***VgsIpG729Ge*** features and 10ms for all other features. This attribute has no effect if the *packetDelayVariationTolerance* attribute is set to ***adaptive***.

Mib	Vgs
Values	Decimal (5..100)
Units	msec
Default	No default

ATTRIBUTE Nsta Vgs PktProf packetDelayVariationTolerance (pdvt)

Access	Read and write
Criticality	Component
Description	This attribute represents the maximum packet arrival jitter in milliseconds that the reassembly process will tolerate in the packet stream without producing errors on the TDM interface. This attribute together with the *bufferSize* attribute, can be configured to optimize the jitter versus absolute delay trade off in various network configurations. The value should always be less than the value of the *bufferSize* attribute minus the maximum packet size divided by two, except on ***2pGeMmSrVsp3*** and ***2pOC3ChSmIrVsp3*** cards, where it need only be less than or equal to the value of the *bufferSize* attribute divided by two. The maximum packet size is 20ms for ***VgsIp***, ***VgsIpG729, VgsIpGe,*** and ***VgsIpG729Ge*** features and 10ms for all other features. If set to ***adaptive***, the hardware attempts to minimise the absolute delay while allowing for the maximum packet arrival jitter encountered. This value is only supported on the following cards: ***2pGeMmSrVsp3***, ***2pOC3ChSmIrVsp3***.
Mib	Vgs
Values	Decimal (5..50) adaptive
Units	msec

Default	20

ATTRIBUTE Nsta Vgs PktProf lossIntegrationPeriod (intPeriod)

Access	Read and write
Description	This attribute represents the interval of time in seconds for which a loss of packet condition must persist before the corresponding call is dropped. A value of zero specifies that packet loss integration is disabled and therefore call connections are not suspended after packet loss.
Mib	Vgs
Values	Decimal (0..50)
Units	seconds
Default	5

ATTRIBUTE Nsta Vgs PktProf defaultVoiceRate (defVRate)

Access	Read and write
Description	This attribute represents the default coding algorithm to be used under normal conditions (when no 2100 Hz tone is detected). For each connection, this default coding algorithm can be overridden by the controller. When the ***vgsIpGe*** feature is provisioned, the value ***64kG711*** must be used. When the ***vgsIpG729*** or ***vgsIpG729Ge*** feature is provisioned, the value must be either ***64kG711*** or ***8kG729***. When the VSP card type is ***2pOC3ChSmIrVsp3***, and the ***vgsIp*** feature is provisioned, the value must be either ***64kG711*** or ***8kG729***. For all other VSP card types, the following restrictions apply: - if the ***vgsAtm*** or ***vgsAtmDc*** feature is provisioned, the value must be ***64kG711*** or ***32kG726***; - if the ***vgsIp*** feature is provisioned, the value must be ***64kG711***.

Mib	Vgs
Values	64kG711 32kG726 8kG729
Default	64kG711

ATTRIBUTE Nsta Vgs PktProf tone2100Rate (toneRate)

Access	Read and write
Description	This attribute represents the coding algorithm to be used when a 2100 Hz tone is detected (phase reversal may or may not be detected). This attribute takes precedence over the *defaultVoiceRate* attribute. For all card types, this attribute must be set to ***64kG711*** when using IP transport. When the ***vgsAtm*** feature is provisioned on a ***2pOC3ChSmIrVsp3*** card, then this attribute must be set to ***64kG711*** if the attribute *defaultVoiceRate* has been set to ***8kG729***.
Mib	Vgs
Values	64kG711 32kG726
Default	64kG711

ATTRIBUTE Nsta Vgs PktProf silenceDetectionHangOverTime (silDetTime)

Access	Read and write
Description	This attribute represents the time in milliseconds for which the speech path is left on, before being suppressed when a timeslot is silent. This helps to prevent clipping at the end of words.
Mib	Vgs
Values	Decimal (30..500)
Units	msec

Default	200

ATTRIBUTE Nsta Vgs PktProf silenceSuppression (silSup)

Access	Read and write
Description	This attribute represents whether silence suppression is performed. A value of ***enabled*** indicates that silence suppression is performed as default. For each connection this default can be overridden by the controller. A value of ***disabled*** indicates that silence suppression is not performed under any circumstances.
Mib	Vgs
Values	enabled disabled
Default	disabled

ATTRIBUTE Nsta Vgs PktProf silenceSuppressionThreshold (silSupThresh)

Access	Read and write
Description	This attribute represents the level above which silence suppression is not performed. A value in the range -39 to -36 dBm0 is only permitted on ***2pGeMmSrVsp3*** and ***2pOC3ChSmIrVsp3*** cards.
Mib	Vgs
Values	Signed (-60..-36)
Units	dBm0
Default	-40

ATTRIBUTE Nsta Vgs PktProf digitTransport

Access	Read and write
Description	This attribute represents the method by which digit tones are transported.

If set to ***64kG711***, then G.729 voice channels will upspeed to send ***64kG711*** packets when DTMF is detected.

If set to ***sendAsVoice***, DTMF is encoded using currently selected codec.

If set to ***squelch,*** during the playback of a digit, silence is sent over the voice path, encoded at the current encoding rate.

If set to ***relay***, this value enables negotiation of mutual support for the relay of DTMF tones as RFC2833 VoIP packets. Should this negotiation fail then behavior is the same as for ***64kG711***.

A value of ***relay*** is only valid on ***2pGeMmSrVsp3*** and ***2pOC3ChSmIrVsp3*** cards.

If the *Sw Lpt featureList* attribute contains ***vgsAtm***, ***vgsAtmDc*** or ***vgsIp*** and the card type is ***12mVspAal*** or ***Vsp2***, this attribute is ignored and the value of ***sendAsVoice*** will be the digit tone transport method.

Mib	Vgs
Values	sendAsVoice 64kG711 squelch relay
Default	No default

ATTRIBUTE Nsta Vgs PktProf vbdTransport

Access	Read and write
Description	This attribute represents the method by which voiceband data tones are transported. If set to ***useTone2100Rate***, then G.729 voice channels will upspeed to send ***64kG711*** packets when VBD is detected regardless of whether or not the remote gateway has indicated support for this codec.

If set to ***useTone2100RateIfNegotiated***, then G.729 voice channels will upspeed to send ***64kG711*** packets when VBD is detected only when the remote gateway has indicated support for this codec.

Mib: Vgs

Values: useTone2100RateIfNegotiated
useTone2100Rate

Default: useTone2100RateIfNegotiated

ATTRIBUTE Nsta Vgs PktProf stateChangeSignalingMode (scsMode)

Access: Read and write

Description: This attribute specifies the mechanism that the gateway uses to signal inband changes in call state to the gateway on the far side of the packet network. This attribute only applies to the following features:

vgsAtm
vgsAtmG729

The possible values for this attribute are:

proprietary - Proprietary PVG tone indication packets are sent.

itu - Standard User State Control (USC) packets are sent, in compliance with ITU-T Recommendation 1.366.2 Annex O.

A value of ***proprietary*** is only permitted on the following cards:

12mVspAal,
Vsp2,
Vsp2W,
2pGeMmSrVsp3.

A value of ***itu*** is only permitted on the following cards:

2pGeMmSrVsp3,
2pOC3ChSmIrVsp3.

For the ***2pOC3ChSmIrVsp3*** card, the default for this attribute is ***itu***. For all other cards the defult for this attribute is ***proprietary***.

Mib	Vgs
Values	proprietary itu
Default	No default

COMPONENT Nsta Vgs TdmAccessGroup (Tag)

Instance	Decimal (0..16777215)
Groups	"GROUP Nsta Vgs Tag Provisioned (Prov)" "GROUP Nsta Vgs Tag OsiState (State)" "GROUP Nsta Vgs Tag Operational (Oper)" "GROUP Nsta Vgs Tag CommonOp (ComOp)"
Scope	Device
Description	*Nsta/n Vgs Tag/n* This component represents a group of TDM timeslots in a TDM primary rate stream associated with this VSP, and relates them to a processing profile. This component defines default processing for all TDM connections represented in this *TdmAccessGroup* component. For each connection, this default processing may be overridden by the controller.
Mib	Vgs
Opt. Subcomp.	"COMPONENT Nsta Vgs Tag ChannelAssociatedSignaling (Cas)"
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Tag Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *TdmAccessGroup* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Tag interfaceName (ifName)

Access	Read and write
Criticality	Process
Description	This attribute specifies the link to a *Chan* component. This *Chan* component must exist on the same Functional Processor.
Mib	Vgs
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Nsta Vgs Tag profile (prof)

Access	Read and write
Description	This attribute specifies the *TdmNetworkProfile* component to use on the TDM trunks of the *Tag* component when a call is setup.
Mib	Vgs
Values	Link (Service, applicationList)
Default	No default

GROUP Nsta Vgs Tag OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	Vgs

ATTRIBUTE Nsta Vgs Tag adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs Tag operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Vgs

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nsta Vgs Tag usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Vgs

Values: idle
active (activ)
busy

Default: idle

GROUP Nsta Vgs Tag Operational (Oper)

Properties: Operational

Description: This group contains attributes that indicate the *Tag* component status.

Mib: Vgs

ATTRIBUTE Nsta Vgs Tag status

Access: Read only

Description	This attribute indicates the status of a *Tag*. The possible values are: ***enabled*** - no failure. ***vgsNotReady*** - the Media Gateway is unavailable. This is currently indicated by the *operationalState* of the *Vsp* component being ***disabled***. ***chanNotReady*** - the TDM *Chan* component is locked, or the *Chan proceduralStatus* is ***initializationRequired***. ***chanDegraded*** - the TDM *Chan* or associated primary rate interface has an outstanding alarm. ***resourceUnavailable*** - there is not enough hardware resource to handle all timeslots of this *Tag*. ***casNotReady*** - the *operationalState* of the *CasDefn* component linked to by the *Cas* subcomponent of this *Tag* is currently ***disabled***.
Mib	Vgs
Values	vgsNotReady chanNotReady enabled chanDegraded resourceUnavailable casNotReady
Default	No default

GROUP Nsta Vgs Tag CommonOp (ComOp)

Properties	Operational
Description	This group contains operational attributes common to *Brag* and *DBrag*.
Mib	Vgs

ATTRIBUTE Nsta Vgs Tag outOfServiceTerminationsByMgc (oosTermsByMgc)

Access	Read only
Description	This attribute is a list of TDM terminations placed out of service by the controller. This does not include TDM terminations placed out of service by the gateway. This attribute is only relevant if the H.248 protocol is in use. If any other attribute is used, this attribute is filtered.
Mib	Vgs
List of	Decimal (1..31)
Default	No default

COMPONENT Nsta Vgs Tag ChannelAssociatedSignaling (Cas)

Groups	"GROUP Nsta Vgs Tag Cas Provisioned (Prov)" "GROUP Nsta Vgs Tag Cas Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs Brag/n ChannelAssociatedSignaling* *Nsta/n Vgs Tag/n ChannelAssociatedSignaling* This component represents the capability to terminate, process and redirect any Channel Associated Signaling information associated with the parent component.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Tag Cas Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Cas* component.

Mib	Vgs

ATTRIBUTE Nsta Vgs Tag Cas channelAssocSignalingDefinition (casDefinition)

Access	Read and write
Criticality	Process
Description	This attribute specifies a link to an *Nsta/n Vgs CasDefn/n* component, which defines the CAS signaling details. This attribute must be supplied.
Mib	Vgs
Values	Link (Service, applicationList)
Default	No default

GROUP Nsta Vgs Tag Cas Operational (Oper)

Properties	Operational
Description	This group contains attributes that indicate the status of a *Cas* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Tag Cas txSignals

Access	Read only
Description	This attribute counts CAS line signals transmitted towards the TDM interface since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Tag Cas rxSignals

Access	Read only

Description	This attribute counts CAS line signals received from the TDM interface since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Tag Cas busyChannels

Access	Read only
Description	This attribute indicates the number of endpoints in answer or setup state for the *Chan* component specified in the *interfaceName* attribute of the parent component. This includes only the endpoints that are not in idle or blocked state.
Mib	Vgs
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Nsta Vgs Tag Cas blockedChannels

Access	Read only
Description	This attribute indicates the number of endpoints in blocked state for the *Chan* component specified in the *interfaceName* attribute of the parent component.
Mib	Vgs
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Nsta Vgs Tag Cas signalFailureIndications

Access	Read only
Description	This attribute counts the number of incoming line state changes that are not recognized as valid candidates for that stage in a call, and that are reported as a Signal Failure to the call server.

	The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Nsta Vgs TdmNetworkProfile (TProf)

Instance	Decimal (0..15)
Groups	"GROUP Nsta Vgs TProf Provisioned (Prov)"
Scope	Device
Description	*Nsta/n Vgs TdmNetworkProfile/n* This component represents a profile defining TDM network behaviour that can be referenced by *Tag* components.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs TProf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *TdmNetworkProfile* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs TProf tdmLogLaw (loglaw)

Access	Read and write
Description	This attribute specifies the G.711 companding law to use.

The possible values are:

aLaw: Alaw companding is used.

muLaw: Mulaw companding is used.

autoConfigured: Mulaw companding is used by *DS1* trunks, while Alaw companding is used by *E1* trunks.

Mib	Vgs
Values	muLaw aLaw autoConfigured
Default	autoConfigured

ATTRIBUTE Nsta Vgs TProf ingressGain (iGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM ingress side to balance the network loss plan.
Mib	Vgs
Values	Signed (-15..15)
Units	dB
Default	0

ATTRIBUTE Nsta Vgs TProf egressGain (eGain)

Access	Read and write
Description	This attribute specifies the gain applied on the TDM egress side to balance the network loss plan.
Mib	Vgs
Values	Signed (-15..15)
Units	dB
Default	0

ATTRIBUTE Nsta Vgs TProf minimumEchoReturnLoss (minEchoRetLoss)

Access	Read and write
Description	This attribute specifies the minimum echo return loss that can be expected on the line. For the following features, the default for this attribute is ***3***: ***gsmBicnMg***, ***umtsBicnMg***, ***cdmaCodec***. For all other features, the default for this attribute is ***6***.
Mib	Vgs
Values	Decimal (0; 3; 6)
Units	dB
Default	No default

ATTRIBUTE Nsta Vgs TProf echoCancellation (eCan)

Access	Read and write
Description	This attribute specifies whether echo cancellation is enabled or disabled. Note that echo cancellation is always disabled when a 2100 Hz tone is detected. The operator may decide to disable this functionality if a third-party echo canceller is present in the network, because having more than one echo canceller will adversely affect voice quality. Note that the gateway controller may override this attribute on a call by call basis to activate or deactivate echo cancellation. This attribute does not have any effect on Wireless digital data services. ***disabled*** - Disables echo cancellation. ***g165Mode*** - Enables echo cancellation except when a 2100Hz tone with phase reversal is detected.

Mib	Vgs
Values	disabled g165Mode
Default	g165Mode

ATTRIBUTE Nsta Vgs TProf echoCancelComfortNoiseGeneration (eCanComNoiseGen)

Access	Read and write
Description	The attribute specifies whether comfort noise generation for the echo cancellation feature is enabled or disabled. The possible values are: ***disabled*** - Comfort noise generation is disabled. ***enabled*** - Comfort noise generation is enabled. This attribute has no effect if the echo canceller is disabled.
Mib	Vgs
Values	disabled enabled
Default	enabled

ATTRIBUTE Nsta Vgs TProf echoCancelTailLength (eCanTailLength)

Access	Read and write
Description	This attribute specifies the echo cancellation tail length. This attribute has no effect if the echo canceller is disabled. For the following features, the default for this attribute is ***64***: ***gsmBicnMg***, ***umtsBicnMg***, ***cdmaCodec***. For all other features, the default for this attribute is ***128***.
Mib	Vgs

Values	64 128
Units	msec
Default	No default

ATTRIBUTE Nsta Vgs TProf echoCancelTailOffset (eCanTailOffset)

Access	Read and write
Description	This attribute specifies the fixed delay offset for the echo cancellation tail length applied to all timeslots. This attribute has no effect if the echo canceller is disabled. This attribute is only applicable for the following features: ***gsmBicnMg***, ***umtsBicnMg***, ***cdmaCodec***.
Mib	Vgs
Values	Decimal (0..16)
Units	msec
Default	0

ATTRIBUTE Nsta Vgs TProf toneset (toneset)

Access	Read and write
Description	This attribute specifies the tone set available to the controller. The possible values are: ***sameAsVgs*** **-** Use the *defaultToneset* attribute from the *Vgs* component ***argentina*** **-** Use the tone set for Argentina. ***australia*** **-** Use the tone set for Australia. ***austria*** **-** Use the tone set for Austria. ***belgium*** **-** Use the tone set for Belgium. ***brazil*** **-** Use the tone set for Brazil.

canadaUsa - Use the tone set for Canada and the USA.
chile - Use the tone set for Chile.
china - Use the tone set for China.
czech - Use the tone set for the Czech Republic.
france - Use the tone set for France.
germany - Use the tone set for Germany.
greece - Use the tone set for Greece.
hongKong - Use the tone set for Hong Kong.
india - Use the tone set for India.
ireland - Use the tone set for Ireland.
israel - Use the tone set for Israel.
italy - Use the tone set for Italy.
japan - Use the tone set for Japan.
jfpt - Use the tone set for Japanese Fire and Police trunks.
korea - Use the tone set for Korea.
malaysia - Use the tone set for Malaysia.
mexico - Use the tone set for Mexico.
netherlands - Use the tone set for The Netherlands.
newZealand - Use the tone set for New Zealand.
panama - Use the tone set for Panama.
philippines - Use the tone set for Philippines.
poland - Use the tone set for Poland.
portugal - Use the tone set for Portugal.
romania - Use the tone set for Romania.
russia - Use the tone set for Russia.
singapore - Use the tone set for Singapore.
spain - Use the tone set for Spain.
sweden - Use the tone set for Sweden.
switzerland - Use the tone set for Switzerland.
taiwan- Use the tone set for Taiwan.
thailand - Use the tone set for Thailand.
turkey - Use the tone set for Turkey.
uk - Use the tone set for the UK.
venezuela - Use the tone set for Venezuela.

This attribute is only applicable for the following features:

vgsAtm,
vgsIp.

Mib

Vgs

Values	sameAsVgs canadaUsa spain uk france portugal belgium germany netherlands sweden austria italy switzerland australia brazil ireland mexico israel romania turkey czech china taiwan korea japan panama argentina greece poland newZealand singapore venezuela chile hongKong malaysia philippines thailand india russia jfpt

Default	sameAsVgs

ATTRIBUTE Nsta Vgs TProf minimumDtmfPowerLevel (minDtmf)

Access	Read and write
Description	This attribute specifies the value of the minimum power level at which DTMF digits must be detected. This value is used to allow for different specification for different administrations. This attribute is ignored if the *DigitCollection* component is not present under the parent *Vgs*.
Mib	Vgs
Values	Signed (-30; -27; -24)
Units	dBm0
Default	-27

ATTRIBUTE Nsta Vgs TProf voiceBitInversion (vbi)

Access	Read and write
Description	This attribute specifies the bit inversion scheme to be applied to G.711 samples on the TDM side of a Media Gateway. The possible values are: ***noBitInversion*** - No bit inversion is applied. ***oddBitInversion*** - Bit inversion is applied to odd bits. ***evenBitInversion*** - Bit Inversion is applied to even bits. ***allBitInversion*** - Bit inversion is applied to all the bits. ***autoConfigure*** **-** The bit inversion scheme depends on the value of the *tdmLogLaw* attribute. When the *tdmLogLaw attribute* is set to ***muLaw***, the value of this attribute will be set to ***allBitInversion***. When the *tdmLogLaw attribute* is set to ***aLaw***, the value of this attribute will be set to ***evenBitInversion***. This attribute is only applicable for the following features: ***gsmBicnMg***, ***umtsBicnMg***, ***cdmaCodec***.

For applicable features, the default for this attribute is ***autoConfigure***, otherwise the default for this attribute is ***noBitInversion***.

Mib: Vgs

Values:
noBitInversion
oddBitInversion
evenBitInversion
allBitInversion
autoConfigure

Default: No default

ATTRIBUTE Nsta Vgs TProf dataBitInversion (dbi)

Access: Read and write

Description: This attribute specifies the bit inversion scheme to be applied to data on the TDM side of a Media Gateway for Wireless CSD applications.

The possible values are:

noBitInversion - No bit inversion is applied.
oddBitInversion - Bit inversion is applied to odd bits.
evenBitInversion - Bit Inversion is applied to even bits.
allBitInversion - Bit inversion is applied to all the bits.

This attribute is only applicable for the following features:

gsmBicnMg,
umtsBicnMg,
cdmaCodec.

Mib: Vgs

Values:
noBitInversion
oddBitInversion
evenBitInversion
allBitInversion

Default: noBitInversion

ATTRIBUTE Nsta Vgs TProf applicationList (appList)

Access	Read only
Description	This attribute contains a list of *Tag* components linked to this profile.
Mib	Vgs
List of	Link (Service, profile)
Default	No default

COMPONENT Nsta Vgs Q921

Instance	Decimal (0..83)
Groups	"GROUP Nsta Vgs Q921 Provisioned (Prov)" "GROUP Nsta Vgs Q921 OsiState (State)" "GROUP Nsta Vgs Q921 Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs Q921/n* This component represents the association between a TDM timeslot used for Q.921 transport in a TDM primary rate stream and a processing profile.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Q921 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Q921* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Q921 interfaceName (ifName)

Access	Read and write
Criticality	Process
Description	This attribute specifies a link to a *Chan* component, which in turn specifies the timeslot for the Q.921 transport.
Mib	Vgs
Values	Link (Service, applicationFramerName)
Default	No default

ATTRIBUTE Nsta Vgs Q921 profile (prof)

Access	Read and write
Description	This attribute specifies a link to the *Q921Profile* component, which in turn specifies the processing required on the Q.921 transport.
Mib	Vgs
Values	Link (Service, applicationList)
Default	No default

GROUP Nsta Vgs Q921 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Vgs

ATTRIBUTE Nsta Vgs Q921 adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Vgs
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Nsta Vgs Q921 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Vgs

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Nsta Vgs Q921 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Vgs
Values	idle active (activ) busy
Default	idle

GROUP Nsta Vgs Q921 Operational (Oper)

Properties	Operational
Description	This group contains attributes that indicate the *Q921* component status.
Mib	Vgs

ATTRIBUTE Nsta Vgs Q921 txFrames

Access	Read only
Description	This attribute counts Q.921 frames transmitted towards the TDM interface since the component was activated. The following frames are counted: information frames, receive

ready frames, receive not ready frames, reject frames, set asynchronous balanced mode frames, disconnect frames, unnumbered acknowledge frames, disconnect mode frames, frame reject frames, exchange id frames, and unnumbered information frames.

The counter wraps to ***0*** when it exceeds its maximum value.

Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Q921 rxFrames

Access	Read only
Description	This attribute counts Q.921 frames received from the TDM interface since the component was activated. This includes HDLC errored frames. The following frames are counted: information frames, receive ready frames, receive not ready frames, reject frames, set asynchronous balanced mode frames, disconnect frames, unnumbered acknowledge frames, disconnect mode frames, frame reject frames, exchange id frames, and unnumbered information frames. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Q921 erroredFrames

Access	Read only
Description	This attribute counts Q.921 frames received from the TDM interface with errors since the component was activated. The following errors are counted: invalid frames received (FCS,

overrun, or non-integral number of octets), SABM errors, DM frames Tx in response to a Rx SABME, frames with an information field that is not permitted or a supervisory unnumbered frame with an incorrect length, frames received with an invalid receive sequence, and frames received with I-field larger than *n201*.

The counter wraps to ***0*** when it exceeds its maximum value.

Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Q921 retriesCounter

Access	Read only
Description	This attribute counts the number of retransmission attempts since the component was activated. The counter wraps to ***0*** when it exceeds its maximum value.
Mib	Vgs
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Nsta Vgs Q921 status

Access	Read only
Description	This attribute indicates the status of the *Q921* component. The possible values are: ***enabled*** - no failure. ***vgsNotReady*** - the Voice Gateway is unavailable. This is currently indicated by the *operationalState* of the *Vsp* component being ***disabled***. ***chanNotReady*** - the TDM *Chan* component is locked, or the

Chan proceduralStatus is ***initializationRequired***.

chanDegraded - the TDM *Chan* or parent component has an outstanding alarm.

layer2Down - the Q.921 Layer 2 is down.

Mib: Vgs

Values:
vgsNotReady
chanNotReady
enabled
chanDegraded
layer2Down

Default: No default

COMPONENT Nsta Vgs Q921Profile (Q921Prof)

Instance: Decimal (0..15)

Groups:
"GROUP Nsta Vgs Q921Prof ProvisionedApps (ProvApp)"
"GROUP Nsta Vgs Q921Prof Provisioned (Prov)"

Scope: Device

Description: *Nsta/n Vgs Q921Profile/n*

This component represents the profile defining TDM Q.921 transport behavior that can be referenced by *Q921* components.

Mib: Vgs

Common Verbs:
Help
List
Display
Add
DELete

GROUP Nsta Vgs Q921Prof ProvisionedApps (ProvApp)

Properties: Provisioned

Description: This group contains a list of client *Q921* components.

Mib	Vgs

ATTRIBUTE Nsta Vgs Q921Prof applicationList (appList)

Access	Read only
Description	This attribute contains a list of *Q921* components linked to this profile.
Mib	Vgs
List of	Link (Service, profile)
Default	No default

GROUP Nsta Vgs Q921Prof Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Q921* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Q921Prof t200

Access	Read and write
Description	This attribute specifies the maximum time between the transmission of a layer 2 frame and the receipt of an acknowledgement from the user. This is the acknowledgement timer (T200). The value is rounded to the nearest 0.5 second.
Mib	Vgs
Values	Decimal (0.5..5.0)
Units	seconds
Default	1.0

ATTRIBUTE Nsta Vgs Q921Prof t203

Access	Read and write
Description	This attribute specifies the maximum time without frame exchange during multiple frame operations.

Mib	Vgs
Values	Decimal (10..300)
Units	seconds
Default	10

ATTRIBUTE Nsta Vgs Q921Prof n200

Access	Read and write
Description	This attribute specifies the maximum number of retransmissions of a layer 2 frame.
Mib	Vgs
Values	Decimal (1..8)
Default	3

ATTRIBUTE Nsta Vgs Q921Prof n201

Access	Read and write
Description	This attribute specifies the maximum length of an information field.
Mib	Vgs
Values	Decimal (4..260)
Units	octets
Default	260

ATTRIBUTE Nsta Vgs Q921Prof outstandingFrames

Access	Read and write
Description	This attribute specifies the maximum number of sequentially numbered I frames (k) that may be unacknowledged at any given time after which no new frames are transmitted unless as part of an error recovery procedure.
Mib	Vgs
Values	Decimal (1..127)

Default	7

ATTRIBUTE Nsta Vgs Q921Prof side

Access	Read and write
Criticality	Process
Description	This attribute specifies if this end of the PRI trunk is to be considered the network end or the user end. The possible values are: ***user***, ***network***.
Mib	Vgs
Values	user network
Default	network

COMPONENT Nsta Vgs TimeslotRelay (Tr)

Instance	Decimal (0..2015)
Groups	"GROUP Nsta Vgs Tr Provisioned (Prov)" "GROUP Nsta Vgs Tr Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs/n TimeslotRelay/n* This component represents an association between two *Chan* components. It provides the capability of routing the data in timeslots defined in one *Chan* component to the timeslots defined in the other.

	Both *Chan* components must exist on the same Function Processor, and must define an equal number of timeslots.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs Tr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *Tr* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Tr interfaceName (ifName)

Access	Read and write
Criticality	Process
Description	This attribute specifies a list of links to associated *Chan* components. These *Chan* components must exist on the same Functional Processor as the *Tr* component. Two *Chan* components must be specified.
Mib	Vgs
List of	Link (Service, applicationFramerName)
List Size	2
Default	No default

GROUP Nsta Vgs Tr Operational (Oper)

Properties	Operational
Description	This group contains the operational attribute of the *Tr* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs Tr status

Access	Read only
Description	This attribute indicates the status of a *Tr* component. The possible values are: ***enabled*** - relaying of timeslot data is being performed, and no faults currently exist on either of the TDM component heirarchies specified in the *interfaceName* attribute. ***degraded*** - relaying of timeslot data is being performed, but at least one alarm is currently set within a TDM component heirarchy specified in the *interfaceName* attribute. ***disabled*** - relaying of timeslot data is not being performed. At least one TDM component specified in the *interfaceName* attribute is either locked or initialising.
Mib	Vgs
Values	enabled degraded disabled
Default	No default

COMPONENT Nsta Vgs ChannelAssocSignalingDefinition (CasDefn)

Instance	Decimal (0..24)
Groups	"GROUP Nsta Vgs CasDefn Provisioned (Prov)" "GROUP Nsta Vgs CasDefn OsiState (State)" "GROUP Nsta Vgs CasDefn Operational (Oper)"
Scope	Device
Description	*Nsta/n Vgs ChannelAssocSignalingDefinition/n*

	This component represents a Channel Associated Signaling profile used on the Media Gateway.
Mib	Vgs
Common Verbs	Help List Display Add DELete

GROUP Nsta Vgs CasDefn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *CasDefn* component.
Mib	Vgs

ATTRIBUTE Nsta Vgs CasDefn fileName

Access	Read and write
Criticality	Process
Description	This attribute specifies the name (without path or extension) of the file that contains the specific CAS variant. The file will be delivered with the software load. Changing the value of this attribute triggers the transfer of the file from the CP to the VSP FP, and clears down any existing CAS trunks associated with this *CasDefn* component. This attribute must be supplied.
Mib	Vgs
Values	String (0..16, ASCII)
Default	""

ATTRIBUTE Nsta Vgs CasDefn primaryRateType

Access	Read and write
Criticality	Process
Description	This attribute specifies the type of standard framing used at the TDM interface. All *CasDefn* components, under the same *Vgs* hierarchy, must have the same value provisioned for this attribute. The possible values are: ***ds1*** - TDM interfaces associated with this *CasDefn* component are compliant to the DS1 standard. CAS signaling transport using DS1 Robbed-Bit Signaling is used. ***e1*** - TDM interfaces associated with this *CasDefn* component are compliant to the E1 standard. CAS signaling transport using timeslot 16 is used.
Mib	Vgs
Values	ds1 e1
Default	ds1

ATTRIBUTE Nsta Vgs CasDefn applicationList (appList)

Access	Read only
Description	This attribute lists all of the *Cas* components associated with this *CasDefn* component.
Mib	Vgs
List of	Link (Service, channelAssocSignalingDefinition)
Default	No default

GROUP Nsta Vgs CasDefn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies

about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Vgs

ATTRIBUTE Nsta Vgs CasDefn adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Vgs

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Nsta Vgs CasDefn operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for

operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Vgs

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Nsta Vgs CasDefn usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Vgs

Values: idle
active (activ)
busy

Default: idle

GROUP Nsta Vgs CasDefn Operational (Oper)

Properties: Operational

Description: This group contains attributes that indicate the status of the *CasDefn* component.

Mib	Vgs

ATTRIBUTE Nsta Vgs CasDefn fileTransferStatus

Access	Read only
Description	This attribute indicates the status of the transfer of the CAS profile file from the CP to the VSP FP. The possible values are: ***inProgress***: The file as specified in *fileName* attribute is being transferred. CAS signaling requests against trunks associated to this *CasDefn* component are not accepted. ***complete***: The file transfer is complete. CAS signaling requests against trunks associated to this *CasDefn* component are accepted. ***missing***: The system can not find the file, specified in the *fileName* attribute, on the CP. An alarm is raised in this state. The VSP FP polls for the file until the transfer can commence. ***fileTooLong***: The file set in the *fileName* attribute is too long to be loaded successfully. An alarm is raised in this state. The VSP FP polls to look for changes in file length or timestamp. ***fileError***: The file set in the *fileName* attribute has failed sanity checks after the transfer, and can not be used. An alarm is raised in this state. The VSP FP polls to look for changes in file length or timestamp. ***cpNotResponding***: The CP is not responding. The CP may be busy or the disk may be locked. The VSP FP polls to check for the CP availability.
Mib	Vgs
Values	inProgress complete missing fileTooLong

	fileError cpNotResponding
Default	missing

Nortel Networks Multiservice Switch 7400/15000/20000

Component Nsta

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component NS

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component NS

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COMPONENT NetworkSynchronization (NS)

Groups	"GROUP NS Provisioned (Prov)" "GROUP NS OsiState (State)" "GROUP NS Operational (Oper)"
Scope	Network
Description	The *NetworkSynchronization* component administers the network clock synchronization.
Mib	Time
Common Verbs	Help List Display Add DELete

VERB Revert NS

Impact	Service
Description	This command moves all clock sources in the reversion delay list to the current clock source list, if the reversion condition applies, to be available for clock synchronization. When entered with no option, this command is applicable only when reversionDelay is manual.

GROUP NS Provisioned (Prov)

Properties	Provisioned

Description	This group contains all of the provisioning data for the *NetworkSynchronization* component.
Mib	Time

ATTRIBUTE NS primaryReference (priRef)

Access	Read and write
Description	This attribute specifies the port that is the preferred choice as the reference for the network clock.
Mib	Time
Values	The name of the component
Default	No default

ATTRIBUTE NS secondaryReference (secRef)

Access	Read and write
Description	This attribute specifies the port that is the second choice for the reference for the network clock.
Mib	Time
Values	The name of the component
Default	No default

ATTRIBUTE NS tertiaryReference (tertRef)

Access	Read and write
Description	This attribute specifies the port that is the third choice for the reference for the network clock.
Mib	Time
Values	The name of the component
Default	No default

ATTRIBUTE NS useableReferences (useRef)

Access	Read and write

Description	This attribute specifies the criteria that a reference must meet for the *NetworkSynchronization* component to consider it a usable clocking source. A value of ***enabled*** indicates that all enabled clocking sources are usable. A value of ***notDegraded*** indicates that clocking sources must be enabled and not degraded to be usable.
Mib	Time
Values	enabled notDegraded
Default	enabled

ATTRIBUTE NS reversionDelay (revDel)

Access	Read and write
Description	This attribute specifies how long the *NetworkSynchronization* component waits before using a port as a reference after it has been cleared of its degraded/disabled status. **Note:** In non-revertive (manual) mode, if all provisioned references have failed, the NS stays in holdover mode (NS *clockSyncState* = *freeRun*). When one of the provisioned references becomes available, the NS remains in holdover mode and will not automatically switch to the available reference (exiting holdover requires that an operator issue the command "revert ns"). In revertive mode, the NS automatically exits holdover mode and switches to the available reference, either immediately or with a delay if provisioned.
Mib	Time
Values	Decimal (0..120) manual (man)
Units	minutes
Default	0

ATTRIBUTE NS ssmProtocol (ssm)

Access	Read and write

Description	This attribute specifies if the clock reference selection based on Synchronization Status Message (SSM) is enabled on the node. If this attribute has a value of ***enabledRevertive***, then the clock reference is revertive to the primary reference provided the active reference has the same quality level. If the attribute value is ***enabledNonRevertive***, then the clock reference selection is not dependent on the provisioned priority of primary, secondary or tertiary. If the attribute value is ***enabledMigration***, then the SSM messages are stored and broadcasted as in other enabled states but no switching decisions are made based on the SSM messages (this is a useful state during network migration when not all node in the network are distributing the proper SSM values). If the attribute value is ***disabled***, then the SSM messages are only stored but no broadcasting or switching decision is made.
Mib	Time
Values	disabled enabledRevertive enabledNonRevertive enabledMigration
Default	disabled

GROUP NS OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Time

ATTRIBUTE NS adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	Time
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE NS operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Time
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE NS usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Time
Values	idle active (activ) busy
Default	idle

GROUP NS Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *NetworkSynchronization* component.
Mib	Time

ATTRIBUTE NS clockSyncState (clkSyncState)

Access	Read only
Description	When the *clockSyncState* attribute has a value of ***freeRun***, either no reference have been provisioned or none of the provisioned references have been found to be valid. The Stratum-3 clock is allowed to run freely at its last adjusted frequency. When the *clockSyncState* attribute has a value of ***synchronizing***, the Stratum-3 is trying to synchronize in frequency to a valid provisioned reference. This state should last approximately 1-2

minutes, provided the reference is stable. Once frequency synchronization is achieved, a null phase is acquired and the value of the *clockSyncState* attribute becomes ***synchronized***. In this state, both phase and frequency are tracked and compensated for. This node is now ready to support transparent data services.

Mib: Time

Values: freeRun
synchronizing
synchronized

Default: No default

ATTRIBUTE NS activeReference (actRef)

Access: Read only

Description:
This attribute indicates the active 8Khz clock reference source

Mib: Time

Values: The name of the component

Default: No default

ATTRIBUTE NS standbyReference (standyRef)

Access: Read only

Description:
This attribute indicates the standby 8Khz clock reference source that will be selected if a failure is detected on the active source.

Mib: Time

Values: The name of the component

Default: No default

ATTRIBUTE NS activeRefSSMValue (actSsm)

Access: Read only

Description: This attribute indicates the Synchronization Status Messages (SSM) value received from the active reference port. This

	attribute is filtered out when no active reference port is available or ssmProtocol is disabled.
Mib	Time
Values	Decimal (0..15)
Default	No default

ATTRIBUTE NS standbyRefSSMValue (stdSsm)

Access	Read only
Description	This attribute indicates the Synchronization Status Message (SSM) value received from the standby reference port. This attribute is filtered out when no standby reference port is available or ssmProtocol is disabled.
Mib	Time
Values	Decimal (0..15)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component NS

Release 6.1

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Contents

About this document 9

Component and attribute overview 11
What are components? 11
Component hierarchy tree 12
Component terms and concepts 13
Component hierarchy - An everyday analogy 20
Chapter summary 28

Interpreting information in this document 29
How this document is organized 29
Abbreviated component description 29
Formal component description 30
Chapter summary 35

Common Verbs 37

Responses 45

Collected Statistics 509

COMPONENT HIERARCHY (EM) 827

Appendix Data types 831
Attribute value data types 831
Component instance value data types 832
Syntax conventions 833

About this document

The guide contains detailed reference material pertaining to Nortel Networks Multiservice Switch components.

Who should read this guide

This is a detailed reference guide intended to be used for installing, configuring, provisioning or operating a Nortel Networks Multiservice Switch node.

How this guide is organized

The introductory chapters:

- give a detailed description of components and attributes
- help you to find your way through this document. Field descriptions and examples ensure a complete understanding of the reference chapters that follow

The remaining chapters contain all component and attribute information for all subsystems. They explain the fields and information required to provision, monitor, operate, and maintain a Nortel Networks Multiservice Switch node.

What you need to know

You should understand Nortel Networks Multiservice Switch network architecture.

Nortel Networks support services

To contact Nortel Networks for information on support services, courses, training and customer service requests, refer to NN10600-030 *Nortel Networks Multiservice Switch 7400/15000/20000 Overview*.

Component and attribute overview

After reading this chapter, you will have a good understanding of what components are and how they work to provide Nortel Networks Multiservice Switch functionality. You will understand that components are defined by their elements, and that a hierarchy tree dictates their functionality.

An analogy that relates components to an automobile has been included as an aid to help you appreciate relationships between components.

For Multiservice Switch-specific examples of components and how they are presented in this document, see “Interpreting information in this document” (page 11).

What are components?

A large part of Nortel Networks Multiservice Switch system flexibility resides in the extensive use of components in both its design and deployment. A component represents some part of the system which could be a service, a piece of software or a physical hardware component. Virtually every Multiservice Switch subsystem has components. Components are manageable entities, which control Multiservice Switch software, hardware capabilities and access services.

Components provide the infrastructure through which network operators and administrators interact with network elements. Standardized and organized in a highly structured environment, components provide the model for operator interaction with Multiservice Switch.

All operator commands are addressed to components for:

- provisioning
- monitoring
- maintenance

Provisioning

Provisioning defines, or re-defines, the operating parameters and performance characteristics of Nortel Networks Multiservice Switch nodes. To initialize a Multiservice Switch service or capability, components specific to that service or capability must be provisioned. Components can also be added automatically when a parent component is added. Frequently, when a component is added, default values are added automatically.

Monitoring

Monitoring components means to observe the operating parameters and performance characteristics of Nortel Networks Multiservice Switch nodes.

Maintenance

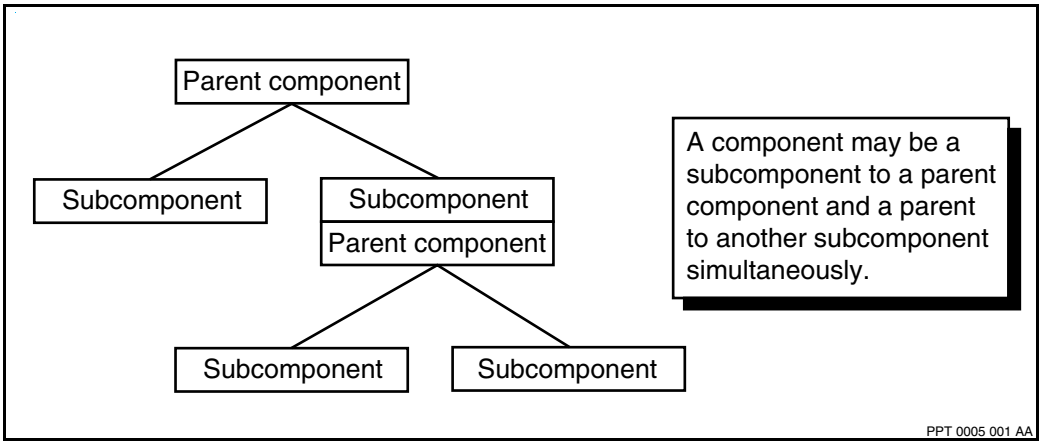
Maintenance means taking components out of service or re-defining their operating characteristics to perform troubleshooting or corrective procedures.

Component hierarchy tree

Components are arranged into hierarchies. A hierarchy is a tree-like structure that defines relationships between the individual components. Through this structure, a functional relationship is developed between each of the components that combine to form Nortel Networks Multiservice Switch systems.

By their relative positions in the hierarchy, components have their parent components and subcomponents defined. A component can have another component below it in the hierarchy. They are called subcomponents. Subcomponents have all the normal characteristics of components and they have a parent component.

Figure 1
How components form into parent and subcomponents by their relative positions



Components form the building blocks of network functionality. Everything that makes up a component has a responsibility to perform a task. Components combine to form components.

Component terms and concepts

Before continuing, you should be familiar with the following terms and concepts:

- components and subcomponents
- type
- instance
- name
- verbs
- attributes
- group

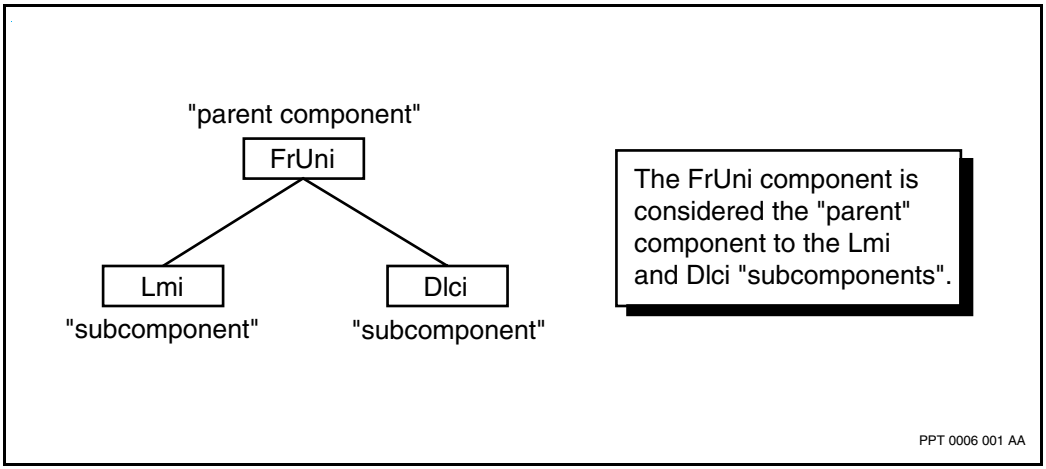
Components and subcomponents

Throughout this documentation set, you may have noticed the terms components and subcomponents. Subcomponents and components have the same properties, “sub” indicates the component’s relative position within the hierarchy. In some cases, components may have operational influence over

their respective parent and subcomponents. They are the method for indicating the behavior of some functionality in Nortel Networks Multiservice Switch systems.

An example is the Frame Relay User to network interface (FrUni) component, the LocalManagementInterface (LMI) component and the DataLinkConnectionIdentifier (Dlci) component. All three are components but the LMI component and the DLCI component are considered subcomponents of the FrUni component.

Figure 2
The FrUni is the “parent component” to the Lmi and Dlci “subcomponents”



Type

A component type refers to a specific type of component such as the Frame Relay user-to-network interface (FrUni) component.

An example of a component type is simply, FrameRelayUni. Note the component type does not specify a value or instance of a particular instance of FrameRelayUni running on the node.

Instance

When more than one of a component type exists, they are differentiated by an instance value. The instance value is information (such as a decimal or a string) appended to the component type. The component instance is separated

from the type by a slash. When only one instance of a component exists on the node, the component is identified by its type, that is, without a slash (/) and instance value.

Example 1

The component FrUni/4 Dlci/7 refers to Dlci instance 7 under FrUni instance 4.

Example 2

There can be only one instance of the Lmi subcomponent for each instance of the FrUni component and as such, Lmi instance values are not required (for example FrUni/3 Lmi).

Name

The component name combines the component type with the instance. Every component has a name. A component name is constructed by the concatenation of several component/instance pairs.

Example 1

By adding the component instance 4 to the component type FrameRelayUni (FrUni), we get:

FrUni/4

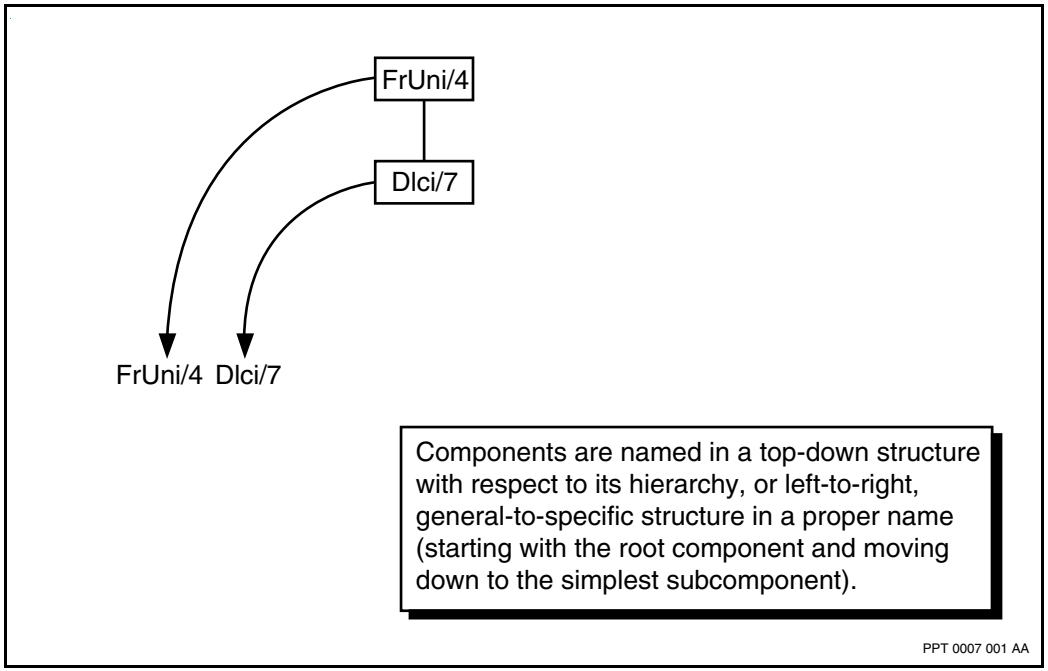
Example 2

A sequence of more than one component type and instance pairs is also a component name, such as:

FrUni/4 Dlci/7

Each type-instance part in the sequence is a subcomponent of its predecessor. In the above example, the Dlci component is a subcomponent of FrUni parent component.

Figure 3
How the naming methodology mirrors the component hierarchy tree



Note that in some cases where there can be only one instance of a component (for example, Shelf), the component appears without an instance value.

Verbs

Verbs are commands issued to Nortel Networks Multiservice Switch components. Commands carry out tasks necessary to provision, maintain and operate your node. Verbs are the action portion of the command.

Within Multiservice Switch systems are a number of verbs that can be issued to all components. These are called common verbs and are described in NN10600-050 *Nortel Networks Multiservice Switch 7400/15000/20000 Command Reference*.

In addition to common commands, there exist a number of commands which are specific to particular subsystems and their components.

Attributes

Components have attributes that define the behavior or informational aspects associated with a specific component. Attributes are either:

- operational
- provisionable

Note: Components with operational attributes may also have provisionable attributes.

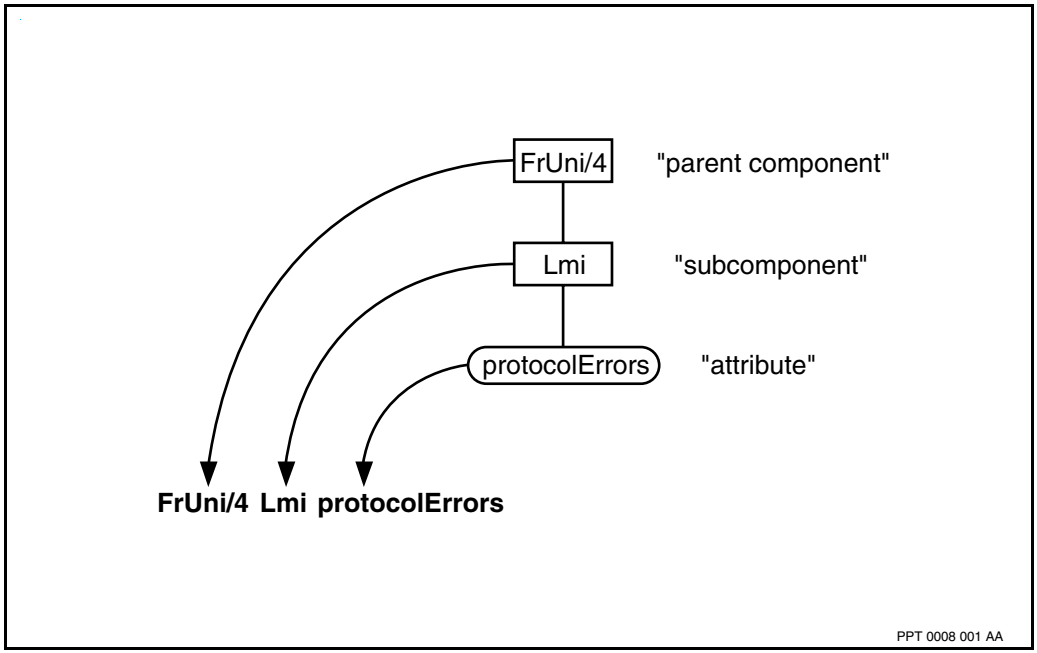
Operational

Operational attributes provide information or data used for monitoring the operation of Nortel Networks Multiservice Switch networks and services. The values of operational attributes are not retained across system restarts. These values can not be provisioned, but some of them can be set. These attributes include information such as:

- component OSI management state
- statistical data

For example, the Frame Relay LocalManagementInterface (Lmi) component with protocolErrors attribute is used to determine if, and how many, Lmi protocol errors have taken place within a given time frame. The Lmi component with this attribute is shown in the figure,“The Lmi component with protocolErrors attribute” (page 18).

Figure 4
The Lmi component with protocolErrors attribute

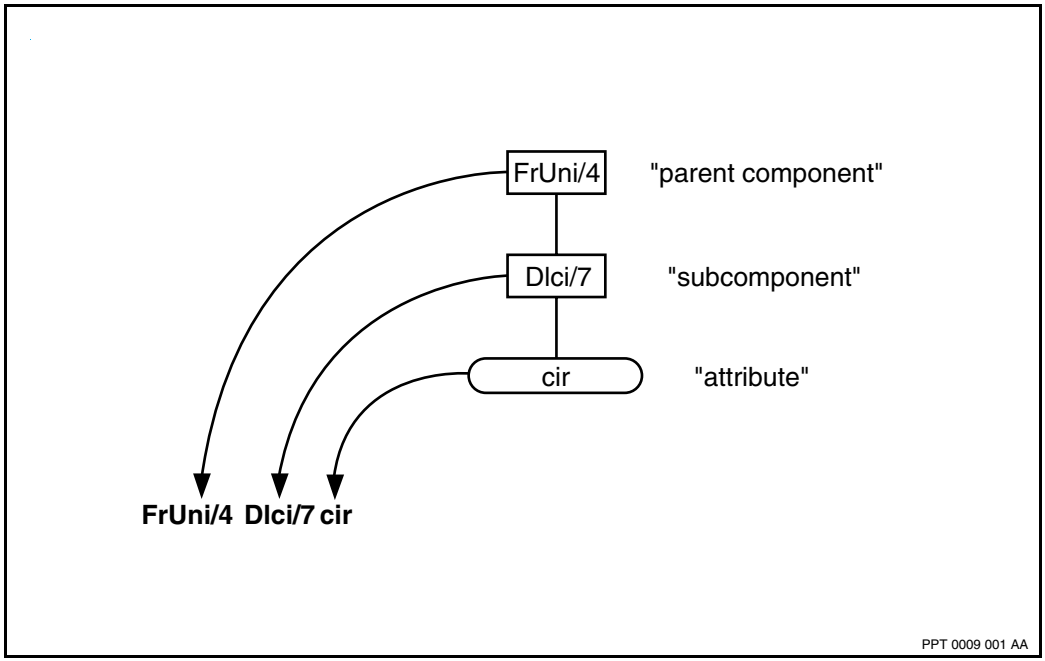


Provisionable

Provisionable attribute values can be configured by the network operator or administrator so that Multiservice Switch subsystems or services perform or behave in a certain manner. All components which are provisioned are saved across system restarts. Some components with provisionable attributes are mandatory and are created automatically by their parent. Components with provisionable attributes can also have operational attributes.

For example, the Frame Relay DataLinkConnectionIdentifier (Dlci) component with committedInformationRate (cir) attribute is used by the operator to specify the committed information rate (the rate at which the system will perform data transfer under normal conditions) in bits per second.

Figure 5
The Dlci component with the cir attribute set



Groups

The attributes of a component are divided into one or more groups whose members share similar characteristics. The characteristics that may be shared could include operating characteristics, or will define whether the attribute was operational or provisionable.

An example of a group is all the provisionable attributes of the Frame Relay DataLinkConnectionIdentifier (Dlci) component. The name of this group is FrsDataLinkConnectionIdentifierProv.

The attributes in this group include:

- maximumFrameSize
- committedInformationRate
- committedBurstSize
- excessBurstSize
- measurementInterval
- rateEnforcementAdaptation

Each of the above attributes relates specifically to the configuring of the DataLinkConnectionIdentifier. You set these attributes when you provision the Frame Relay service.

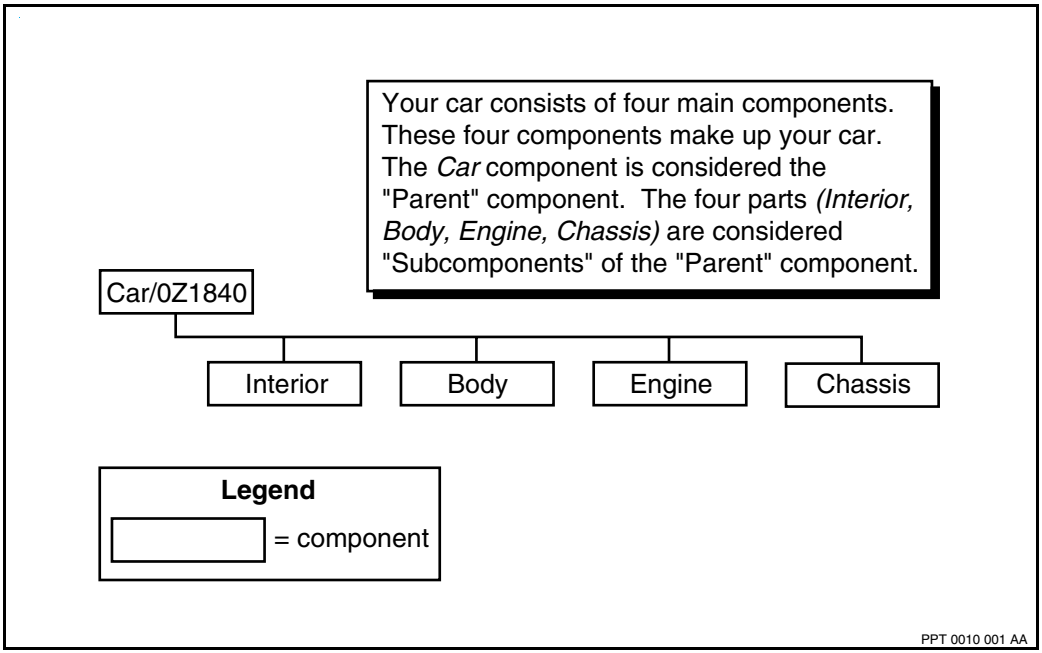
Component hierarchy - An everyday analogy

To help define components in everyday terms, think of the parts, or components if you will, that make up your automobile. For the sake of explanation, think of your car as being made up of the following main pieces, or components:

- interior
- body
- engine
- chassis

These four components are the subcomponents that make up the parent component, that being your car as a whole. This two level hierarchy can be represented by the hierarchy diagram. The car, like every car on the road, was assigned a license plate (or in component terms, an instance value) of 0Z1840. The license plate sets your car apart from all of the other cars which are virtually identical to it.

Figure 6
The first level breakdown of the component hierarchy that is your car



Note that the use of the terms parent component and subcomponent will alternate as each level of the hierarchy is described. This is because these terms describe the relative position of the components as they relate to the hierarchy. What was considered a subcomponent at a higher level in the hierarchy would now be considered a parent component of the subcomponent.

At this point the car's components can be properly named. The names are:

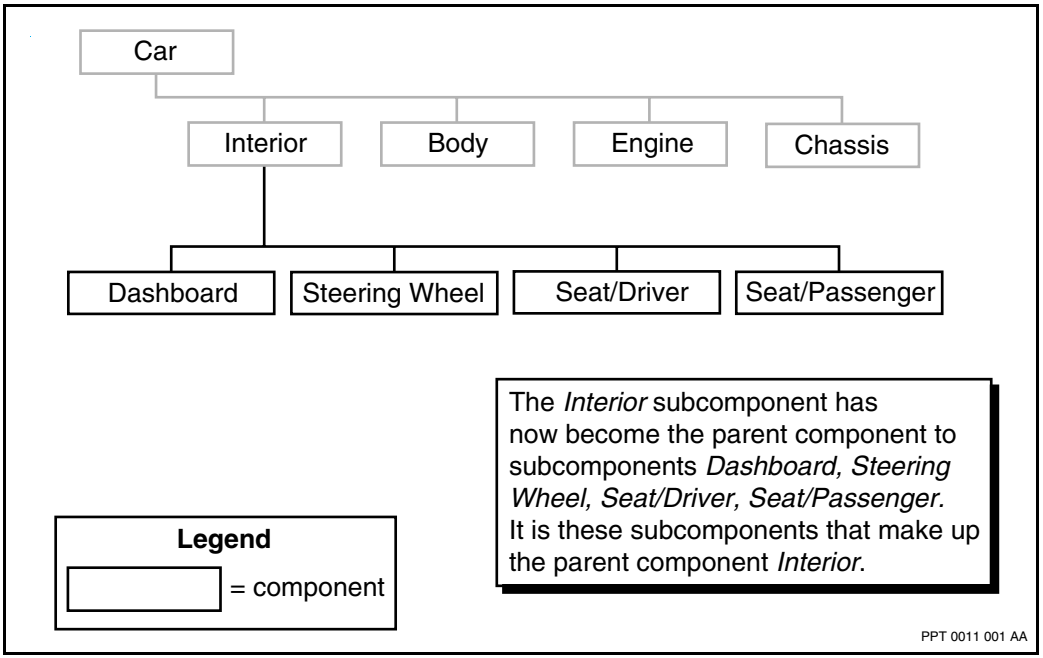
- Car/0Z1840
- Car/0Z1840 Interior
- Car/0Z1840 Body
- Car/0Z1840 Engine
- Car/0Z1840 Chassis

Now let's examine the subcomponents that make up the "Interior" parent component. What was the subcomponent "Interior" is now the parent to these subcomponents:

- dashboard
- steeringwheel
- seat/driver
- seat/passenger

Notice that the Seat components were assigned instance values. This is because both seats are identical and the instance value differentiates them.

Figure 7
The second level breakdown of the Interior component



The components that make up the car's interior (as properly named) include:

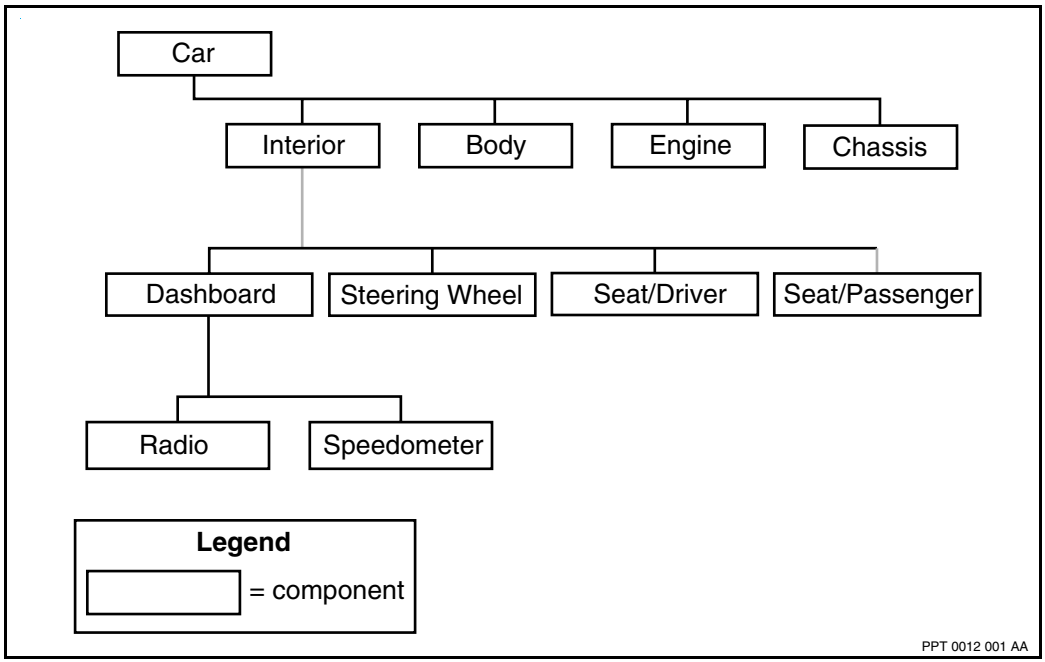
- Car/0Z1840
- Car/0Z1840 Interior

- Car/0Z1840 Interior Dashboard
- Car/0Z1840 Interior SteeringWheel
- Car/0Z1840 Interior Seat/driver
- Car/0Z1840 Interior Seat/passenger

If we examine the subcomponent dashboard, we notice that it has two subcomponents. These subcomponents include:

- radio
- speedometer

Figure 8
The third level breakdown of the dashboard component



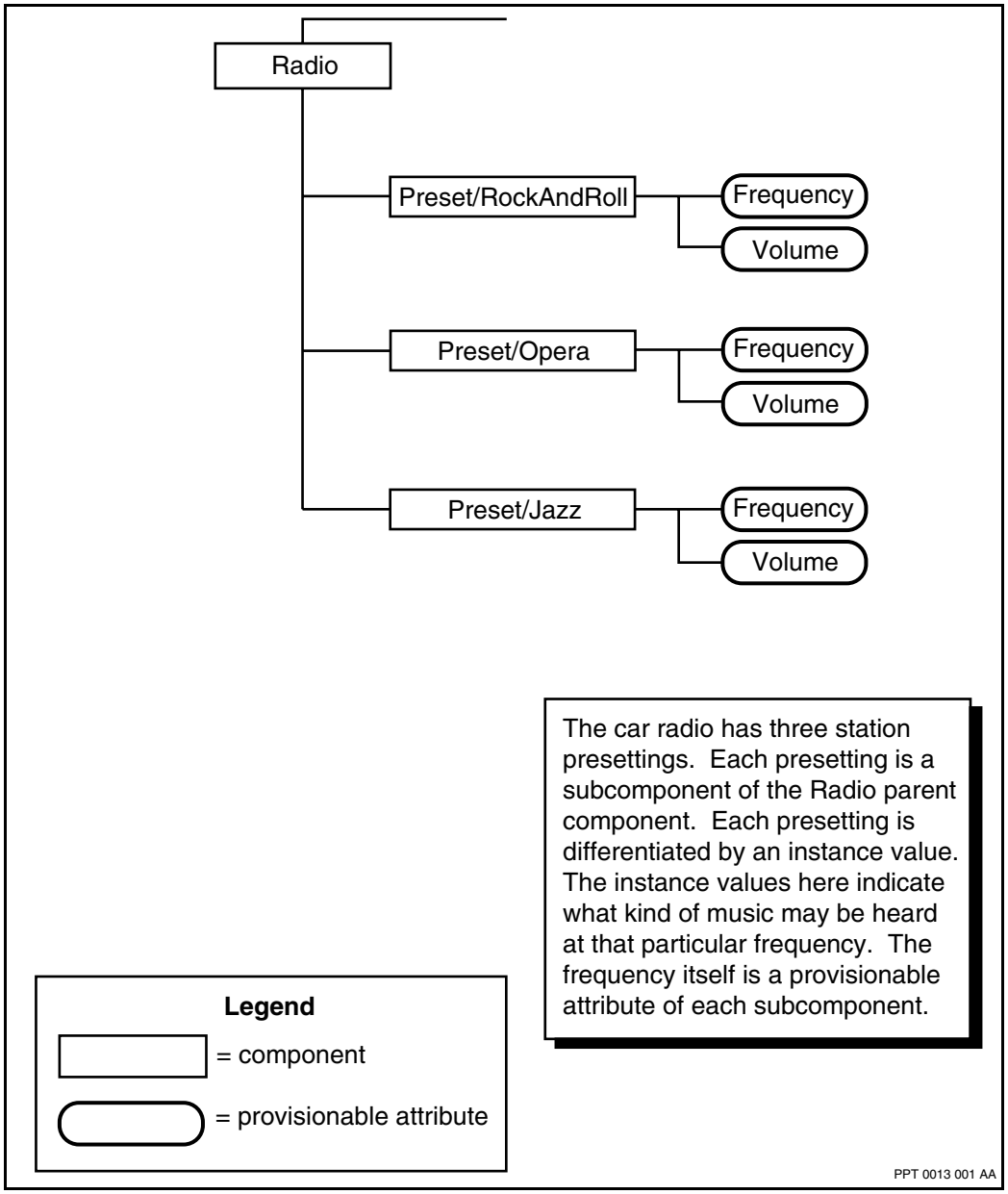
Assigning attributes

At this stage of our analogy we will assign attributes to those subcomponents that make up the Dashboard parent component.

Radio

To change the station on a car radio you must manually adjust it to obtain the preferred frequency. Many car radios have radio station presettings so you do not have to adjust the receiver's settings to a different frequency when you would like to listen to a different station, you just push a button. These preset stations must be previously provisioned. In our example, we have provisioned three preset receiver frequencies on our radio. These presettings are subcomponents of the Radio parent component. The frequencies are the provisionable attributes of the subcomponents. The three settings are given instance values which define what kind of music each station plays.

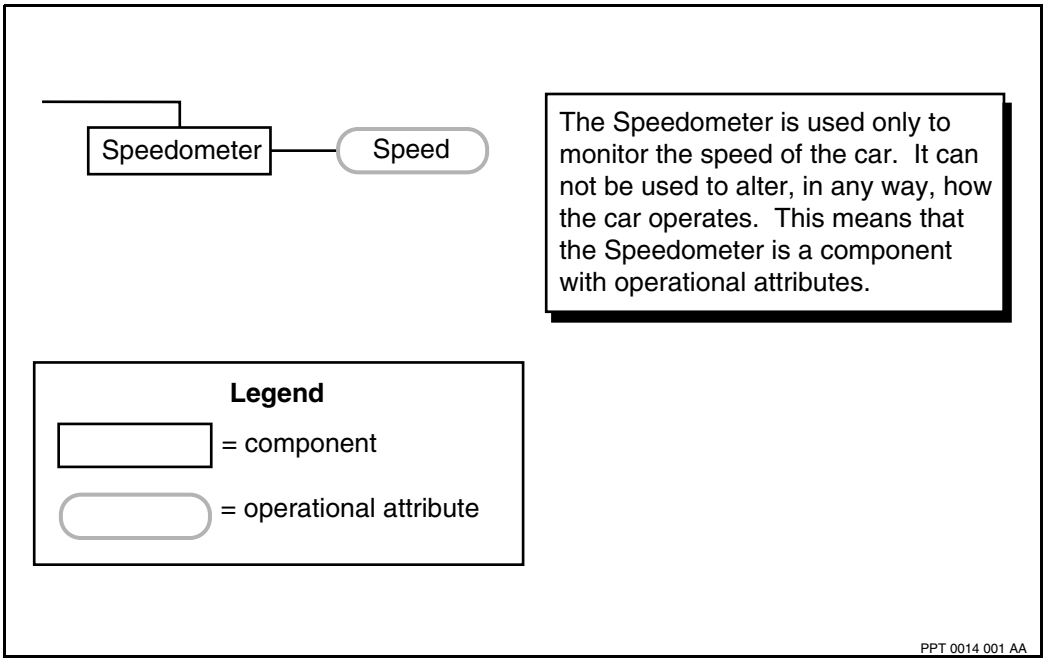
Figure 9
The radio has three station presettings whose frequency must be provisioned



Speedometer

The speedometer tells you how fast the car is travelling. The speed can not be set using the speedometer. When the car is not operating the speed is reset to zero. You may only utilize the speedometer when the car is operating and you can not influence the car's speed through the speedometer component. It is because of these points, that makes the speedometer a component with *operational* attributes. The attribute tells you the car's speed only and nothing else.

Figure 10
As you can only use the Speedometer to monitor your car's speed, it is a component with operational attributes



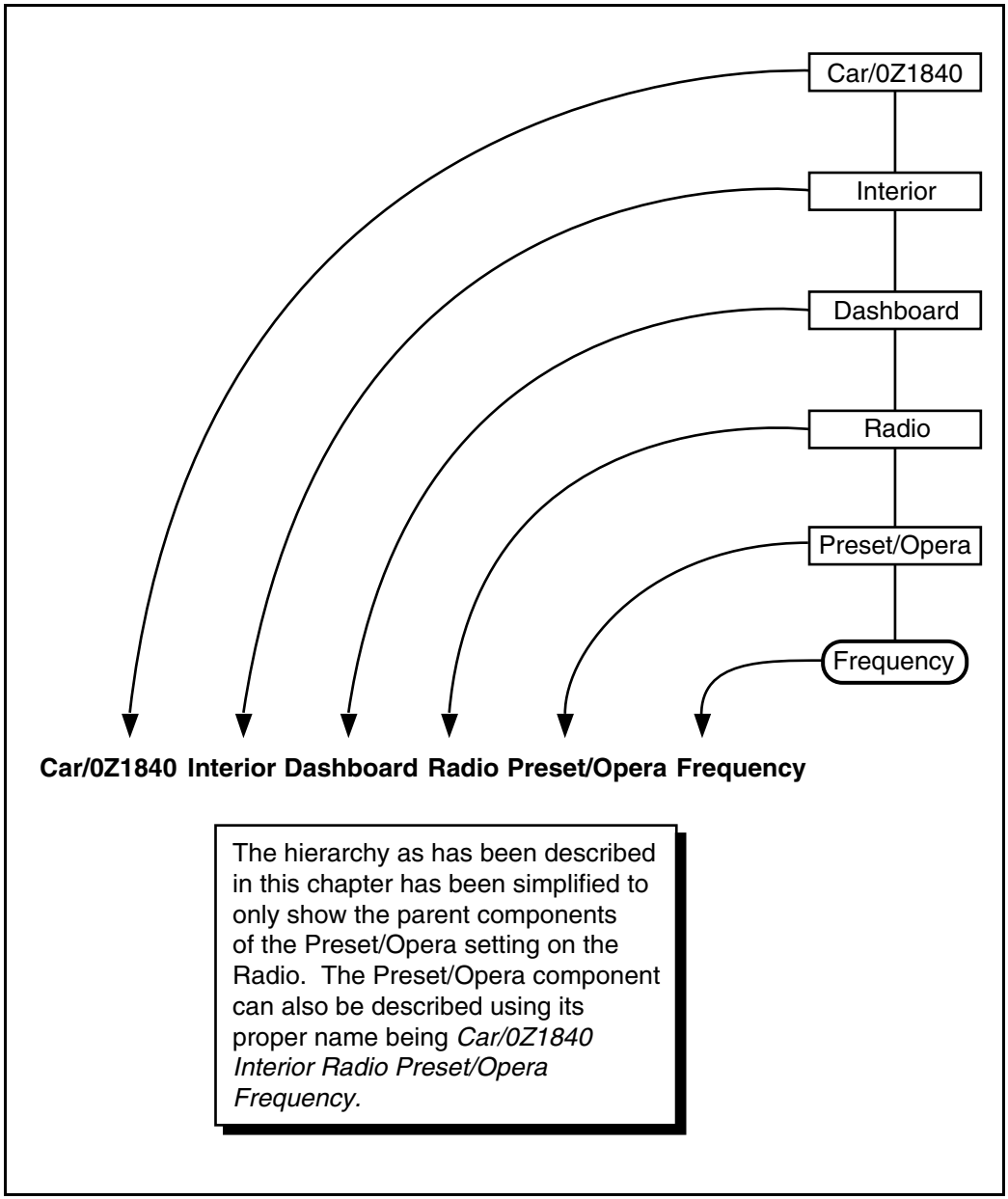
Applying naming conventions to the analogy

Component names consist of all components and subcomponents, each with an instance value. To apply this rule see the examples.

Example 1

The Radio parent component's station setting can be described visually.

Figure 11
How the frequency attribute for the Opera radio station is named



Example 2

The proper name for the Jazz radio station frequency component would be:

Car/0Z1840 Interior Dashboard Radio Preset/ jazz

The point to understand here is that there can be many variations of a similar theme. The instance values distinguish one variation from the next, even though they may appear to be virtually identical.

Example 3

The name of the Speedometer component would be:

Car/0Z1840 Interior Dashboard Speedometer

As this component is operational, the component shows the speed our car is travelling at.

Chapter summary

This chapter described components and the hierarchical nature that structures their existence. The way in which Nortel Networks Multiservice Switch systems are made up of component building blocks, and the way that each component block contributes to the system functionality, was also described. An analogy relating Multiservice Switch hierarchy to that of an automobile was included to help you better understand the component hierarchy. This chapter forms the basis of component understanding so that you may use the remaining chapters of this document confidently.

Interpreting information in this document

How this document is organized

Each Nortel Networks Multiservice Switch product subsystem has its own chapter in this document and each is described by means of:

- a hierarchical table of contents which provides an abbreviated component description
- a formal component description

This chapter contains a description of both.

Abbreviated component description

The abbreviated component description lists components, groups, verbs (including options and responses) and attributes. These are designed to make it easy to locate the operational and provisionable parameters of the component you require.

The abbreviated component description levels which reflect the hierarchical structure of the components. This list explains each type of level and provides an example.

- root component

  This is the top level element in the component hierarchy, for example, the enterprise module (EM).

- component

  A component, for example, Collector (Col), can be subcomponent of the root component or of another component. Nortel Networks Multiservice Switch systems accepted abbreviation is displayed in brackets.

- group

  This level divides the attributes into groups that share similar characteristics. An example, Provisioned (Prov) is a group containing all the provisionable attributes of the Collector component.The abbreviation for the group name is displayed in the brackets.

- attribute

  This level names the attribute, for example, agentQueueSize (agentQ). The abbreviation of the attribute's name is shown in brackets.

- verb

  In addition to the common verbs that may be applied to a component, there may component specific commands that only apply to certain components, for example, newfile. The abbreviation of the verb is found in brackets.

Formal component description

The formal component description is similar to the abbreviated component description but contains more information. The formal component description defines components in terms of:

- a description of the specific component
- the specific component's attributes
- the specific component's verbs

This document covers all of these aspects for component as a section before describing another component. This description can be visualized using the diagram.

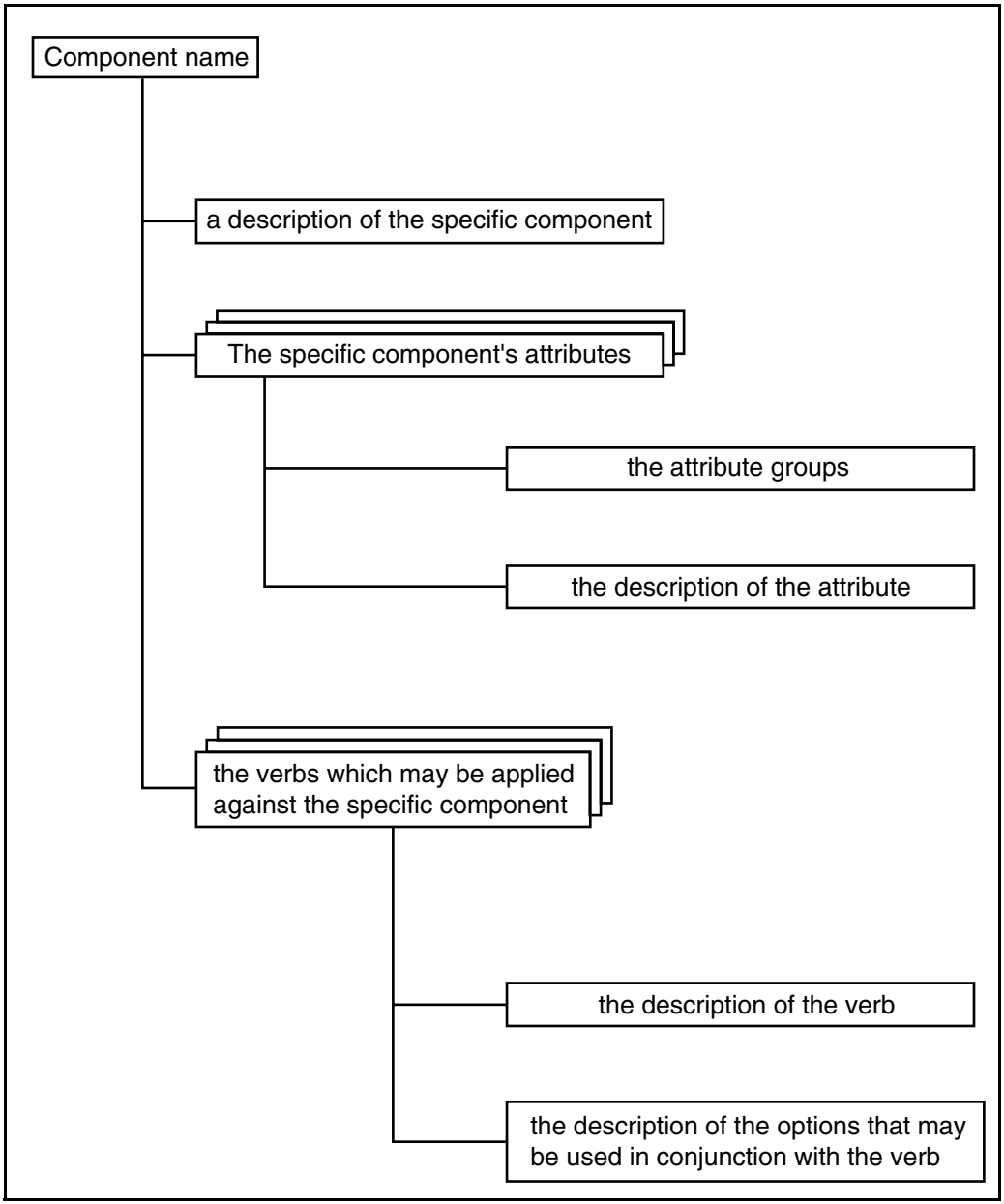
The detailed information is contained in information modules. These modules include:

- components
- attributes
- verbs

The component section presents the component from a high level similar to the abbreviated component description. The attribute section describes the attributes that apply to the component. The verb section describes each verb that may be used on the component.

It should be noted that not every component includes all the fields of information as described in this chapter. If the component you are researching is missing one or more fields, then those missing fields do not apply to that particular component.

Figure 12
How this document modularizes the details of each Multiservice Switch component



Components

The component description section provides a high-level description of the component.

This field...	Contains...
COMPONENT	This names the component being detailed
Groups	This lists the attribute groups defining the data for a component type.
Scope	This states the level of operator capability required to access or change components of this type.
Opt. Subcomp.	This states the optional components which must be added or provisioned by the user.
Subcomponents	This states the subcomponents that are created automatically when the parent component is created.
Dyn. Subcomp.	These are the non-provisionable (operational) subcomponents.
Dyn. Opt. Subcomp.	These are the subcomponents which may have optional or dynamic instances.

Attributes

Attributes in this document are covered in terms of two levels:

- attribute groups
- attribute descriptions

Attribute groups

Attributes are organized into attribute groups. Attributes in a particular attribute group share similar characteristics.

This field...	Contains...
GROUP	Identifies the group to which the following attributes belong.
Properties	This specifies whether the attribute is provisionable or operational.

Attribute descriptions

At this level the attributes are described in detail.

This field...	Contains...
ATTRIBUTE	This is the attribute being described.
Criticality	This defines the disruption to the service that will occur if the attribute's value is changed. NONE - The attribute's value can be changed without causing any disruption to the service. PROCESS - One of the attribute's parent components, and all of that component's subcomponents will be taken out of service. To determine the specific component you must run checkprov. COMPONENT - The attribute's parent component and all of the component's subcomponents will be taken out of service. MODULE - The module will reload once a change is made.
Access	This states whether the component is write only, read only, read and write, or none.
Default	This states the attributes assigned default value.
Values	This specifies the attribute's data type, that is, the set of values it can assume.

Verbs

Many of Nortel Networks Multiservice Switch components include unique verbs which may be applied against the component. In this document, these component-specific verbs are detailed in their own series of subsections that follow the description of the component's attributes. The verbs are detailed in the following sections:

- verb description
- options
- responses

Each verb is defined. Verb options define operational parameters that may be applied to that verb. Every system response (a message from the system displayed on the network management tool) from the use of that verb follows.

Verb description

The verb description states the verb and the impact.

This field...	Contains...
VERB	This is the verb being described.
Impact	This states the level of operator capability required to use this command.

Options

Verb options are conditions applied to verbs to limit their scope of influence.

This field...	Contains...
OPTION	This is the verb option being described.

Responses

Responses are messages from Nortel Networks Multiservice Switch indicating that there is a process under execution, or an error was made during provisioning. Responses will also warn you if you attempt something before completing any prerequisites.

This field...	Contains...
RESPONSE	This states the system response resulting from the use of a verb.

Chapter summary

This chapter described how this document presents all the information about Nortel Networks Multiservice Switch components. Described is how each chapter details a specific component using a hierarchy diagram, an abbreviated component description, and a formal component description. How each of these mechanisms is used is included with appropriate examples and diagrams. This chapter instructs you how to use the remainder of this document with confidence.

Common Verbs

VERB Add (A) Common

Impact	Configuration
Description	*Add[-superiors] <component name>* This verb creates a new component (with default attribute values) in the edit view. The operator's session must be in provisioning mode to use this command. Components which are created automatically (for example, when their parent component is added) cannot be "manually" created with the *Add* command. **Options:** *-superiors* If this option is specified and one or more ancestors of the component to be added do not exist, the *Add* command will automatically add the missing ancestor component(s), with default attribute values. If this option is not specified, the *Add* command fails when any of the ancestors of the component to be added do not exist.

VERB DELete Common

Impact	Configuration
Description	*Delete <component name>* This verb removes a component (and all its subcomponents) from the edit view. The operator's session must be in provisioning mode to use this command. When asked to delete any component which is a "required" subcomponent of its parent, either *Delete* will refuse if only a single such subcomponent is possible, or semantic checks will fail if all such subcomponents have been deleted. Components which are created automatically (for example, when their parent component is added) cannot be removed with the *Delete* command. To remove all components (including required ones) whose associated feature has already been removed, use command *Clear -rf Prov* To undo the effect of *Delete*, the *Copy Prov* command may be used.

VERB Display (D) Common

Impact	Passive
Description	*Display [-current] [-provisionedData] [-operationalData] [-noTabular] <component name> [<attribute specification>]* This verb obtains the values of (a subset of) the attributes of one or more components. The attribute specification is a list of one or more attribute or group names, separated by commas. If this specification is present, *Display* will show only the requested attributes and/or groups of attributes. If there is no attribute specification, the default behavior of *Display* depends on whether the operator session is in provisioning mode or not. A session in provisioning mode will see the values (in the edit view) of all provisionable attributes. A

session not in provisioning mode will see the values (in the current view) of all operational attributes. See below for options to override this behavior.

The component name may be “wild-carded” by entering it in the form

<component name> <component type>/<pattern>

in which case the *Display* command shows attribute values for all subcomponents of the given component name that are of the specified type and that match the pattern. A pattern may contain one or more wildcard (*) characters. An example:
display prov view/*.full.*

Similarly, the form

<component name> *

may be used to display attribute values for all subcomponents of the given component name. If this form is used, no attribute specification is allowed.

The wild-carded form will produce tabular output (unless the *-noTabular* option was specified). However, if the component has too many attributes, not all will fit in the table. An indication of the attributes not shown will be made. Two possible solutions are to specify fewer attributes explicitly, or to indicate that your screen width is larger than the default of 79. This can be done as shown in this example:

```
1> me
Nmis Telnet Session/5; userid = x
Impact = service; Scope = device;
CustomerId = 0

2> set nmis tel ses/5 screenWidth 131
Nmis Telnet Session/5
ok 1995-09-11 12:40:22.35
```

Options:

-current

If this option is specified, the attribute values displayed are those for the current view, even if the operator’s session is in provisioning mode. Without this option, the information is retrieved from the edit view if the session is in provisioning mode

and the data is provisioned. If the session is in provisioning mode but the data is not provisioned, or the session is not in provisioning mode, the information is retrieved from the current view.

-provisionedData
This option is significant only if no specific attributes or groups have been requested in the *Display* command. If this option is present, all provisioned data of the component will be displayed. Without this option, the provisioned data will be displayed only if the operator session is in provisioning mode.

-operationalData
This option is significant only if no specific attributes or groups have been requested in the *Display* command. If this option is present, all operational data of the component will be displayed. Without this option, the operational data will be displayed only if the operator session is not in provisioning mode.

-noTabular
A wild-carded display (for example, d lp/*) will format information in a tabular style. Long rows may wrap onto several lines and some information may be truncated. In these cases, this option will format information one attribute per line, without loss of information.

VERB Help (H) Common

Impact — Passive

Description — *Help [-verb(<verb>)] [-subcomponents] [<component class> [<attribute specification>]]*
This verb provides information about components, attributes, and verbs.

A component class is a sequence of component type names. If no component class is entered, *Help* displays the syntax of the *Help* command, a list of top-level component types, and a list of verbs which can be entered without specifying any component name.

If a component class is entered, *Help* displays information about the class, including allowed subcomponent types and verbs.

The component class may be followed by an attribute specification, which is either an attribute name or an attribute group name. In this case *Help* displays information about the requested attribute or attribute group.

Options:
-verb(<verb>)
This option specifies the name of a verb for which the user wants to have a detailed description. This verb must be valid for the specified component class.

-subcomponents
This option requests a display of the hierarchy of all subcomponent types under the specified component class.

VERB List (L) Common

Impact: Passive

Description: *List [-current] [-provisionedComponents] [-operationalComponents] [<component specification>]*
This verb lists the subcomponents of a specified component instance.

The component specification can either be a component name, in which case the subcomponents of the named component are listed, or it can have the form
<component name> <component type>/<pattern>
in which case only the subcomponents of the named component that are of the specified type and whose instances match the pattern are listed. A pattern can consist of one or more wildcard (*) characters. An example:
list prov view/*.full.*

If the operator session is in provisioning mode, the component instances displayed are those in the edit view, and only provisioned subcomponents are displayed. If the operator session is not in provisioning mode, the component instances displayed are those in the current view, and both provisioned and operational subcomponents are displayed.

Options:

-current

If this option is specified, the subcomponents listed will be those in the current view. Without this option, the subcomponents listed will be those in the edit view if the operator's session is in provisioning mode and the specified component is provisioned. If the operator is in provisioning mode and the specified component is operational, or the operator is not in provisioning mode, the subcomponents listed will be those in the current view.

-provisionedComponents

If this option is specified, provisioned subcomponents will be listed. Otherwise, provisioned subcomponents will be listed only if the operator session is in provisioning mode and the *-operationalComponents* option has not been specified.

-operationalComponents

If this option is specified, operational subcomponents will be listed. Otherwise, operational subcomponents will be listed only if the operator session is not in provisioning mode and the *-provisionedComponents* option has not been specified.

VERB LOCK Common

Impact: Service

Description: *Lock [-force] <component name>*

This verb will cause the specified component to enter the OSI ***shuttingDown*** administrative state. While shutting down, the component continues to provide service to existing clients but rejects any new requests for service. In some cases, locking a component also causes all its subcomponents to shut down.

When the component is no longer providing service, it enters the OSI ***locked*** administrative state.

Options:

-force

If this option is present, service to current clients is terminated and the ***locked*** state is entered immediately (that is, without first going through the ***shuttingDown*** state). Without this option, *Lock* behaves as described above.

VERB Set (S) Common

Impact: Service

Description: *Set <component name> <attribute name> <value> [, <attribute name> <value> ...]*
This verb changes one or more of a component's attribute values.

The syntax for the values depends on the data type of the attribute being set. For multi-valued attributes, such as lists, several values may follow the attribute name.

Provisionable attributes can be changed only in the edit view, and only by an operator whose session is in provisioning mode.

VERB Unlock Common

Impact: Service

Description: *Unlock <component name>*
This verb causes the specified component to enter the OSI ***unlocked*** state.

VERB Find (F) Common

Impact: Passive

Description: Find -freelinks(<component class>) [-attribute(<attribute>) [-nonrecursive] [-c] [-p] [-o] [<component name>]

This verb returns all provisioned components that are available to be linked to the specified component class. The user can specify a target component name, which will limit the components that are searched. The target component name supports any wildcarding, pattern matching, and value-based filtering that are supported by the list and display commands. Example:
Find -freelinks(atmif) lp/* ds3/*

Options:
-freelinks(<component class>)
This option is mandatory. The *Find* command will return components to which this class can be linked.

-attribute(<attribute>)
This option is required when the component class specified by the *-freelinks* option has more than one settable link attribute. This option designates which attribute will be used by the find command.

-nonrecursive
By default, the find command searches the subtree(s) routed at the target component name. This option indicates that the subcomponents should not be recursively searched.

-current
If this option is specified, the components returned will be those in the current view. Without this option, the components returned will be those in the edit view if the operator's session is in provisioning mode. If the operator is not in provisioning mode, the components returned will be those in the current view.

-provisionedComponents
If this option is specified, provisioned components will be returned. Otherwise, provisioned components will be returned only if the *-operationalComponents* option has not been specified.

-operationalComponents
If this option is specified, operational components will be returned. Otherwise, operational components will be returned only if the operator session is not in provisioning mode and the *-provisionedComponents* option has not been specified.

Responses

RESPONSE ..... and ... should not be less than 1 hour apart.

Description

This response is issued when a semantic check is done on a Collector, indicating that this pair of times are too close together. It appears once for each invalid pair of times.

ATTRIBUTE invalidTimeFirstOfPair

Description

This is the first of a pair of times that are too close together.

Values Time (HM)

ATTRIBUTE invalidTimeSecOfPair

Description

This is the second of a pair of times that are too close together.

Values Time (HM)

RESPONSE Error:

Description

This response is issued to show the attribute which is in error on a DCS intra-component semantic error or warning.

ATTRIBUTE attribute

Description This attribute identifies the attribute containing the error.

Values Decimal (0..4294967295)

RESPONSE Attribute Problem

Description

This response is generated when the node detects a problem with the way the MDM uses an attribute. This can occur for the get, set or help services and action. The actual problem is indicated via related alarms and responses. Some problems are ignored and so multiple such responses are possible for each attribute with a problem.

System action: the command is ignored for this attribute. The command may or may not be executed for other attributes.

Operator action: avoid using this attribute. Update the software on the MDM.

ATTRIBUTE attribute

Description

This parameter identifies, by name, the attribute for which a problem has been detected.

Values

Decimal (0..65535)

RESPONSE Component problem

Description

This error response is generated when the node detects a problem with the way the MDM uses the component name target of a command. The actual problem is indicated via related alarms and responses.

System action: the command fails.

Operator action: avoid using this component. Update the software on the MDM.

ATTRIBUTE component

Description

This parameter contains the valid portion of the component name.

Values

The name of the component

RESPONSE Group problem

Description

This response is generated when the node detects a problem with the way the MDM uses a group. This can occur for the get or help service and action. The actual problem is indicated via related alarms and responses. Some problems are ignored and so multiple such responses are possible for each group with a problem.

System action: the command is ignored for this group. The command may or may not be executed for other groups.

Operator action: avoid using this group. Update the software on the MDM.

ATTRIBUTE group

Description

This parameter identifies the group, by name, for which a problem has been detected.

Values

Decimal (0..65535)

RESPONSE Option problem

Description

This response is generated when the node detects a problem with the way the MDM uses an option. The actual problem is indicated via related alarms and responses.

System action: the option may be ignored. The other options may be or may not be accessed. If not, the command fails.

Operator action: avoid using this option unless it is mandatory. Update the software on the MDM.

ATTRIBUTE option

Description

This parameter identifies the option, by name, for which a problem has been detected.

Values

Decimal (0..65535)

RESPONSE Fmip command identifier invalid

Description

This error response is generated when an invalid service or action is requested.

System action: the command is not executed.
Operator action: avoid using this command. Update the software on the MDM. The help command can be used to get a list of all verbs (services or actions).

ATTRIBUTE action

Description

This parameter identifies the unrecognized action type. The MDM may or may not be able to convert it to an ASCII name.

Values

Decimal (0..65535)

ATTRIBUTE service

Description

This parameter identifies the unrecognized service. The MDM may or may not be able to convert it to an ascii name.

Values

Decimal (0..65535)

RESPONSE ....

Description

This response describes the attributes specific to an Alarm Event.

ATTRIBUTE activeListStatus

Description

This mandatory attribute is the active alarm list status. This is equivalent to the DPN-100 Alarm Type field and is used by the NMS to add (on receiving a **set**) and delete (on receiving a **clear**) alarms from the alarm displays.

Values

message (MSG)
set (SET)
clear (CLR)

ATTRIBUTE severity

Description

This mandatory attribute is the severity of the alarm which should indicate what priority that fixing this problem should be given.

All values are OSI-defined; refer to CCITT X.733 for a more complete description.

Values

indeterminate
critical
major
minor
warning
cleared

ATTRIBUTE alarmType

Description

This mandatory attribute is the Alarm Type field as defined by OSI which is used to indicate a broad category of what is wrong. The first six values are OSI-defined; refer to CCITT X.733 (for the first 5) and CCITT X.736 (for the last) for a more complete description.

The value ***operator*** is used when an alarm is issued due to an operator command. The values ***debug*** and ***unknown*** are for compatibility with DPN-100 and are used for debugging alarms and for those which do not fit any of the above, respectively.

Values

communications
qualityOfService
processing
equipment
environmental
security
operator
debug
unknown

ATTRIBUTE probableCause

Description

This mandatory attribute is the probable cause for the alarm which usually qualifies the Alarm Type field. Most values are OSI-defined; refer to CCITT X.733 and X.736 for a more complete description. Some Nortel Networks-specific causes are added to be more descriptive in cases where no OSI-defined cause is appropriate.

Values	lossOfSignal lossOfFrame framingError localTransmissionError remoteTransmissionError callEstablishmentError degradedSignal commSubsystemFailure commProtocolError lanError dteDceInterfaceError responseTimeExcessive queueSizeExceeded bandwidthReduced retransmissionRateReduced thresholdCrossed performanceDegraded congestion atOrNearCapacity storageCapacityProblem versionMismatch corruptData cpuCyclesLimitExceeded softwareError softwareProgramError softwareProgramTermination fileError outOfMemory underlyingResourceUnavailable (underlyingResourceUnavail) applicationSubsystemFailure configurationError powerProblem timingProblem processorProblem datasetModemError multiplexorProblem receiverFailure transmitterFailure outputDeviceError inputDeviceError ioDeviceError

equipmentFailure
adapterError
duplicateInfo
infoMissing
infoModification
infoOutOfSequence
unexpectedInfo
denialOfService
outOfService
proceduralError
otherOperational
cableTamper
intrusionDetection
otherPhysical
authenticationFailure
breachOfConfidence
nonRepudiationFailure
unauthorizedAccess
otherSecurityService
delayedInfo
keyExpired
outOfHoursActivity
enclosureDoorOpen
excessiveVibration
fireDetected
floodDetected
heatVentCoolingProblem
humidityUnacceptable
leakDetected
materialSupplyExhausted
pressureUnacceptable
pumpFailure
temperatureUnacceptable
toxicLeakDetected
operationalCondition
debugging
unknown
inactiveVirtualCircuit
networkServerIntervention
activeVirtualCircuit

ATTRIBUTE ntpIndex

Description	This mandatory attribute is an 8-digit code that is an index into NTP NN10600-230 which provides a more detailed description of the alarm and possible actions to take. The first four digits indicate a “grouping” of alarms (a set of alarms common to a particular subsystem or component, etc.). The last four digits are a subindex arbitrarily assigned by the application which is responsible for the “group”.
Values	BCD (8)

RESPONSE

Description	This response describes the attributes specific to a Log Event.

ATTRIBUTE userId

Description	This mandatory attribute is the user id of the user who issued the command (see **command**).
Values	String (0..8, ASCII)

ATTRIBUTE sessionSequenceNumber

Description	This mandatory attribute is a numeric session sequence number. A “login” Log and all commands issued during that particular session would have the same sequence number. The next time a user (the same one or a different one) logs in, a new sequence number is used.
Values	Decimal (0..4294967295)

ATTRIBUTE command

Description	This mandatory attribute is the command which was entered by the user.
Values	String (1..255, ASCII)

ATTRIBUTE response

Description	This mandatory attribute is the success/failure indicator of the command which was entered. Note that this is not the full textual response actually received by the user.

Values	String (1..255, ASCII)

RESPONSE

Description	This response describes the attributes specific to a Debug Event.

ATTRIBUTE debugData

Description	This mandatory attribute is the debugging information.
Values	String (0..1024, ASCII)

RESPONSE Accounting Information

Description	This response describes the attributes specific to a Vintage 4 format Accounting Event.

ATTRIBUTE vintage4Data

Description	This mandatory attribute is hexadecimal data which is in the same format as the DPN-100 Vintage 4 accounting record.
Values	String (0..255, Hex)

RESPONSE You have insufficient impact capability to access ....

Description	This error response is generated whenever an operator is prevented from accessing a group or attribute due to insufficient impact capability. **System action**: the command is not applied to the named group or attribute; it may have been applied to other groups or attributes specified in the command. **Operator action**: you must log in using a userid with a higher impact capability in order to access this group or attribute.

ATTRIBUTE attribute

Description	This attribute contains the name of an attribute which the operator is not permitted to access with this command.
Values	Decimal (0..65535)

ATTRIBUTE group

Description	This attribute contains the name of a group which the operator is not permitted to *Display*.
Values	Decimal (0..65535)

RESPONSE Invalid Software Distribution Site or file access error on the Software Distribution Site.

Description	The *Start Sw Dld* command issues this response when an Application name version, as specified by the *avListToDownload* attribute, could not be found at the site specified by the *-h* option of the command. This could be caused by one of the following: - The host IP address specified in the *-h* option of the command does not correspond to a site which contains software compatible with this type of Nortel Networks Multiservice Switch. - There is a directory or file access error on the Software Distribution Site (SDS).

ATTRIBUTE fileBeingAccessed

Description	This attribute is the name of the file or directory which is being accessed at the time of the error.
Values	String (1..128, ASCII)

RESPONSE File access error on Filesystem.

Description	This response is issued when the download is stopped due to some directory or file access error on the file system of the module attempting the download.

ATTRIBUTE fileBeingAccessed

Description	This attribute is the name of the file or directory which is being accessed at the time of the error.
Values	String (1..128, ASCII)

RESPONSE Cannot ....

Description

This response may indicate a file system failure.

System action: If the file system error occurred during processing of an operator command, the command terminates (it may have been partly executed).
Operator action: Check that the file system is enabled. If the error occurred during a write or delete operation, check that the named file is not protected. Retry the operator command which produced the error (if applicable). If the problem persists, follow the fault clearing procedures for the file system.

ATTRIBUTE failedOperation

Description

This attribute identifies the operation which failed.

Values

open
read
write
close
delete
swap
protect
unprotect

ATTRIBUTE fileOrDirectory

Description

This attribute indicates whether the file involved was a directory or an ordinary file.

Values

directory
file

ATTRIBUTE fileName

Description

This attribute contains the file or directory name.

Values

String (0..128, ASCII)

RESPONSE Unrecognized attribute identifier: component description mismatch

Description

This warning response is generated when the MDM uses an unrecognized attribute identifier. This can only occur for the get, help or set commands. This response may be repeated for every attribute with this problem. Other attributes are still processed.

System action: the command is ignored for this attribute. Other attributes are still processed.

Operator action: Update the software on the MDM. The help command can be used to list the names of the recognized attributes. Avoid using attributes not in this list.

ATTRIBUTE attribute

Description

This parameter identifies an attribute, by numeric id, that is not recognized by the node. The MDM may or may not be able to convert it to an ASCII name.

Values

Decimal (0..65535)

RESPONSE Attribute value/index out of range: component description mismatch

Description

This response is generated when the MDM attempts to set an attribute to contain a value or index that is out of range.

System action: the command is ignored for this attribute. Other attributes are still processed.
Operator action: Update the software on the MDM. The help command can be used to list the appropriate value/index ranges.

ATTRIBUTE attribute

Description

This parameter identifies, by name, the attribute for which a problem has been detected. This response may be repeated for every attribute with this problem. Other attributes are still processed

Values

Decimal (0..65535)

RESPONSE .....

Description

This response describes the attributes specific to an Alarm Event.

ATTRIBUTE notificationId

Description

This mandatory attribute is the notification Id of the alarm. The high-order byte is the slot number of the card from which this alarm originated. The low-order 24 bits contain a sequence number which increases each time an alarm is generated. Thus, this Id provides a simple way of uniquely identifying an alarm as well as the order in which alarms are generated on a card. For cross-card ordering, one would have to look at the time stamp (see *dateAndTime*).

Values

Hex (H.0..H.ffffff)

ATTRIBUTE commentData

Description

This optional attribute is additional textual information for the network operator to use. Other than for software alarms, if it is not self-explanatory, it should be described in NTP NN10600-230.

Note: The total number of bytes in comment, operator, and internal data may not exceed 750 bytes.

Values

String (0..750, ASCII)

ATTRIBUTE operatorData

Description

This optional attribute is additional hexadecimal information for the network operator to use. Other than for software alarms, it should be described in NTP NN10600-230.

Note: The total number of bytes in comment, operator, and internal data may not exceed 750 bytes.

Values

String (0..750, Hex)

ATTRIBUTE pid

Description	This optional attribute is a string representation of the internal process id (Pid) of the process which generated the alarm (for internal use only).
Values	String (0..25, ASCII)

ATTRIBUTE fileName

Description	This optional attribute is an internal file name (for internal use only).
Values	String (0..255, ASCII)

ATTRIBUTE relatedComponentNames

Description	This mandatory attribute is a list of the names of any components related to the component (that is, the one in the header FIELD) against which this alarm is raised. It typically contains at least the LP and possibly the card on which the originating component resides.
List of	The name of the component

ATTRIBUTE fileLineNumber

Description	This optional attribute is an internal line number in the file (see *fileName*) referred to above (for internal use only).
Values	Decimal (0..4294967295)

ATTRIBUTE fileVersion

Description	This optional attribute is a version indicator of the file (*fileName*) referred to above (for internal use only).
Values	String (0..255, ASCII)

ATTRIBUTE correlatedNotificatns

Description	This optional attribute is additional internal hexadecimal information for internal use only. It does not have to be described in NTP NN10600-230. It is a list of *notificationId*s which would indicate other alarms

which are related to this one. Note that if this is not a MSG alarm, the MDM clears any SET alarms whose *notificationId*s are listed here.

List of Hex (H.0..H.ffffff)

ATTRIBUTE internalData

Description This optional attribute is additional internal hexadecimal information for internal use only. It does not have to be described in NTP NN10600-230 .

Note: The total number of bytes in comment, operator, and internal data may not exceed 750 bytes.

Values String (0..750, Hex)

RESPONSE The following components have been created:

Description This is the normal response to an *Add* command. It lists all the components added, including the component specified in the *Add* command, any missing ancestors which were added, and any automatically added subcomponents.

ATTRIBUTE component

Description This attribute contains the name of a component which has been added. It is repeated for every added component.

Values The name of the component

RESPONSE Syntax Error

Description This error response group is generated when an operator inputs a syntactically invalid command. This response is specially formatted to indicate where in the original command, the error occurred.

System action: the command is completely ignored.
Operator action: re-issue the command as appropriate.

ATTRIBUTE term

Description This attribute contains the symbolic name of the syntactic term in error (for example, “verb”, “option”, “component”, “attribute”,

	“group”). The portion of the original input corresponding to this term is indicated via braces.
Values	String (1..255, ASCII)

ATTRIBUTE termStart

Description	This attribute contains the character offset from the start of the command where the symbolic term starts. Given “ABCD”, then “BC” starts at offset of 1.
Values	Decimal (0..1023)

ATTRIBUTE termEnd

Description	This attribute contains the character offset from the start of the command where the symbolic term ends. Given “ABCD”, then “BC” ends at offset 3. This is one character beyond the ending character position.
Values	Decimal (0..1023)

ATTRIBUTE problem

Description	This attribute contains a description of the problem associated with the term (for example, “missing”, “unrecognized”).
Values	String (1..255, ASCII)

ATTRIBUTE relatedTerm

Description	This optional attribute contains the symbolic name of another syntactic term that is related to the first one. The portion of the original input corresponding to this term is indicated via braces.
Values	String (1..255, ASCII)

ATTRIBUTE term2Start

Description	This optional attribute contains the character offset from the start of the command where the symbolic term starts. Given “ABCD”, then “BC” starts at offset of 1.

Values	Decimal (0..1023)

ATTRIBUTE term2End1

Description	This optional attribute contains the character offset from the start of the command where the symbolic term ends. Given “ABCD”, then “BC” ends at offset 3. This is one character beyond the ending character position.
Values	Decimal (0..1023)

ATTRIBUTE reason

Description	This optional attribute contains the reason the parsing problem occurred.
Values	String (1..255, ASCII)

RESPONSE Component ... already exists.

Description	This error response is generated by an *Add* or *Copy Prov* command if execution of the command would create a component that already exists in the edit view. **System action**: the command is not executed. **Operator action**: in the case of an *Add* command, no action is needed, since the desired component is already in the edit view. In the case of a *Copy Prov* command, retry the command using a different *-destination* option.

ATTRIBUTE component

Description	This attribute is the name of the component that already exists. It is present only if the component name is different from the component name specified in the command.
Values	The name of the component

RESPONSE Component... does not exist....

Description

This error response is generated whenever the component to which a command applies does not exist.

System action: the command is not executed.
Operator action: for commands which can be applied to either current or edit views of provisioning data, ensure first that the correct view is the view being examined, then retry the command with a valid component name.

ATTRIBUTE component

Description

This attribute contains the name of the missing component. It is present only if the component name is different from the component name specified in the command.

Values

The name of the component

ATTRIBUTE view

Description

The view from which a component does not exists. This attribute is only present for commands that operate on more than one view; for example, the *Display* and *Set* command can specify both operational and provisional attributes.

Values

current
edit

RESPONSE A total of ... components have been deleted.

Description

This is the normal response to a *Delete* command. It contains a count of deleted components.

ATTRIBUTE count

Description

This attribute counts the number of deleted components.

Values

Decimal (0..65535)

RESPONSE The filename specified is invalid.The correct format for activate, apply or load is:...name[.type[.number]]The correct format for a save or commit command is only:...nameThe name...may contain only alphanumeric ...

Description

An *Activate*, *Apply, Commit*, *Load* or *Save* command produces this response when the specified file name has an invalid form.

System action: the command is ignored.
Operator action: retry the command with a valid file name.

ATTRIBUTE reason

Description

The text describes the format of a provisioning file.

Values

Decimal (0..0)

RESPONSE The above response was generated during loading, when the following command failed:.....

Description

During loading, this response is issued whenever a command from the provisioning data file fails to execute successfully. This should only happen if the *-force* option was used on the *Load* command, or if loading a partial view.

System action: loading is terminated at the point where the error was detected, unless the *-force* option is in effect (in which case loading continues).
Operator action: this response includes the response to the failed command, which can be interpreted in the same way as if the command had been entered manually. If the *-force* option is in effect, the most probable cause of this error is that the file being loaded requires a different software configuration than what is currently running on the Control Processor. Previous output from the *Load* command will have indicated what changes should be made to the software configuration.

ATTRIBUTE command

Description

This attribute contains the command that failed during loading.

Values

String (1..2048, ASCII)

RESPONSE Too many errors loading file ....

Description

This error response is generated when the number of failed commands read from the provisioning file being loaded, exceeds a predefined limit. Note that this limit on the number of failed commands is not enforced if the *-force* option is used in the *Load* command.

System action: the edit view is updated to match the parts of the provisioning data file which were loaded without errors. Loading stops at the point where the error limit was reached.
Operator action: to attempt loading of the entire file, ignoring the error limit, re-issue the *Load* command, specifying the *-force* option.

ATTRIBUTE file

Description

This attribute identifies the provisioning file being read.

Values

String (1..40, ASCII)

RESPONSE Session..... is in provisioning mode.

Description

This error response is generated when the operator attempts to enter a provisioning command which is allowed outside provisioning mode only when no other session is in that mode.

This includes the following commands: *Activate*, *Commit*, *Confirm*, *Restore*, *Start*, and *Stop*.

System action: the command is ignored.
Operator action: wait until the current provisioning operator is finished. To terminate the other operator's provisioning session, retry the *Start Prov* command using the *-force* option. (Note: if you terminate the other operator's session, the edit view may contain changes made by that operator which have not been saved on disk.)

ATTRIBUTE provisioningSession

Description

This attribute identifies the session which is currently in provisioning mode.

Values

The name of the component

ATTRIBUTE userId

Description	This attribute identifies the user whose session is in provisioning mode.
Values	String (0..8, ASCII)

RESPONSE .....

Description	This error response is generated when a provisioning command is entered and the provisioning system is currently executing a provisioning command. **System action**: the new command is ignored. **Operator action**: wait for the previous command to complete.

ATTRIBUTE reason

Description	This attribute gives the type of provisioning command that is being executed.
Values	Initial loading is in progress Activation is in progress Initial activation is in progress Roll back sequence is in progress Save prov command is in progress Load or Apply prov command is in progress Check prov command is in progress You must confirm the edit view changes first, then proceed with the provisioning command Clear prov command is in progress Copy prov command is in progress Commit prov command is in progress Delete command is in progress Confirm prov command is in progress Add command is in progress Restore command is in progress

ATTRIBUTE commandPhase

Description	This attribute gives the phase of the command that is currently being executed.
Values	Decimal (0..100)

ATTRIBUTE additionReason

Description	This is an optional attribute which gives the percentage of work that has been finished.
Values	Decimal (0..100)

ATTRIBUTE file

Description	This is an optional attribute. This attribute only shows up when an *apply*, *load* or *save* command is in progress, it gives the name of the file currently being accessed.
Values	String (0..40, ASCII)

RESPONSE Component has no... subcomponents of the requested type....

Description	This message will be generated by a *List* command, or by a *Display* command using a “wild card” specification, if no subcomponents matching the component type specification were found.

ATTRIBUTE reason

Description	This attribute contains the reason explaining why no subcomponents are displayed
Values	provisioned or operational provisioned operational requested

ATTRIBUTE filter

Description	This attribute indicates to the user that their userid does not have the correct scope or cid to list subcomponents.
Values	Decimal (0..0)

RESPONSE Fmip PDU problem

Description	This response is generated when a severe problem has been detected with the fmip pdu.

ATTRIBUTE notificationId

Description: This parameter contains the notification identifier of the alarm that contains related information as to why the pdu has a problem. It is optional.

Values: Hex (H.0..H.ffffff)

RESPONSE Displaying attribute ... is not allowed.

Description: This error response is generated when the operator attempts to display an attribute for which *Display* is not permitted. Note that this message does not signify that the operator has insufficient impact capability, but rather that no operator is allowed to *Display* this attribute.

System action: none. Any other requested attributes which the operator is allowed to *Display* will have been displayed by the command that produced this message.
Operator action: none.

ATTRIBUTE attribute

Description: This attribute identifies the attribute that cannot be displayed.

Values: Decimal (0..65535)

RESPONSE Setting attribute ... is not allowed.

Description: This error response is generated when the user attempts to set an attribute for which *Set* is not permitted.

System action: the named attribute's value is unchanged. Any other attributes specified in the same command will have been set if the operator is allowed to do so. Note that this message does not signify that the operator has insufficient impact capability, but rather that no operator is allowed to *Set* this attribute.
Operator action: none.

ATTRIBUTE attribute

Description: This attribute identifies the attribute that cannot be set.

Values: Decimal (0..65535)

RESPONSE You must be in provisioning mode to set attribute ....

Description

This error response is generated when the operator attempts to set a provisioning attribute while their session is not in provisioning mode.

System action: the attribute value is unchanged; other attributes, if any, in the *Set* command may have been set.
Operator action: issue a *Start Prov* command before attempting to set any provisionable attribute.

ATTRIBUTE attribute

Description

This attribute identifies the attribute that cannot be set.

Values

Decimal (0..65535)

RESPONSE Fed problem

Description

A Fed related problem occurred.

ATTRIBUTE problem

Description

The problem with the given fed.

Values

unrecognized
missing
unexpected
corrupt
invalid
value

ATTRIBUTE type

Description

The recognized Fed Type that has a problem.

Values

fedArray
fedArrayItem
fedArrayItemValue
fedAttribute
fedAttributeValue
fedBits
fedBitSet
fedCondition
fedComplexFilter

fedComponentInstance
fedComponentName
fedContinuedLogical
fedContinuedPhysical
fedField
fedFieldActionType
fedFieldAsciiBuffer
fedFieldAsciiLog
fedFieldComponentName
fedFieldEventType
fedFieldGetRequest
fedFieldGetResponse
fedFieldHeader
fedFieldOptions
fedFieldResponseError
fedFieldResponseErrorAscii
fedFieldResponseNormal
fedFieldSetRequest
fedFieldTime
fedFieldTransaction
fedFlow
fedGroup
fedHasError
fedIdentifier
fedInvalid
fedInvokeId
fedLength
fedList
fedListItem
fedListItemValue
fedModifier
fedNibbles
fedNull
fedOctetString
fedPattern
fedPdu
fedService
fedSigned
fedSimpleCondition
fedString
fedStruct

fedSubcomponent
fedTime
fedType
fedUnsigned
fedValue
fedVersion
fedVector
fedVectorItem
fedVectorItemValue
fedWild

ATTRIBUTE typeId

Description	An unrecognized Fed Type.
Values	Decimal (0..65535)

ATTRIBUTE length

Description	The length of the FedTlv. This attribute is optional.
Values	Decimal (0..65535)

ATTRIBUTE valueUnsigned

Description	The value of a Fed as a DECIMAL when possible.
Values	Decimal (0..65535)

ATTRIBUTE valueHex

Description	The value of a Fed as a hex string.
Values	String (0..255, Hex)

ATTRIBUTE valueAscii

Description	The value of a FEDas an ASCII string.
Values	String (0..255, ASCII)

RESPONSE The edit view differs from the current view....

Description

This response is generated when a user successfully starts the provisioning session.

System action: none.
Operator action: none. This message is for information only.

ATTRIBUTE provCommandInProgress

Description

The presence of this attribute indicates that a provisioning command is still in progress and the end result of this provisioning command will change the number of components added to or deleted from the edit view.

Values

An Activate Prov command is in progress.
Initial activation is in progress.
A roll back sequence is in progress.
A Save Prov command is in progress.
A Load or Apply Prov command is in progress.
A Check Prov command is in progress.
Changes in the edit view have not been confirmed.
The Clear Prov command is in progress.
The Copy Prov command is in progress.
The Commit Prov command is in progress.
The Delete command is in progress.
The Confirm Prov command is in progress.
An Add command is in progress.
The Restore Prov command is in progress.

ATTRIBUTE componentAddedCount

Description

This attribute indicates the number of components that have been added to the edit view since the last activation.

Values

Decimal (0..2147483647)

ATTRIBUTE componentDeletedCount

Description

This attribute indicates the number of components that have been deleted from the edit view since the last activation.

Values

Decimal (0..2147483647)

ATTRIBUTE dataChangedCount

Description	This attribute indicates the number of attributes that have been changed in the edit view since the last activation.
Values	Decimal (0..2147483647)

RESPONSE Error: ...

Description	This response is issued when a semantic check error occurs requiring only a string response.

ATTRIBUTE errorString

Description	This attribute is a string issued as a semantic check error.
Values	String (1..255, ASCII)

RESPONSE The software supporting this component is not loaded.

Description	This response is generated when the MDM uses an unrecognized subcomponent type identifier. **System action**: the command fails. **Operator action**: Load the software onto the node. Update the software on the MDM. The help command can be used to list the names of the recognized subcomponents. Avoid using components not derived from this list.

ATTRIBUTE component

Description	This parameter contains the valid portion of the component name.
Values	The name of the component

ATTRIBUTE subcomponentType

Description	This parameter identifies the unrecognized subcomponent type. The MDM may or may not be able to convert it to an ascii name.
Values	Decimal (0..65535)

RESPONSE Component instance out of range or invalid syntax: component description mismatch

Description

This response is generated when the MDM uses a component instance value that is out of range or does not have the correct syntax.

System action: the command fails.

Operator action: Update the software on the MDM. The help command can be used to list the appropriate instance value ranges.

ATTRIBUTE component

Description

This parameter contains the valid portion of the component name. The last subcomponent instance which is in error is not shown.

Values

The name of the component

RESPONSE Unrecognized group identifier: component description mismatch

Description

This warning response is generated when the MDM uses an unrecognized group identifier. This can only occur for the get or help commands. This response may be repeated for every group with this problem. Other groups are still processed.

System action: the command is ignored for this group. Other groups are still processed.

Operator action: Update the software on the MDM. The help command can be used to list the names of the recognized groups. Avoid using groups not in this list.

ATTRIBUTE group

Description

This parameter identifies a group, by numeric id, that is not recognized by the node. The MDM may or may not be able to convert it to an ASCII name.

Values

Decimal (0..65535)

RESPONSE Unrecognized option identifier: component description mismatch

Description

This warning response is generated when the MDM uses an unrecognized option identifier. This response may be repeated for every option with this problem. Other options are still processed.

System action: the option is ignored. Other options are still processed.

Operator action: Update the software on the MDM. The help command can be used to list the names of the recognized options. Avoid using options not in this list.

ATTRIBUTE option

Description

This parameter identifies an option, by numeric id, that is not recognized by the node. The MDM may or may not be able to convert it to an ASCII name.

Values

Decimal (0..65535)

RESPONSE Option value/index out of range: component description mismatch

Description

This response is generated when the MDM attempts to pass an options value or index that is out of range.

System action: the command is ignored for this option. Other options are still processed.

Operator action: Update the software on the MDM. The help command can be used to list the appropriate value/index ranges.

ATTRIBUTE option

Description

This parameter identifies the option, by name, for which a problem has been detected.

Values

Decimal (0..65535)

RESPONSE Component ... is not ready. Try again later.

Description

This error response occurs when an operator command has been sent to a component, but the component has indicated that it is still initializing and is not yet ready.

System action: the command terminates without having done anything.
Operator action: retry the command later.

ATTRIBUTE component

Description

The name of the component that is not ready. This attribute is present only if the component is different from the one specified in the command.

Values

The name of the component

RESPONSE The semantically checked file ... has an invalid file format.

Description

This response is generated when the specified view has a bad format, for example, the application list and feature set information is missing.

System action: the command is ignored.
Operator action: re-enter the command using a properly formatted file.

ATTRIBUTE file

Description

This attribute is the name of the file that has an invalid file format. A software alarm is also generated by the subsystem SCS.

Values

String (1..40, ASCII)

RESPONSE Help on attribute ... is not allowed.

Description

This error response is generated when the operator attempts to ask for help on an attribute for which *Help* is not permitted. Note that this message does not signify that the operator has insufficient impact capability, but rather that no operator is allowed to query *Help* on this attribute.

System action: none.
Operator action: none.

ATTRIBUTE attribute

Description

This attribute identifies the attribute that cannot be queried for help.

Values

Decimal (0..65535)

RESPONSE ... .

Description

This response contains the three OSI State attributes and the six OSI Status attributes. It is used in Alarms and SCNs.

The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component that issues alarms or SCNs. For component-specific information and the valid state combinations, refer to the appropriate NTP.

ATTRIBUTE adminState

Description

This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is in administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Values

locked
unlocked
shuttingDown

ATTRIBUTE operationalState

Description

This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Values

enabled
disabled

ATTRIBUTE usageState

Description

This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no

spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Values

idle
active
busy

ATTRIBUTE availabilityStatus

Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Set of

inTest
failed
dependency
powerOff
offLine
offDuty
degraded
notInstalled
logFull
migrating

ATTRIBUTE proceduralStatus

Description

If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Set of

initializationRequired (initRequired)
notInitialized (notInit)
initializing
reporting
terminating

ATTRIBUTE controlStatus

Description

If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Set of

subjectToTest
partOfServicesLocked (partOfSrvLckd)
reservedForTest (rsrvdForTest)
suspended

ATTRIBUTE alarmStatus

Description

If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or

disabled.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Set of

underRepair
critical
major
minor
alarmOutstanding (alrmOutstdng)

ATTRIBUTE standbyStatus

Description

If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Values	hotStandby coldStandby providingService (providingServ) notSet

ATTRIBUTE unknownStatus

Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure. This could be used, for example, when a "proxy" alarm is issued on the component's behalf.
Values	false true

RESPONSE The value of ...

Description	This error response is generated by the *Copy Prov* command when a DNA attribute cannot be copied from the source component to the destination component. Usually this is because doing so would create a duplicate DNA. **System action**: the value of the DNA attribute is set to empty (zero length). **Operator action**: use the *Set* command to give the DNA attribute another value.

ATTRIBUTE attribute

Description	The name of the attribute that was not copied.
Values	Decimal (0..65536)
Replication	The name of the component

ATTRIBUTE component

Description	This attribute contains the name of the (destination) component whose DNA was set to empty.

Values	The name of the component

RESPONSE The specified verb is ambiguous with ....

Description	The *Help* command generates this error response if the named verb is ambiguous for the given component class. **System action**: the command is not executed. **Operator action**: re-enter the command, supplying an appropriate verb name.

ATTRIBUTE listOfAmbiguities

Description	This attribute contains the list of verbs which are ambiguous matches with the specified verb.
Values	String (0..255, ASCII)

RESPONSE The ... verb is not applicable to this component.The component has no readable attributes.

Description	The *Help* command generates this error response if the named verb is the common verb display, and the component definition does not contain any readable attributes. **System action**: the command is not executed. **Operator action**: use help on the component to display the allowable verbs.

ATTRIBUTE matchedVerbName

Description	This attribute contains the fullname of the verb specified in the command. This lets the user know exactly what the system's interpretation is of any abbreviation or unambiguous string that is specified in the command.
Values	String (0..255, ASCII)

RESPONSE The ... verb is not applicable to this component.The component has no writable attributes.

Description

The *Help* command generates this error response if the named verb is the common verb set, and the component definition does not contain any writable attributes.

System action: the command is not executed.
Operator action: use help on the component to display the allowable verbs.

ATTRIBUTE matchedVerbName

Description

This attribute contains the fullname of the verb specified in the command. This lets the user know exactly what the system's interpretation is of any abbreviation or unambiguous string that is specified in the command.

Values

String (0..255, ASCII)

RESPONSE Loading file ... is aborted.

Description

This response is generated when loading is aborted due to failure in checking the version and feature set information.

System action: View is not loaded.
Operator action: Upgrade the switch's software and retry the command.

ATTRIBUTE file

Description

The name of the view to be loaded.

Values

String (1..40, ASCII)

RESPONSE No more sequence numbers available for view ... - specify a different name.

Description

This response occurs when the system attempts to generate the next view sequence number (during an *Activate*, *Commit* or *Save*), and the highest possible value (999) is already in use.

System action: the command is not executed.
Operator action: retry the command using a different file name.

ATTRIBUTE file

Description	This attribute identifies the provisioning file which already exists.
Values	String (1..40, ASCII)

RESPONSE Permission denied: you have insufficient scope capability....

Description	This error response is generated whenever an operator cannot access a component due to insufficient scope capability. **System action:** the command is not executed. **Operator action**: you must log in using a userid with a higher scope capability in order to access this component.

ATTRIBUTE component

Description	This attribute contains the name of the component for which the operator has invalid scope access. It is present only if different from the target component.
Values	The name of the component

RESPONSE Component ...is owned by another customer.

Description	This error response is generated when an operator attempts to access a component owned by another customer. **System action**: the command is not executed for this component. **Operator action**: none.

ATTRIBUTE component

Description	This attribute contains the name of the component owned by another customer. It is present only if the component name is different from the component name specified in the command.
Values	The name of the component

RESPONSE ... file(s) deleted.

Description

This response is generated when the *Tidy* command is done. It indicates to the user the number of files that have been removed from the provisioning directory.

System action: none. This is an information message only.
Operator action: none.

ATTRIBUTE count

Description

This attribute is the number of files deleted from the provisioning directory.

Values

Decimal (1..65535)

RESPONSE ... will be kept.

Description

This response is generated when the committed view, current view, last used view, a protected view, or a base view is within the list of views the *Tidy* command is attempting to remove. These views are never removed by the *Tidy* command.

System action: the named view is not deleted.
Operator action: none. This message is for information only.

ATTRIBUTE reason

Description

Describe the type of view not removed

Values

Committed file
Last used file
Current view file
Protected file
Non-provisioning file
Open file
Base file

ATTRIBUTE fileName

Description

The committed or the last used view name.

Values

String (1..40, ASCII)

RESPONSE ... is not a provisionable component.

Description

The *Save* command generates this response if the operator specifies a component to be saved (via the *-component* option) which is not provisionable. Since *Save* saves only provisioned components, the command is rejected.

System action: the command is not executed.
Operator action: if desired, retry the command, specifying a provisionable component.

ATTRIBUTE component

Description

This attribute contains the name of the component.

Values

The name of the component

RESPONSE Operational ..... not exist in the edit view. Include the -current option.

Description

The *List* or *Display* commands generate this error response when the user is in provisioning mode and requests information about operational data in the edit view. The response attribute indicates the type of data requested by the operator. Only one type of data will be present.

System action: the command is not executed.
Operator action: issue the list command again with the -current option.

ATTRIBUTE components

Description

The response attribute indicates that the operator attempted to show information about many operational components while in provisioning mode. The operator could have entered one of:

```
PROV 1> list -o [-p] component
PROV 2> list [-o] [-p] operComponent
PROV 3> display [-o] [-p] operComponent *
```

Values

Decimal (0..0)

ATTRIBUTE component

Description: This response attribute indicates that the operator attempted to display information about an operational component while in provisioning mode. The operator could have entered one of:
`PROV 1> display [-o] [-p] operComponent`

Values: Decimal (0..0)

ATTRIBUTE group

Description: This response attribute indicates that the operator attempted to display information about an operational group within provisioning mode. The operator could have entered one of:
`PROV> display [-o] [-p] component operGroup`

Values: Decimal (0..65535)

ATTRIBUTE attribute

Description: This response attribute indicates that the operator attempted to display information about an operational attribute within provisioning mode. The operator could have entered one of:
PROV> display [-o] [-p] component operationalAttribute

Values: Decimal (0..65535)

ATTRIBUTE data

Description: This response attribute indicates that the operator attempted to display information about an operational data within provisioning mode. The operator could have entered one of:
PROV> display -o [-p] component

Values: Decimal (0..0)

RESPONSE Help on Group ... is not allowed.

Description

This error response is generated when the operator attempts to ask for help on a group for which *Help* is not permitted. Note that this message does not signify that the operator has insufficient impact capability, but rather that no operator is allowed to query *Help* on this group.

System action: none.
Operator action: none.

ATTRIBUTE group

Description

This attribute identifies the group that cannot be queried for help.

Values

Decimal (0..65535)

RESPONSE The value of ... was not copied to ....

Description

Copy can generate this warning when copying part of the current view to the edit view. If a link attribute of a “source” component names a component which does not exist in the edit view, or if the destination component is already linked to something else and it does not support multiple links, the attribute in the copied component is not set.

System action: the link attribute is set to empty.
Operator action: determine the appropriate component to link to. Add this component if necessary, or remove the existing link, then enter a *Set* command to set the link attribute.

ATTRIBUTE attribute

Description

This attribute names the link attribute that cannot be set.

Values

Decimal (1..65535)

Replication

The name of the component

ATTRIBUTE component

Description

This attribute identifies the component containing the named attribute.

Values

The name of the component

RESPONSE Component has no ... data.

Description

This warning message is issued when a *Display* command does not find any data to display for components that have no data. If data is not displayed due to insufficient impact, the invalid impact error response is generated instead.

ATTRIBUTE reason

Description

This response attribute indicates the type of the requested data that could not be found.

Values

provisioned or operational
provisioned
operational

RESPONSE Error:

Description

A *Check* command produces this response when two attributes within the same component have incompatible values.

System action: no *Activate* command will be accepted until a subsequent *Check* completes without errors.
Operator action: correct the incompatibility between the values of the attributes specified by “attribute” and “conflictingAttribute”, then retry the *Check* command.

ATTRIBUTE attribute

Description

This attribute identifies one of the attributes involved in the conflict.

Values

Decimal (0..65535)

ATTRIBUTE group

Description

This attribute identifies one of the groups involved in the conflict.

Values

Decimal (0..65535)

ATTRIBUTE subcomponent

Description

This attribute identifies one of the subcomponent types involved in the conflict.

Values

Decimal (0..65535)

ATTRIBUTE conflictingAttribute

Description	This attribute identifies the other attribute involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingGroup

Description	This attribute identifies the other group involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingSubcomponent

Description	This attribute identifies the other subcomponent type involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE reason

Description	This attribute describes the problem.
Values	String (0..255, ASCII)

RESPONSE Warning:

Description	A *Check* command produces this response when there is a conflict between the values of two attributes within the same component, but the conflict is not sufficiently serious to prevent activation of the edit view. **System action**: none - the warning has no effect on subsequent commands. **Operator action**: the conflict should be resolved, but not necessarily before activating the edit view.

ATTRIBUTE attribute

Description	This attribute identifies one of the attributes involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE group

Description	This attribute identifies one of the groups involved in the conflict.

Values	Decimal (0..65535)

ATTRIBUTE subcomponent

Description	This attribute identifies one of the subcomponent types involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingAttribute

Description	This attribute identifies the other attribute involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingGroup

Description	This attribute identifies the other group involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingSubcomponent

Description	This attribute identifies the other subcomponent type involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE reason

Description	This attribute describes the problem.
Values	String (0..255, ASCII)

RESPONSE Error:

Description	A *Check* command produces this response when two attributes in different components have incompatible values. **System action**: no *Activate* command will be accepted until a subsequent *Check* completes without errors. **Operator action**: correct the incompatibility between the values of the attributes specified by “attribute” and “conflictingAttribute”, then retry the *Check* command.

ATTRIBUTE attribute

Description	This attribute identifies one of the attributes involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE group

Description	This attribute identifies one of the groups involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE subcomponent

Description	This attribute identifies one of the subcomponent types involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingComponent

Description	This attribute identifies the other component involved in the conflict.
Values	The name of the component

ATTRIBUTE conflictingAttribute

Description	This attribute identifies the other attribute involved in the conflict.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE conflictingGroup

Description	This attribute identifies the other group involved in the conflict.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE conflictingSubcomponent

Description	This attribute identifies the other subcomponent type involved in the conflict.

Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE reason

Description	This attribute describes the problem.
Values	String (0..255, ASCII)

RESPONSE Warning:

Description	A *Check* command produces this response when there is a conflict between the values of two attributes within different components, but the conflict is not sufficiently serious to prevent activation of the edit view. **System action**: none - the warning has no effect on subsequent commands. **Operator action**: the conflict should be resolved, but not necessarily before activating the edit view.

ATTRIBUTE attribute

Description	This attribute identifies one of the attributes involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE group

Description	This attribute identifies one of the groups involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE subcomponent

Description	This attribute identifies one of the subcomponent types involved in the conflict.
Values	Decimal (0..65535)

ATTRIBUTE conflictingComponent

Description	This attribute identifies the other component involved in the conflict.

Values	The name of the component

ATTRIBUTE conflictingAttribute

Description	This attribute identifies the other attribute involved in the conflict.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE conflictingGroup

Description	This attribute identifies the other group involved in the conflict.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE conflictingSubcomponent

Description	This attribute identifies the other subcomponent type involved in the conflict.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE reason

Description	This attribute describes the problem.
Values	String (0..255, ASCII)

RESPONSE Warning: Activation will disrupt service for the following component(s):

Description	A *Check* command generates this response to identify the component(s) which will go out of service temporarily if this view is activated. **System action**: None - information message only. **Operator action**: Follow appropriate procedures before activating the view (these could include notification, *Lock*ing of components, etc.)

ATTRIBUTE component

Description	This attribute is used to identify each component which will be taken out of service by an activation (up to a maximum of 200 components).
List of	The name of the component

ATTRIBUTE additional

Description	This attribute states the number of components which will be taken out of service, by an activation, but were not listed by name.
Values	Decimal (0..4000000000)

RESPONSE The committed file is ....

Description	The *Commit* command uses this response to display the name of the committed file. **System action**: none. **Operator action**: none. This message is for information only.

ATTRIBUTE file

Description	This attribute is the name of the committed file.
Values	String (1..40, ASCII)

RESPONSE The provisioning data is saved in file ....

Description	The *Save* command uses this response to display the name of the file used to save the provisioning data. **System action**: none. **Operator action**: none. This message is for information only.

ATTRIBUTE file

Description	This attribute is the name of the file created by the *Save* command.
Values	String (1..40, ASCII)

RESPONSE Loaded or applied file ....

Description — The *Apply* or *Load* command generates this message when loading is complete, to display the name of the file loaded.

System action: none.
Operator action: none. This message is for information only.

ATTRIBUTE file

Description — This attribute is the name of the accessed file.

Values — String (1..40, ASCII)

RESPONSE usage: Help [-verb(\...)] [-subcomponents] [\.....[\...[, \...]]]...

Description — This is the normal response to a *Help* command which specifies neither options nor a component class. It consists of a usage description followed by a list of top level components and a list of verbs for which a component name is not mandatory.

ATTRIBUTE subcomponentTypes

Description — This attribute contains a list of all top level component types.

List of — String (0..255, ASCII)

ATTRIBUTE verbs

Description — This attribute contains the names of all verbs for which a component name is not mandatory.

List of — String (0..255, ASCII)

RESPONSE

Description — This is the normal response to a *Help* command which requests information about a specific attribute group.

ATTRIBUTE groupName

Description — This attribute contains the name of the given group.

Values — String (0..255, ASCII)

ATTRIBUTE groupType

Description	This attribute indicates whether the group being described by this response is provisionable or not.
Values	Operational Provisionable

ATTRIBUTE attributeList

Description	This attribute contains the names of the attributes in the group.
List of	String (0..255, ASCII)

RESPONSE

Description	This is the normal response to a *Help* command which requests information about a specific attribute.

ATTRIBUTE attributePrompt

Description	This attribute contains the name (and abbreviation) of the specified attribute.
Values	String (0..255, ASCII)

ATTRIBUTE readAccess

Description	This attribute specifies the level of operator impact capability required to *Display* the attribute. A value of “not allowed” means that no operator is allowed to *Display* it.
Values	not allowed debug systemAdministration configuration service passive all

ATTRIBUTE writeAccess

Description	This attribute indicates the level of operator impact capability required to *Set* the attribute. A value of “not allowed” indicates that the attribute is read-only, that is, no operator is allowed to *Set* it.

Values

not allowed
debug
systemAdministration
configuration
service
passive
all

ATTRIBUTE criticality

Description

This attribute displays the criticality of the attribute.

Changing the value of a provisionable attribute with criticality ***none*** does not cause any disruption of service when the change is made effective (by a subsequent *Activate* command).

Changing the value of an attribute with criticality ***component*** will cause the component containing the attribute to temporarily go out of service on an *Activate*.

Changing the value of an attribute with criticality ***parent*** will cause the component containing the attribute, and possibly some of its ancestor components, to temporarily go out of service on an *Activate*.

Changing the value of an attribute with criticality ***parent (set only)*** will cause the component containing the attribute, and possibly some of its ancestor components, to temporarily go out of service on an *Activate.* Adding a new instance of a component containing such an attribute does not cause any component to go out of service.

Values

none
component
parent
module
parent (set only)

ATTRIBUTE type

Description

This attribute contains the type specification for the attribute.

Values

String (0..255, ASCII)

ATTRIBUTE index

Description	This attribute describes the index or indices of the attribute. For a VECTOR or replicated attribute, there will be one index; for an ARRAY there will be two indices; for all other types there will be no indices and this attribute will be omitted from the response. The description of an index identifies both its type and its permitted values. In the case of an ARRAY index, the name of the index and its abbreviation are included.
Values	String (0..255, ASCII)

ATTRIBUTE values

Description	This attribute identifies the permitted values of the attribute.
Values	String (0..255, ASCII)

ATTRIBUTE defaultValue

Description	This attribute contains the default value of the attribute.
Values	String (0..255, ASCII)

ATTRIBUTE units

Description	This attribute identifies the units for the values of the attribute.
Values	String (0..255, ASCII)

RESPONSE

Description	This is the normal response to a *Help* command when the *-subcomponents* option is specified.

ATTRIBUTE hierarchyEntry

Description	This attribute contains the name (and abbreviation) of a subcomponent type, appropriately indented. It will be repeated if there are multiple subcomponents.
Values	String (0..255, ASCII)

RESPONSE

Description: This is the normal response to a *Help* command that requests information about a specific verb.

ATTRIBUTE verb

Description: This attribute contains the name of the given verb.

Values: String (0..255, ASCII)

ATTRIBUTE impact

Description: This attribute indicates the level of operator impact capability required to use the given verb.

Values:
debug
administration
configuration
service
passive
Refer to ReadAccess'ofattribute.'
Refer to WriteAccess'ofattribute.'

ATTRIBUTE mandatoryOptions

Description: This attribute displays the mandatory options of the verb.

List of: String (0..255, ASCII)

ATTRIBUTE options

Description: This attribute displays the options of the verb.

List of: String (0..255, ASCII)

RESPONSE The ... verb is not allowed for this component.

Description: The *Help* command generates this error response if the named verb is a recognizable verb, but is illegal for the given component class.

System action: the command is not executed.
Operator action: re-enter the command, supplying an appropriate verb name.

ATTRIBUTE matchedVerbName

Description
This attribute contains the fullname of the verb specified in the command. This lets the user know exactly what the system's interpretation is of any abbreviation or unambiguous string that is specified in the command.

Values
String (0..255, ASCII)

RESPONSE .....

Description
This response is the List command output.

ATTRIBUTE type

Description
This attribute describes whether the entry found in the directory was a file or a directory.

Values
dir (directory)
file

ATTRIBUTE status

Description
The value of this attribute tells if the file or directory is write protected.

Values
yes (protected)
no (unprotected)

ATTRIBUTE size

Description
This attribute describes the size, in bytes, of the file.

Values
Decimal (0..4294967295)

ATTRIBUTE timeStamp

Description
This attribute describes the file's last modification time.

Values
Time (DHMS)

ATTRIBUTE name

Description

This attribute describes the file's name.

Values

String (1..128, ASCII)

RESPONSE ..... is not ... one.

Description

The List command generates this error response when the options used in the command conflict with the component type.

System action: the command is not executed.
Operator action: issue the list command again with the correct options.

ATTRIBUTE component

Description

This attribute identifies the component. This would happen if the operator entered:

```
PROV 1>list -o -c provisionedComponent
2>list -o provisionedComponent
PROV 3>list -p operationalComponent
4>list -p operationalComponent
```

Values

Decimal (0..0)

ATTRIBUTE subComponent

Description

This attribute identifies the component. This would happen if the operator entered:

```
PROV 1>list -o -c provisionedComponent/*
2>list -o provisionedComponent/*
PROV 3>list -p operationalComponent/*
4>list -p operationalComponent/*
```

Values

Decimal (0..65535)

ATTRIBUTE group

Description

This attribute identified the group whose type conflicts with the options. It could happen if the operator entered:

```
PROV 1>display -o -c provisionedGroup
2>display -o provisionedGroup
```

```
PROV 3>display -p -c operationalGroup
4>display -p operationalGroup
```

Values: Decimal (0..65535)

ATTRIBUTE attribute

Description: This attribute identified the attribute whose type conflicts with the options. It could happen if the operator entered:

```
PROV 1>display -o -c provisionedAttribute
2>display -o provisionedAttribute
PROV 3>display -p -c operationalAttribute
4>display -p operationalAttribute
```

Values: Decimal (0..65535)

ATTRIBUTE dataType

Description: This attribute identifies the type of the component, whether it is provisioned or operational.

Values: an operational
a provisioned

RESPONSE .....

Description: This is the first part of the normal response to a *Help* command which requests information about a specific component.

ATTRIBUTE subcomponentTypes

Description: This attribute contains the types of the top level subcomponents of the chosen component.

List of: String (0..255, ASCII)

ATTRIBUTE componentPrompt

Description: This attribute contains the name (and the abbreviation, if there is one) of the chosen component.

Values: String (0..255, ASCII)

ATTRIBUTE instanceType

Description	This attribute identifies the permitted instance values for the component class. If only one instance of the component is permitted, this attribute is omitted from the response.
Values	String (0..255, ASCII)

ATTRIBUTE existance

Description	This attribute specifies the rules for adding and deleting the component. A value of ***required*** means that an instance of this component type is added at the same time as its parent is, and there must always be at least one instance of this type present thereafter. This means that where multiple instances of a component type (under the same parent) are permitted, the operator may be allowed to add and delete instances of this component type, provided at least one instance remains when provisioning is complete. A value of ***optional*** means that instances of this component type may be added and deleted explicitly by operator commands; there need not be any instance of this component. A value of ***dynamic*** means that the application software associated with the parent component can add and delete instances of this component type; however the operator is not allowed to do so. A value of ***dynamic or optional*** means that this component type may have provisioned or dynamic instances. The provisioned instances are any that the operator adds, and they replace any existing dynamic instance with the same instance value. Dynamic instances cannot be deleted by the operator.
Values	required optional dynamic dynamic or optional

ATTRIBUTE scope

Description	This attribute indicates the level of operator scope capability required to access the chosen component.
Values	network device application

RESPONSE

Description	This is the second part of the normal response to a *Help* command which requests information about a specific component. It describes one attribute group of the component. If the component has multiple groups, one of these responses will appear for each group.

ATTRIBUTE attributeList

Description	This attribute contains the names of the attributes in the group.
List of	String (0..255, ASCII)

ATTRIBUTE groupType

Description	This attribute indicates whether the group being described by this response is provisionable or not.
Values	Operational Provisionable

ATTRIBUTE groupName

Description	This attribute contains the name of an attribute group that belongs to the chosen component.
Values	String (0..255, ASCII)

RESPONSE

Description	This is the third and final part of the normal response to a *Help* command which requests information about a specific component.

ATTRIBUTE verbs

Description	This attribute contains a list of verbs that can be applied to the chosen component.
List of	String (0..255, ASCII)

RESPONSE List ... is full.

Description	This error response is generated when the operator attempts to add a value to a list attribute that already contains the maximum permitted number of elements. **System action**: the attribute value is unchanged; other attributes, if any, in the *Set* command may have been set. **Operator action**: if desired, remove an element from the named attribute, then retry the original *Set* command.

ATTRIBUTE attribute

Description	This attribute identifies the attribute that cannot be set.
Values	Decimal (0..65535)

RESPONSE

Description	This response is the WorkingDir command output.

ATTRIBUTE pathName

Description	This attribute describes the working directory pathname.
Values	String (1..128, ASCII)

RESPONSE ... ...

Description	This response indicates the RID, MID and PID of an intermediate node in the network visited as the ping query packet was travelling to its destination.

ATTRIBUTE rid

Description	This attribute indicates the RID of the intermediate node that was visited as the ping query packet was travelling to its destination.

Values Decimal (1..127)

ATTRIBUTE mid

Description This attribute indicates the MID of the intermediate node that was visited as the ping query packet was travelling to its destination.

Values Decimal (1..2046)

ATTRIBUTE pid

Description This attribute indicates the process identifier of the intermediate node that was visited as the ping query packet was travelling to its destination. Note that for a Nortel Networks Multiservice Switch, this value is 0.

Values Decimal (0..4294967295)

RESPONSE The specified verb is not recognized....

Description The *Help* command generates this error response if the named verb is not defined for the given component class.

System action: the command is not executed.
Operator action: re-enter the command, supplying an appropriate verb name.

ATTRIBUTE matchedComponent

Description This attribute indicates whether a component was specified or not.

Values by this component

RESPONSE The ... verb requires a component to be specified.

Description The *Help* command generates this error response if the named verb is a recognizable verb, but this verb requires a component.

System action: the command is not executed.
Operator action: re-enter the command, supplying an appropriate verb name.

ATTRIBUTE matchedVerbName

Description	This attribute contains the fullname of the verb specified in the command. This lets the user know exactly what the system's interpretation is of any abbreviation or unambiguous string that is specified in the command.
Values	String (0..255, ASCII)

RESPONSE Cannot set the ... on another users Session.

Description	This error response appears if a user tries to issue a *Set* command on the *dataStreams* attribute of a session other than his own. The user is prevented from changing someone else's attribute.

ATTRIBUTE attribute

Description	This attribute specifies the name of the attribute that cannot be set.
Values	Decimal (0..65535)

RESPONSE Command aborted due to internal error....

Description	This error response is returned when a command has failed due to some internal error such as a software error or engineering error (for example, out of memory). There should be an alarm generated that would indicate the remedial action to perform. **System action**: the command is aborted. It may have been partially executed. **Operator action**: examine the alarm output to determine the nature of the problem and the appropriate action.

ATTRIBUTE notificationId

Description	This attribute is the unique alarm identifier associated with the error. If the alarm ID is unknown, this attribute is omitted.
Values	Hex (H.0..H.fffffff)

RESPONSE The following AV(s) have been removed:

Description	This response is issued to indicate to the user which *AVs* have been removed as a result of a *Tidy* or *Remove c*ommand.

ATTRIBUTE listOfRemovedAvs

Description	This attribute is a list of the names of *AVs* which have been removed.
List of	String (1..30, ASCII)

RESPONSE AV(s) already exist(s):

Description	This response is issued when the user specifies, in the *avListToDownload*, one or more *AVs* which already exist on disk. These *AVs* are not added to the *avListToDownload*.

ATTRIBUTE existingAvList

Description	This attribute is a list of *AVs*, which the user attempted to add to the *avListToDownload*, but which exist already on disk.
List of	String (1..30, ASCII)

RESPONSE

Description	The following describes the attributes of the Test process to be displayed for an automatic test statistics display.

ATTRIBUTE bitsTx

Description	This attribute indicates the number of bits sent during the test period.
Values	Long Integer

ATTRIBUTE bytesTx

Description	This attribute indicates the number of bytes sent during the test period.
Values	Long Integer

ATTRIBUTE frmTx

Description	This attribute indicates the number of frames sent during the test period. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Values Long Integer

ATTRIBUTE bitsRx

Description This attribute indicates the number of bits received during the test period.

Values Long Integer

ATTRIBUTE bytesRx

Description This attribute indicates the number of bytes received during the test period.

Values Long Integer

ATTRIBUTE frmRx

Description This attribute indicates the number of frames received during the test period.

This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.

Values Long Integer

ATTRIBUTE erroredFrmRx

Description This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame.

For all other card types, this attribute indicates the number of errored frames received during the test period.

Values Long Integer

ATTRIBUTE bitErrorRate

Description This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface.

For all other card types, this attribute indicates the calculated bit

error rate on the link derived from the received errored frames and transmitted frames ratio.

Values: String (0..5, ASCII)

ATTRIBUTE elapsedTime

Description: This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Values: Decimal (0.00..30240.00)

Units: minutes

ATTRIBUTE timeRemaining

Description: This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Values: Decimal (0.00..30240.00)

Units: minutes

RESPONSE Other end already linked to component ....

Description: This error response is generated when the user attempts to *Set* a LINK type attribute, when the remote end is already linked to something, and does not support multiple links.

System action: the LINK attribute is unchanged.
Operator action: if desired, remove the link from the component named in the error response, then retry the original *Set* command.

ATTRIBUTE currentRemoteValue

Description: This attribute contains the name of the component to which the remote end is currently linked.

Values: The name of the component

RESPONSE Loading provisioning data on the standby CP: ...% done.

Description

A *Switchover, Restart,* or *Reset (active cp or lp/0)* command generates this response if the standby CP is still in the process of preloading the provisioning data.

System Action: the *Switchover* or *Reset* command is ignored.

Operator Action: retry the command later. If an immediate switchover is necessary, you may use the *Restart -force Lp/0* or *Reset -force Lp/0* command; however doing so may cause FPs to restart.

ATTRIBUTE percentageDone

Description

This attribute indicates the percentage of the provisioning data loaded onto the standby CP.

Values

Decimal (0..100)

RESPONSE The software upgrade failed due to a failure in upgrading the standby CP. Failure reason: .....

Description

The Control Processor software upgrade failed because the standby CP failed while being upgraded. Software upgrade is aborted.

ATTRIBUTE pcsString

Description

This attribute may be used to provide further information.

Values

String (0..512, ASCII)

ATTRIBUTE pcsAbortReason

Description

This attribute indicates why the software migration is being aborted.

Values

Abort reason undetermined
Inserted card type does not match provisioned card type
Card has been inserted into an unconfigured slot
A software error occured
Card failed self tests
Card is not responding
Card has backplane connectivity problems

Card with unsupported PEC code is inserted
Standby Cp crashed
Active Cp crashed
Software downgrade is detected but not supported
Active spared FP crashed
Disk synchronization failed
Migration stopped via stopprov'command'

RESPONSE Feature ... must be present in the feature list of at least one Lpt component linked to an Lp in the current view before this provisioning file can be loaded.

Description

A *Load* command produces this response when one or more of the features that appear in the load file are not present in any feature list in the current view. This implies that the software necessary to load some parts of the file is not currently loaded.

System action: the file is not loaded. The edit view is unchanged.
Operator action: Correct the *featureList* attributes of one or more *LogicalProcessorType* components (found under the *Software* component) as indicated by this response. Check, activate and confirm these changes (this will involve a CP reload). Then retry the original *Load* command.
Note: if necessary, the *-force* option can be used to attempt loading of the file. However, syntax errors will likely result, and some components which are present in the file may not appear in the edit view after loading.
A reload -f(<filename>) lp/0 command is another option to load and activate this file.

ATTRIBUTE feature

Description

This attribute gives the name of a missing feature that must be added, checked and activated before retrying the *Load* command.

Values

String (1..30, ASCII)

RESPONSE Av ... must be present in the avList of the Sw component in the current view before this provisioning file can be loaded.

Description

A *Load* command produces this response when one or more of the Application versions that appear in the load file are not present in the AVL of the current view. This implies that the software necessary to load some parts of the file is not currently loaded.

System action: the file is not loaded. The edit view is unchanged.
Operator action: Correct the *AVL* attribute of the *Software* component by adding the *AV* component as indicated by the response. Check, activate and confirm these changes (this will involve a CP reload). Then retry the original *Load* command.
Note: if necessary, the *-force* option can be used to attempt loading of the file. However, syntax errors will likely result, and some components which are present in the file may not appear in the edit view after loading.
A reload -f(<filename>) lp/0 command is another option to load and activate this file.

ATTRIBUTE applicationVersion

Description

This attribute gives the name of a missing Av that must be added, checked and activated before retrying the *Load* command.

Values

String (1..30, ASCII)

RESPONSE Application ... in the current views avList should be version ... before this provisioning file can be loaded. Versions other than this one may also be acceptable.

Description

A *Load* command produces one of these responses for each application version (AV) in the load file which is incompatible with a currently selected AV.

System action: the file is not loaded. The edit view is unchanged.
Operator action: Correct the *avList* attribute of component *Software* as indicated by this response. Check, activate and confirm these changes (this will involve a CP reload). Then retry the original *Load* command.
Note: if necessary, the *-force* option can be used to attempt loading of the file. However, syntax errors will likely result, and some components which are present in the file may not appear in the edit view after loading.
A reload -f(<filename>) lp/0 command is another option to load and activate this file.

ATTRIBUTE applicationName

Description

This attribute names an application whose *avList* entry must be changed.

Values

String (1..30, ASCII)

ATTRIBUTE versionName

Description

This attribute indicates the required version of the named application.

Values

String (1..30, ASCII)

RESPONSE Application ... in the current views avList must be at least version ... before this provisioning file can be loaded.

Description

A *Load* command produces one of these responses for each application version (AV) in the load file which is incompatible with a currently selected AV.

System action: the file is not loaded. The edit view is unchanged.
Operator action: Correct the *avList* attribute of component *Software* as indicated by this response. Check, activate and confirm these changes (this will involve a CP reload). Then retry the original *Load* command.
Note: if necessary, the *-force* option can be used to attempt loading of the file. However, syntax errors will likely result, and some components which are present in the file may not appear in the edit view after loading.
A reload -f(<filename>) lp/0 command is another option to load and activate this file.

ATTRIBUTE applicationName

Description

This attribute names an application whose *avList* entry must be changed.

Values

String (1..30, ASCII)

ATTRIBUTE versionName

Description

This attribute indicates the minimum required version of the named application.

Values

String (1..30, ASCII)

RESPONSE The following views or files reference this Av or are corrupted and therefore the Av cannot be removed as requested:

Description

This response is issued to indicate to the user the views (current and/or edit) and/or provisioning files which reference the *A*v that the operator wanted removed. This response can also indicate provisioning files which are corrupted. The result in all cases is that the Av cannot be removed.

ATTRIBUTE listOfFileNames

Description This attribute is a list of view and/or file names which reference the associated Av (or possibly are corrupted).

List of String (1..40, ASCII)

RESPONSE These AV names are invalid and cannot be downloaded:

Description This response is issued when the user specifies, an Av name in the *avListToDownload*, that has either a missing Application name or a missing Version as part of its name. A valid Av name must consist of both an application name and a version separated by an underscore. These invalid *AVs* are not added to the *avListToDownload*.

ATTRIBUTE invalidAvNameList

Description This attribute is a list of *AVs*, which the user attempted to add to the *avListToDownload*, but which are invalid names.

List of String (1..30, ASCII)

RESPONSE ..... and ... should not be more than 12 hours apart.

Description

This response is issued when a semantic check is done on a Collector, indicating that this pair of times are too far apart. It appears once for each invalid pair of times.

ATTRIBUTE invalidTimeFirstOfPair

Description

This is the first of a pair of times that are too far apart.

Values Time (HM)

ATTRIBUTE invalidTimeSecOfPair

Description

This is the second of a pair of times that are too far apart.

Values Time (HM)

RESPONSE ... component(s) reported errors.

Description	Cas generates this error response when it encounters errors due to incompatible options while processing a wild-carded command. **System action**: the command is partially executed. **Operator action**: issue the command again on those components that failed using the correct options.

ATTRIBUTE count

Description	This attribute identifies the number of errors encountered.
Values	Decimal (0..65535)

RESPONSE The Filesystem is full.

Description	This response is issued when the download is stopped due to the local disk of the file system becoming full.

ATTRIBUTE fileBeingAccessed

Description	This attribute is the name of the file or directory which is being accessed at the time of the error.
Values	String (1..128, ASCII)

RESPONSE There is insufficient disk space for download to continue.

Description	This response is issued when the download is stopped because of lack of disk space that the file system has detected.

ATTRIBUTE fileBeingAccessed

Description	This attribute is the name of the file or directory which is being accessed at the time of the error.
Values	String (1..128, ASCII)

RESPONSE Cannot download data from SDS; possible link failure.

Description	This response is issued when the download is stopped due to a bad read from the data socket. One possible reason for this is that the download connection path has failed.

ATTRIBUTE fileBeingAccessed

Description	This attribute is the name of the file or directory which is being accessed at the time of the error.
Values	String (1..128, ASCII)

RESPONSE The Copy command is not allowed for the ... component.

Description	The *Copy* command produces this response if the *Add* command cannot be applied to the component types specified in the *-source* option. **System action**: the *Copy* command is not executed. **Operator action**: none.

ATTRIBUTE component

Description	This attribute contains the name of the component that cannot be copied.
Values	The name of the component

RESPONSE The following AV(s) would be removed if the Tidy command was issued without the query option:

Description	This response is returned to the user to indicate which *AVs* would be removed if a *Tidy* command (without the *Query* option) was issued.

ATTRIBUTE listOfRemovedAvs

Description	This attribute is a list of the names of *AVs* which would be removed if *the Tidy* command is issued without the query option
List of	String (1..30, ASCII)

RESPONSE ....

Description

This response is generated when a provisioning command, other than the one entered by the operator, is invoked automatically by the system. For example, if *Activate Prov* is entered by the user, and the Edit View has not been semantically checked, the system will automatically invoke the semantic checker before proceeding with the activate.

System action: another command will be automatically executed as part of the specified one.
Operator action: none. This message is for information only.

ATTRIBUTE command

Description

This attribute gives the type of provisioning command that is being invoked.

Values

Invoking Activate prov command
Invoking Save prov command
Invoking Load prov command
Invoking Check prov command
Invoking Clear prov command
Invoking Copy prov command
Invoking Commit prov command
Invoking Delete command
Invoking Confirm prov command
Invoking Add command

RESPONSE View ... has not been saved in a delta format.

Description

This error response is generated when a user attempts to *apply* a view that has not been saved in a ***delta*** format, that is, the difference between the current and edit views at the time of the *Save Prov.*

System action: the command is ignored.
Operator action: Enter a correct view name.

ATTRIBUTE file

Description

This attribute is the name of the view saved without the ***delta*** format.

Values String (1..40, ASCII)

RESPONSE The base file ... does not exist. The delta file ... cannot be loaded.

Description A *Load* or an *Activate* command produces this response when the specified file is a delta file and the base for the delta file cannot be found. The base file for the delta file has been deleted, most likely by a manual operator command entered in error.

System action: the command is not executed.
Operator action: if possible, restore the base file and reissue the *Load* or *Activate* command. Otherwise, use the *Tidy* command to remove the delta file and retry the *Load* or *Activate* using a different view.

ATTRIBUTE file

Description This attribute indicates the name of the missing base file.

Values String (1..40, ASCII)

ATTRIBUTE fileName

Description This attribute indicates the name of the delta file which could not be loaded.

Values String (1..40, ASCII)

RESPONSE Saving the ... into ... (with ... formats) ...

Description This response is generated at the start of saving a view to disk. This can occur with *activate*, *commit* or *save*. Saving can be aborted via *stop*. In certain cases, a single *save prov* command can result in both the current and edit views to be saved.

System action: none.
Operator action: none. This message is for information only.

ATTRIBUTE view

Description The view from which components are saved onto disk.

Values current
edit

ATTRIBUTE file

Description	This attribute is the name of the view being saved.
Values	String (1..40, ASCII)

ATTRIBUTE formats

Description	This attribute contains the formats of the provisioning data that are being saved. Refer to the *formats* attribute of the *View* subcomponent for more information.
Set of	ascii commit delta part portable

RESPONSE In the voiceRates attribute:...

Description	This response is used when the user attempts to set the *voiceRates* attribute to an illegal value. The only rate allowed for ***g711Only*** encoding is 64 kbit/s. The only rate allowed for ***g728Only*** encoding is 16 kbit/s. The only rate allowed for ***g729Only*** encoding is 8 kbit/s. The minimum ***g711G726*** rate must be 32, 24 or 16 kbit/s. The maximum ***g711G726*** rate must be 64, 32, 24 or 16 kbit/s. The min ***g711G726*** rate cannot be greater than the max ***g711G726*** rate.

ATTRIBUTE errorType

Description	See the description in the response.
Values	g711Only rates must be 64.0 kbit/s g728Only rates must be 16.0 kbit/s g729Only rates must be 8.0 kbit/s The minimum g711G726 rate must be 16.0, 24.0 or 32.0 kbit/s The maximum g711G726 rate must be 16.0, 24.0, 32.0 or 64.0 kbit/s. The minimum g711G726 rate cannot exceed the maximum g711G726 rate

RESPONSE In the modemFaxRates attribute:...

Description

This response is used when the user attempts to set the *modemFaxRates* attribute to an illegal value. The only rate allowed for ***g711Only*** encoding is 64 kbit/s. The minimum ***g711G726*** rate must be 32, 24 or 16 kbit/s. The maximum ***g711G726*** rate must be 64, 32, 24 or 16 kbit/s.The minimum ***g711G726*** rate cannot be greater than the max ***g711G726*** rate. The minimum ***relay*** rate must be 0.0 kbit/s. The maximum ***relay*** rate must be 14.4, 12.0, 9.6, 7.2, 4.8 or 2.4 kbit/s.

ATTRIBUTE errorType

Description

See the description in the response.

Values

g711Only rates must be 64.0 kbit/s
The minimum g711G726 rate must be 16.0, 24.0 or 32.0 kbit/s
The maximum g711G726 rate must be 16.0, 24.0, 32.0 or 64.0 kbit/s
The minimum g711G726 rate cannot exceed the maximum g711G726 rate
The minimum relay rate must be 0.0 kbit/s
The maximum relay rate must be 14.4, 12.0, 9.6, 7.2, 4.8 or 2.4 kbit/s
The minimum relay rate cannot exceed the maximum relay rate

RESPONSE Error: Command not executed.Component ... does not exist.

Description

The *Start* command produces this response when attempted for a *ServiceTrace* component which has not been provisioned or its receiver specified by *rcvr* attribute has not been provisioned.

System action: The *Start* command has no effect.

Operator action: Check existence of the specified *ServiceTrace* component or *Rcvr* component, enter command again.

ATTRIBUTE componentMissing

Description

This attribute is the component name which has not been provisioned.

Values

The name of the component

RESPONSE Error: The trace call to the receiver has failed with ..., ...

Description

The *Start* command produces this response when the trace call fails to connect to the receiver.

System action: The service trace session stopped.

Operator action: Check the failure reason according to the values of *clearCause* and *diagnostic*, correct it, enter command again.

ATTRIBUTE clearCause (cause)

Description

This attribute is the trace VC clear cause.

Values

Hex (H.0..H.ff)

ATTRIBUTE diagnostic (diag)

Description

This attribute is the trace VC diagnostic code.

Values

String (1..8, Hex)

RESPONSE You cannot set both operational and provisioned attributes at the same time.

Description

This error response is generated when the operator attempts to set operational and provisioned attributes at the same time, eg,

```
set component oper 5, prov 7
```

This is an error because operational attributes only exist in the current view, while provisioned attributes can only be set in the edit view. This would cause two views to be accessed simultaneously.

System action: the entire *Set* command is ignored.
Operator action: issue at least two separate *Set* commands, one for the provisioned attributes, and another for the operational ones.

ATTRIBUTE operationalAttribute

Description

This attribute identifies the operational attribute that conflicts with the provisioned one.

Values

Decimal (0..65535)

ATTRIBUTE provisionedAttribute

Description	This attribute identifies the provisioned attribute that conflicts with the operational one.
Values	Decimal (0..65535)

RESPONSE Error:This application is incompatible with the value specified by attribute ... of the component ....

Description	This error message appears in response to a *Check Prov* command if the value specified in the identified attribute is incompatible with an application. **System action**: The edit view cannot be activated. **Operator action**: Choose a different value for the indicated attribute.

ATTRIBUTE valueId

Description	This attribute contains the numeric ID of the attribute whose specified value is incompatible with the application.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE valueComponentName

Description	This attribute contains the name of the component containing the attribute whose specified value is incompatible with the application.
Values	The name of the component

RESPONSE The ... is congested.

Description	This response is returned when either the CP or the first hop of the path to reach the destination is congested.

ATTRIBUTE congestedComponent

Description	This attribute indicates whether the CP or the path is congested.
Values	CP path

RESPONSE ... packets were sent, ... packets were returned.

Description	This response indicates how many query packets were sent and how many of them were returned. It is used in response to the *-all* ping option. The paths found and their usage follow the response.

ATTRIBUTE numAllPktSent

Description	This attribute indicates how many query packets were sent.
Values	Decimal (1..16)

ATTRIBUTE numAllPktReceived

Description	This attribute indicates how many query packets were returned.
Values	Decimal (1..16)

RESPONSE Path ... used ... time(s):

Description	This response contains the header line for a particular path used by one or more ping query packets. It is used in response to the *-all* ping option. The path mentioned in the header line follows the response.

ATTRIBUTE pathId

Description	This attribute indicates the identifier of the path which follows.
Values	Decimal (1..16)

ATTRIBUTE pathCount

Description	This attribute indicates how many times the path which follows was used.
Values	Decimal (1..16)

RESPONSE Destination ..., ... VC path taken is:

Description	This response indicates the destination RID and MID of the Frame Relay DLCI connection. It is used for the *ping* command with no option. The path taken by the VC of the Frame Relay DLCI follows the response.

ATTRIBUTE vcsDestRid

Description	This attribute indicates the destination RID of Frame Relay DLCI connection.
Values	Decimal (1..127)

ATTRIBUTE vcsDestMid

Description	This attribute indicates the destination MID of Frame Relay DLCI connection.
Values	Decimal (1..2046)

RESPONSE and another ... component(s).

Description	This is the normal response to an *Add* command. It displays the number of extra subcomponents which have been added if there were more than 6 in total.

ATTRIBUTE count

Description	This attribute indicates the number of added components that have not been displayed.
Values	Decimal (0..65535)

RESPONSE Error: The following applications have reserved IP addresses. (At most 20 applications are shown.)

Description	A *Check Prov* command generates this response if one or more linked components have a reserved IP address. A reserved IP address is one of: 1) The interface address defined at the *ProtocolPort*. 2) The subnet address - the host portion of the address is all zeros. 3) The broadcast address - the host portion of the address is all ones.

ATTRIBUTE illegalFriReserved

Description	This attribute contains a list of the offending Frame Relay interfaces.
List of	The name of the component
List Size	20

RESPONSE Selected reference is not capable of providing a reference.

Description	The Set command generates this response whenever an operator adds an invalid component name to the list.

ATTRIBUTE erroredReferenceEntry

Description	This parameter contains a copy of the offending value.
Values	The name of the component

RESPONSE A ... command is already in progress.

Description	The *Tidy* command produces this response if another *Tidy Prov*, *Tidy Software*, or *Remove Software Av* command is in progress. **System action**: the *Tidy* command is not executed. **Operator action**: re-enter the command after the running one has finished.

ATTRIBUTE tidyAction

Description	This attribute indicates the actual *Tidy* or *Remove* command that is in progress.
Values	tidy prov tidy software remove software

RESPONSE

Description	This response is used to display collected round trip delay information. It contains the sent and returned packets data size in bytes, the emission priority order of the packet, and the average, minimum and maximum round trip delays to the destination in milliseconds. Five samples are sent to the destination. Results are calculated based on returned packets.

ATTRIBUTE averageRtd

Description	This attribute indicates the average round trip delay to the destination.
Values	Decimal (0..20000)
Units	msec

ATTRIBUTE minimumRtd

Description	This attribute indicates the minimum round trip delay to the destination.
Values	Decimal (0..20000)
Units	msec

ATTRIBUTE maximumRtd

Description	This attribute indicates the maximum round trip delay to the destination.
Values	Decimal (0..20000)
Units	msec

ATTRIBUTE sentPktDataSize

Description	This attribute indicates the round trip delay query packet data size, excluding the Nortel Networks proprietary common header and the subnet header, sent to the destination.
Values	Decimal (0..4095)
Units	bytes

ATTRIBUTE returnedPktDataSize

Description	This attribute indicates the round trip delay acknowledge packet data size, excluding the Nortel Networks proprietary common header and the subnet header, received from the destination.
Values	Decimal (0..4095)
Units	bytes

ATTRIBUTE pktEmissionPriority

Description	This attribute indicates the emission priority order used for the round trip delay query.
Values	normal high interrupting

ATTRIBUTE numRtdPktSent

Description	This attribute indicates how many round trip delay query packets were sent to the destination.
Values	Decimal (0..5)

ATTRIBUTE numRtdPktReceived

Description	This attribute indicates how many round trip delay query packets were returned.
Values	Decimal (0..5)

RESPONSE Outgoing Telnet access ....

Description	The *Telnet* command produces this error when the attempt to set up a Telnet client connection fails for some reason. The *reason* attribute contains more information as to why it failed.

ATTRIBUTE reason

Description	This attribute contains text which should help the user to know why the *Telnet* command failed.
Values	String (0..255, ASCII)

RESPONSE Invalid Data Length for Facility

Description	Facility Classes A,B and C require one, two or three octets of Data, respectively. Facility code D has the length of data encoded in the first byte. The code is determined from the upper two bits of the Facility Code.

ATTRIBUTE escapeFaxAttributeCode

Description	This will just echo back the Facility that was input.

Values	String (1..128, Hex)
Replication	Hex (H.0..H.ff)

RESPONSE Error: Component ... does not exist.

Description	A *Check Prov* command produces this response when the index of an *IpxSapApplyEntry* does not specify an existing *ProtocolPort*.

ATTRIBUTE missingPpName

Description	This attribute contains the name of the *ProtocolPort* which does not exist.
Values	The name of the component

RESPONSE Error: There is no IpxPort component under ....

Description	A *Check Prov* command produces this response when the index of an *IpxSapApplyEntry* specifies a *ProtocolPort* which does not have an *IpxPort* subcomponent.

ATTRIBUTE missingPpName

Description	This attribute contains the name of the *ProtocolPort* which does not have an *IpxPort* subcomponent.
Values	The name of the component

RESPONSE Error:The value of ripNeighbor, ..., is not a valid IP address for a RIP neighbor.

Description	A *Check Prov* command produces this response when the attribute *ripNeighbor* is set to an address that does not belong to any Class A, B or C network.

ATTRIBUTE invalidRipNbrAddress

Description	This attribute contains value of the invalid *ripNeighbor* address.
Values	IP address

RESPONSE Error:Duplicate sourceAddress found. The sourceAddress must be unique for all StaticEndPoint and MultipointStaticEndPoint components within the same sharedDomainVirtualRouter. Please verify against

Description

A *Check Prov* command produces this response when it detects that at least two *StaticEndPoint* or *MultipointStaticEndPoint* components have the identical *sourceAddress* and *sharedDomainVirtualRouter* attributes. The *sourceAddress* of *StaticEndPoint* or *MultipointStaticEndPoint* components within the same *sharedDomainVirtualRouter* must be unique.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Change the value of *sourceAddress* or *sharedDomainVirtualRouter* attributes of the related *StaticEndPoint* or *MultipointStaticEndPoint* components to ensure that, the *sourceAddress* of *StaticEndPoint* or *MultipointStaticEndPoint* components within the same *sharedDomainVirtualRouter* is unique.

ATTRIBUTE otherDupTunnelEndpt

Description

This attribute indicates the other *StaticEndPoints* or *MultipointStaticEndPoints* component which has the identical *sourceAddress* within same *sharedDomainVirtualRouter*.

Values

The name of the component

RESPONSE File ... compile failed:.....

Description

This returns an informational error string describing why the filter file failed to compile.

ATTRIBUTE fileName

Description

This attribute holds the fully qualified name of the file we're trying to compile.

Values

String (1..255, ASCII)

ATTRIBUTE compilerErrorMsg

Description: This attribute contains a single string holding the compiler error which caused the compile to fail.

Values: String (1..80, ASCII)

RESPONSE Error: The bfrIndex value ... is already being used by other Bfr component. The suggested value is ....

Description: The *Check* command produces this response if two or more *Bfr* components on the same *Lp* have the same *bfrIndex* value.
To correct this problem, change the *bfrIndex* to the suggested value.

ATTRIBUTE currentValue

Description: This attribute specifies the current value of the attribute *bfrIndex*.

Values: Decimal (0..511)

ATTRIBUTE suggestedValue

Description: This attribute specifies the suggested value of the attribute *bfrIndex*.

Values: Decimal (0..511)

RESPONSE Error: ... is an invalid value for attribute ... .

Description: This group contains responses for invalid string values entered by the user. This response will be displayed when the user tries to set to value for a network number / node number string.

ATTRIBUTE invalidString

Description: This attribute contains the actual string value entered by the user.

Values: String (1..18, ASCII)

ATTRIBUTE invalidAttribute

Description: This attribute contains the attribute name of the attribute containing the error.

Values	Decimal (1..65535)

RESPONSE Error: Attribute ... cannot be ... if attribute ... is ... .

Description	This response group informs the user if the *networkNumberProv* and the *defaultType* are incorrectly provisioned. This response will be invoked on a set command.

ATTRIBUTE netNoName

Description	This attribute contains the name of the *networkNumberProv* attribute to be displayed at response time
Values	Decimal (1..65535)

ATTRIBUTE netNoValue

Description	This attribute contains the value of the *networkNumberProv* attribute to be displayed at response time.
Values	String (0..4, Dashed Hex)

ATTRIBUTE defTypeName

Description	This attribute contains the name of the *defaultType* attribute to be displayed at response time.
Values	Decimal (1..65535)

ATTRIBUTE defTypeValue

Description	This attribute contains the value of the *defaultType* attribute to be displayed at response time.
Values	other broadcast ppp wanRip unnumberedRip

RESPONSE Error : ... cannot be ... for the media provisioned .

Description	This response group informs the user if the if the *defaultType* is incorrectly set based on the encapsulation on the *ipxPort*. This response will be invoked while setting the defaultType value.

ATTRIBUTE defTypeName

Description	This attribute contains the name of the *defaultType* attribute to be displayed at response time.
Values	Decimal (1..65535)

ATTRIBUTE defTypeValue

Description	This attribute contains the value of the *defaultType* attribute to be displayed at response time.
Values	other broadcast ppp wanRip unnumberedRip

RESPONSE Host ... responded in ... milliSecs.

Description	This response contains the node address of the host which responded back.

ATTRIBUTE node

Description	This attribute node address of the host which actually responded to the ping.
Values	String (1..6, Dashed Hex)

ATTRIBUTE time

Description	This attribute describes the time in which the node responds to the ping request.
Values	Decimal (1..2000)

RESPONSE Error : ... encapsulation is invalid for provisioned media type.

Description	This response group informs the user if the IpxPort instance Id is incorrectly set for a given media application. This response will be invoked when a Ipx Port is added under the protocol port.

ATTRIBUTE encapVal

Description	This attribute contains the instance (encapsulation) of the *ipxPort* attribute to be displayed at response time.
Values	link ethernet novell sap snap vns tunnel

RESPONSE Error : No Net Sentry component installed under ... .

Description	This response group checks for the presence or absence of the *netSentry* component under the *vr*. This response will be invoked when the user tries to add a NetSentry component under Ipx or A NetSentry Port component under an IpxPort.

ATTRIBUTE vrName

Description	This attribute contains the name of the *vr* component to be displayed at response time.
Values	The name of the component

RESPONSE Error: ... cannot exist without ... .

Description	This response group informs the user that an ipx port cannot be provisioned without ipx being provisioned. This response will be invoked while adding an Ipx port under the protocol port.

ATTRIBUTE ipxPortCompName

Description	This attribute contains the name of the *IpxPort* instance to be displayed at response time
Values	The name of the component

ATTRIBUTE ipxCompName

Description	This attribute contains the value of the *Ipx* instance to be displayed at response time.
Values	The name of the component

RESPONSE Error: IPX component ... does not exist.

Description: This group contains responses for invalid protocol port names or SAP Filter ids by the user. This response will be displayed when the user tries add a *IpxSapApplyEntry* filter with a protocol port name or a SAP filter id which has not been provisioned.

ATTRIBUTE invalidPort

Description: This attribute contains the protocol port component or SAP Filter Component which must be provisioned.

Values: The name of the component

RESPONSE Error: ... is an invalid value for attribute ... .

Description: This group contains a response which will be displayed when the user tries to set a value of 0 or ff-ff-ff-ff for the internal network number.

ATTRIBUTE invalidValue

Description: This attribute contains the actual dashed hex value for the internal network number entered by the user.

Values: String (1..4, Dashed Hex)

ATTRIBUTE invalidAttribute

Description: This attribute contains the internal network number attribute which is in error.

Values: Decimal (1..65535)

RESPONSE Error: ... ... is assigned to ... .

Description: This response group informs the user if the *networkNumberProv* has already been assigned to an existing *ipxPort*. This check would be invoked on a add command.

ATTRIBUTE netNoName

Description: This attribute contains the name of the *networkNumberProv* attribute to be displayed at response time

Values: Decimal (1..65535)

ATTRIBUTE netNoValue

Description	This attribute contains the value of the *networkNumberProv* attribute to be displayed at response time.
Values	String (0..4, Dashed Hex)

ATTRIBUTE ipxPortComp

Description	This attribute contains the *ipxPort* Component to be displayed at response time.
Values	The name of the component

RESPONSE Error: At least one of the attributes ..., ..., ... or ... should be specified.

Description	A *Check* command will produce this response if the user does not specify the *type*, *name*, *networkNumber* or the *node* for a given SAP filter instance.

ATTRIBUTE invalidType

Description	This attribute contains the attribute name of the attribute *type*.
Values	Decimal (1..65535)

ATTRIBUTE invalidName

Description	This attribute contains the attribute name of the attribute *name*.
Values	Decimal (1..65535)

ATTRIBUTE invalidNetNo

Description	This attribute contains the attribute name of the attribute *networkNumber.*
Values	Decimal (1..65535)

ATTRIBUTE invalidNode

Description	This attribute contains the attribute name of the attribute *node*.
Values	Decimal (1..65535)

RESPONSE Error: ... encapType must be llcEncap or ipxVcEncap.

Description

A *check prov* command produces this error message when the attribute *encapType* under the linked *AtmMpe* component is neither ***llcEncap*** nor ***ipxVcEncap***.

ATTRIBUTE atmMpeName

Description

This attribute contains the name of the *AtmMpe* component.

Values

The name of the component

RESPONSE ERROR: The attribute ... is not a valid Token Ring group address.

Description

The first two bytes of a valid group address, in canonical form, must be 03-00, and the least significant bit of the next byte must be 1.

ATTRIBUTE groupMacAdrId

Description

This attribute contains the numeric ID of the MAC address attribute involved in the error.

Values

Decimal (1..65535)

RESPONSE ERROR: The attribute ... must set its U/L bit to 1.

Description

A provisioned MAC address must have its locally administrative bit set to 1. This response is generated as a result of a semantic failure.

ATTRIBUTE localAdminMacAdrId

Description

This attribute contains the numeric ID of the MAC address attribute involved in the error.

Values

Decimal (1..65535)

RESPONSE ERROR: The attribute ... can not be provisioned as broadcast address (FF-FF-FF-FF-FF-FF).

Description

The broadcast MAC address is not a valid value for this attribute. This response is generated as a result of a semantic failure.

ATTRIBUTE bcastMacAdrId

Description

This attribute contains the numeric ID of the MAC address attribute involved in the error.

Values

Decimal (1..65535)

RESPONSE Error: Bridge priority provisioned for this spanning tree is out of range for the following operational protocol specification - ....

Description

This response group is used to encode an error message that will be displayed to the user when the bridge priority semantic check fails. The bridge priority semantic check verifies if the provisioned bridge priority is valid according to the provisioned protocol specification. Priorities supplied by the user must meet the following conditions:
1) 0-255 for protocol specification DEC and
2) 0-65535 for protocol specification IEEE.
System Action: The provisioning session will fail
Operator Action: Provision the correct value for the attribute *priority* as per the rules mentioned above based upon the *protocolSpec* provisioned for the indicated spanning tree instance.

ATTRIBUTE opStp

Description

This attribute will carry the operational value of the protocol specification assigned to the spanning tree instance.

Values

both
dec
ieee8021

RESPONSE Error: Number of ... bridge ports provisioned,... exceeds allowed maximum of ....

Description	This response group is provided to encode the response to be set back to the user in case of a semantic check failure. This semantic check checks if the number of bridge ports provisioned under the same VirtualRouter does not exceed the allowed maximum of 255. **System Action:** The provisioning session will fail **Operator Action:** Reduce the number of bridge ports provisioned to be under the allowed maximum of 255.

ATTRIBUTE brPortType

Description	This attribute contains the bridge type which was exceeded.
Values	String (1..9, ASCII)

ATTRIBUTE numBrpsProvd

Description	This attribute will actually carry the number of bridge ports provisioned.
Values	Decimal (1..65535)

ATTRIBUTE numBrpsAllowed

Description	This attribute will actually carry the allowed maximum number of bridge ports.
Values	Decimal (1..65535)

RESPONSE Error: The following bridge port was provisioned when no port numbers were available: ... This port must be deleted before this session can be activated.

Description	This response group is provided to encode the response to be sent back to the user in case a bridge port was provisioned after the maximum allowed bridge ports were allocated. When this occurs, a port number cannot be assigned to the bridge port and the port is considered to be invalid. **System Action:** The provisioning session will fail **Operator Action:** Delete the specified bridge port. If the maximum number of bridge ports is not provisioned, it can be re-added into the system.

ATTRIBUTE invBrCompName

Description	This attribute will actually carry the component name of the invalid bridge port.
Values	The name of the component

RESPONSE Error: ... must be the same for all source route bridge ports in the same domain.

Description	The error message is returned when the user has provisioned an invalid *internalLanId, or bridgeNum* value. **System Action:** The provisioning session will fail **Operator Action:** Correct the *internalLanId* or bridgeNum value, then initiate a *check prov* or an *act prov* command.

ATTRIBUTE attributeName

Description	This attribute will carry the name of the *bridgeNum* or *internalLanId* attribute.
Values	Decimal (0..65535)

RESPONSE Error: Invalid LanId value specfied. ... must be in range (1 - 4095).

Description	The error message is returned when the user has provisioned an invalid *lanId* or *internalLanId* value. **System Action:** The provisioning session will fail **Operator Action:** Correct the *lanId* or *internalLanId* value, then initiate a *check prov* or an *act prov* command.

ATTRIBUTE attributeName

Description	This attribute will carry the name of the *lanid* or *internalLanId* attribute.
Values	Decimal (0..65535)

RESPONSE ...

Description	Display LanTest specific information, this may be in the form of multiple responses.

ATTRIBUTE testData

Description	This attribute contains the test information requested.

Values String (0..255, ASCII)

RESPONSE ERROR: The attribute ... is not a valid Token Ring functional address.

Description

The provisioned functional address must contain the bit mask of 03-00-fe-8f-84-01.

ATTRIBUTE funcAdrId

Description

This attribute contains the numeric ID of the functional address attribute involved in the error.

Values Decimal (1..65535)

RESPONSE Warning: (00-00-00-00-00-00) is provisioned for attribute ....

Description

A MAC address consisting of all zeros is not a valid value for this attribute. This response is generated as a result of a semantic failure.

ATTRIBUTE zeroMacAdrId

Description

This attribute contains the numeric ID of the MAC address attribute involved in the error.

Values Decimal (1..65535)

RESPONSE Error: Attribute ... has an illegal value of ... for this bridge port and medium combination.

Description A *check prov* command produces this response if the attribute *preserveDomain* cannot have the value ***on*** for the given bridge port and medium combination.
The Ethernet media cannot handle a value of ***on*** for the attribute *preserveDomain*.
System Action: A error message is generated and provisioning session fails.
Operator Action: Set the value of *preserveDomain* attribute to ***off***.

ATTRIBUTE pd

Description	This attribute carries the name of the *preserveDomain* attribute.
Values	Decimal (1..65535)

ATTRIBUTE pdVall

Description	This attribute will carries the value of the *preserveDomain* attribute.
Values	off on

RESPONSE Error: Attribute ... has an illegal value of ... for this bridge port and medium combination.

Description	This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the attribute *serviceClass* can have the value ***ordered*** for the given bridge port and medium combination. This response is not supported as the attribute *serviceClass* was obsoleted. **System Action**: A error message is generated and provisioning session fails. **Operator Action**: Set the value of *serviceClass* attribute to ***notOrdered***. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE svc

Description	This attribute will actually carry the name of the *serviceClass* attribute.
Values	Decimal (1..65535)

ATTRIBUTE svcVal

Description	This attribute will actually carry the value of the *serviceClass* attribute.
Values	ordered notOrdered

RESPONSE No name

Description	This is an EGP Neighbor Loss Trap derived from RFC 1450, RFC 1213, and RFC 1157. An egpNeighborLoss trap signifies that an *EgpNeighbor* has been marked down and the EGP peer relationship no longer obtains.

ATTRIBUTE egpNeighAddrOid

Description	This is the object identifier of the EgpNeighAddr variable binding in the trap The object identifier is “root.iso.org.dod.internet.mgmt.mib-2.egp.egpNeighTable.egpNeighEntry.egpNeighAddr”
Values	Integer Sequence

ATTRIBUTE egpNeighAddrValue

Description	This is the value of the egpNeighAddr that has been lost.
Values	IP address

RESPONSE IpPing: Rx reply of ... bytes from ...: icmpSeq=..., time=...ms

Description	This response indicates that the ping to the specified IP address was successful.

ATTRIBUTE bytes

Description	This attribute indicates the number of bytes contained in the IP echo reply packet.
Values	Decimal (30..20000)

ATTRIBUTE ipAddr

Description	This attribute indicates the IP address of the remote host.
Values	IP address

ATTRIBUTE sequence

Description	This attribute indicates the sequence number contained in the echo reply.
Values	Decimal (0..4294967295)

ATTRIBUTE time

Description	This attribute indicates the time the echo request/reply takes to make a round trip.
Values	Decimal (0..65535)

RESPONSE Destination ... is not responding after ... attempt(s).

Description	This response indicates that the ping to the specified IP address was unsuccessful.

ATTRIBUTE ipAddr

Description	This attribute indicates the *ipAddr* of the remote host.
Values	IP address

ATTRIBUTE attempts

Description	This attribute indicates the number of attempts made before the *Ping* command declared that the destination was not responding.
Values	Decimal (1..4095)

RESPONSE IP Trace Route for ...:Path taken:

Description	This response contains the header line used when the *-traceRoute* ping option was specified. It is used when the trace was successful. The path taken follows this response.

ATTRIBUTE ipAddr

Description	This attribute indicates the IP address of the remote host.
Values	IP address

RESPONSE No name

Description	This is the DLCI Status Change Trap derived from the draft Frame Relay DTE MIB (draft-ietf-iplpdn-frmib-dte-02.txt). This trap event is generated when a virtual circuit changes state. It has either been created or invalidated, or has toggled between the active and inactive states. The object identifier for this trap is "root.iso.org.dod.internet.mgmt.mib-2.transmission.frameRelay.frameRelayTraps.frDLCIStatusChange"

ATTRIBUTE frCircuitStateObjectId

Description	This is the object identifier of the frCircuitState variable binding in the trap. The object identifier is "root.iso.org.dod.internet.mgmt.mib-2.transmission.frameRelay.frCircuitTable.frCircuitEntry.frCircuitState" plus an instance specific portion.
Values	Integer Sequence

ATTRIBUTE frCircuitStateValue

Description	This is the value of the frCircuitState variable binding in the trap. The value of frCircuitState indicates whether the particular virtual circuit is operational. The object identifier of this variable binding is "root.iso.org.dod.internet.mgmt.mib-2.transmission.frameRelay.frCircuitTable.frCircuitEntry.frCircuitState" plus an instance specific portion.
Values	invalid active inactive

RESPONSE Error: Number of ... stp instances exceeds allowedmaximum of 16.

Description

This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the total number of stp instances does not exceed 16.
This response will contain a message that corresponds to the finding that the number of stp instances provisioned exceeds 16.
System Action: The provisioning session will fail
Operator Action: Verify that the number of instances of the component *SpanningTreeProtocol* provisioned are less than 16. This includes the *SpanningTreeProtocol* component with the value of its attribute *stpMode* set to ***backbone***. If there are more instances of the component *SpanningTreeProtocol* provisioned than allowed then delete the unwanted instances of the same. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE mode

Description

This attribute will actually carry the mode of stp found in violation.

Values

tb
sr

RESPONSE Error: Interdependency criterion between ..., and ... not satisfied.

Description

This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the following criteria are satisfied:
bridgeMaxAge >= 2 * *bridgeHelloTime* + 1.0 seconds.
System Action: The provisioning session will fail
Operator Action: Check the values of the indicated attributes and ensure that the criterion mentioned below is satisfied. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE bma

Description

This attribute will actually carry the name of one of the attributes that is used to verify the criteria. The attribute's name is *bridgeMaxAge.*

Values

Decimal (1..65535)

ATTRIBUTE bht

Description: This attribute will actually carry the name of one of the attributes that is used to verify the criteria. The attribute's name is *bridgeHelloTime*.

Values: Decimal (1..65535)

RESPONSE Error: Interdependency criterion between ... and ... is not satisfied.

Description: This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the following criteria are satisfied:
2 *(*bridgeForwardDelay* -1.0sconds) >= *bridgeMaxAge*.
System Action: The provisioning session will fail
Operator Action: Check the values of the indicated attributes and ensure that the criterion mentioned below is satisfied. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE bma

Description: This attribute will actually carry the name of one of the attributes that is used to verify the criteria. The attribute's name is *bridgeMaxAge.*

Values: Decimal (1..65535)

ATTRIBUTE bfd

Description: This attribute will actually carry the name of one of the attributes that is used to verify the criteria.The attribute's name is *bridgeForwardDelay.*

Values: Decimal (1..65535)

RESPONSE Error: The following component ..... does not exist.

Description

This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the bridge port mentioned as the value of the *receivePort* attribute has already been provisioned.
This response contains a message that corresponds to the finding that the bridge port used as *receivePort* has not been provisioned yet. A bridge port must be provisioned in the same provisioning session as the *StaticTableEntry* component.
System Action: The provisioning session will fail
Operator Action: Provision the indicated bridge port or change the value of the attribute *receivePort* so that it does not refer to a bridge port that has not been provisioned yet. Also ensure that the provisioned bridge port name is a valid bridge port name. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE ppName

Description

This attribute will actually carry the component name of the protocol port that was used as a part of the value of the *receivePort* attribute. Protocol port(s) and bridge port(s) that are going to be used in the attribute *receivePort* must be provisioned before they are referred to.

Values

The name of the component

ATTRIBUTE brPortName

Description

This attribute will actually carry the name of the bridge port that was used as the value of the *receivePort* attribute but was not found to be provisioned yet. This could also be due to the fact that an invalid bridge port name was provisioned. Bridge port(s) that are going to be used as *receivePort* must be provisioned before they are referred to.

Values

String (1..29, ASCII)

RESPONSE Error: The following bridge port, part of attribute ..., does not exist.- ... .

Description

This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if all the bridge ports mentioned in the *allowedToGoTo* attribute are already provisioned.
This attribute contains a message that corresponds to the finding that some bridge port(s) specified in the attribute *allowedToGoTo* has / have not been provisioned yet. All bridge ports mentioned in this attribute are expected to be provisioned before they are referred to.
System Action: The provisioning session will fail
Operator Action: Provision the indicated bridge ports or change the value of the attribute *allowedToGoTo* so that it does not refer to bridge port(s) that has/have not been provisioned yet. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE atgt

Description

This attribute will actually carry the name of the attribute *allowedToGoTo* under the component *StaticTableEntry.*

Values

Decimal (1..65535)

ATTRIBUTE brPortName

Description

This attribute will actually carry the component name of the bridge ports that were mentioned in the attribute *allowedToGoTo* under the component *StaticTableEntry* and was not found to be provisioned yet.

Values

The name of the component

RESPONSE Error: No Net Sentry component installed under ....

Description

This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check, checks for the following:
1. If the global component *NetSentry* is provisioned yet.
This attribute houses a message that corresponds to the finding that the component *Vr/<string> Bridge NetSentry* was provisioned before the *Vr/<string> NetSentry* component.
System Action: The provisioning session will fail.
Operator Action: Provision the global *Vr/<string> NetSentry* component or delete the component *Vr/<string> Bridge NetSentry.* After this type in the *check prov* or the *act prov* command.

ATTRIBUTE noGlobalNsComp

Description

This attribute will actually carry the component name of the *Vr/<string>* component to be displayed at response time.

Values

The name of the component

RESPONSE Error: Following domain number must be provisioned before being referred to- ....

Description

This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check, checks for the following:
If the referenced domain number is actually provisioned.
This attribute houses a message that corresponds to the finding that the domain number referred to in the component *ApplyTableEntry* has not been provisioned yet.
System Action: The provisioning session will fail
Operator Action: Provision the indicated domain number, setting it as the value of the attribute *domainNum* of a bridge port or change the value of the attribute *domainNum* in the *NsAte* component so that it refers to a domain that has already been provisioned. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE domNum

Description	This attribute will actually carry the domain number which was expected to be provisioned but was not found to be so.
Values	Decimal (0..4294967293)

RESPONSE Error: This bridge port cannot exist without the following component- ....

Description	This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the *TransparentBridge* component is provisioned when a bridge port exists. This response contains a message that corresponds to the finding that one of the above mentioned components, required for the operation of this bridge port, has not been provisioned yet. **System Action:** The provisioning session will fail **Operator Action:** Provision the indicated component. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE compName

Description	This attribute will actually carry the component name that is required for the operation of the bridge port.
Values	The name of the component

RESPONSE Error: It is illegal to provision this bridge port and the following bridge port under the same protocol port- ....

Description	This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the combination of bridge ports provisioned under the protocol port is legal, given the bridge port types and the associated medium. This response is obsoleted as only the transparent bridge port is supported. **System Action:** The provisioning session will fail **Operator Action:** Delete one of the bridge ports provisioned under the indicated protocol port. This bridge port can be provisioned under a different protocol port as per the rules mentioned below.

ATTRIBUTE brpName

Description	This attribute carries the component name of the bridge port which is found to be an illegal combination when provisioned together with the bridge port being checked, under the same protocol port.
Values	The name of the component

RESPONSE Error: Either A) the domain number assigned to this bridge port is wrong, since it is being used as an instanceidentifier of the backbone stp- ...; or B) the preserveDomainattribute of this bridge port is wrong and it should be set ON.

Description	A *check prov* command produces this response if the domain number provisioned for the access bridge port is the same as the instance identifier of the man *stp*. This response contains a message which corresponds to the finding that the domain number assigned to the access bridge port is the same as the instance identifier of the backbone *stp* instance. A *stp* component's instance identifier usually represents the domain it is associated with, except when the attribute *stpMode* in the *stp* component has a value of ***backbone***. This instance cannot be used as a domain number for a access bridge port. **System Action:** The provisioning session will fail. **Operator Action:** Verify that the domain number assigned to any access bridge port is not equal to the instance identifier of the *SpanningTreeProtocol* component whose attribute *stpMode* is set to ***backbone***. If such a condition is found, change the domain number assigned to concerned bridge port(s).

ATTRIBUTE domNum

Description	This attribute will carries the domain number found in violation.
Values	Decimal (0..4294967295)

RESPONSE Error: Bridge port priority provisioned out of range for the following operational stp type- ....

Description

This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the bridge port priority range is correct as according to the operational stp type.
This response contains a message that corresponds to the finding that the bridge port priority is found to be other than the following range for the corresponding stp type:
1) 0-255 for stp type DEC and
2) 0-65535 for stp type IEEE.
System Action: The provisioning session will fail
Operator Action: Provision the correct value for the attribute *portPriority* as per the rules mentioned above. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE opStp

Description

This attribute will carry the operational value of the stp type the bridge port will participate in.

Values

dec
ieee8021

RESPONSE Error: There should exist at least one instance of the following stp component for this bridge port to be operational- ....

Description

This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if there exists at least one instance of the *SpanningTreeProtocol* component provisioned while there exist bridge ports provisioned.
This response contains a message that corresponds to the finding that there does not exist a single instance of the *SpanningTreeProtocol* component provisioned while there exist bridge ports provisioned. In other words it is not allowed to provision bridge ports that are out of stp's reach.
System Action: The provisioning session will fail
Operator Action: Provision an instance of the component *SpanningTreeProtocol*. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE stpComp

Description: This attribute will carry the name of the stp component needed for the operation of the bridge port.

Values: The name of the component

RESPONSE Error: It is illegal for the following bridge port ... to be the value of the attribute receivePort, and part of attribute ... .

Description: This response group is provided to encode the response to be sent back to the user in case of a semantic check failure. This semantic check checks if the bridge port mentioned in the *receivePort* attribute appears in the *allowedToGoTo* attribute.
System Action: The provisioning session will fail
Operator Action: Provision the value of the attribute *allowedToGoTo* so that the bridge port provisioned as the *receivePort* does not appear in it. After this type in the *check prov* or the *act prov* command.

ATTRIBUTE brPortName

Description: This attribute will actually carry the name of the bridge port that was used as the value of the *receivePort* attribute but was found to be a part of the attribute *allowedToGoTo*. Bridge port(s) that are going to be used as *receivePort* cannot appear in the *allowedtoGoTo* attribute.

Values: String (1..29, ASCII)

ATTRIBUTE atgt

Description: This attribute will actually carry the name of the attribute *allowedToGoTo* under the component *StaticTableEntry.*

Values: Decimal (1..65535)

RESPONSE ERROR: The attribute ... can not be provisioned as a multicasting address.

Description: A multicasting address is not a valid value for this attribute. This response is generated as a result of a semantic failure.

ATTRIBUTE mcastMacAdrId

Description

This attribute contains the numeric ID of the MAC address attribute involved in the error.

Values

Decimal (1..65535)

RESPONSE WARNING: The attribute ... is provisioned.

Description

This Warning message is generated when a MAC address is provisioned.

ATTRIBUTE provMacAdrScId

Description

This attribute contains the numeric ID of the provisioned MAC address.

Values

Decimal (1..65535)

RESPONSE Error:The ... feature must be provisioned on ....

Description

The *Start* command produces this response when attempted against a service trace receiver without the corresponding trace receiver feature having been provisioned.

System action: The *Start* command has no effect.

Operator action: Add the required feature to the list of features specified by the *featureList* for this LP, issues *Start* command again.

ATTRIBUTE rcvrFeature

Description

This attribute is the trace receiver feature which must be provisioned.

Values

String (0..20, ASCII)

ATTRIBUTE lp

Description

This attribute is the component name of the LP which has requested a trace.

Values The name of the component

RESPONSE Cannot Unlock - attribute ... is not set to up.

Description This error response is generated when an operator attempts to *Unlock* a component whose currently provisioned administrative status is ***down*** or ***testing***.

System action: the *Unlock* command is ignored.
Operator action: if desired, change the value provisioned for the indicated attribute to ***up***, then retry the original *Unlock* command. Note that doing this will cause the component to attempt to go into service whenever a CP reload occurs.

ATTRIBUTE attribute

Description This attribute identifies the provisioned administrative status attribute.

Values Decimal (0..65535)

RESPONSE Destination reachable. Measured round trip delay ....

Description This response contains the measured round trip delay taken to reach the destination node.

ATTRIBUTE roundTripDelay

Description This attribute contains the round trip delay encountered to reach the destination node.

Values Decimal (0..10000)

RESPONSE .....

Description This response contains the *nodeName and nodeId* of an intermediate node in the network that was visited as the ping query packet travelled to its destination. The order of nodes listed (through multiple occurances of this response) is the order the nodes were traversed.

ATTRIBUTE nodeName

Description	This attribute contains the *nodeName* of each intermediate node that was visited as the ping query packet travelled to its destination.
Values	String (1..12, ASCII)

ATTRIBUTE nodeId

Description	This attribute contains the *nodeId* of each intermediate node that was visited as the ping query packet travelled to its destination.
Values	Decimal (1..4095)

RESPONSE Path ... used ... times:

Description	This response contains the header line for a particular path used by one or more ping query packets. It is used in response to the *-all* ping option. The path taken follows this response.

ATTRIBUTE pathInstance

Description	This attribute contains the instance number of the path which follows.
Values	Decimal (1..16)

ATTRIBUTE pathCount

Description	This attribute contains the count of the number of times the path which follows was used.
Values	Decimal (1..16)

RESPONSE Measured maximum round trip delay was ....

Description	This response contains the maximum measured round trip delay taken to reach a destination node in the logical network.

ATTRIBUTE maxRoundTripDelay

Description	This attribute contains the round trip delay encountered to reach the destination node.
Values	Decimal (0..10000)

RESPONSE Cannot Unlock - attribute ..... is not set to active.

Description

This error response is generated when an operator attempts to *Unlock* a component corresponding to a provisioned SNMP table row whose *rowStatus* is not ***active***. Note that if the table can have dynamic as well as provisioned rows, the component containing the provisioned data is not the same as the one representing the SNMP table.

System action: the *Unlock* command is ignored.
Operator action: if desired, change the value provisioned for the indicated attribute to ***active***, then retry the original *Unlock* command.

ATTRIBUTE provisionedComponent

Description

This attribute identifies the component which contains the provisioned *rowStatus* attribute. It is present only if the component is different from that specified in the *Unlock* command.

Values

The name of the component

ATTRIBUTE rowStatusAttribute

Description

This attribute identifies the provisioned *rowStatus* attribute.

Values

Decimal (0..65535)

Replication

The name of the component

RESPONSE Error:...The value specified for ... is invalid. It must be in SnmpUdpAddress Format: IPaddress-UDPport, where UDPport is 162.

Description

A *Set Vr/x Snmp Community/n Manager/n transportAddress* command produces this response when the specified *transportAddress* has an invalid format.

System action: the command is ignored.

Operator action: retry the command with a valid *transportAddress*.

ATTRIBUTE snmpUdpAddressFormat

Description: This attribute contains the numeric ID of the attribute whose value was *Set* incorrectly.

Values: Decimal (1..65535)

RESPONSE Error:...The ... attribute does not match any ... instance.

Description: This error message appears in response to a *Check Prov* command if the value of an *Vr/x Snmp Community/n viewIndex* attribute does not match the replication *index* for a *Vr/x Snmp View/x, n.n* component.

System action: The provisioning view cannot be activated.

Operator action: Set the *viewIndex* attribute to match the replication *index* of an existing *View* component, or add a *View* component with the replication *index* corresponding to *viewIndex*.

ATTRIBUTE attrInError

Description: This attribute contains the numeric ID of the *viewIndex* attribute whose value was not properly set.

Values: Decimal (1..65535)

ATTRIBUTE viewComponent

Description: This attribute indicates a pattern for a *View* component name which is meant to be referenced by the *viewIndex* attribute.

Values: The name of the component

RESPONSE Error:...The ... attribute is set incorrectly. The set bit should be consistent with the access mode specified by ... . The v1Trap and v2Trap may not be set simultaneously.

Description

This error message appears in response to a *Check Prov* command if the value of the *Vr/x Snmp Community/n Manager/n* component's *privileges* attribute is inconsistent with the parent *Community* component's *accessMode* attribute. Note that ***set*** operations are only allowed if the *Community accessMode* is ***readWrite***.

System action: The provisioning view cannot be activated.

Operator action: Change the *Manager privileges* to be consistent with the *Community accessMode*, or change the *Community accessMode* to allow the *Manager privileges*.

ATTRIBUTE privilegesAttribute

Description

This attribute contains the numeric ID of the *privileges* attribute involved in the conflict.

Values

Decimal (1..65535)

ATTRIBUTE relatedComponent

Description

This attribute contains the component name of the parent *Community* component, whose *accessMode* attribute is involved in the conflict.

Values

The name of the component

ATTRIBUTE accessModeAttribute

Description

This attribute contains the numeric ID of the parent *Community* component's *accessMode* attribute involved in the conflict.

Values

Decimal (1..65535)

Replication

The name of the component

RESPONSE Error:...There are ... instances of the ... component. The maximum number of allowed instances is ....

Description

This error message is generated in response to a *Check Prov* command when the maximum number of *Party, Context or Acl* components has been exceeded.

System action: The provisioning view cannot be activated.

Operator action: Delete enough *Party, Context or Acl* components so that the maximum number of components is not exceeded.

ATTRIBUTE numberOfSubcomponents

Description

This attribute contains the number of subcomponents. This value exceeds the maximum number allowed.

Values

Decimal (0..4294967295)

ATTRIBUTE nameOfSubcomponent

Description

This attribute contains the name of the subcomponent which has too many instances. It can be *Party*, *Context*, or *Acl*.

Values

The name of the component

ATTRIBUTE maximumNumberOfSubcomponents

Description

This attribute contains a value indicating the maximum number of allowed subcomponents.

Values

Decimal (0..4294967295)

RESPONSE Error:...The ... and ... components have the same value for the ... attribute.

Description

This error message is generated in response to a *Check Prov* command when duplicate *Vr/x Snmp Community/n Manager/n* components are found. The *Manager* components are the same if the value of their *transportAddress* attributes are the same.

System action: The provisioning view cannot be activated.

Operator action: Delete one of the *Manager* components or ensure that their *transportAddress* attributes are different.

ATTRIBUTE managerComponent1

Description

This attribute contains the component name of the first instance of duplicate *Manager* components.

Values

The name of the component

ATTRIBUTE managerComponent2

Description

This attribute contains the component name of the second instance of duplicate *Manager* components.

Values

The name of the component

ATTRIBUTE duplicatedAttribute

Description

This attribute contains the numeric ID of the *transportAddress* attribute which must be unique among *Manager* components.

Values

Decimal (1..65535)

RESPONSE Error:...The ... and ... components have the same value for the ..., and ... attributes.

Description

This error message is generated in response to a *Check Prov* command when duplicate *Vr/x Snmp Community/n* components are found. The *Community* components are the same if they have the same values for their *communityString* and *tDomain* attributes.

System action: The provisioning view cannot be activated.

Operator action: Delete one of the *Community* components or change the value of at least one of the *communityString* or *tDomain* attributes so that the *Community* components are no longer the same.

ATTRIBUTE communityComponent1

Description

This attribute contains the component name of the first duplicate *Community* component.

Values

The name of the component

ATTRIBUTE communityComponent2

Description

This attribute contains the component name of the second duplicate *Community* component.

Values

The name of the component

ATTRIBUTE duplicatedAttribute1

Description

This attribute contains the numeric ID of the *communityString* attribute which is involved in the conflict.

Values

Decimal (1..65535)

ATTRIBUTE duplicatedAttribute2

Description

This attribute contains the numeric ID of the *tDomain* attribute which is involved in the conflict.

Values

Decimal (1..65535)

RESPONSE Warning:The value of the ... ... attribute has been changed from ... to ... on the copy.

Description	This warning message appears in response to a *Copy* command when a component containing an attribute whose value must be unique is copied. A new value for the named attribute in the destination component is automatically assigned when the *Copy* is done. **System action**: the named attribute has been assigned a unique value. **Operator action**: none.

ATTRIBUTE nameOfChangedComponent

Description	This attribute contains the name of the destination component whose attribute value was changed.
Values	The name of the component

ATTRIBUTE changedAttribute

Description	This attribute contains the numeric ID of the attribute whose value was changed.
Values	Decimal (1..65535)
Replication	The name of the component

ATTRIBUTE oldValueOfAttribute

Description	This attribute contains the original value of the attribute in the source component of the *Copy* operation.
Values	Decimal (0..4294967295)

ATTRIBUTE newValueOfAttribute

Description	This attribute contains the newly assigned value of the attribute in the destination component of the *Copy* operation.
Values	Decimal (0..4294967295)

RESPONSE Error:...SNMP requires the VirtualRouter Ip component to be provisioned when the ... attribute has the value ....

Description

This error message is generated in response to a *Check Prov* command when a *Vr/x Snmp ipStack* attribute has a provisioned value of ***vrIp*** and the *Vr/x Ip* component has not been provisioned.

System action: The provisioning view cannot be activated.

Operator action: Provision the *Vr/x Ip* component or change the value of the *Vr/x Snmp ipStack* attribute, or delete the *Vr/x Snmp* component.

ATTRIBUTE attributeInError

Description

This attribute contains the numeric ID for the *ipStack* attribute involved in the conflict.

Values

Decimal (1..65535)

ATTRIBUTE attributeValue

Description

This attribute contains the value of the *ipStack* attribute involved in the conflict.

Values

vrIp
ipiFrIpiVc

RESPONSE Error: ... SNMP requires the IpiFr or IpiVc component to be provisioned when the ... attribute has the value ....

Description

This error message is generated in response to a *Check Prov* command when a *Vr/x Snmp ipStack* attribute has a provisioned value of ***ipiFrIpiVc*** and neither *IpiFr* nor *IpiVc* component have been provisioned.

System action: The provisioning view cannot be activated.

Operator action: Provision the *IpiFr* or *IpiVc* component or change the value of the *Vr/x Snmp ipStack* attribute, or delete the *Vr/x Snmp* component.

ATTRIBUTE attributeInError

Description	This attribute contains the numeric ID for the *ipStack* attribute involved in the conflict.
Values	Decimal (1..65535)

ATTRIBUTE attributeValue

Description	This attribute contains the value of the *ipStack* attribute involved in the conflict.
Values	vrIp ipiFrIpiVc

RESPONSE Warning:...A unique value could not be assigned to the ..... attribute.

Description

This warning message appears in response to an *Add* or *Copy* command when it is not possible to assign a unique value to an attribute whose value must be assigned when the *Add* or *Copy* is done. All possible values are currently in use by other components of the same type.

System action: the attribute specified in the response could not be assigned a valid value and the component is left with invalid provisioning data.
Operator action: the component specified in the response should be *deleted*. If you wish to add this component again, then you should *delete* other components of the same type and *activate* the provisioning view in order to free up attribute values.

ATTRIBUTE nameOfAffectedComponent

Description	This attribute contains the name of the component whose attribute was not assigned a valid value. This attribute will not appear if the component which generates the response contains the attribute whose value was not properly assigned.
Values	The name of the component

ATTRIBUTE componentAttribute

Description	This attribute contains the numeric id of the attribute which was not assigned a valid value. This attribute will not appear if the

component which generates the response contains the attribute whose value was not properly assigned.

Values: Decimal (1..65535)

Replication: The name of the component

ATTRIBUTE attribute

Description: This attribute contains the numeric id of the attribute which was not assigned a valid value. This attribute will only appear if the component which generates the response contains the attribute whose value was not properly assigned.

Values: Decimal (1..65535)

RESPONSE Error:...The Vr managementAccess attributemust be enabled when the ... attribute has the value ....

Description: This error message is generated in response to a *Check Prov* command when a *Vr/x Snmp ipStack* attribute has a provisioned value of ***ipiFrIpiVc*** and *Vr/x managementAccess* attribute is set to ***disabled***.

System action: The provisioning view cannot be activated.

Operator action: Change the value of the value of *Vr/x Snmp ipStack* attribute to ***vrIp*** or change the *Vr/x managementAccess* attribute value or remove the *Vr/x Snmp* component.

ATTRIBUTE attributeInError

Description: This attribute contains the numeric ID for the *ipStack* attribute involved in the conflict.

Values: Decimal (1..65535)

ATTRIBUTE attributeValue

Description: This attribute contains the value of the *ipStack* attribute involved in the conflict.

Values: vrIp
ipiFrIpiVc

RESPONSE Error:...The Vr managementAccess attribute must be enabled when the ... attribute has the value ....

Description

This error message is generated in response to a *Check Prov* command when a *Vr/x Snmp alarmsAsTraps* attribute has a provisioned value of ***enabled*** and the *Vr/x managementAccess* attribute is set to ***disabled***.

System action: The provisioning view cannot be activated.

Operator action: Change the value of the *Vr/x Snmp alarmsAsTraps* attribute to ***disabled*** or change the *Vr/x managementAccess* attribute value or remove the *Vr/x Snmp* component.

ATTRIBUTE attributeInError

Description

This attribute contains the numeric ID for the *alarmsAsTraps* attribute involved in the conflict.

Values

Decimal (1..65535)

ATTRIBUTE attributeValue

Description

This attribute contains the value of the *alarmsAsTraps* attribute involved in the conflict.

Values

enabled
disabled

RESPONSE Error: ... Snmp requires the Man component to be provisioned when the ... attribute has the value ....

Description

This error message is generated in response to a *Check Prov* command when a *Vr/x Snmp alarmsAsTraps* attribute has a provisioned value of ***enabled*** and no *Man* component has been provisioned.

System action: The provisioning view cannot be activated.

Operator action: Provision the *Man* component or change the value of the *Vr/x Snmp alarmsAsTraps* attribute, or delete the *Vr/x Snmp* component.

ATTRIBUTE attributeInError

Description: This attribute contains the numeric ID for the alarmsAsTraps attribute involved in the conflict.

Values: Decimal (1..65535)

ATTRIBUTE attributeValue

Description: This attribute contains the value of the alarmsAsTraps attribute involved in the conflict.

Values: enabled
disabled

RESPONSE Error:...The mib subtree specified in the view instance... is not allowed on a non management virtual router.

Description: This error message appears in response to a *Check Prov* command if the MIB subtree value specified in the subscriber V*r/x Snmp View* is starting with 1.3.6.1.4.1.562

System action: The provisioning view cannot be activated.

Operator action: Change the MIB subtree value specified in the subscriber V*r/x Snmp View* to indicate a branch which is not associated with Nortel Enterprise MIB branches, or delete this *view*.

ATTRIBUTE actualValProved

Description: This attribute contains the actual value of the MIB subtree specified in a subscriber *Vr/x snmp view* component, which causes the conflict.

Values: The name of the component

RESPONSE Error: The Stp component must ...exist for ... connections.

Description: This response is generated by the *Check Prov* command when *SrcPvc* or *DstPvc* exists, but *Stp* does not exist, or *Stp* exists, but *SrcPvc* or *DstPvc* does not exist.

ATTRIBUTE invalid

Description	Either “” or “not ”.
Values	String (0..4, ASCII)

ATTRIBUTE connection

Description	Either “SPVC” or “PVC”.
Values	String (3..4, ASCII)

RESPONSE Error: This is a backbone brige port (preserveDomain = on), but its domainNum matches the STP instance of the access STP - .... Change either the preserveDomain attribute or the domainNum attribute.

Description	A *Check Prov* command produces this response when the user has provisioned the bridge port as a backbone port (*preserveDomain* = ***on***) but *domainNum* of that bridge port matches the STP instance of an access STP (*stpMode* = ***access***).

ATTRIBUTE domNum

Description	This attribute carries the domain number found in violation.
Values	Decimal (0..4294967295)

RESPONSE

Description	This RtStats collected event record is generated by an ATM Signalling Interface at the end of each RtStats collection interval. It contains statistics related to call setup attempts and failures. ATM User-Network Interface Specification Version 3.1.(af-sig-0010.002) is referred for Failure Cause Values.

ATTRIBUTE txSetupPdus

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause3

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 3.

Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause17

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 17.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause18

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 18.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause21

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 21.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause27

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 27.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause28

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 28.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause35

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 35.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause36

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 36.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause37

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 37.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause41

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 41.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause45

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 45.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause47

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 47.

Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause49

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 49.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause57

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 57.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause58

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 58.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause63

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 63.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause65

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 65.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause73

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 73.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause78

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 78.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause88

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 88.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause96

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 96.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause99

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 99.
Values	Decimal (0..4294967295)

ATTRIBUTE txFailureCause100

Description	This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 100.

Values Decimal (0..4294967295)

ATTRIBUTE txFailureCause104

Description This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 104.

Values Decimal (0..4294967295)

ATTRIBUTE txFailureCause111

Description This attribute indicates the total number of outgoing call setup attempts in the last collection interval rejected with cause value 111.

Values Decimal (0..4294967295)

ATTRIBUTE rxSetupPdus

Description This attribute indicates the total number of incoming call setup attempts in the last collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE rxFailureCause3

Description This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 3.

Values Decimal (0..4294967295)

ATTRIBUTE rxFailureCause17

Description This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 17.

Values Decimal (0..4294967295)

ATTRIBUTE rxFailureCause18

Description This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 18.

Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause21

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 21.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause27

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 27.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause28

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 28.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause35

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 35.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause36

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 36.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause37

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 37.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause41

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 41.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause45

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 45.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause47

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 47.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause49

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 49.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause57

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 57.

Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause58

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 58.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause63

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 63.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause65

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 65.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause73

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 73.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause78

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 78.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause88

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 88.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause96

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 96.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause99

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 99.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause100

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 100.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause104

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 104.
Values	Decimal (0..4294967295)

ATTRIBUTE rxFailureCause111

Description	This attribute indicates the total number of incoming call setup attempts in the last collection interval rejected by the switch with cause value 111.

Values	Decimal (0..4294967295)

ATTRIBUTE signallingChannelStatus

Description	This attribute indicates if the signalling interface is capable of processing or originating call setup requests. If the value is ***up*** then the signalling channel was capable of processing or originating call setup requests at the end of the last collection interval. If the value is ***down*** then the signalling channel was not capable of processing or originating call setup requests at the end of the last collection interval.
Values	down up

ATTRIBUTE rxCbrSetup

Description	This attribute indicates the total number of incoming CBR call setup attempts received by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.
Values	Decimal (0..65535)

ATTRIBUTE rxRtVbrSetup

Description	This attribute indicates the total number of incoming RtVBR call setup attempts received by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.
Values	Decimal (0..65535)

ATTRIBUTE rxNrtVbrSetup

Description	This attribute indicates the total number of incoming NrtVBR call setup attempts received by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.
Values	Decimal (0..65535)

ATTRIBUTE rxUbrSetup

Description	This attribute indicates the total number of incoming UBR call setup attempts received by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.
Values	Decimal (0..65535)

ATTRIBUTE txCbrSetup

Description	This attribute indicates the total number of outgoing CBR call setup attempts transmitted by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.
Values	Decimal (0..65535)

ATTRIBUTE txRtVbrSetup

Description	This attribute indicates the total number of outgoing RtVBR call setup attempts transmitted by the ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.
Values	Decimal (0..65535)

ATTRIBUTE txNrtVbrSetup

Description	This attribute indicates the total number of outgoing NrtVBR call setup attempts transmitted by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.
Values	Decimal (0..65535)

ATTRIBUTE txUbrSetup

Description	This attribute indicates the total number of outgoing UBR call setup attempts transmitted by this ATM interface during the last collection interval. This total includes successful and unsuccessful setup attempts.
Values	Decimal (0..65535)

ATTRIBUTE rxCbrSetupFail

Description	This attribute indicates the total number of failed incoming CBR call setup attempts received by this ATM interface during the last collection interval.
Values	Decimal (0..65535)

ATTRIBUTE rxRtVbrSetupFail

Description	This attribute indicates the total number of failed incoming RtVBR call setup attempts received by this ATM interface during the last collection interval.
Values	Decimal (0..65535)

ATTRIBUTE rxNrtVbrSetupFail

Description	This attribute indicates the total number of failed incoming NrtVBR call setup attempts received by this ATM interface during the last collection interval.
Values	Decimal (0..65535)

ATTRIBUTE rxUbrSetupFail

Description	This attribute indicates the total number of failed incoming UBR call setup attempts received by this ATM interface during the last collection interval.
Values	Decimal (0..65535)

ATTRIBUTE txCbrSetupFail

Description	This attribute indicates the total number of failed outgoing CBR call setup attempts transmitted by this ATM interface during the last collection interval.
Values	Decimal (0..65535)

ATTRIBUTE txRtVbrSetupFail

Description	This attribute indicates the total number of failed outgoing RtVBR call setup attempts transmitted by this ATM interface during the last collection interval.

Values Decimal (0..65535)

ATTRIBUTE txNrtVbrSetupFail

Description This attribute indicates the total number of failed outgoing NrtVBR call setup attempts transmitted by this ATM interface during the last collection interval.

Values Decimal (0..65535)

ATTRIBUTE txUbrSetupFail

Description This attribute indicates the total number of failed outgoing UBR call setup attempts transmitted by this ATM interface during the last collection interval.

Values Decimal (0..65535)

RESPONSE Error:The value of ripInterface, ..., does not match any RIP interface address provisioned on this virtual router.

Description A *Check Prov* command produces this response when the attribute *ripInterface* is set to an address that does not match any *LogicalIf* address on this virtual router that has a *RipIf*.

ATTRIBUTE invalidRipInterfaceAddress

Description This attribute contains the invalid *ripInterface* address.

Values IP address

RESPONSE Error: The Autonomous System Identifier asId ...of this neighbor can not be equal to the asId of this Egp entity.

Description This error message appears when the value of Autonomous System Identifier *asId* of the *EgpNeighbor* is equal to the value of Autonomous System Identifier *asId* of the *Egp* entity.

ATTRIBUTE invalidNeighborAsId

Description This attribute contains the asId of the invalid neighbor.

Values Decimal (1..65535)

RESPONSE Error: The effective address of NetworkList ... is not a valid IP network address.

Description	This response group generates an error in case the effective address of the *NetworkList* component is not a valid IP network address. i.e., either all 0's (0.0.0.0) or all 1's (255.255.255.255).

ATTRIBUTE invalidExportAddress

Description	This attribute contains the value of invalid *NetworkList* address.
Values	IP address

RESPONSE Error: The neighbor address, ..., does not correspond to any networks provisioned on this virtual router.

Description	A *Check Prov* command produces this response when an EGP neighbor is provisioned with an address that does not correspond to any network as defined by the *LogicalIf*s.

ATTRIBUTE invalidNeighborAddress

Description	This attribute contains value of the invalid *neighbor* address.
Values	IP address

RESPONSE Error: The specified mask ... is not a valid contiguous mask.

Description	This error message appears in response to a Check Prov command when the value of a specified mask is provisioned with an invalid discontiguous mask. 1. The semantic check function will check for the contiguity of the mask by checking if there are contiguous 1's.

ATTRIBUTE invalidMask

Description	This attribute contains the value of the invalid mask.
Values	IP address

RESPONSE Error: The NextHop Address ... does not belong to any of the subnets provisioned under an IpPort.

Description This error message appears when the value of a *NextHops* provisioned for a static *RouteEntry* does not belong to one of the subnets provisioned under an *IpPort*. Each provisioned *NextHop* should belong to a valid subnet. This can be accomplished either by adding a *logicalIf* entry under *IpPort* component or changing the *NextHop* address to reflect to one of the subnets provisioned by *logicalIf* entry.

ATTRIBUTE invalidNextHopAddress

Description This attribute contains the value of invalid *NextHop* address.

Values IP address

RESPONSE Error: The combination of IP Address ... and Mask ... does not provide a valid entry.

Description This error message appears when the logical-AND of address and mask do not make a valid entry.

ATTRIBUTE invalidDestAddress

Description This attribute contains the index value of the invalid destination address.

Values IP address

ATTRIBUTE invalidDestMask

Description This attribute contains the index value of the invalid destination mask.

Values IP address

RESPONSE Error: The ripinterface value can not be set to ....

Description This error message is invoked when the *ripInterface* address is set to
0xffffffff..

ATTRIBUTE invalidRipInterfaceAddress

Description This attribute contains value of invalid rip Interface Address.

Values IP address

RESPONSE Error: The attribute metricType for StubAreaEntry ... should be set to ospfMetric if and only if the attribute importAsExtern for the AreaEntry is set to importNoExternal.

Description This Error message appears when there is inconsistency between the attribute *importAsExtern* and the *metricType.*

ATTRIBUTE ospfStubAreaId

Description This attribute contains the value of invalid *areaId*.

Values IP address

RESPONSE Error: The value of routerId should not be ....

Description This error message is produced when the *routerId* is set to either 0.0.0.0 or 255.255.255.255

ATTRIBUTE invalidAddress

Description This attribute contains value of invalid Router Id.

Values IP address

RESPONSE Error: The value of stub area ID ... is not equal to any of the StubAreaEntries provisioned under OSPF component.

Description This Error message appears when this areaId does not match to any of the stub areas provisioned.

ATTRIBUTE ospfStubAreaId

Description This attribute contains the value of invalid *areaId*.

Values IP address

RESPONSE Error: The value of areaId ... is not equal to any of the AreaEntries provisioned under the Ospf component.

Description This Error message will appear for different components under *Ospf* that used areaId. When this areaId does not match to any of the areas provisioned.

ATTRIBUTE ospfAreaId

Description This attribute contains the value of invalid *areaId*.

Values IP address

RESPONSE Error: The attribute importAsExtern for AreaEntry ... should be set either to importNoExternal or to importNssa.

Description This Error message appears when there is a valid *AreaEntry* provisioned for *StubAreaEntry* component, but the value of *importAsExtern* attribute for that *AreaEntry* is not set either to ***importNoExternal*** or ***importNssa***.

ATTRIBUTE ospfStubAreaId

Description This attribute contains the value of invalid *areaId*.

Values IP address

RESPONSE Error: When the value of advertiseDefault is set to yes then the value of importAsExtern for this area ... should be set to importNssa.

Description This error message is produced when the *StubArea* belongs to a valid provisioned Areas but if the value of *advertiseDafult* is set to ***yes***, then the attribute *importAsExtern*'s value for that particular *AreaEntry* should be ***importNssa***.

ATTRIBUTE ospfStubAreaEntryAreaId

Description This attribute will contain the value of invalid *areaId*.

Values IP address

RESPONSE Error: When the index lsdbType is set to nssaExternalLink then the attribute importAsExtern for this Area ... should be set to importNssa.

Description This Error message will appear when the index *lsdbType* is set to ***nssaExternalLink*** then the attribute *importAsExtern* for that *Area* should have the value of ***importNssa***.

ATTRIBUTE ospfAggregateEntryAreaId

Description This attribute contains the value of invalid *areaId*.

Values IP address

RESPONSE Error: The index value nbrRouterId can not be all ....

Description This Error message is produced when the provisioned index value *nbrRouterId* is equal to 0.0.0.0 or 255.255.255.255.

ATTRIBUTE invalidAddress

Description This attribute contains value of invalid Interface Address.

Values IP address

RESPONSE Error:The value of outInterface, ..., does not match any RIP interface address provisioned on this routing component.

Description A *Check Prov* command produces this response when the attribute *outInterface* is set to an address that does not match any *logicalIf* or *Interface* address on this routing component (*Vr*, *Rtr* or *Vrf*) that has a *RipIf*.

ATTRIBUTE invalidOutInterface

Description This attribute contains value of the invalid *outInterface* address.

Values IP address

RESPONSE Error:The value of interface, ..., does not match any RIP interface address provisioned on this routing component.

Description A *Check Prov* command produces this response when the attribute *interface* is set to an address that does not match any *LogicalIf* or *Interface* address on this routing component (*Vr*, *Rtr* or *Vrf*) that has a *RipIf*.

ATTRIBUTE invalidInterfaceAddress

Description This attribute contains value of the invalid *interface* address.

Values IP address

RESPONSE Error:The value of ripInterface, ..., does not match any RIP interface address provisioned on this routing component.

Description A *Check Prov* command produces this response when the attribute *ripInterface* is set to an address that does not match any *LogicalIf* or *Interface* address on this routing component (*Vr*, *Rtr* or *Vrf*) that has a *RipIf*.

ATTRIBUTE invalidRipInterface

Description This attribute contains the invalid *ripInterface* address.

Values IP address

RESPONSE Error: The address ... and mask ... should be in classA, classB or classC.

Description This error message appears when the specified address and mask are not in classA or in classB or in classC for *ApplyEntry* component.

ATTRIBUTE netSentryAddress

Description This attribute contains the value of invalid mask.

Values IP address

ATTRIBUTE netSentryMask

Description This attribute contains the value of invalid mask.

Values IP address

RESPONSE Error: The HostEntry Address ... does not belong to any of the subnets provisioned as Interface or as logicalIfEntry under IpPort.

Description This error will be generated if the hostAddress provisioned does not correlate with any of the subnets provisioned for an *interface* or *ipPort.*

ATTRIBUTE arpHostEntry

Description This attribute will contain the address of Host Entry.

Values IP address

RESPONSE Error: The PhysAddress can not be ....

Description This error message is displayed when attribute *PhysAddress* is set to all zeroes or all ones.

ATTRIBUTE invalidPhysAddress

Description This attribute contains the value of invalid physical Address.

Values	String (0..6, Dashed Hex)

RESPONSE Error: The netMask ... is not one of classA, classB, or classC.

Description	This error message appears when *netMask* under *IpLogicalInterface* or *Interface* is not one of classA, classB or classC. *netMask* must be contiguous starting from the left-most bit.

ATTRIBUTE invalidNetMask

Description	This attribute contains the value of invalid *netMask*.
Values	IP address

RESPONSE Error: The specified Address ... is not one of classA, classB or classC.

Description	This error message appears when the specified IP Address is not of classA, classB or classC.

ATTRIBUTE invalidAddress

Description	This attribute contains the value of invalid IP address.
Values	IP address

RESPONSE Error: The Ip Address ... is a network address given provisioned NetMask.

Description	This error message appears when IP Address under *IpLogicalInterface* or *Interface* happens to be a broadcastAddress.

ATTRIBUTE invalidAddress

Description	This attribute contains the value of invalid IP address.
Values	IP address

RESPONSE Error: There are duplicate LogicalIf ... found.

Description	This error message appears when there are duplicate *IpLogicalInterface* Addresses found under two different *IpPorts*.

ATTRIBUTE invalidAddress

Description	This attribute contains the value of invalid *IP address.*

Values IP address

RESPONSE Error:The NextHop Address can not be set to ....

Description This error message appears when the value of *NextHops* provisioned for a static *RouteEntry* is set to 0.0.0.0 or 255.255.255.255.

ATTRIBUTE invalidAddress

Description This attribute contains the value of the invalid *NextHop* address.

Values IP address

RESPONSE Error: There are duplicate linkDestinationAddress ... found.

Description This error message appears when there are duplicate *linkDestinationAddresses* found.

ATTRIBUTE invalidAddress

Description This attribute contains the value of invalid IP address.

Values IP address

RESPONSE Error: Mtu of ... exceeds the maximum defined range of the media.

Description This error message appears when *maxTxUnit* is not within the defined range of the media.
The possible media ranges are Ethernet=1500, FDDI=4470, X25=9188, PPP=18000, TokenRing=18944.

ATTRIBUTE invalidMtuRange

Description This attribute contains the value of an out of range MTU.

Values Decimal (0..65535)

RESPONSE Error: The linkDestinationAddress can not be set to ....

Description This error message appears when attribute *linkModel* under *IpPort* or *Interface* component is set to ***pointToPoint*** and the attribute *linkDestinationAddress* under *IpLogicalInterface* or *Interface* component is set either to 0.0.0.0 or 255.255.255.255.

ATTRIBUTE invalidAddress

Description	This attribute contains value of invalid linkDestination Address.
Values	IP address

RESPONSE Error: The value of index rangeNet can not be set to ....

Description	This error message appears when index value of *rangeNet* of Ospf AreaRange Entry is set to either 0x00000000 or 0xffffffff.

ATTRIBUTE invalidAddress

Description	This attribute contains the value of invalid rangeNet address.
Values	IP address

RESPONSE Error:The NextHop Address ... can not be equal to any logicalIf If it belongs to any subnets provisioned under an IpPort.

Description	This error message appears when the value of *NextHops* provisioned for a static *RouteEntry* belongs to one of the subnets provisioned under an IpPort; however, the *NextHop* address is equal to the index value of some *LogicalIfEntry* component.

ATTRIBUTE invalidNextHopAddress

Description	This attribute contains the value of an invalid *NextHop* address.
Values	IP address

RESPONSE Error:The combination of destAddress and destMask is ambiguous, Please add destAddress as ....

Description	This error message appears when the logical-AND of destAddress and not of destMask provides and ambiguous entry.

ATTRIBUTE invalidDestAddress

Description	This attribute contains the value of the index *destAddress*.
Values	IP address

RESPONSE Error:The feature ... is not provisioned in the feature list of ....

Description — The *Check Prov* command produces this response when an IP, IPX, or bridge port is configured under *ProtocolPort* component, but the corresponding feature is not present in the *featureList* of the *Sw Lpt/<string>* component associated with the port's inbound card.

ATTRIBUTE featName

Description — This attribute indicates the feature that is required in the *featureList* of *Sw Lpt/<string>* for an IP/IPX/bridge port. The feature can be ip, ipx, or bridge depending on the protocol port.

Values — String (1..30, ASCII)

ATTRIBUTE lpt

Description — This attribute indicates the *Sw Lpt* component associated with the inbound card of a particular protocol port. This component should have an IP/IPX/bridge feature in its *featureList* if the IP/IPX/bridge port is provisioned under *ProtocolPort*.

Values — The name of the component

RESPONSE Error: The effective address of NetworkList ... is not a valid IP network address.

Description — This response group generates an error in case the effective address
of the *NetworkList* component is not a valid IP network address, i.e., either all 0's (0.0.0.0) or all 1's (255.255.255.255).

ATTRIBUTE invalidExportAddress

Description — This attribute contains the value of invalid *NetworkList* address.

Values — IP address

RESPONSE Error: The value of localAddressConfigured, ..., does not match any IP interface address provisioned on this routing component.

Description: A *Check Prov* command produces this response when the attribute *localAddressConfigured* is set to an address that does not match any *logicalIf* or *Interface* address on this routing component (*Vr*, *Rtr* or *Vrf*).

ATTRIBUTE invalidIPInterfaceAddress

Description: This attribute contains value of the invalid *localAddressConfigured* address.

Values: IP address

RESPONSE Error: The attribute peerAs, ..., must be set to a BGP peerAs on this routing component.

Description: A *Check Prov* command produces this response when the value of attribute *peerAs* does not match the *peerAs* of any BGP peer on the routing component (*Vr*, *Rtr* or *Vrf*).

ATTRIBUTE invalidPeerAs

Description: This attribute contains value of the invalid *peerAs* value.

Values: Decimal (0..65535)

RESPONSE Error: The value of peerIpAddress, ..., does not match any peers address on this routing component.

Description: A *Check Prov* command produces this response when the value of
attribute *peerIpAddress* does not match the address of any BGP peer on the routing component (*Vr*, *Rtr* or *Vrf*).

ATTRIBUTE invalidPeerAddress

Description: This attribute contains value of the invalid *peerIpAddress* value.

Values: IP address

RESPONSE Error: The value of the attribute bgpIdentifier should not be ....

Description: This error message appears when the *bgpIdentifier* attribute is set to either 0.0.0.0 or 255.255.255.255.

ATTRIBUTE invalidBgpId

Description	This attribute contains value of invalid *Bgp* Identifier.
Values	IP address

RESPONSE Error:Exceeded maximum number of Routing Components.

Description	The *Check Prov* command produces this response when the maximum number of allowable Routing Components (*Vr*, *Router* and *Vrf*) has been exceeded. Delete all Routing Components which are in excess of the maximum allowed.

ATTRIBUTE maxAllowedVrs

Description	The maximum number of provisionable Routing Components.
Values	Decimal (0..65535)

ATTRIBUTE currentProvisionedVrs

Description	The current number of provisioned Routing Components.
Values	Decimal (0..65535)

RESPONSE Error:Exceeded maximum allowable Protocol Ports and Interfaces.

Description	The *Check Prov* command produces this response when the maximum number of allowable Protocol Ports and Interfaces has been exceeded. Delete all Protocol Ports and Interfaces which are in excess of the maximum allowed.

ATTRIBUTE maxAllowedProtocolPorts

Description	The maximum number of provisionable Protocol Ports and Interfaces.
Values	Decimal (0..65535)

ATTRIBUTE currentProvisionedProtocolPorts

Description	The current number of provisioned Protocol Ports and Interfaces.
Values	Decimal (0..65535)

RESPONSE ... dynamic ARP entries removed.

Description	This response indicates the number of dynamic ARP entries removed. If no entries were removed, it may be due to specifying an incorrect IP address for the *-logicalIf* option.

ATTRIBUTE numDeleted

Description	This is the number of dynamic ARP entries removed.
Values	Decimal (0..65535)

RESPONSE Error: ... is an invalid value for attribute ... .

Description	This group contains a response which will be displayed when the user tries to set a value of ff-ff-ff-ff for the port network number.

ATTRIBUTE invalidValue

Description	This attribute contains the actual dashed hex value for the port network number entered by the user.
Values	String (0..4, Dashed Hex)

ATTRIBUTE invalidAttribute

Description	This attribute contains the port network number attribute which is in error.
Values	Decimal (1..65535)

RESPONSE Download stopped. The following AV does not support the processor target specified:

Description	This response is issued when the user have specified an option of the *processorTargets* attribute which is not applicable to the given AV. This is the case when the requested files (for example, ***ppc*** type) are not present in the corresponding AD file.

ATTRIBUTE scsAvName

Description	This attribute contains the name of the AV which does not support the file type specified in the hardwareType attribute.
Values	String (1..30, ASCII)

RESPONSE Error:The following TosMap components contain conflicting tos values:

Description	A *Check Prov* command produces this response if any value in the *tos* attribute appears in two different *TosMap* components under the same *CosPolicyGroup*, and the *assignedCos* attribute of the two parent *Policy* components are not equal.

ATTRIBUTE tosMap1

Description	This attribute specifies the first of two conflicting *TosMap* components.
Values	The name of the component

ATTRIBUTE tosMap2

Description	This attribute specifies the second of two conflicting *TosMap* components.
Values	The name of the component

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify all addresses, some of the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* subcomponents of the *CosPolicyGroup*:

1. The values of the *assignedCos* attribute of the parent *Policy* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are zero.
4. The values of the *portNumberRange* attributes specify overlapping, but not equal port ranges.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify all addresses, some of the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* subcomponents of the *DiffServProfile*:

1. The values of the *assignedPhb* attribute of the parent *MfMap* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are zero.
4. The values of the *portNumberRange* attributes specify overlapping, but not equal port ranges.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify the same addresses, some of the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* components under the *CosPolicyGroup*:

1. The values of the *assignedCos* attribute of the parent *Policy* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are equal and not zero.
4. The values of the *prefix* attributes are equal up to the prefix length.
5. The values of the *portNumberRange* attributes specify overlapping, but not equal port ranges.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify the same addresses, some of the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* components under the *DiffServProfile*:

1. The values of the *assignedPhb* attribute of the parent *MfMap* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are equal and not zero.
4. The values of the *prefix* attributes are equal up to the prefix length.
5. The values of the *portNumberRange* attributes specify overlapping, but not equal port ranges.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE

Description

This response displays the result of the OAM Ethernet port test.

ATTRIBUTE testResult

Description

This attribute records the result of last port test executed on the OAM Ethernet port. The result can be one of the following values.
pass: the test passed
fail: the test failed
neverRun: the test has not been run
running: the test is running

Values

running
pass
fail
neverRun

RESPONSE Frame Relay Accounting Information

Description

This response describes the attributes specific to a Frame Relay accounting record. All items which belong to a Frame Relay accounting record are defined here. This definition is translated into Service Data Description files - sdd file. The Accounting Data Server (ADS) uses the sdd file to decode accounting records.

ATTRIBUTE recordType

Description

recordType attribute indicates the type of the record. For the first record in the accounting period, only *first* is set to 1. For the last record, only *last* is set to 1. For intermediate records, both *first* and *last* are set to 0. If there is only one record in the accounting period, then both *first* and *last* are set to 1.
first, ~last - first record
~first, ~last - intermediate record.
~first, last - final record.
first, last - first and last record (one only).

Set of

first
last

ATTRIBUTE callType

Description	This attribute defines the type of the call for which this accounting record is issued. ~gateway, ~localNetwork - non gateway call. ~gateway, localNetwork - gateway call to another network gateway, ~localNetwork - gateway call from another network gateway, localNetwork - gateway transit call.
Set of	gateway localNetwork

ATTRIBUTE callReferenceNumber

Description	This attribute contains the value of the call reference number assigned to each new call. Accounting records are uniquely defined by a call reference number on each function processor. In double ended accounting the *callReferenceNumber* is the same for both accounting records. Call reference number is unique only on function processor
Values	Decimal (0..16777215)

ATTRIBUTE callingNodeIdentifier

Description	This attribute identifies the calling (originating) node by a unique number assigned to each node in the *ModuleData* component. (In DPN it is called a NamsId.)
Values	Decimal (256..49151)

ATTRIBUTE callingCustomerIdentifier

Description	This attribute contains the number assigned in each service to a customer and it identifies the customer at the calling end of the call in the Customer Network Management.
Values	Decimal (0; 1..8191)

ATTRIBUTE callingPortIdentifier

Description	This attribute contains the function processor number used by the service issuing the accounting record for the calling (originating) part of the call. If the port information is from DPN, then the pe, port and pi numbers are encoded as 5, 5, 6 bits.

Values Decimal (0..65535)

ATTRIBUTE callingNpi

Description This attribute contains the calling numbering plan indicator of the calling address.

Values x121
e164

ATTRIBUTE callingAddress

Description This attribute contains the calling DataNetworkAddress of the interface. *callingAddress* includes DNIC (first 4 digits) for X.121, and CC (Country Code) for the E.164 address of the calling end. The maximum length is 15 digits.

Values BCD (1..15)

ATTRIBUTE callingDlci

Description This attribute contains the calling DLCI number of the interface. (DLCI is sometimes called LCN - logical channel number). This number is assigned to the call request at the calling end.

Values Decimal (16..1007)

ATTRIBUTE calledNodeIdentifier

Description

This attribute identifies the called (terminating) node by a unique number assigned to each node in the *ModuleData* component. (In DPN it is called a NamsId.)

Values Decimal (256..49151)

ATTRIBUTE calledCustomerIdentifier

Description

This attribute contains the number assigned in each service to a customer and it identifies the customer at the called end of the call in the Customer Network Management.

Values Decimal (0; 1..8191)

ATTRIBUTE calledPortIdentifier

Description
This attribute contains the function processor number used by the service issuing an accounting record for the called (terminating) side of the call. If the port information is from DPN, then the pe, port and pi numbers are encoded as 5, 5, 6 bits.

Values
Decimal (0..65535)

ATTRIBUTE calledNpi

Description
This attribute contains the called numbering plan indicator of the called address.

Values
x121
e164

ATTRIBUTE calledAddress

Description
This attribute contains the called DataNetworkAddress of the interface. *calledAddress* includes DNIC (first 4 digits) for X.121, and CC (Country Code) for the E.164 address of the called end. The maximum length is 15 digits.

Values
BCD (1..15)

ATTRIBUTE calledDlci

Description
This attribute contains the called DLCI number of the interface. (DLCI is sometimes called LCN - logical channel number). This number is assigned to the call request at the called end.

Values
Decimal (16..1007)

ATTRIBUTE segmentSizeIndex

Description
This attribute is the segment size index provisioned on the module.
It is used to calculate the number of segments sent and received in the accounting record. Two to the power of *segmentSizeIndex* is equal to the segment size (in bytes) provisioned in the *VirtualCircuitSytem* component. For example, if the segment size is 128, then *segmentSizeIndex* is 7.

Values	Decimal (0..16)

ATTRIBUTE clearCause

Description	This attribute is the clear cause signalled at the end of a connection. It is set to H.b0 for intermediate records.
Values	Decimal (0..255)

ATTRIBUTE diagnosticCode

Description	This attribute is the diagnostic code signalled at the end of a connection. It is set to 0 for intermediate records.
Values	Decimal (0..255)

ATTRIBUTE callingCir

Description	This attribute contains the calling end provisioned CIR (Committed Information Rate).
Values	Decimal (0..65535)

ATTRIBUTE callingEir

Description	This attribute contains the calling end provisioned EIR (Excess Information Rate).
Values	Decimal (0..65535)

ATTRIBUTE callingServiceType

Description	This attribute indicates the service supported by the port used by the calling end. This number is provisioned on each interface Dna as *accountClass*.
Values	Decimal (0..50)

ATTRIBUTE callingCollectReason

Description
This attribute indicates the reason for the accounting collection of the calling end (It can be any combination of Audit, Study, Test, Billing, Force).

Set of
bill
test
study
audit
force

ATTRIBUTE callingDse

Description
This attribute defines the calling end Data Service Exchange provisioned in Dna as an arbitrary number in the *serviceExchange* attribute.

Values
Decimal (0..255)

ATTRIBUTE callingRateAdaptation

Description
provisioned - rate adaptation provisioned on the calling end of the call.
occurred - rate adaptation occurred on the calling end of the call.
enforced - rate enforcement provisioned on the calling end of the call.

Set of
provisioned
occured
enforced

ATTRIBUTE callingClassOfService

Description
emissionPriority - emission priority provisioned.

Set of
emissionPriority

ATTRIBUTE calledCir

Description
This attribute contains the called end provisioned CIR (Committed Information Rate).

Values Decimal (0..65535)

ATTRIBUTE calledEir

Description

This attribute contains the called end provisioned EIR.

Values Decimal (0..65535)

ATTRIBUTE calledServiceType

Description This attribute indicates the service supported by the port used by the called end-user. This number is provisioned on each interface Dna as *accountClass*.

Values Decimal (0..255)

ATTRIBUTE calledCollectReason

Description This attribute indicates the reason for the accounting collection of the called end (It can be any combination of Audit, Study, Test, Billing, Force).

Set of
bill
test
study
audit
force

ATTRIBUTE calledDse

Description One byte field defines the called end Data Service Exchange provisioned in Dna as an arbitrary number in the *serviceExchange* attribute.

Values Decimal (0..255)

ATTRIBUTE calledRateAdaptation

Description

provisioned - rate adaptation provisioned on the called end of the call
occurred - rate adaptation occurred on the called end of the call.

enforced - rate enforcement provisioned on the called end of the call.

Set of provisioned
occured
enforced

ATTRIBUTE calledClassOfService

Description

emissionPriority - emission priority provisioned.

Set of emissionPriority

ATTRIBUTE flags

Description This attribute contains values for the call characteristics.
calledEndCharging - called end is charging.
~calledEndCharging - calling end is charging
highPriority - call is high priority.
pvcType - call is pvc.
~pvcType - call is svc.
hunted - call was hunted.
redirected - call was redirected.
calledGenerated - called end generated accounting record.
~calledGenerated - calling end generated accounting record.
calledCleared - call was cleared by called end.
~calledCleared - call was cleared by calling end.
unique - accounting record is unique.
reachedDataTransfer - call reached data transfer.
collReasonValid - collection reasons are valid.
callingUni - interface is callingUni.
~callingUni - interface is callingNni.
calledUni - interface is calledUni.
~calledUni - interface is calledNni.
spareOne - not used
spareTwo - not used
callingAbit - called Abit set

	calledAbit - calling Abit set userDataInCallReq - user data present in call request
Set of	calledEndCharging highPriority pvcType hunted redirected calledGenerated calledCleared unique reachedDataTransfer collReasonValid userDataInCallReq callingUni calledUni spareOne spareTwo callingAbit calledAbit

ATTRIBUTE startTime

Description	This attribute represents the start time in the accounting record. For SVC it is the time when the call request packet was created. For PVC it is set by the Master VC when the master call is formatted. On the subsequent accounting record, the start time corresponds to the end time of the previous record. If Time of Day Accounting (TODA) is used, start time (and end time) correspond to times set in the schedule (set in *Col/accounting collectionTimes* attribute).
Values	Time (DHMS)

ATTRIBUTE endTime

Description	This attribute represents the end time in the accounting record. If TODA is used, the end time in non-final records is the time of the TODA period. For 12-hour accounting, the time on non-final records is the time when the 12-hour timer expires at the charged end. On final accounting records, the end time is the time when the disconnect packet is first received. If Time of Day Accounting

(TODA) is used, end time (and start time) correspond to times set in the schedule (set in *Col/accounting collectionTimes* attribute).

Values Time (DHMS)

ATTRIBUTE elapsedTime

Description

This attribute represents the duration of the call in 0.1 second increments. This time interval is started when call request is processed. If call does not reach data transfer, then elapsed time is set to 0. Elapsed time represents the true measure of the accounting period. It is measured independently of start time and end time. Since start time and end time can be changed externally by adjusting the clock, elapsed time can be shorter or longer than the difference between start time and end time. This difference can show as much as 60 seconds on accounting records for the virtual circuits which are idle (carry no traffic) and when TODA is used (in which case it is caused by the internal TODA detection mechanism). When a 12 hour accounting period is used, elapsed time is exact or differs by a few seconds from a 12 hour duration.

Values Decimal (0..16777215)

ATTRIBUTE callingEgressBytes

Description This attribute contains the total number of bytes received at the calling end.

Values Long Integer

ATTRIBUTE callingIngressBytes

Description This attribute contains the total number of bytes sent at the calling end.

Values Long Integer

ATTRIBUTE callingEgressFrames

Description This attribute contains the total number of frames received at the calling end.

Values Decimal (0..4294967295)

ATTRIBUTE callingIngressFrames

Description	This attribute contains the total number of frames sent at the calling end.
Values	Decimal (0..4294967295)

ATTRIBUTE callingEgressSegments

Description	This attribute contains the total number of segments received at the calling end.
Values	Decimal (0..4294967295)

ATTRIBUTE callingIngressSegments

Description	This attribute contains the total number of segments sent at the calling end.
Values	Decimal (0..4294967295)

ATTRIBUTE callingEirEgressBytes

Description	This attribute contains the number of EIR bytes received from the subnet at the calling end.
Values	Long Integer

ATTRIBUTE callingEirIngressBytes

Description	This attribute contains the number of EIR bytes sent to the subnet at the calling end.
Values	Long Integer

ATTRIBUTE callingEirEgressFrames

Description	This attribute contains the number of EIR Frames received from the subnet at the calling end.
Values	Decimal (0..4294967295)

ATTRIBUTE callingEirIngressFrames

Description	This attribute contains the number of EIR Frames sent to the subnet at the calling end.

Values	Decimal (0..4294967295)

ATTRIBUTE callingEirEgressSegments

Description	This attribute contains the number of EIR segments received from the subnet at the calling end.
Values	Decimal (0..4294967295)

ATTRIBUTE callingEirIngressSegments

Description	This attribute contains the number of EIR segments sent to the subnet at the calling end
Values	Decimal (0..4294967295)

ATTRIBUTE callingDiscardedBytes

Description	This attribute contains the number of bytes discarded at the calling end due to rate enforcement when no rate adaptation occurred.
Values	Long Integer

ATTRIBUTE callingDiscardedFrames

Description	This attribute contains the number of frames discarded at the calling end due to rate enforcement when no rate adaptation occurred.
Values	Decimal (0..4294967295)

ATTRIBUTE callingDiscardedSegments

Description	This attribute contains the number of segments discarded at the calling end due to rate enforcement when no rate adaptation occurred.
Values	Decimal (0..4294967295)

ATTRIBUTE calledEgressBytes

Description	This attribute contains the total number of bytes received at the called end.
Values	Long Integer

ATTRIBUTE calledIngressBytes

Description	This attribute contains the total number of bytes sent at the called end.
Values	Long Integer

ATTRIBUTE calledEgressFrames

Description	This attribute contains the total number of frames received at the called end.
Values	Decimal (0..4294967295)

ATTRIBUTE calledIngressFrames

Description	This attribute contains the total number of frames sent at the called end.
Values	Decimal (0..4294967295)

ATTRIBUTE calledEgressSegments

Description	This attribute contains the total number of segments received at the called end.
Values	Decimal (0..4294967295)

ATTRIBUTE calledIngressSegments

Description	This attribute contains the total number of segments sent at the called end.
Values	Decimal (0..4294967295)

ATTRIBUTE calledEirEgressBytes

Description	This attribute contains the number of EIR bytes received from the subnet at the called end
Values	Long Integer

ATTRIBUTE calledEirIngressBytes

Description	This attribute contains the number of EIR bytes sent to the subnet at the called end

Values	Long Integer

ATTRIBUTE calledEirEgressFrames

Description	This attribute contains the number of EIR Frames received from the subnet at the called end
Values	Decimal (0..4294967295)

ATTRIBUTE calledEirIngressFrames

Description	This attribute contains the number of EIR Frames sent to the subnet at the called end
Values	Decimal (0..4294967295)

ATTRIBUTE calledEirEgressSegments

Description	This attribute contains the number of EIR segments received from the subnet at the called end
Values	Decimal (0..4294967295)

ATTRIBUTE calledEirIngressSegments

Description	This attribute contains the number of EIR segments sent to the subnet at the called end
Values	Decimal (0..4294967295)

ATTRIBUTE calledDiscardedBytes

Description	This attribute contains the number of bytes discarded at the called end due to rate enforcement when no rate adaptation occurred.
Values	Long Integer

ATTRIBUTE calledDiscardedFrames

Description	This attribute contains the number of frames discarded at the called end due to rate enforcement when no rate adaptation occurred.
Values	Decimal (0..4294967295)

ATTRIBUTE calledDiscardedSegments

Description	This attribute contains the number of segments discarded at the called end due to rate enforcement when no rate adaptation occurred.
Values	Decimal (0..4294967295)

ATTRIBUTE callingTotalPwmBytes

Description	This attribute contains the calling end peak water mark for the total number of ingress bytes.
Values	Decimal (0..4294967295)

ATTRIBUTE callingEirPwmBytes

Description	This attribute contains the calling end peak water mark for the number of ingress bytes carried on frames with DE-bit = 1.
Values	Decimal (0..4294967295)

ATTRIBUTE callingCirPwmBytes

Description	This attribute contains the calling end peak water mark for the number of ingress bytes carried on frames with DE-bit = 0.
Values	Decimal (0..4294967295)

ATTRIBUTE calledTotalPwmBytes

Description	This attribute contains the called end peak water mark for the total number of ingress bytes.
Values	Decimal (0..4294967295)

ATTRIBUTE calledEirPwmBytes

Description	This attribute contains the called end peak water mark for the number of ingress bytes carried on frames with DE-bit = 1.
Values	Decimal (0..4294967295)

ATTRIBUTE calledCirPwmBytes

Description	This attribute contains the called end peak water mark for the number of ingress bytes carried on frames with DE-bit = 0.

Values Decimal (0..4294967295)

ATTRIBUTE recordIdentifier

Description

recordIdentifier attribute indicates the contents of the accounting record.

Values

gvcVintage4
frsVintage4
frsLocalCounts
frsLocalAndRemoteCounts
frsShortLocalCounts
frsShortLocalAndRemoteCounts
frsInterworkingPvcRecord
frsInterworkingSvcRecord
frsIpOptPvcRecord

ATTRIBUTE callingTotalPwmIntervalNumber

Description

This attribute contains the number of the pwm (peak water mark) interval in which the pwm occurred and is not part of accounting record if Time of Day is not running. (Attribute *collectionTimes* in *Collector* component for accounting is not set.)
The value is relative to *collectionTimes* attribute together with *peakWaterMarkInterval* attribute in *Collector* component. For example if *collectionTimes* is set to 16:00 and value of *callingTotalPwmIntervalNumber* is reported 3 and attribute *peakWaterMarkInterval* in *Collector* component is set to 5 minutes, then peak traffic happened between 16:15 and 16:20.

Values Decimal (0..1000)

ATTRIBUTE callingEirPwmIntervalNumber

Description

This attribute contains the number of the pwm (peak water mark) interval in which the pwm occurred and is not part of accounting record if Time of Day is not running. (Attribute *collectionTimes* in *Collector* component for accounting is not set.)

Values Decimal (0..1000)

ATTRIBUTE callingCirPwmIntervalNumber

Description

This attribute contains the number of the pwm (peak water mark) interval in which the pwm occurred and is not part of accounting record if Time of Day is not running. (Attribute *collectionTimes* in *Collector* component for accounting is not set.)

Values

Decimal (0..1000)

ATTRIBUTE calledTotalPwmIntervalNumber

Description

This attribute contains the number of the pwm (peak water mark) interval in which the pwm occurred and is not part of accounting record if Time of Day is not running. (Attribute *collectionTimes* in *Collector* component for accounting is not set.)

Values

Decimal (0..1000)

ATTRIBUTE calledEirPwmIntervalNumber

Description

This attribute contains the number of the pwm (peak water mark) interval in which the pwm occurred and is not part of accounting record if Time of Day is not running. (Attribute *collectionTimes* in *Collector* component for accounting is not set.)

Values

Decimal (0..1000)

ATTRIBUTE calledCirPwmIntervalNumber

Description

This attribute contains the number of the pwm (peak water mark) interval in which the pwm occurred and is not part of accounting record if Time of Day is not running. (Attribute *collectionTimes* in *Collector* component for accounting is not set.)

Values

Decimal (0..1000)

ATTRIBUTE originalNpi

Description

This attribute contains numbering plan indicator for originally called address.

Values x121
e164

ATTRIBUTE originalAddress

Description This attribute contains originally called DataNetworkAddress of the interface if call was redirected.

Values BCD (1..15)

ATTRIBUTE originalServiceType

Description This attribute indicates the service supported by the port used by the calling end. This number is provisioned on each interface Dna as accountClass.

Values Decimal (0..255)

ATTRIBUTE callingTransferPriority

Description This attribute indicates the transfer priority used in the direction towards the network.

The transfer priority is a preference configured for an application according to its time-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. The transfer priority standard is defined to have 16
levels from 0 to 15.

Each transfer priority n, where n is the transfer priority index, contains a default setting for routing class of service (***multimedia, delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned under the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a network operator if required.

Values Decimal (0..255)

ATTRIBUTE calledTransferPriority

Description

This attribute indicates the transfer priority used in the direction from the network.

The transfer priority is a preference configured for an application according to its time-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. The transfer priority standard is defined to have 16
levels from 0 to 15.

Each transfer priority n, where n is the transfer priority index, contains a default setting for routing class of service (***multimedia, delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned under the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a network operator if required.

Values

Decimal (0..255)

ATTRIBUTE circuitId

Description

This attribute indicates a unique string, set by the operator as the "*correlationTag*" provisioned attribute, which identifies the call for accounting purposes. Downstream processing uses this attribute to correlate accounting records issued at different nodes in the network.

Typically, the attribute is provisioned, as the *correlationTag*, with the same value at both ends of the connection, but this is not mandatory. As a default, there is no *correlationTag* provisioned against the DLCI.

For single-sided accounting with the Egress Protocol on, the circuit identifier specifies the *correlationTag* value provisioned at the local interface only. There is no circuit identifier for the remote DLCI in the record. For double-sided accounting, the accounting records generated at each end contains the local *correlationTag* value.

Values String (32, ASCII)

ATTRIBUTE callingIpAddress

Description This attribute contains the calling IP address of the Frame Relay interface for the connection. It is only applicable when using BNX. Its value is taken from the *ipAddress* attribute in the *BnxProtocol* subcomponent of the FrUni. The *ipAddress* attribute must have been set to an IP address which is associated with the Frame Relay port. This address must be in the same subnet as the associated protocol port.

Values IP address

ATTRIBUTE calledIpAddress

Description This attribute contains the called IP address for the connection. It is only applicable when using BNX. Its value is taken from the *calledIpAddress* attribute in the *BnxIwf* subcomponent of the DLCI for the connection. The *calledIpAddress* attribute must have been set to the destination IP address which receives the datagrams.

Values IP address

RESPONSE

Description This response displays the port test statistics.

ATTRIBUTE elapsedTime

Description This attribute is the number of minutes elaspsed since the test started.

Values Decimal (0..4294967295)

ATTRIBUTE timeRemaining

Description This attribute is the number of minutes remaining before the test terminates itself.

Values Decimal (0..4294967295)

ATTRIBUTE frmTx

Description This attribute is the number of frames sent during the test period.

Values	Long Integer

ATTRIBUTE bitsTx

Description	This attribute is the number of bits sent during the test period.
Values	Long Integer

ATTRIBUTE frmRx

Description	This attribute is the total number of frames received during the test period.
Values	Long Integer

ATTRIBUTE bitsRx

Description	This attribute is the total number of bits received during the test period.
Values	Long Integer

ATTRIBUTE erroredFrmRx

Description	This attribute is the total number of errored frame received during the test period.
Values	Long Integer

RESPONSE IP Account Record Information

Description	This record describes the attributes specific to the IP accounting. All items which belong to an IP accounting record are defined here.Ip Accounting records are generated for individual *ProtocolPorts*.

ATTRIBUTE recordIdentifier

Description	This attribute distinguishes the IP accounting record from other types of accounting records.
Values	ipAcctRecord

ATTRIBUTE vpiId

Description	This attribute indicates the virtual Private Intranet Identifier to which the *ProtocolPort* component instance belongs.

Note that this attribute will be obsoleted in the near future. It's functionality is replaced by the *virtualPrivateNetworkIdentifier* attribute. Any affected tools that use this attribute should be converted to use the *vpnId* attribute instead.

Values: Decimal (1..255)

ATTRIBUTE collectReason

Description: This attribute indicates the reason(s) for accounting collection which are the same as the ***accountCollection*** attribute in *Vr Ip*. It can be any combination of the following reasons: ***bill, test, study, audit,*** or ***force***.

Set of:
bill
test
study
audit
force

ATTRIBUTE protocolPortIfIndex

Description: This attribute indicates the interface index of the Protocol Port that generated this accounting record

Values: Decimal (1..1024)

ATTRIBUTE protocolPortInstance

Description: This attribute indicates the instance name of the protocol port that generated this accounting record.

Values: String (1..20, ASCII)

ATTRIBUTE mediaType

Description: This attribute indicates the type of media over which IP traffic is being carried. It is one of the following values:
pointToPointTunnel
pointToMultipointTunnel
frameRelay
atmMpe
ppp
A value of ***frameRelay*** is used by the *ProtocolPort* components that are linked to either the *IpDlciGroup* or *FrDte* component.

Values	pointToPointTunnel pointToMultipointTunnel frameRelay atmMpe ppp

ATTRIBUTE localNodeIdentifier

Description	This attribute identifies the node by a unique number assigned to each node. This value is provisioned in the attribute *namsId* of the component *ModuleData*.
Values	Decimal (256..49151)

ATTRIBUTE vrInstance

Description	This attribute indicates which VR generated the accounting record.
Values	String (1..16, ASCII)

ATTRIBUTE startTime

Description	This attribute represents the starting time of the accounting interval for the *ProtocolPort*. In subsequent records, this attribute represents the starting time of the current accounting collection interval. When TODA (time of day accounting) is enabled, the collection intervals are delimited by the entries in the TODA schedule (the *Col/accounting collectionTimes* attribute). When TODA is disabled, they are delimited by a timer that expires every 12-hours.
Values	Time (DHMS)

ATTRIBUTE endTime

Description	This attribute indicates the time when the current accounting collection interval ended. In the last accounting record this attribute represents the time when accounting was disabled. When TODA (time of day accounting) is enabled, the collection intervals are delimited by the entries in the TODA schedule (the *Col/accounting collectionTimes* attribute). When TODA is

disabled, they are delimited by a timer that expires every 12-hours.

Values Time (DHMS)

ATTRIBUTE elapsedTime

Description This attribute indicates the length of time, in 0.1 second increments, the protocol port was enabled during the reported accounting interval. It is the true duration of the accounting interval, measured independently of the start and end time (since start time and end time can be affected by the adjustment of the clock, elapsed time can be shorter or longer than the difference between them).

Values Decimal (0..16777215)

ATTRIBUTE ipTunnelSrcAddr

Description This attribute indicates the source IP Tunnel address in the shared domain.This attribute appears in the accounting record only if the *mediaType* is:
pointToPointTunnel
pointToMultipointTunnel

Values IP address

ATTRIBUTE ipTunnelDestAddr

Description This attribute indicates the destination IP Tunnel address in the shared doamin.This attribute appears in the accounting record only if the *mediaType* is:
pointToPointTunnel
pointToMultipointTunnel

Values IP address

ATTRIBUTE InOctets

Description This attribute contains the aggregate number of octets received by the *ProtocolPort* during the accounting interval.

Values Long Integer

ATTRIBUTE OutOctets

Description	This attribute contains the aggregate number of octets transmitted by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE InPkts

Description	This attribute contains the aggregate number of packets received by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE OutPkts

Description	This attribute contains the aggregate number of packets transmitted by a *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE InDiscards

Description	This attribute indicates the aggregate number of packets received by the *ProtocolPort* that were discarded, during the accounting interval.
Values	Long Integer

ATTRIBUTE OutDiscards

Description	This attribute indicates the aggregate number of packets transmitted by the *ProtocolPort* that were discarded, during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos0InOctets

Description	This attribute contains the total number of Cos0 octets received by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos0OutOctet

Description	This attribute contains the total number of Cos0 octets transmitted by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos0InPkts

Description	This attribute contains the number of Cos0 packets received by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos0OutPkts

Description	This attribute contains the total number of Cos0 packets transmitted by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos0InDiscards

Description	This attribute indicates the number of Cos0 packets received by the *ProtocolPort* that were discarded, during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos0OutDiscards

Description	This attribute indicates the number of Cos0 packets transmitted by the *ProtocolPort* that were discarded, during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos1InOctets

Description	This attribute contains the total number of Cos1 octets received by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos1OutOctet

Description	This attribute contains the total number of Cos1 octets transmitted by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos1InPkts

Description	This attribute contains the number of Cos1 packets received by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos1OutPkts

Description	This attribute contains the total number of Cos1 packets transmitted by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos1InDiscards

Description	This attribute indicates the number of Cos1 packets received by the *ProtocolPort* that were discarded, during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos1OutDiscards

Description	This attribute indicates the number of Cos1 packets transmitted by the *ProtocolPort* that were discarded, during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos2InOctets

Description	This attribute contains the total number of Cos2 octets received by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos2OutOctet

Description	This attribute contains the total number of Cos2 octets transmitted by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos2InPkts

Description	This attribute contains the number of Cos2 packets received by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos2OutPkts

Description	This attribute contains the total number of Cos2 packets transmitted by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos2InDiscards

Description	This attribute indicates the number of Cos2 packets received by the *ProtocolPort* that were discarded, during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos2OutDiscards

Description	This attribute indicates the number of Cos2 packets transmitted by the *ProtocolPort* that were discarded, during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos3InOctets

Description	This attribute contains the total number of Cos3 octets received by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos3OutOctet

Description	This attribute contains the total number of Cos3 octets transmitted by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos3InPkts

Description	This attribute contains the number of Cos3 packets received by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos3OutPkts

Description	This attribute contains the total number of Cos3 packets transmitted by the *ProtocolPort* during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos3InDiscards

Description	This attribute indicates the number of Cos3 packets received by the *ProtocolPort* that were discarded, during the accounting interval.
Values	Long Integer

ATTRIBUTE Cos3OutDiscards

Description	This attribute indicates the number of Cos3 packets transmitted by the *ProtocolPort* that were discarded, during the accounting interval.
Values	Long Integer

ATTRIBUTE virtualPrivateNetworkIdentifier

Description	This attribute indicates the Virtual Private Network (VPN) associated with the Virtual Router that relates to this accounting record. This is a globally unique identifier composed of a three-octet long Organizationally Unique Identifier (OUI) followed by a four-octet long VPN index as described in RFC 2685.The value "***000000:00000000***" identifies an unspecified VPN.

Values String (7, Hex)

ATTRIBUTE ipTunnelVcgVr

Description This attribute indicates the IP tunnel Carrier VR (VCG) and it is used by the RTD feature only. This attribute appears in the accounting record only if the *mediaType* is:
pointToPointTunnel
pointToMultipointTunnel

Values String (1..16, ASCII)

ATTRIBUTE ipTunnelVcgIpAddr

Description This attribute indicates the BGP loopback IP address of the VCG VR used by RTD feature. This attribute appears in the accounting record only if the *mediaType* is:
pointToPointTunnel
pointToMultipointTunnel

Values IP address

RESPONSE Full Vc Accounting Information

Description

This response describes the attributes specific to a full Vc accounting record. All items which belong to a full Vc accounting record are defined here. This definition is translated into Service Data Description files - sdd file. Accounting Data Server (ADS) uses the sdd file to decode accounting records.

ATTRIBUTE recordType

Description

recordType attribute indicates the type of the record. For the first record in the accounting period, only *first* is set to 1. For the last record, only *last* is set to 1. For intermediate records, both *first* and *last* are set to 0. If there is only one record in the accounting period, then both *first* and *last* are set to 1.
first, ~last - first record
~first, ~last - intermediate record.

~first, last - final record.
first, last - first and last record (one only).

Set of
first
last

ATTRIBUTE callType

Description

This attribute defines the type of call for which this accounting record is issued.
~gateway, ~localNetwork - non gateway call.
~gateway, localNetwork - gateway call to another network
gateway, ~localNetwork - gateway call from another network
gateway, localNetwork - gateway transit call.

Set of
gateway
localNetwork

ATTRIBUTE callReferenceNumber

Description

This attribute contains the value of the call reference number assigned to each new call. Accounting records are uniquely defined by a call reference number on each function processor. In double ended accounting the *callReferenceNumber* is the same for both accounting records. Call reference number is unique only on function processor.

Values

Decimal (0..16777215)

ATTRIBUTE callingNodeIdentifier

Description

This attribute identifies the calling (originating) node by a unique number assigned to each node in the ModuleData component. (In DPN it is called a NamsId.)

Values

Decimal (256..49151)

ATTRIBUTE callingCustomerIdentifier

Description

This attribute contains the number assigned in each service to a customer and it identifies the customer at the calling end of the call in the Customer Network Management.

Values Decimal (0; 1..8191)

ATTRIBUTE callingPortIdentifier

Description This attribute contains the function processor number used by the service issuing the accounting record for the calling (originating) part of the call. If the port information is from DPN, then the pe, port, and pi numbers are respectively encoded as 5, 5, 6 bits.

Values Decimal (0..65535)

ATTRIBUTE callingNpi

Description This attribute contains calling numbering plan indicator of the calling address.

Values x121
e164

ATTRIBUTE callingAddress

Description

This attribute contains the calling DataNetworkAddress of the interface. *callingAddress* includes DNIC (first 4 digits) for X.121, and CC (Country Code) for the E.164 address of the calling end. The maximum length is 15 digits.

Values BCD (1..15)

ATTRIBUTE callingDlci

Description

This attribute contains the calling DLCI number of the interface. (DLCI is sometimes called LCN - logical channel number). This number is assigned to the call request at the calling end.

Values Decimal (16..1007)

ATTRIBUTE calledNodeIdentifier

Description

This attribute identifies the called (terminating) node by a unique number assigned to each node in the ModuleData component. (In DPN it is called a NamsId.)

Values Decimal (256..49151)

ATTRIBUTE calledCustomerIdentifier

Description

This attribute contains the number assigned in each service to a customer and it identifies the customer at the called end of the call in the Customer Network Management.

Values

Decimal (0; 1..8191)

ATTRIBUTE calledPortIdentifier

Description

This attribute contains the function processor number used by the service issuing accounting record for the called (terminating) side of the call. If the port information is from DPN, then the pe, port, and pi numbers are respectively encoded as 5, 5, 6 bits.

Values

Decimal (0..65535)

ATTRIBUTE calledNpi

Description

This attribute contains the called numbering plan indicator of the called address.

Values

x121
e164

ATTRIBUTE calledAddress

Description

This attribute contains the called DataNetworkAddress of the interface. *calledAddress* includes DNIC (first 4 digits) for X.121, and CC (Country Code) for the E.164 address of the called end. The maximum length is 15 digits.

Values

BCD (1..15)

ATTRIBUTE calledDlci

Description

This attribute contains the called DLCI number of the interface. (DLCI is sometimes called LCN - logical channel number). This number is assigned to the call request at the called end.

Values

Decimal (16..1007)

ATTRIBUTE segmentSizeIndex

Description

This attribute is the segment size index provisioned on the module.
It is used to calculate the number of segments sent and received in the accounting record. Two to the power of *segmentSizeIndex* is equal to the segment size (in bytes) provisioned in the *VirtualCircuitSytem* component. For example, if the segment size is 128, then *segmentSizeIndex* is 7.

Values Decimal (0..16)

ATTRIBUTE clearCause

Description This attribute is the clear cause signalled at the end of connection. It is set to H.b0 for intermediate records.

Values Decimal (0..255)

ATTRIBUTE diagnosticCode

Description This attribute is the diagnostic code signalled at the end of connection. It is set to 0 for intermediate records

Values Decimal (0..255)

ATTRIBUTE callingServiceType

Description

This attribute indicates the service supported by the port used by the calling end. This number is provisioned on each interface Dna as *accountClass*.

Values Decimal (0..255)

ATTRIBUTE callingCollectReason

Description
This attribute indicates the reason for accounting collection of the calling end (can be any combination of Audit, Study, Test, Billing, Force).

Set of
bill
test
study
audit
force

ATTRIBUTE callingDse

Description
This attribute defines the calling end Data Service Exchange provisioned in Dna as arbitrary number in *serviceExchange* attribute.

Values
Decimal (0..255)

ATTRIBUTE calledServiceType

Description
This attribute indicates the service supported by the port used by the called end-user. This number is provisioned on each interface Dna as *accountClass*.

Values
Decimal (0..255)

ATTRIBUTE calledCollectReason

Description
This attribute indicates the reason for accounting collection of the called end (can be any combination of Audit, Study, Test, Billing, Force).

Set of
bill
test
study
audit
force

ATTRIBUTE calledDse

Description

One byte field defines the called end Data Service Exchange provisioned in Dna as arbitrary number in *serviceExchange* attribute.

Values

Decimal (0..255)

ATTRIBUTE flags

Description

This attribute contains values for call characteristics.
calledEndCharging - called end is charging.
~calledEndCharging - calling end is charging
highPriority - call is high priority.
pvcType - call is Pvc.
~pvcType - call is svc.
hunted - call was hunted.
redirected - call was redirected.
calledGenerated - called end generated accounting record.
~calledGenerated - calling end generated accounting record.
calledCleared - call was cleared by called end.
~calledCleared - call was cleared by calling end.
unique - accounting record is unique.
reachedDataTransfer - call reached data transfer.
collReasonValid - collection reasons are valid.
userDataInCallReq - user data present in call request.

fastSelect - fast select call
restrictedResponse - fast select call with restricted response

Set of

calledEndCharging
highPriority
pvcType
hunted
redirected
calledGenerated
calledCleared
unique
reachedDataTransfer
collReasonValid
userDataInCallReq
fastSelect
restrictedResponse

ATTRIBUTE startTime

Description

This attribute represents start time in the accounting record. For SVC it is the time when the call request packet was created. For PVC it is set by the Master VC when the master call is formatted. On subsequent accounting record, the start time corresponds to the end time of the previous record. If Time of Day Accounting (TODA) is used, start time (and end time) correspond to times set in the schedule (set in *Col/accounting collectionTimes* attribute).

Values

Time (DHMS)

ATTRIBUTE endTime

Description

This attribute represents end time in the accounting record. If TODA is used, the end time in non-final records is the time of the TODA period. For 12-hour accounting, the time on non-final records is the time when the 12-hour timer expires at the charged end. On final accounting records, the end time is the time when the disconnect packet is first received. If Time of Day Accounting (TODA) is used, end time (and start time) correspond to times set in the schedule (set in *Col/accounting collectionTimes* attribute).

Values

Time (DHMS)

ATTRIBUTE elapsedTime

Description

Duration of the call in 0.1 second increments. This time interval is started when call request is processed. If call does not reach data transfer elapsed time is set to 0. Elapsed time represents true measure of the accounting period. It is measured independent of start time and end time. Since start time and end time can be changed externally by adjusting the clock, elapsed time can be shorter or longer than difference between start time and end time. This difference can show as much as 60 seconds on accounting records for the virtual circuits which are idle (carry no traffic) and when TODA is used and is caused in this case by internal TODA detection mechanism. When 12 hour accounting period is used elapsed time is exact or differs by a few seconds from 12 hour duration.

Values Decimal (0..16777215)

ATTRIBUTE localEgressSegments

Description This attribute contains the total number of segments received at the local end.

Values Decimal (0..4294967295)

ATTRIBUTE localIngressSegments

Description This attribute contains the total number of segments sent at the local end.

Values Decimal (0..4294967295)

ATTRIBUTE originalNpi

Description This attribute contains numbering plan indicator for originally called address.

Values x121
e164

ATTRIBUTE originalAddress

Description This attribute contains originally called DataNetworkAddress of the interface if call was redirected.

Values BCD (1..15)

ATTRIBUTE originalServiceType

Description This attribute indicates the service supported by the port used by the calling end. This number is provisioned on each interface Dna as accountClass.

Values Decimal (0..255)

ATTRIBUTE callingReceiveWindow

Description

This attribute contains the value for the local calling end receive window size. For SVC/PVC this field is populated by X.25 and X.75 services, all other services set it to 0.

Values Decimal (0..16)

ATTRIBUTE calledReceiveWindow

Description

This attribute contains the value for the local called end receive window size. For SVC/PVC this field is populated by X.25 and X.75 services, all other services set it to 0.

Values Decimal (0..16)

ATTRIBUTE callingSendWindow

Description

This attribute contains the value for the local calling end send window size. For SVC/PVC this field is populated by X.25 and X.75 services, all other services set it to 0.

Values Decimal (0..16)

ATTRIBUTE calledSendWindow

Description

This attribute contains the value for the local called end send window size. For SVC/PVC this field is populated by X.25 and X.75 services, all other services set it to 0.

Values Decimal (0..16)

ATTRIBUTE callingCalledThruput

Description

This attribute contains throughput class of packets sent from the calling DTE to the called end.

Values Decimal (0..16)

ATTRIBUTE calledCallingThruput

Description

This attribute contains throughput class of packets sent from the called DTE to the calling end.

Values Decimal (0..16)

ATTRIBUTE callingCalledPktSize

Description

This attribute contains the value of the packet size sent from the calling DTE to the called end. The value is base 2 of actual packet size.

Values Decimal (0..16)

ATTRIBUTE calledCallingPktSize

Description

This attribute contains the value of the packet size sent from the called DTE to the calling end. The value is base 2 of actual packet size.

Values Decimal (0..16)

ATTRIBUTE recordIdentifier

Description

recordIdentifier attribute indicates the contents of the accounting record.

Values gvcVintage4
frsVintage4
frsLocalCounts
frsLocalAndRemoteCounts

frsShortLocalCounts
frsShortLocalAndRemoteCounts

ATTRIBUTE localUserResets

Description: This attribute contains the total number of user resets at the local end.

Values: Decimal (0..4294967295)

ATTRIBUTE callingTransferPriority

Description: This attribute indicates the transfer priority used in the direction towards the network.

The transfer priority is a preference configured for an application according to its time-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. The transfer priority standard is defined to have 16 levels from 0 to 15.

Each transfer priority n, where n is the transfer priority index, contains a default setting for routing class of service (***multimedia, delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned under the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a network operator if required.

Values: Decimal (0..255)

ATTRIBUTE calledTransferPriority

Description: This attribute indicates the transfer priority used in the direction from the network.

The transfer priority is a preference configured for an application according to its time-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. The transfer priority standard is defined to have 16 levels from 0 to 15.

Each transfer priority n, where n is the transfer priority index, contains a default setting for routing class of service (***multimedia, delay***, or ***throughput***) and frame relay egress queue (depending on the number of supported egress queues on the remote end interface) specified by the *routingClassOfServic*e and *emissionPriority* attributes provisioned under the *Mod Frs DprsNet Tpm/n* component. The default mapping can be altered by a network operator if required.

Values Decimal (0..255)

RESPONSE Time Change Information

Description

This response describes the attributes specific to an event caused by change of time on the switch. When time is adjusted by more than 20 seconds, time change record is issued and sent to be part of accounting stream. It is then used to keep track of changed of clock for each switch and to explain potential inconsistencies in the accounting records related to start time and end time.

ATTRIBUTE recordType

Description

Always set to first and last.

Set of first
last

ATTRIBUTE oldDate

Description

This attribute represents old time on the switch before time was adjusted.

Values Time (DHMS)

ATTRIBUTE newDate

Description

This attribute represents new time on the switch after time was adjusted. Change of time may cause TODA trigger to generate accounting records if time which was adjusted spans TODA

expiry. TODA expiry is defined in *Collector/Accounting* component *collectionTimes* attribute.

Values Time (DHMS)

ATTRIBUTE namsId

Description

This attribute contains *namsId* of the switch which issued time change accounting record. Value of *namsId* is provisioned in *ModuleData* component.

Values Decimal (256..49151)

ATTRIBUTE recordIdentifier

Description

recordIdentifier attribute indicates the contents of the accounting record.

Values
gvcVintage4
frsVintage4
frsLocalCounts
frsLocalAndRemoteCounts
frsShortLocalCounts
frsShortLocalAndRemoteCounts
timeChangeRecord

RESPONSE Mpa Voice Accounting Information

Description This response describes the attributes specific to an MPA voice accounting record. All items which belong to an MPA voice accounting record are defined here. This definition is translated into Service Data Description files - sdd file. Multiservice Data Provider (MDP) uses the sdd file to decode accounting records.

ATTRIBUTE recordIdentifier

Description This attribute distinguishes the Voice accounting record from other types of accounting records.

Values mpaVoAccRecord

ATTRIBUTE recordType

Description

This attribute indicates the type of the record. For the first record in the accounting period, only ***first*** is set. For the last record, only ***last*** is set. For intermediate records, neither ***first*** nor ***last*** is set. If there is only one record in the accounting period, then both ***first*** and ***last*** are set.
first, ***~last*** (recordType_first 1, recordType_last 0) - first record
~first, ***~last*** (recordType_first 0, recordType_last 0) - intermediate record.
~first, ***last*** (recordType_first 0, recordType_last 1) - final record.
first, ***last*** (recordType_first 1, recordType_last 1) - first and last record (one only).

Set of

first
last

ATTRIBUTE callCorrelationIdentifier

Description

This attribute indicates a unique value assigned to all accounting records generated by calling and called nodes for this call. The *callCorrelationId* is used during post processing of accounting records to correlate records generated by different nodes. The *callCorrelationId* is always unique in the network with respect to *callCorrelationIds* generated by other function processors. The value of *callCorrelationId* repeats after 2^{24} calls on the same, continually active function processor.

Values

String (13, Hex)

ATTRIBUTE startTime

Description

This attribute indicates the start time of the accounting record. For the first record, this is the time when the setup message was received. On subsequent accounting records, the *startTime* will be equal to the *endTime* of the previous record. If Time of Day Accounting (TODA) is used, *startTime* is the time of the TODA (set in *Col/accounting collectionTimes* attribute).

Values

Time (DHMS)

ATTRIBUTE endTime

Description	This attribute indicates end time of the accounting record. In the final accounting record for a call, *endTime* is the time when the disconnect packet was received. If TODA is used, *endTime* in non-final records is the time of the TODA. For 12-hour accounting, *endTime* in non-final records is the time when the 12-hour timer expires.
Values	Time (DHMS)

ATTRIBUTE elapsedTime

Description	This attribute indicates the duration of the call in 0.1 second increments. This time interval is started when the call request is processed. *elapsedTime* indicates the true measure of the accounting period. It is measured independent of *startTime* and *endTime*. Since *startTime* and *endTime* can be changed externally by adjusting the clock, *elapsedTime* can be shorter or longer than the difference between *startTime* and *endTime*. When 12 hour accounting is used, *elapsedTime* is exact or differs by a few seconds from a 12 hour duration.
Values	Decimal (0..16777215)

ATTRIBUTE localNodeIdentifier

Description	This attribute identifies the *nodeId* of the node that generated the accounting record. *nodeId* is assigned to each node in the *ModuleData* component.
Values	Decimal (1..4095)

ATTRIBUTE localLogicalProcessor

Description	This attribute indicates the logical processor used by the service issuing the accounting record.
Values	Decimal (0..15)

ATTRIBUTE localPort

Description	This attribute indicates the port used by the service issuing the accounting record.

Values	Decimal (0..1024)

ATTRIBUTE localMpanlInstanceNo

Description	This attribute indicates the MPANL instance number issuing the accounting record.
Values	Decimal (1..65535)

ATTRIBUTE callingNumber

Description	This attribute indicates the calling number signalled to the node. This may have a length of 0 if the calling number was not provided.
Values	String (0..16, ASCII)

ATTRIBUTE localDlci

Description	This attribute indicates the local dlci number of the interface. This number is assigned to the call request by the node generating this accounting record.
Values	Decimal (0; 16..1007)

ATTRIBUTE calledNumber

Description	This attribute indicates the called number signalled to the node. If *Mpanl/n Voice Acct digitsSuppressed* was provisioned with a non-zero value, that number of trailing digits in *calledNumber* are replaced with “X”s.
Values	String (1..32, ASCII)

ATTRIBUTE connectedNumber

Description	This attribute indicates the connected number signalled to the node. This may have a length of zero if the connected number was not provided.
Values	String (0..16, ASCII)

ATTRIBUTE sourceNpi

Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *sourceDna*. This is the value sent by the source accounting node

to the destination accounting node during call setup. The *sourceDna* may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.

Values
x121
e164

ATTRIBUTE sourceDna

Description
This attribute indicates the data network address (the unique identifier) of the calling addressable switched voice application. This is the value sent by the source accounting node to the destination accounting node during call setup. It is valid in accounting records generated by both ends of the call.

Values
BCD (0..15)

ATTRIBUTE destinationNpi

Description
This attribute indicates the Numbering Plan Indicator (NPI) of the *destinationDna*. This is the value sent by the destination accounting node to the source accounting node during call setup. The *destinationDna* may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.

Values
x121
e164

ATTRIBUTE destinationDna

Description
This attribute indicates the data network address (the unique identifier) of the called addressable switched voice application. This is the value sent by the destination accounting node to the source accounting node during call setup. It is valid in accounting records generated by both ends of the call.

Values
BCD (0..15)

ATTRIBUTE clearCause

Description
This attribute indicates the reason the call was cleared. If the call was cleared in the subnet, this attribute contains a Q931 value regardless of the source protocol. If the call was cleared by the MPA, this attribute may contain other information conforming to

the specifications of the used protocol. It is set to 0 for intermediate records.

Values Decimal (0..127)

ATTRIBUTE diagnosticCode

Description This attribute indicates the diagnostic code signalled at the end of connection. It is set to 0 for intermediate records.

Values Hex (H.0..H.ffffff)

ATTRIBUTE localServiceType

Description This attribute indicates the service supported by the port used by the local interface. This number is provisioned on each interface as *accountClass*.

Values Decimal (0..255)

ATTRIBUTE localCollectReason

Description This attribute indicates the reason the accounting record was generated (The reason can be any combination of ***audit***, ***study***, ***test***, ***bill***).

Set of
bill
test
study
audit

ATTRIBUTE localDse

Description This attribute defines the local end Data Service Exchange provisioned as an arbitrary number in *serviceExchange* attribute.

Values Decimal (0..255)

ATTRIBUTE localCustomerIdentifier

Description This attribute indicates the number assigned in each service to a customer. It identifies the customer in the Customer Network Management on the end which generated the accounting record.

Values Decimal (0; 1..8191)

ATTRIBUTE mpaVoiceFlags

Description

This attribute indicates values for call characteristics.
answered (mpaVoFlags_answered 1) - The call was answered
originating (mpaVoFlags_originating 1) - The local end originated the call.
~originating (mpaVoFlags_originating 0) - The far end originated the call.
unique (mpaVoFlags_unique 1) - If this is set to 1, it guarantees that only the local end generated one or more accounting records for this call.
clearedInSubnet (mpaVoFlags_clearedInSubnet 1) - This flag is only valid in the final accounting record. The value 1 indicates the call was cleared from within the subnet side of this MPANL instance.
~clearedInSubnet (mpaVoFlags_clearedInSubnet 0) - This flag is only valid in the final accounting record. The value 0 indicates the call was cleared from outside the subnet side of this MPANL instance.

Set of

answered
originating
unique
clearedInSubnet

ATTRIBUTE callAnswerTime

Description

This attribute indicates the time in seconds between the setup indication and the call answered indication for answered calls. For unanswered calls, this attribute indicates the time between the setup indication and the call release indication. For values greater than 255 seconds it reports 255 seconds.

Values

Decimal (0..255)

RESPONSE ATM Accounting Record Information

Description

This response describes the attributes specific to the ATM accounting record. All items that belong to an ATM accounting record are defined here.

ATTRIBUTE recordIdentifier

Description	This attribute distinguishes the ATM accounting record from other types of accounting records.
Values	atmAccRecord

ATTRIBUTE recordType

Description	The *recordType* attribute indicates the position of the accounting record in a sequence of records generated by a given interface for a given call. The attribute is a set that contains the value ***first*** for the first record of the call and the value ***last*** for the last record of a call; for calls that generate only one accounting record, both ***first*** and ***last*** are present.; for intermediate records, neither ***first*** nor ***last*** are present.
Set of	first last

ATTRIBUTE callConnId

Description	This attribute may be used by downstream processing systems to correlate the accounting records issued for the same call at different interfaces (nodes) in the network. For SVCs (switched virtual connections) and S-PVCs (soft permanent virtual connections), the *callConnId* is generated by the switch and is unique for every call in the network. For PVCs (permanent virtual connections), the *callConnId* is provisioned in the *correlationTag* attribute of the *AtmIf Vcc Vcd* or *AtmIf Vpc Vpd* component.
Values	String (64, Hex)

ATTRIBUTE callingCollectReason

Description	This attribute indicates the reason(s) for accounting collection at the ATM interface. It can be any combination of the following reasons: ***Billing, Test, Study, Audit,*** or ***Force***. For SVCs and SPVCs, it indicates the value provisioned in attribute *accountCollection* of component *AtmIf Uni* or *Atmif Iisp*. For PVCs, it indicates the value provisioned in attribute *accountCollection* of *NAcct*.

For SVCs and SPVCs, this attribute is present only for incoming calls.

For PVCs, only *calledCollectReason* is present for both incoming and outgoing calls.

Set of

bill
test
study
audit
force

ATTRIBUTE calledCollectReason

Description

This attribute indicates the reason(s) for accounting collection at the ATM interface. It can be any combination of the following reasons: ***Billing, Test, Study, Audit,*** or ***Force***. For SVCs and SPVCs, it indicates the value provisioned in attribute *accountCollection* of component *AtmIf Uni* or *AtmIf Iisp*. For PVCs, it indicates the value provisioned in attribute *accountCollection* of component *AtmIf NAcct*.

For SVCs and SPVCs, this attribute is present only for outgoing calls.

For PVCs, only *calledCollectReason* is present for both incoming and outgoing calls.

Set of

bill
test
study
audit
force

ATTRIBUTE callingServiceType

Description

This attribute indicates the service type of the interface that generated the accounting record. For SVCs and SPVCs, the value is provisioned in attribute *accountClass* for each ATM interface (under the *AtmIf Uni* or *AtmIf Iisp* component). For PVCs, it indicates the value provisioned in attribute *accountClass* of component *AtmIf NAcct*.

For SVCs and SPVCs, this attribute is present only for incoming calls.

For PVCs, only *calledServiceType* is present for both incoming and outgoing calls.

Values Decimal (0..255)

ATTRIBUTE calledServiceType

Description This attribute indicates the service type of the interface that generated the accounting record. For SVCs and SPVCs, the value is provisioned in attribute *accountClass* for each ATM interface (under the *AtmIf Uni* or *AtmIf Iisp* component). For PVCs, the value is provisioned in attribute *accountClass* for each ATM interface (under the *AtmIf NAcct* component).

For SVCs and SPVCs, this attribute is present only for outgoing calls.

For PVCs, only *calledServiceType* is present for both incoming and outgoing calls.

Values Decimal (0..255)

ATTRIBUTE callingDse

Description This attribute indicates the Data Service Exchange associated with the ATM interface. For SVCs and SPVCs, it indicates the value provisioned in attribute *serviceExchange* of component *AtmIf Uni* or *AtmIf Iisp*. For PVCs, it indicates the value provisioned in attribute *serviceExchange* of component *AtmIf NAcct*.

For SVCs and SPVCs, this attribute is present only for incoming calls.

For PVCs, only *calledDse* is present for both incoming and outgoing calls.

Values Decimal (0..255)

ATTRIBUTE calledDse

Description

This attribute indicates the Data Service Exchange associated with the ATM interface. For SVCs and SPVCs, it indicates the value provisioned in attribute *serviceExchange* of component *AtmIf Uni* or *AtmIf Iisp*. For PVCs, it indicates the value provisioned in attribute *serviceExchange* of component *AtmIf NAcct*.

For SVCs and SPVCs, this attribute is present only for outgoing calls.

For PVCs, only *calledDse* is present for both incoming and outgoing calls.

Values

Decimal (0..255)

ATTRIBUTE callOrigMethod

Description

This attribute indicates whether the call is point-to-point, point-to-multipoint, multipoint-to-multipoint, or multipoint-to-point.

Values

pointToPoint
pointToMultipt
multiptToPoint
multiptToMultipt

ATTRIBUTE callType

Description

This attribute indicates the type of call. It is one of the following values:
pvcChannel (switched virtual connection)
spvcChannel (soft permanent virtual connection)
pvcChannel (permanent virtual channel transporting a nailed up connection)
pvcPath (permanent virtual path transporting a nailed up connection)

Values

pvcChannel
pvcPath
svcChannel
spvcChannel

ATTRIBUTE connPointType

Description	This attribute indicates what type of connection point generated the call record: ***originating***, ***intermediate***, or ***terminating***. It can be used by downstream processing systems when correlating two or more records for the same call.
Values	originating intermediate terminating

ATTRIBUTE atmInterfaceNumber

Description	This attribute indicates the number of the ATM interface that generates the accounting record.
Values	Decimal (1..4095)

ATTRIBUTE callVpi

Description	This attribute indicates the VPI of the connection point at the interface where the accounting record is generated.
Values	Decimal (0..4095)

ATTRIBUTE callVci

Description	This attribute indicates the VCI of the connection point at the interface where the accounting record is generated.
Values	Decimal (0..65535)

ATTRIBUTE atmCallTermCauseValue

Description	This attribute indicates the call termination cause value as defined by the ATM Forum AtmIf UNI 3.1 specification. It is set to 0 for non-final records.
Values	Decimal (0..255)

ATTRIBUTE callTermInSetup

Description	This attribute indicates whether or not the call was terminated in setup (unsuccessful call attempt).

Values
false
true

ATTRIBUTE cellCountValidityFlag

Description
This attribute indicates whether or not the cell counts in this accounting record are valid.

Values
invalid
valid

ATTRIBUTE startTime

Description
In the first accounting record for a call, this attribute indicates the time the call was set up. In subsequent records, this attribute represents the time the current accounting collection interval started.

When TODA (time of day accounting) is enabled, the collection intervals are delimited by the entries in the TODA schedule (the *Col/accounting collectionTimes* attribute). When TODA is disabled, they are delimited by a timer that expires every 12-hours (per call).

Values
Time (DHMS)

ATTRIBUTE endTime

Description
In non-final accounting records, this attribute indicates the time the current accounting collection interval ended. In the final record for a call, this attribute represents the time the call was cleared.

When TODA is enabled, the collection intervals are delimited by the entries in the TODA schedule (the *Col/accounting collectionTimes* attribute). When TODA is disabled, they are delimited by a timer that expires every 12-hours (per call).

Values
Time (DHMS)

ATTRIBUTE elapsedTime

Description
This attribute indicates the length of time, in 0.1 second increments, the connection was enabled during the reported

accounting interval. It is the true duration of the accounting interval, measured independently of the start and end time (since start time and end time can be affected by the adjustment of the clock, elapsed time can be shorter or longer than the difference between them).

Values Decimal (0..16777215)

ATTRIBUTE callingNsapAddr

Description This attribute indicates the NSAP address of the calling party.

This attribute is not present in accounting records for PVCs.

Values String (20, Hex)

ATTRIBUTE calledNsapAddr

Description This attribute indicates the NSAP address of the called party.

This attribute is not present in accounting records for PVCs.

Values String (20, Hex)

ATTRIBUTE callingNsapSubAddr

Description This attribute indicates the saved NSAP address of the calling party (which is restored when leaving the public network).

This attribute is not present in accounting records for PVCs.

Values String (20, Hex)

ATTRIBUTE calledNsapSubAddr

Description This attribute indicates the saved NSAP address of the called party (which is restored when leaving the public network).

This attribute is not present in accounting records for PVCs.

Values String (20, Hex)

ATTRIBUTE callForwPcrClp0

Description	This attribute indicates the Peak Cell Rate (PCR) for the connection in the forward direction, for high-priority cells (with CLP=0). The value is in cells per second.
Values	Decimal (0..4294967295)

ATTRIBUTE callForwPcrClp01

Description	This attribute indicates the Peak Cell Rate (PCR) for the connection in the forward direction, for all cells (with CLP=0 or CLP=1). The value is in cells per second.
Values	Decimal (0..4294967295)

ATTRIBUTE callForwScrClp0

Description	This attribute indicates the Sustained Cell Rate (SCR) for the connection in the forward direction, for high-priority cells (with CLP=0). The value is in cells per second.
Values	Decimal (0..4294967295)

ATTRIBUTE callForwScrClp01

Description	This attribute indicates the Sustained Cell Rate (SCR) for the connection in the forward direction, for all cells (with CLP=0 or CLP=1). The value is in cells per second.
Values	Decimal (0..4294967295)

ATTRIBUTE callForwMbsClp0

Description	This attribute indicates the Maximum Burst Size (MBS) for the connection in the forward direction, for high-priority cells (with CLP=0). The value is in cells.
Values	Decimal (0..4294967295)

ATTRIBUTE callForwMbsClp01

Description	This attribute indicates the Maximum Burst Size (MBS) for the connection in the forward direction, for all cells (with CLP=0 or CLP=1). The value is in cells.

Values	Decimal (0..4294967295)

ATTRIBUTE callForwQos

Description	This attribute indicates the quality of service (QoS) for the connection in the forward direction. The values of the QoS are conforming to the ATM Forum Atmif UNI 3.1 specification.
Values	Decimal (0..4)

ATTRIBUTE callBackPcrClp0

Description	This attribute indicates the Peak Cell Rate (PCR) for the connection in the backward direction, for high-priority cells (with CLP=0). The value is in cells per second.
Values	Decimal (0..4294967295)

ATTRIBUTE callBackPcrClp01

Description	This attribute indicates the Peak Cell Rate (PCR) for the connection in the backward direction, for all cells (with CLP=0 or CLP=1). The value is in cells per second.
Values	Decimal (0..4294967295)

ATTRIBUTE callBackScrClp0

Description	This attribute indicates the Sustained Cell Rate (SCR) for the connection in the backward direction, for high-priority cells (with CLP=0). The value is in cells per second.
Values	Decimal (0..4294967295)

ATTRIBUTE callBackScrClp01

Description	This attribute indicates the Sustained Cell Rate (SCR) for the connection in the backward direction, for all cells (with CLP=0 or CLP=1). The value is in cells per second.
Values	Decimal (0..4294967295)

ATTRIBUTE callBackMbsClp0

Description	This attribute indicates the Maximum Burst Size (MBS) for the connection in the backward direction, for high-priority cells (with CLP=0). The value is in cells.
Values	Decimal (0..4294967295)

ATTRIBUTE callBackMbsClp01

Description	This attribute indicates the Maximum Burst Size (MBS) for the connection in the backward direction, for all cells (with CLP=0 or CLP=1). The value is in cells.
Values	Decimal (0..4294967295)

ATTRIBUTE callBackQos

Description	This attribute indicates the quality of service (QoS) for the connection in the backward direction. The values of the QoS are conforming to the ATM Forum Uni 3.1 specification.
Values	Decimal (0..4)

ATTRIBUTE ingressCellCountClp0

Description	This attribute contains the number of high priority cells (with CLP=0) received from the link during the accounting interval.
Values	Long Integer

ATTRIBUTE ingressCellCountClp01

Description	This attribute indicates the total number of cells (with CLP=0 or CLP=1) received from the link during the accounting interval.
Values	Long Integer

ATTRIBUTE egressCellCountClp0

Description	This attribute contains the number of high priority cells (with CLP=0) transmitted on the link during the accounting interval.
Values	Long Integer

ATTRIBUTE egressCellCountClp01

Description: This attribute indicates the total number of cells (with CLP=0 or CLP=1) transmitted on the link during the accounting interval.

Values: Long Integer

ATTRIBUTE ingressDiscardedClp0

Description: This attribute indicates the number of high priority cells or frames (with CLP=0) received from the link and discarded (not transmitted to the switch) during the accounting interval.

For consistency with other operational measurements for various applications, the count is expressed either as number of cells or as number of frames.

For applications: Loop, CES, Wireless, PVG, and ABS, the count is expressed in cells.

For applications: FrAtm, PORS, ATMMPE, and control channels for SVCs, the count is expressed in frames.

For applications: Test, SVCs, SVPs, and MPLS, the count is expressed in cells unless AAL5 is used. When AAL5 is used, the count is expressed in frames.

Values: Long Integer

ATTRIBUTE ingressDiscardedClp01

Description: This attribute indicates the total number of cells or frames (with CLP=0 or CLP=1) received from the link and discarded (not transmitted to the switch) during the accounting interval.

For consistency with other operational measurements for various applications, the count is expressed either as number of cells or as number of frames.

For applications: Loop, CES, Wireless, PVG, and ABS, the count is expressed in cells.

For applications: FrAtm, PORS, ATMMPE, and control channels

for SVCs, the count is expressed in frames.

For applications: Test, SVCs, SVPs, and MPLS, the count is expressed in cells unless AAL5 is used. When AAL5 is used, the count is expressed in frames.

Values Long Integer

ATTRIBUTE egressDiscardedClp0

Description This attribute indicates the number of high priority cells or frames (with CLP=0) received from the switch and discarded (not transmitted on the link) during the accounting interval.

For consistency with other operational measurements for various applications, the count is expressed either as number of cells or as number of frames.

For applications: Loop, CES, Wireless, PVG, and ABS, the count is expressed in cells.

For applications: FrAtm, PORS, ATMMPE, and control channels for SVCs, the count is expressed in frames.

For applications: Test, SVCs, SVPs, and MPLS, the count is expressed in cells unless AAL5 is used. When AAL5 is used, the count is expressed in frames.

Values Long Integer

ATTRIBUTE egressDiscardedClp01

Description This attribute indicates the total number of cells or frames (with CLP=0 or CLP=1) received from the switch and discarded (not transmitted on the link) during the accounting interval.

For consistency with other operational measurements for various applications, the count is expressed either as number of cells or as number of frames.

For applications: Loop, CES, Wireless, PVG, and ABS, the count is expressed in cells.

For applications: FrAtm, PORS, ATMMPE, and control channels for SVCs, the count is expressed in frames.

For applications: Test, SVCs, SVPs, and MPLS, the count is expressed in cells unless AAL5 is used. When AAL5 is used, the count is expressed in frames.

Values: Long Integer

ATTRIBUTE callTrafficMgmt

Description: This attribute indicates the traffic management policy in effect for the call: tagging (setting CLP=1) or dropping cells.
If ***tagFwd*** is present, then tagging is enabled in the forward direction, otherwise cells are dropped; if ***tagBkwd*** is present, then tagging is enabled in the backward direction, otherwise cells are dropped.

Set of: tagFwd
tagBwd

ATTRIBUTE callBestEffort

Description: This attribute indicates whether the “best effort” request was specified in the call setup message.

Values: false
true

ATTRIBUTE callingCustomerIdentifier

Description: This attribute contains the number assigned in each service to a customer and it identifies the customer at the calling end of the call in the Customer Network Management.

For SVCs and SPVCs, this attribute is present only for incoming calls.

For PVCs, only *calledCustomerIdentifier* is present for both incoming and outgoing calls.

Values: Decimal (0..8191)

ATTRIBUTE calledCustomerIdentifier

Description	This attribute contains the number assigned in each service to a customer and it identifies the customer at the called end of the call in the Customer Network Management. For SVCs and SPVCs, this attribute is present only for outgoing calls. For PVCs, only *calledCustomerIdentifier* is present for both incoming and outgoing calls.
Values	Decimal (0..8191)

ATTRIBUTE callingNodeIdentifier

Description	This attribute identifies the calling node by a unique number assigned to each node. This value is provisioned in the attribute *namsId* of the component *ModuleData*. For SVCs and SPVCs, this attribute is present only for incoming calls. For PVCs, only *calledNodeIdentifier* is present for both incoming and outgoing calls.
Values	Decimal (256..49151)

ATTRIBUTE calledNodeIdentifier

Description	This attribute identifies the called node by a unique number assigned to each node. This value is provisioned in the attribute *namsId* of the component *ModuleData* For SVCs and SPVCs, this attribute is present only for outgoing calls. For PVCs, only *calledNodeIdentifier* is present for both incoming and outgoing calls.
Values	Decimal (256..49151)

ATTRIBUTE minimumCtd

Description

This attribute indicates the minimum calculated cell transfer delay value in microseconds for this connection. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell.

This value is visible only for SPVC and SPVP connections when the *ctdCalculation* attribute of the *AtmIf* component is ***on*** and the *segSwitchSideLoopback* attribute value is ***on*** for the connection.

The value is 0 when the switch-side loopback is not working.

Values

Decimal (0..2147483647)

ATTRIBUTE maximumCtd

Description

This attribute indicates the maximum calculated cell transfer delay value in microseconds for this connection. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell.

This value is visible only for SPVC and SPVP connections when the *ctdCalculation* attribute of the *AtmIf* component is ***on*** and the *segSwitchSideLoopback* attribute value is ***on*** for the connection.

The value is 0 when the switch-side loopback is not working.

Values

Decimal (0..2147483647)

ATTRIBUTE averageCtd

Description

This attribute indicates the average of all calculated cell transfer delay in microseconds for this connection. Cell transfer delay is calculated as half of the measured segment round trip delay of a loopback cell.

This value is visible only for SPVC and SPVP connections when the *ctdCalculation* attribute of the *AtmIf* component is ***on*** and the *segSwitchSideLoopback* attribute value is ***on*** for the connection.

The value is 0 when the switch-side loopback is not working.

Values Decimal (0..2147483647)

ATTRIBUTE sampleSizeCtd

Description This attribute indicates the number of loopback cells sampled for cell transfer delay calculations.

This value is included only for SPVC and SPVP connections when the *ctdCalculation* attribute of the *AtmIf* component is ***on*** and the *segSwitchSideLoopback* attribute value is ***on*** for the connection.

Values Decimal (0..16384)

ATTRIBUTE lFwdTotalUserCellTxClp0

Description This attribute indicates the total number of user cells with CLP=0 transmitted from the local side in the forward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values Long Integer

ATTRIBUTE lFwdTotalUserCellTxClp01

Description This attribute indicates the total number of user cells with CLP=0+1 transmitted from the local side in the forward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values Long Integer

ATTRIBUTE lFwdTotalUserCellRxClp0

Description This attribute indicates the total number of user cells with CLP=0 received on the Remote Side in the forward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values Long Integer

ATTRIBUTE lFwdTotalUserCellRxClp01

Description This attribute indicates the total number of user cells with CLP=0+1 received on the Remote Side in the forward direction.

This value is included only when Performance Monitoring is provisioned on the link side.

Values Long Integer

ATTRIBUTE IFwdTotalPmCellDiscardCount

Description This attribute indicates the total number of Performance Monitoring cells discarded in the forward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values Decimal (0..4294967295)

ATTRIBUTE IBwdTotalUserCellTxClp0

Description This attribute indicates the total number of user cells with CLP=0 transmitted from the Remote Side in the backward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values Long Integer

ATTRIBUTE IBwdTotalUserCellTxClp01

Description This attribute indicates the total number of user cells with CLP=0+1 transmitted from the Remote Side in the backward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values Long Integer

ATTRIBUTE IBwdTotalUserCellRxClp0

Description This attribute indicates the total number of user cells with CLP=0 received on the local side in the backward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values Long Integer

ATTRIBUTE IBwdTotalUserCellRxClp01

Description This attribute indicates the total number of user cells with CLP=0+1 received on the local side in the backward direction.

This value is included only when Performance Monitoring is provisioned on the link side.

Values Long Integer

ATTRIBUTE lBwdTotalPmCellDiscardCount

Description This attribute indicates the total number of Performance Monitoring cells discarded in the backward direction. This value is included only when Performance Monitoring is provisioned on the link side.

Values Decimal (0..4294967295)

ATTRIBUTE lArTotalTime

Description This attribute indicates the total time in seconds that is used to calculate the Availability Ratio. This value is included only when Performance Monitoring is provisioned on the link side.

Values Decimal (0..4294967295)

ATTRIBUTE lArAvailableTime

Description This attribute indicates the total time in seconds that a connection was available. This value is included only when Performance Monitoring is provisioned on the link side.

Values Decimal (0..4294967295)

ATTRIBUTE sFwdTotalUserCellTxClp0

Description This attribute indicates the total number of user cells with CLP=0 transmitted from the local side in the forward direction. This value is included only when performance Monitoring is provisioned on the switch side.

Values Long Integer

ATTRIBUTE sFwdTotalUserCellTxClp01

Description This attribute indicates the total number of user cells with CLP=0+1 transmitted from the local side in the forward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values Long Integer

ATTRIBUTE sFwdTotalUserCellRxClp0

Description This attribute indicates the total number of user cells with CLP=0 received on the Remote Side in the forward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values Long Integer

ATTRIBUTE sFwdTotalUserCellRxClp01

Description This attribute indicates the total number of user cells with CLP=0+1 received on the Remote Side in the forward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values Long Integer

ATTRIBUTE sFwdTotalPmCellDiscardCount

Description This attribute indicates the total number of Performance Monitoring cells discarded in the forward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values Decimal (0..4294967295)

ATTRIBUTE sBwdTotalUserCellTxClp0

Description This attribute indicates the total number of user cells with CLP=0 transmitted from the Remote Side in the backward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values Long Integer

ATTRIBUTE sBwdTotalUserCellTxClp01

Description This attribute indicates the total number of user cells with CLP=0+1 transmitted from the Remote Side in the backward direction. This value is included only when Performance Monitoring is provisioned on the switch side.

Values Long Integer

ATTRIBUTE sBwdTotalUserCellRxClp0

Description	This attribute indicates the total number of user cells with CLP=0 received on the local side in the backward direction. This value is included only when Performance Monitoring is provisioned on the switch side.
Values	Long Integer

ATTRIBUTE sBwdTotalUserCellRxClp01

Description	This attribute indicates the total number of user cells with CLP=0+1 received on the local side in the backward direction. This value is included only when Performance Monitoring is provisioned on the switch side.
Values	Long Integer

ATTRIBUTE sBwdTotalPmCellDiscardCount

Description	This attribute indicates the total number of Performance Monitoring cells discarded in the backward direction. This value is included only when Performance Monitoring is provisioned on the switch side.
Values	Decimal (0..4294967295)

ATTRIBUTE sArTotalTime

Description	This attribute indicates the total time in seconds that is used to calculate the Availability Ratio. This value is included only when Performance Monitoring is provisioned on the switch side.
Values	Decimal (0..4294967295)

ATTRIBUTE sArAvailableTime

Description	This attribute indicates the total time in seconds that a connection was available. This value is included only when Performance Monitoring is provisioned on the switch side.
Values	Decimal (0..4294967295)

ATTRIBUTE atmServiceCategory

Description

This attribute indicates the ATM service category for both directions of the connection.

Values

UBR
CBR
rt-VBR
nrt-VBR
ABR

ATTRIBUTE circuitId

Description

This attribute indicates a unique string, set by the operator allowing the customer to assign a meaningful name to identify and manage the VCC/VPC level components that make up a circuit. It is provisioned in the *correlationTag* attribute of the *AtmIf Vcc Vcd* or *AtmIf Vpc Vpd* component. Downstream processing may use this attribute to correlate accounting records issued at different nodes in the network.

Values

String (64, ASCII)

ATTRIBUTE rxUpcViolationOnEnforcer1

Description

This attribute counts the UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 1. This attribute is only applicable if UPC is enforced or monitored. This attribute is not applicable for standard *VPT VCC* components.

This attribute is not applicable on CQC-based, APC-based, and QRD-based ATM cards.

When the value of the *rxTrafficDescType* attribute for this connection. is 3, 4, 5, 6, 7 or 8, Enforcer 1 enforces conformance of traffic received from the interface to PCR CLP0+1.

If UPC is enforced, all non-conforming cells are discarded by this enforcer. These discarded cells are included in *rxCellDiscard* attribute value.

For basic *Vpt* components, this attribute indicates the aggregated total of all *rxUpcViolationOnEnforcer1* attribute values for the

Vcc components associated with the *Vpt* component.

The counter wraps to zero when it exceeds its maximum value.

Values Long Integer

ATTRIBUTE rxUpcViolationOnEnforcer2

Description This attribute counts the UPC violations observed by the Generic Cell Rate Algorithm (GCRA) Enforcer 2. This attribute is only applicable if UPC is enforced or monitored. This attribute is not applicable for standard *VPT VCC* components.

This attribute is not applicable on CQC-based, APC-based, and QRD-based ATM cards.

Enforcer 2 is applicable only if the *rxTrafficDescType* attribute value for this connection is 4, 5, 6, 7 or 8.

When the value of *rxTrafficDescType* attribute is 4 or 5**,** Enforcer 2 enforces conformance of traffic received from the interface to PCR CLP0.

When the value of *rxTrafficDescType* attribute is 6**,** Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0+1.

When the value of *rxTrafficDescType* attribute is 7 or 8, Enforcer 2 enforces conformance of traffic received from the interface to SCR CLP0.

If UPC is enforced, Enforcer 2 discards non-conforming cells for *rxTrafficDescType* attribute values of 4, 6 and 7. It tags non-conforming cells for *rxTrafficDescType* attribute values of 5 and 8. Discarded cells are counted in the *rxCellDiscard* attribute value.

For basic *Vpts* component, this attribute indicates the aggregated total of all *rxUpcViolationOnEnforcer2* attribute values for the *Vcc* components associated with the *Vpt* component.

The counter wraps to zero when it exceeds its maximum value.

Values Long Integer

RESPONSE Voice Networking Accounting Information

Description This response describes the attributes specific to a voice networking accounting record. All items that belong to a voice networking accounting record are defined here. This definition is translated into Service Data Description files - sdd file. The Multiservice Data Provider (MDP) uses the sdd file to decode accounting records.

ATTRIBUTE recordIdentifier

Description This attribute distinguishes the Voice Networking accounting record from other types of accounting records.

Values vnetAccRecord

ATTRIBUTE recordType

Description This attribute indicates the type of the record. For the first record in the accounting period, only ***first*** is set. For the last record, only ***last*** is set. For intermediate records, neither ***first*** nor ***last*** is set. If there is only one record in the accounting period, then both ***first*** and ***last*** are set.
first, ***~last*** (recordType_first 1, recordType_last 0) - first record
~first, ***~last*** (recordType_first 0, recordType_last 0) - intermediate record.
~first, ***last*** (recordType_first 0, recordType_last 1) - final record.
first, ***last*** (recordType_first 1, recordType_last 1) - first and last record (one only).

Set of first
last

ATTRIBUTE callCorrelationIdentifier

Description This attribute indicates a unique value assigned to all accounting records generated by calling and called nodes for this call. The *callCorrelationId* is used during post processing of accounting records to correlate records generated by different nodes. The *callCorrelationId* is always unique in the network with respect to *callCorrelationIds* generated by other function processors. The

value of *callCorrelationId* repeats after 2 to the power of 24 calls on the same, continually active function processor.

Values: String (13, Hex)

ATTRIBUTE startTime

Description: This attribute indicates the start time of the accounting record.

For the first record, this is the time when the setup message was received. On subsequent accounting records, the *startTime* is equal to the *endTime* of the previous record. If Time of Day Accounting (TODA) is used, *startTime* is the time of the TODA (set in *Col/accounting collectionTimes* attribute).

Values: Time (DHMS)

ATTRIBUTE endTime

Description: This attribute indicates end time of the accounting record. In the final accounting record for a call, *endTime* is the time when the disconnect packet was received. If TODA is used, *endTime* in non-final records is the time of the TODA. For 12-hour accounting, *endTime* in non-final records is the time when the 12-hour timer expires.

Values: Time (DHMS)

ATTRIBUTE elapsedTime

Description: This attribute indicates the duration of the call in 0.1 second increments. This time interval is started when the call request is processed. *elapsedTime* indicates the true measure of the accounting period. It is measured independent of *startTime* and *endTime*. Since *startTime* and *endTime* can be changed externally by adjusting the clock, *elapsedTime* can be shorter or longer than the difference between *startTime* and *endTime*. When 12 hour accounting is used, *elapsedTime* is exact or differs by a few seconds from a 12 hour duration.

Values: Decimal (0..16777215)

ATTRIBUTE localNodeIdentifier

Description	This attribute identifies the *nodeId* of the node that generated the accounting record. *nodeId* is assigned to each node in the *ModuleData* component.
Values	Decimal (1..4095)

ATTRIBUTE localLogicalProcessor

Description	This attribute indicates the logical processor used by the service issuing the accounting record.
Values	Decimal (0..15)

ATTRIBUTE localPort

Description	This attribute indicates the port used by the service issuing the accounting record.
Values	Decimal (0..7)

ATTRIBUTE localTimeslots

Description	This attribute indicates the time slots used by the node issuing the accounting record. Note that in ISDN multiple time slots may be assigned to a single call. Accounting records are not generated for call attempts that fail to get a time slot.
Set of	Decimal (1..31)

ATTRIBUTE callingNumber

Description	This attribute indicates the calling number signalled to the node. This may have a length of 0 if the calling number was not provided. The maximum length is 16 digits.
Values	String (0..16, ASCII)

ATTRIBUTE localDlci

Description	This attribute indicates the local DLCI number of the interface. (DLCI is sometimes called LCN - logical channel number). This number is assigned to the call request by the node generating this accounting record.

Values Decimal (0; 16..1007)

ATTRIBUTE calledNumber

Description This attribute indicates the called number signalled to the node. If *Vroute/n Acct digitsSuppressed* was provisioned with a non-zero value, that number of trailing digits in *calledNumber* are replaced with “X”s.

Values String (1..32, ASCII)

ATTRIBUTE connectedNumber

Description This attribute indicates the connected number signalled to the node. This may have a length of zero if the connected number was not provided.

Values String (0..16, ASCII)

ATTRIBUTE sourceNpi

Description This attribute indicates the Numbering Plan Indicator (NPI) of the *sourceDna*. This is the value sent by the source accounting node to the destination accounting node during call setup. The *sourceDna* may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.

Values x121
e164

ATTRIBUTE sourceDna

Description This attribute indicates the data network address (the unique identifier) of the calling addressable switched voice application. This is the value sent by the source accounting node to the destination accounting node during call setup. It is valid in accounting records generated by both ends of the call.

Values BCD (0..15)

ATTRIBUTE destinationNpi

Description This attribute indicates the Numbering Plan Indicator (NPI) of the *destinationDna*. This is the value sent by the destination accounting node to the source accounting node during call setup.

The *destinationDna* may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.

Values
x121
e164

ATTRIBUTE destinationDna

Description
This attribute indicates the data network address (the unique identifier) of the called addressable switched voice application. This is the value sent by the destination accounting node to the source accounting node during call setup. It is valid in accounting records generated by both ends of the call.

Values
BCD (0..15)

ATTRIBUTE callVncs

Description
This attribute identifies the *VoiceNetworkingCallServer* used locally for this call by its instance value. This will have a value of 0 in an accounting record generated by a terminating end node.

Values
Decimal (0; 1..16)

ATTRIBUTE callProfile

Description
This attribute identifies the *VoiceProfile* instance used locally for this call. *VoiceProfile* instance values are only unique with respect to a particular *Vncs* instance. This will have a value of 0 in an accounting record generated by a terminating end node.

Values
Decimal (0; 1..16)

ATTRIBUTE vnetCallType

Description
This attribute defines the type of call for which this accounting record is issued.
data - ISDN data call
modem - a 2100 Hz tone was detected during the call
faxRelay - fax relay was applied to this call
modemRelay - modem relay was applied to this call
voice - all other calls

Values
voice
data

modem
faxRelay
modemRelay

ATTRIBUTE clearCause

Description: This attribute indicates the reason the call was cleared. If the call was cleared in the subnet, this attribute contains a Q931 value regardless of the source protocol. If the call was cleared by the PBX, this attribute may contain other information conforming to the specifications of the used protocol. It is set to 0 for intermediate records.

Values: Decimal (0..127)

ATTRIBUTE diagnosticCode

Description: This attribute indicates the diagnostic code signalled at the end of connection. It is set to 0 for intermediate records.

Values: Hex (H.0..H.ffffff)

ATTRIBUTE localServiceType

Description: This attribute indicates the service supported by the port used by the local interface. This number is provisioned on each interface as *accountClass*.

Values: Decimal (0..255)

ATTRIBUTE localCollectReason

Description: This attribute indicates the reason the accounting record was generated (The reason can be any combination of ***audit***, ***study***, ***test***, ***bill***, ***force***).

Set of:
bill
test
study
audit
force

ATTRIBUTE localDse

Description	This attribute defines the local end Data Service Exchange provisioned as an arbitrary number in *serviceExchange* attribute.
Values	Decimal (0..255)

ATTRIBUTE localCustomerIdentifier

Description	This attribute indicates the number assigned in each service to a customer. It identifies the customer in the Customer Network Management on the end that generated the accounting record.
Values	Decimal (0; 1..8191)

ATTRIBUTE vnetFlags

Description	This attribute indicates values for call characteristics. ***bumped*** (vnetFlags_bumped 1) - The call was bumped to another path by a higher priority call in the accounting interval reported by this record. ***optimized*** (vnetFlags_optimized 1) - The path of the call was altered in the accounting interval reported by this record. ***answered*** (vnetFlags_answered 1) - The call was answered ***frameCountsValid*** (vnetFlags_frameCountsValid 1) - The frame counts in this accounting record are valid. ***originating*** (vnetFlags_originating 1) - The local end originated the call. ***~originating*** (vnetFlags_originating 0) - The far end originated the call. ***tandemPassThrough*** (vnetFlags_tandemPassThrough 1) - The node that generated this record used tandem pass through for this call. ***faxRelayDownspeed*** (vnetFlags_faxRelayDownspeed 1) - The fax relay call accounted by this record lowered the relay rate in the accounting interval reported by this record. ***unique*** (vnetFlags_unique 1) - If this is set to 1, it guarantees that only the local end generated one or more accounting records for this call. ***clearedInSubnet*** (vnetFlags_clearedInSubnet 1) - This flag is only valid in the final accounting record. The value 1 indicates the call was cleared from within the subnet. ***~clearedInSubnet*** (vnetFlags_clearedInSubnet 0) - This flag is

only valid in the final accounting record. The value 0 indicates the call was cleared from outside the subnet.

Set of

bumped
optimized
answered
frameCountsValid
originating
tandemPassThrough
faxRelayDownspeed
unique
clearedInSubnet

ATTRIBUTE callRingTime

Description

This attribute indicates the time in seconds between the setup indication and the call answered indication for answered calls. For unanswered calls, this attribute indicates the time between the setup indication and the call release indication. For values greater than 255 seconds it reports 255 seconds.

Values

Decimal (0..255)

ATTRIBUTE framesAtRate1ToNetwork

Description

This attribute indicates the total number of rate 1 frames sent to the network.

Values

Decimal (0..4294967295)

ATTRIBUTE framesAtRate2ToNetwork

Description

This attribute indicates the total number of rate 2 frames sent to the network.

Values

Decimal (0..4294967295)

ATTRIBUTE framesAtRate3ToNetwork

Description

This attribute indicates the total number of rate 3 frames sent to the network.

Values

Decimal (0..4294967295)

ATTRIBUTE framesAtRate1FromNetwork

Description	This attribute indicates the total number of rate 1 frames received from the network.
Values	Decimal (0..4294967295)

ATTRIBUTE framesAtRate2FromNetwork

Description	This attribute indicates the total number of rate 2 frames received from the network.
Values	Decimal (0..4294967295)

ATTRIBUTE framesAtRate3FromNetwork

Description	This attribute indicates the total number of rate 3 frames received from the network.
Values	Decimal (0..4294967295)

ATTRIBUTE rate1

Description	This attribute indicates the bit rate of the rate 1 statistics in bit/s.
Values	Decimal (0..1920000)

ATTRIBUTE rate2

Description	This attribute indicates the bit rate of the rate 2 statistics in bit/s.
Values	Decimal (0..1920000)

ATTRIBUTE rate3

Description	This attribute indicates the bit rate of the rate 3 statistics in bit/s.
Values	Decimal (0..1920000)

ATTRIBUTE rate1CompressionAlgorithm

Description	This attribute indicates the compression algorithm used for the rate 1 statistics. If no compression algorithm was used, the value is ***none***.
Values	none g711

g726
g728
g729
faxRelay
modemRelay

ATTRIBUTE rate2CompressionAlgorithm

Description: This attribute indicates the compression algorithm used for the rate 2 statistics. If no compression algorithm was used, the value is ***none***.

Values:
none
g711
g726
g728
g729
faxRelay
modemRelay

ATTRIBUTE rate3CompressionAlgorithm

Description: This attribute indicates the compression algorithm used for the rate 3 statistics. If no compression algorithm was used, the value is ***none***.

Values:
none
g711
g726
g728
g729
faxRelay
modemRelay

ATTRIBUTE rate1FrameSize

Description: This attribute indicates the size of the rate 1 frames in bytes.

Values: Decimal (0..999)

ATTRIBUTE rate2FrameSize

Description: This attribute indicates the size of the rate 2 frames in bytes.

Values: Decimal (0..999)

ATTRIBUTE rate3FrameSize

Description This attribute indicates the size of the rate 3 frames in bytes.

Values Decimal (0..999)

ATTRIBUTE frmLostInNetwork

Description This attribute indicates the number of frames lost in the network. If it is greater than 65535 then the value reported is 65535.

Values Decimal (0..65535)

ATTRIBUTE frmDumped

Description This attribute indicates the number of frames that were dumped to limit the size of the egress queue. *frmDumped* may be an indication of persistent network clock synchronization problems between the interfaces involved in the calls. If it is greater than 255 then the value reported is 255.

Values Decimal (0..255)

ATTRIBUTE frmUnderRuns

Description This attribute indicates the number of frames that arrived late to prevent the egress queue from becoming empty. *frmUnderRuns* are an indication of network clock synchronization problems between the interfaces involved in the calls. If it is greater than 255 then the value reported is 255.

Values Decimal (0..255)

RESPONSE FR-ATM Accounting Information

Description This response describes the attributes specific to a FR-ATM accounting record. All items which belong to a FR-ATM accounting record are defined here.

ATTRIBUTE recordType

Description The *recordType* attribute indicates the type of the record. For the first record in the accounting period, only ***first*** is set to 1. For the last record, only ***last*** is set to 1. For intermediate records, both ***first*** and ***last*** are set to 0. If there is only one record in the accounting period, then both ***first*** and ***last*** are set to 1.

first, ~last - first record.
~first, ~last - intermediate record.
~first, last - final record.
first, last - first and last record (one only).

Set of
first
last

ATTRIBUTE recordIdentifier

Description
The *recordIdentifier* attribute indicates the contents of the accounting record. A value ***frAtmAccRecord*** indicates that it is a FR-ATM accounting record.

Values
frAtmAccRecord

ATTRIBUTE callConnId

Description
This attribute may be used by downstream processing systems to correlate the accounting records issued for the same call at different interfaces (nodes) in the network. For SPVCs (soft permanent virtual connections), the *callConnId* is generated by the switch and is unique for every call in the network. For NPVCs (nailed-up permanent virtual connections), the *callConnId* is provisioned in the *correlationTag* attribute of the *FrAtm Dlci Siwf Npvc* component.

Values
String (32, Hex)

ATTRIBUTE callType

Description
This attribute indicates the type of call. It is one of the following values:
spvcChannel (soft permanent virtual connection),
pvcChannel (permanent virtual channel transporting a nailed-up connection).

Values
pvcChannel
spvcChannel

ATTRIBUTE interworkingType

Description
This attribute indicates the type of FR-ATM interworking being accounted for.

Values frf8
frf5

ATTRIBUTE callingNodeIdentifier

Description This attribute identifies the calling (originating) node by a unique number assigned to each node in the *ModuleData* component.

Values Decimal (256..49151)

ATTRIBUTE callingCustomerIdentifier

Description This attribute contains the number assigned in each service to a customer and it identifies the customer of the FR-ATM at the calling end of the call.

Values Decimal (0; 1..8191)

ATTRIBUTE callingNsapAddr

Description This attribute indicates the NSAP address of the calling party.

This attribute may not be present in accounting records for FRF.8 NPVCs and FRF.5 DLCI configurations, because the provisioning of the FR-ATM address is optional. Furthermore, at the called end, if the calling address is present in the setup request, then it will be present in the accounting record.

Values String (20, Hex)

ATTRIBUTE callingEndPointNsapAddr

Description This attribute indicates the NSAP address of the calling End Point for FRF.5 configuration.

This attribute is only present for FRF.5. Furthermore, at the called end, if the calling address is present in the setup request, then it will be present in the accounting record.

Values String (20, Hex)

ATTRIBUTE callingDlci

Description This attribute contains the calling DLCI number of the interface.

This attribute does not appear in accounting records for the called end of a FRF.8 SPVC.

Values Decimal (16..1007)

ATTRIBUTE callingVpi

Description This attribute indicates the VPI of the calling end.

For a FRF.5 configuration, this attribute is the calling VPI of the End Point, that the *FrAtm* is associated with. At the called end, if the calling address is present in the setup request, then it will be present in the accounting record.

Values Decimal (0..4095)

ATTRIBUTE callingVci

Description This attribute indicates the VCI of the calling end.

If the calling address is present in the setup request, then it will be present at the called end. Also, for a FRF.5 configuration, this attribute is the calling VCI of the End Point that the *FrAtm* is associated with.

Values Decimal (0..65535)

ATTRIBUTE calledNodeIdentifier

Description This attribute identifies the called (terminating) node by a unique number assigned to each node in the *ModuleData* component.

Values Decimal (256..49151)

ATTRIBUTE calledCustomerIdentifier

Description This attribute contains the number assigned in each service to a customer, and it identifies the customer at the called end of the call.

Values Decimal (0; 1..8191)

ATTRIBUTE calledNsapAddr

Description This attribute indicates the NSAP address of the called party.

For FRF.8 NPVC, this attribute will not appear in the accounting record.

Values String (20, Hex)

ATTRIBUTE calledEndPointNsapAddr

Description This attribute indicates the NSAP address of the called End Point for FRF.5 configuration.

This is only applicable for FRF.5.

Values String (20, Hex)

ATTRIBUTE calledDlci

Description This attribute contains the called DLCI of the interface.

This attribute will not occur in records for FRF.8 NPVC configuration and the calling end of a FRF.8 SPVC configuration.

In the case of FRF.5, this called DLCI is the DLCI in the FRF.5 End Point.

Values Decimal (16..1007)

ATTRIBUTE calledVpi

Description This attribute indicates the VPI of the called end.

For FRF.8 NPVC, this attribute does not appear in the accounting record.

Values Decimal (0..4095)

ATTRIBUTE calledVci

Description This attribute indicates the VCI of the called end.

This attribute will not occur in records only for FRF.8 NPVC configuration.

Values Decimal (0..65535)

ATTRIBUTE atmCallTermCauseValue

Description	This attribute indicates the call termination cause value as defined by the ATM Forum AtmIf UNI 3.1 specification. It is set to 0 for non-final records.
Values	Decimal (0..255)

ATTRIBUTE callingCir

Description	This attribute indicates the calling end CIR (Committed Information Rate).
Values	Decimal (0..65535)

ATTRIBUTE callingEir

Description	This attribute indicates the calling end EIR (Excess Information Rate).
Values	Decimal (0..65535)

ATTRIBUTE callingServiceType

Description	This attribute indicates the service supported by the port used by the calling end. This number is provisioned on each interface *FrAtm Ca* as *accountClass*.
Values	Decimal (0..50)

ATTRIBUTE callingCollectReason

Description	This attribute indicates the reason for the accounting collection of the calling end (It can be any combination of ***audit, study, test, billing, force***).
Set of	bill test study audit force

ATTRIBUTE callingDse

Description	This attribute indicates the calling end Data Service Exchange provisioned in *FrAtm Ca* as an arbitrary number in the *serviceExchange* attribute.
Values	Decimal (0..255)

ATTRIBUTE calledCir

Description	This attribute indicates the called end CIR (Committed Information Rate).
Values	Decimal (0..65535)

ATTRIBUTE calledEir

Description	This attribute contains the called end EIR (Excess Information Rate).
Values	Decimal (0..65535)

ATTRIBUTE calledServiceType

Description	This attribute indicates the service supported by the port used by the called end-user. This number is provisioned on each interface *FrAtm Ca* as *accountClass*.
Values	Decimal (0..255)

ATTRIBUTE calledCollectReason

Description	This attribute indicates the reason for the accounting collection of the called end (It can be any combination of ***audit, study, test, billing, force***).
Set of	bill test study audit force

ATTRIBUTE calledDse

Description	This attribute indicates the called end Data Service Exchange provisioned in *FrAtm Ca* as an arbitrary number in the *serviceExchange* attribute.
Values	Decimal (0..255)

ATTRIBUTE flags

Description	This attribute indicates values for the call characteristics. ***calledGenerated*** - called end generated accounting record. ***~calledGenerated*** - calling end generated accounting record. ***calledCleared*** - call was cleared by called end. ***~calledCleared*** - call was cleared by calling end.
Set of	calledGenerated calledCleared

ATTRIBUTE startTime

Description	This attribute indicates the start time in the accounting interval. On the subsequent accounting interval, the start time corresponds to the end time of the previous interval.
Values	Time (DHMS)

ATTRIBUTE endTime

Description	This attribute indicates the end time in the accounting interval. On final accounting records, the end time is the time when the connection is disconnected.
Values	Time (DHMS)

ATTRIBUTE elapsedTime

Description	This attribute indicates the duration of the call in 0.1 second increments. This time interval is started when the call request is processed. If call does not reach data transfer, then elapsed time is set to 0. Elapsed time represents the true measure of the accounting period. It is measured independently of start time and end time. Since start time and end time can be changed externally

by adjusting the clock, elapsed time can be shorter or longer than the difference between start time and end time.

Values Decimal (0..16777215)

ATTRIBUTE callingEgressBytes

Description This attribute indicates the total number of bytes sent to the link at the calling end.

Values Long Integer

ATTRIBUTE callingIngressBytes

Description This attribute indicates the total number of bytes received from the link at the calling end.

Values Long Integer

ATTRIBUTE callingEgressFrames

Description This attribute indicates the total number of frames sent to the link at the calling end.

Values Decimal (0..4294967295)

ATTRIBUTE callingIngressFrames

Description This attribute indicates the total number of frames received from the link at the calling end.

Values Decimal (0..4294967295)

ATTRIBUTE callingEirEgressBytes

Description This attribute indicates the number of EIR bytes sent to the link at the calling end.

Values Long Integer

ATTRIBUTE callingEirIngressBytes

Description This attribute indicates the number of EIR bytes received from the link at the calling end.

Values Long Integer

ATTRIBUTE callingEirEgressFrames

Description	This attribute indicates the number of EIR Frames sent to the link at the calling end.
Values	Decimal (0..4294967295)

ATTRIBUTE callingEirIngressFrames

Description	This attribute indicates the number of EIR Frames received from the link at the calling end.
Values	Decimal (0..4294967295)

ATTRIBUTE callingDiscardedBytes

Description	This attribute indicates the number of bytes discarded at the calling end.
Values	Long Integer

ATTRIBUTE callingDiscardedFrames

Description	This attribute indicates the number of frames discarded at the calling end.
Values	Decimal (0..4294967295)

ATTRIBUTE calledEgressBytes

Description	This attribute indicates the total number of bytes sent to the link at the called end.
Values	Long Integer

ATTRIBUTE calledIngressBytes

Description	This attribute indicates the total number of bytes received from the link at the called end.
Values	Long Integer

ATTRIBUTE calledEgressFrames

Description	This attribute indicates the total number of frames sent to the link at the called end.

Values	Decimal (0..4294967295)

ATTRIBUTE calledIngressFrames

Description	This attribute indicates the total number of frames received from the link at the called end.
Values	Decimal (0..4294967295)

ATTRIBUTE calledEirEgressBytes

Description	This attribute contains the number of EIR bytes sent to the link at the called end.
Values	Long Integer

ATTRIBUTE calledEirIngressBytes

Description	This attribute indicates the number of EIR bytes received from the link at the called end.
Values	Long Integer

ATTRIBUTE calledEirEgressFrames

Description	This attribute indicates the number of EIR Frames send to the link at the called end.
Values	Decimal (0..4294967295)

ATTRIBUTE calledEirIngressFrames

Description	This attribute indicates the number of EIR Frames received from the link at the called end.
Values	Decimal (0..4294967295)

ATTRIBUTE calledDiscardedBytes

Description	This attribute indicates the number of bytes discarded at the called end.
Values	Long Integer

ATTRIBUTE calledDiscardedFrames

Description	This attribute indicates the number of frames discarded at the called end.
Values	Decimal (0..4294967295)

ATTRIBUTE callingTransferPriority

Description	This attribute indicates the transfer priority at the calling end.
Values	Decimal (0..255)

ATTRIBUTE calledTransferPriority

Description	This attribute indicates the transfer priority at the called end.
Values	Decimal (0..255)

ATTRIBUTE circuitId

Description	This attribute indicates a unique string, set by the operator as the “correlationTag” provisioned attribute, which identifies the call for accounting purposes. Downstream processing uses this attribute to correlate accounting records issued at different nodes in the network. Typically, the attribute is provisioned, as the correlationTag, with the same value at both ends of the connection, but this is not mandatory. As a default, there is no correlationTag provisioned against the DLCI
Values	String (0..32, ASCII)

RESPONSE The following AVs will be removed if the Tidy command is issued without the query option. Some of these AVs are partial AVs.

Description	This response is issued only when the query option is used for the *Tidy* command. It lists the AVs which would be tidied if the *Tidy* command was issued without the query option. This list also includes some partial AVs.

ATTRIBUTE listOfRemovedAvs

Description	This attribute is a list of the names of AVs which would be removed if the *Tidy* command was issued without the query option.
List of	String (1..30, ASCII)

RESPONSE Only partial AVs exist on the disk. They will be removed if the Tidy command was issued without the query option.

Description	This response is returned when partial AVs exist on the disk which would be removed if the *Tidy* command was issued without the query option.

ATTRIBUTE listOfRemovedAvs

Description	This attribute is a list of the names of AVs which would be removed if the *Tidy* command was issued without the query option.
List of	String (1..30, ASCII)

RESPONSE APS request of equal or higher priority already in effect.

Description	This response is issued when the APS request invoked by the command entered is of lower priority than the APS requests already present on the *Aps* component.

ATTRIBUTE apsResponseText

Description	This response text gives the specific reason why the command was ignored. For example, “Far end is transmitting signalFail on protection”, and a suggested alternative, such as “Use ‘switch -force’ to override the signalFail”.
Values	String (0..256, ASCII)

RESPONSE Error:The component name specified by attribute... does not exist or was not specified.

Description	This error message appears in response to a *Check Prov* command if the specified component name cannot be found in the edit view.

ATTRIBUTE atmAccMissingComponent

Description: This attribute contains the numeric ID of the attribute used to specify the component name of the *atmConnection* to be used.

Values: Decimal (0..65535)

RESPONSE Error:The ATM connection specified by attribute ... is not supported.

Description: This error message appears in response to a *Check Prov* command if the *atmConnection* specified is not supported by this component.

ATTRIBUTE atmAccVCUnsupported

Description: This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection which is unsupported.

Values: Decimal (0..65535)

RESPONSE Error:The component name specified by attribute ... does not exist or was not specified.

Description: This error message appears in response to a *Check Prov* command if the specified component name cannot be found in the edit view.

ATTRIBUTE paAtmAccMissingComponent

Description: This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection to be used.

Values: Decimal (0..65535)

RESPONSE Error:The ATM connection specified by attribute ... is not supported.

Description: This error message appears in response to a *Check Prov* command if the ATM connection specified is not supported by this component.

ATTRIBUTE paAtmAccVCUnsupported

Description: This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection which is unsupported.

Values Decimal (0..65535)

RESPONSE Error: The ATM connection specified by attribute ... must have the same VPI value as its parent Trunk ATM connection.

Description This error message appears in response to a *Check Prov* command if the ATM connection specified has a different VPI value from its parent Trunk ATM connection.

ATTRIBUTE paAtmAccVpMismatch

Description This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection which has a different VPI value from its parent Trunk ATM connection.

Values Decimal (0..65535)

RESPONSE Error: The ATM connection specified by attribute ... must have the same AtmIf value as its parent Trunk ATM connection.

Description This error message appears in response to a *Check Prov* command if the ATM connection specified has a different AtmIf value from its parent Trunk ATM connection.

ATTRIBUTE paAtmAccAtmifMismatch

Description This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection which has a different AtmIf instance value from its parent Trunk ATM connection.

Values Decimal (0..65535)

RESPONSE Error: The parent Trunk ATM connection specified by its attribute ... is elastic. Pa Atm must be configured for mapped mode on inverse multiplexing Atm trunks.

Description This error message appears in response to a *Check Prov* command if Pa Atm Mode is set to multiplexing and its parent Trunk Atm connection is elastic. Pa Atm does not support elastic Vcc. Mapped mode is recommended on inverse multiplexing Atm trunks.

ATTRIBUTE paAtmAccMuxNotAllowed

Description	This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection which is elastic.
Values	Decimal (0..65535)

RESPONSE Warning: The ATM connection specified by attribute ... is not relevant in mapped mode and will be ignored.

Description	This warning message appears in response to a *Check Prov* command if a provisioned VCC component is associated with a Pa Atm which is in map mode.

ATTRIBUTE paAtmAccMapModeWarning

Description	This attribute contains the numeric ID of the attribute used to specify the component name of the ATM connection which is associated with a map-moded Pa ATM.
Values	Decimal (0..65535)

RESPONSE

Description	The following describes the attributes of loopback to be displayed when a stop loopback command is issued.

ATTRIBUTE localTotalFrm (ltf)

Description	This attribute records the number of frames looped back to the link since the loopback mode was started.
Values	Decimal (0..4294967295)

ATTRIBUTE localTotalBytes (ltb)

Description	This attribute records the number of bytes looped back to the link since the loopback mode was started.
Values	Decimal (0..4294967295)

ATTRIBUTE localFecnFrm (lff)

Description	This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the link since the loopback mode was started.
Values	Decimal (0..4294967295)

ATTRIBUTE localBecnFrm (lbf)

Description	This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the link since the loopback mode was started.
Values	Decimal (0..4294967295)

ATTRIBUTE localDeFrm (ldf)

Description	This attribute records the number of frames with the Discard Eligibility (DE) bit set, loopback to the link since the looped back mode was started.
Values	Decimal (0..4294967295)

ATTRIBUTE localDeBytes (ldb)

Description	This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the link since the loopback mode was started.
Values	Decimal (0..4294967295)

ATTRIBUTE remoteTotalFrm (rtf)

Description	This attribute records the number of frames looped back to the subnet since the loopback mode was started.
Values	Decimal (0..4294967295)

ATTRIBUTE remoteTotalBytes (rtb)

Description	This attribute records the number of bytes looped back to the subnet since the loopback mode was last started.
Values	Decimal (0..4294967295)

ATTRIBUTE remoteFecnFrm (rff)

Description: This attribute records the number of frames with the Forward Explicit Congestion Notification (FECN) bit set, looped back to the subnet since the loopback mode was started.

Values: Decimal (0..4294967295)

ATTRIBUTE remoteBecnFrm (rbf)

Description: This attribute records the number of frames with the Backward Explicit Congestion Notification (BECN) bit set, looped back to the subnet since the loopback mode was started.

Values: Decimal (0..4294967295)

ATTRIBUTE remoteDeFrm (rdf)

Description: This attribute records the number of frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.

Values: Decimal (0..4294967295)

ATTRIBUTE remoteDeBytes (rdb)

Description: This attribute records the number of bytes in frames with the Discard Eligibility (DE) bit set, looped back to the subnet since the loopback mode was started.

Values: Decimal (0..4294967295)

RESPONSE Error:The vcci attribute for the AtmTrunkConnection component must take values in the range 0-4095 when an Aal2Svc component is provisioned.

Description: A *Check Prov* command produces this response if the user tries to provision a value in the range 0-4095 for the *vcci* attribute of a *AtmTConn* component, when an *Aal2SvcService* component is provisioned.

System action: no *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: provision a value between 0 and 4095 for the *vcci* attribute of the *VgsConn* component.

ATTRIBUTE relatedComponent

Description: This attribute identifies the component in which the error was detected.

Values: The name of the component

RESPONSE

Description: This is the normal response for a *Trace* command issued against a connection. It lists the ATM components at each hop along the connection path up to the next segment OAM boundary.

An example of the complete response is:
Switch side trace result:
EM/NewYork AtmIf/10 Vcc/0.43
EM/Raleigh AtmIf/30 Vcc/0.43
EM/Raleigh AtmIf/51 Vcc/1.66
EM/Denver AtmIf/40 Vpt/1 Vcc/66
EM/Denver AtmIf/12 Vpt/4 Vcc/25
EM/Atlanta AtmIf/71 Vcc/4.25
EM/Atlanta AtmIf/70 Vcc/0.37

Note that the lines of response in the Trace command output are not necessarily in order. This is due to the fact that the Trace command requires a response from each node along the connection. The time taken to respond to the trace cell depends on the load on that processor. So in any node that has other activity, there are minor differences in the time to respond to the Trace command.

The Trace response for a *Vcc* does not show any hops of a VCC which are conveyed on a path connection (VPC). In this case the Trace command only shows the *Vcc* hop points, along with any *Virtual Path Terminators (VPTs)* that may be present.

ATTRIBUTE switchSideResponseList

Description: This attribute is used to create a response containing the switch-side trace results.

List of: The name of the component

ATTRIBUTE linkSideResponseList

Description	This attribute is used to create a response containing the link-side trace results.
List of	The name of the component

RESPONSE Warning:Traffic will not be forwarded to any ATM FP LPs with the following LPTs, since the ppplwf feature is not provisioned in the featureList of those LPTs:

Description	This response is produced by the *Check Prov* command if the user has not provisioned the ***pppIwf*** feature on any card which can be used to route an SPVC configured through a *PppIwf AtmAdaptionPoint*.

ATTRIBUTE component

Description	This attribute specifies the identity of each *Lpt* which does not have the feature ***pppIwf*** provisioned on it.
List of	The name of the component

RESPONSE Error: The ... attribute must ...

Description	This error response is generated by the *Check Prov* command when the operator attempts to provision a PVC connection and the *atmConnection* attribute is not provisioned, or the operator attempts to provision an SPVC connection and the *atmConnection* attribute is provisioned.

ATTRIBUTE invalidType

Description	This attribute contains the numeric ID of the attribute which was left unprovisioned.
Values	Decimal (1..65535)

ATTRIBUTE invalidValue

Description	Either “be set.“ or “not be set.“.
Values	String (7..11, ASCII)

RESPONSE Error: The ... attribute must be set.

Description This response is produced by the *Check* command if the user has not provisioned the *linkToProtocolPort* attribute.

ATTRIBUTE invalidType

Description This attribute contains the numeric ID of the attribute which was left unprovisioned.

Values Decimal (1..65535)

RESPONSE Error: The ... attribute must be set.

Description This response is produced by the *Check* command if the user has not provisioned the *ilsForwarder* attribute.

ATTRIBUTE invalidType

Description This attribute contains the numeric ID of the attribute which was left unprovisioned.

Values Decimal (1..65535)

RESPONSE Error: ... encapType must be llcEncap or ipVcEncap.

Description This error message appears when the attribute *encapType* under the linked *AtmMpe* component is neither ***llcEncap*** nor ***ipVcEncap***.

ATTRIBUTE atmMpeName

Description This attribute contains the name of the *AtmMpe* component.

Values The name of the component

RESPONSE Failed to reach destination within the maximum of ... hops.

Description This response indicates the *Ping -traceRoute* command cannot reach the given destination IP address within the maximum number of hops supported by IP Trace Route.

ATTRIBUTE hopCount

Description This attribute indicates the maximum number of hops the *Ping -traceRoute* command will try to reach its destination.

Values	Decimal (1..255)

RESPONSE IP Trace Route for ...:Path taken:

Description	This response contains the header line used when the *-traceRoute* ping option was specified. It is used when the trace was unsuccessful due to a timeout. The path taken before the 10 second timer expired follows this response.

ATTRIBUTE ipAddr

Description	This attribute indicates the IP address of the remote host.
Values	IP address

RESPONSE ...Hop ...:...(failed)

Description	This response is printed as the last line of the ping *-traceRoute* command when the command fails or times out. It indicates the number hops the command had traversed before it failed.

ATTRIBUTE hopCount

Description	This attribute indicates the number of hops the command had traversed when the command failed.
Values	Decimal (1..255)

RESPONSE .....

Description	This response contains the *hopCount*, *hopAddress* and *roundTripTime* of an intermediate node in the network to reach the IP address being traced.

ATTRIBUTE hopCount

Description	This attribute indicates the hop count of a node that was visited by the *Ping -traceRoute* command.
Values	Decimal (1..255)

ATTRIBUTE ipAddress

Description	This attribute indicates the IP address of a node that was visited by the *Ping -traceRoute* command.

The value 0.0.0.0 is displayed if a transit router along the path did not respond. This might be the result of a node filtering incoming and/or outgoing ICMP messages, for example, a firewall router. In this case, the *roundTripTime* is displayed as 0 as well and should be ignored.

Values IP address

ATTRIBUTE roundTripTime

Description This attribute indicates the round trip time taken to reach this node.

The value 0 is displayed if a transit router along the path did not respond. This might be the result of a node filtering incoming and/or outgoing ICMP messages, for example, a firewall router. In this case, the IP address is displayed as 0.0.0.0 as well and should be ignored.

Values Decimal (0..65535)

RESPONSE Transport Connection to ... is up.

Description This response indicates that the *Ping* issued against the enabled *Ep* has verified that the transport connection to the remote end is up. If the *Ping* issued against the Ep is disabled due to transport priority overlap, then this response indicates that the transport connection from this Ep's associated Ep to the remote end is up.

ATTRIBUTE remoteComponentName

Description This attribute indicates the component name of the remote *Ep*.

Values String (0..46, ASCII)

RESPONSE Error: ... encapType must be llcEncap.

Description This error message appears when the attribute *encapType* under the linked *AtmMpe* component is not ***llcEncap***.

ATTRIBUTE atmMpeName

Description This attribute contains the name of the *AtmMpe* component.

Values The name of the component

RESPONSE Warning:Traffic will not be forwarded to any AtmMpe protocol port on Lp(s) with the following Lpt(s), since the feature atmMpe is not provisioned in the featureList of those Lpt(s):

Description	This response is produced by the *Check Prov* command if the user has not provisioned the ***atmMpe*** feature on any card which has the ***ip*** feature provisioned.

ATTRIBUTE component

Description	This attribute specifies the identity of each *Lpt* which does not have the feature ***atmMpe*** provisioned on it.
List of	The name of the component

RESPONSE Error:The feature atmMpe must be provisioned in the featureList of ...

Description	This error response is generated when the feature ***atmMpe*** is not provisioned on the corresponding logical processor.

ATTRIBUTE lpt

Description	This attribute indicates the *Lpt* which should have the ***atmMpe*** feature on it.
Values	The name of the component

RESPONSE ...

Description	This response is generated as an error response to the start verb. The reasons for this response include: The FRUNI is incapable of generation traffic in its current state.

ATTRIBUTE ErrorMsg

Description	This attribute contains the error message to be displayed.
Values	String (1..81, ASCII)

RESPONSE Error:An Lsp must have one of either a ...,or ... or ... subcomponent provisioned when a FEC MscMap is provisioned under the LspG.

Description

The *Check Prov* command produces this response when the specified component name cannot be found in the edit view.

System Action: The *Check Prov* fails.

Operator Action: Provision either an *LdpQos* or *CrLdpQos* or *RsvpQos* component under this *Lsp* component.

ATTRIBUTE mplsLspGLspMissingCrLdpQosError

Description

This attribute indicates the name of the *CrLdpQos* component to be used in the response.

Values

Decimal (0..65535)

ATTRIBUTE mplsLspGLspMissingLdpQosError

Description

This attribute indicates the name of the *LdpQos* component to be used in the response.

Values

Decimal (0..65535)

ATTRIBUTE mplsLspGLspMissingRsvpQosError

Description

This attribute indicates the name of the *RsvpQos* component to be used in the response.

Values

Decimal (0..65535)

RESPONSE Error:The total number of LSP components has exceeded the allowable limit of ... per Mpls component.

Description

The *Check Prov* command produces this response when the number of *Lsp* components provisioned has exceeded a defined constant

System Action: The *Check Prov* fails.

Operator Action: Reduce the number of *Lsp* components provisioned

ATTRIBUTE mplsLspGLspTooManyLspsError

Description: This attribute indicates the maximum number of *Lsp* components that can be provisioned on a switch under an *Mpls* component . This value is a constant set within the software.

Values: Decimal (0..65535)

RESPONSE Error:A Te component must have the ... attribute set when the Lsp component has a CrLdpQos subcomponent.

Description: The *Check Prov* command produces this response when the *TrafficEngineering* component does not have its *pathname* attribute set.

System Action: The *Check Prov* fails.

Operator Action: Provision the *pathname* attribute under the *TrafficEngineering* component to point to a valid MPLS *Path* component.

ATTRIBUTE mplsTePathnameSetError

Description: This attribute indicates the name of the *Pathname* attribute to be used in the response.

Values: Decimal (0..65535)

RESPONSE Warning:The ... attribute will be ignored when the Lsp component has an LdpQos subcomponent.

Description: The *Check Prov* command produces this response when the *Lsp* component has an *LdpQos sub*component provisioned and the *PathOnDemand* attribute is set to ***enabled*** or when an *LdpQos* component is provisioned and the *PathName* attribute is set.

System Action: The *Check Prov* command passes.

Operator Action: No operator action required.

ATTRIBUTE mplsTeLdpQosWarning

Description: This attribute indicates the name of the attribute to be used in the response.

Values Decimal (0..65535)

RESPONSE Error:A Te ... attribute has to be set to an existing Path component.

Description The *Check Prov* command produces this response when the *pathname* attribute of the *TrafficEngineering* component of an *Lsp* component has been set to a non-existent *Path.*

System Action: The *Check Prov* fails.

Operator Action: Provision the *pathname* attribute to point to a valid MPLS *Path* component.

ATTRIBUTE mplsTePathnameExistError

Description This attribute indicates the name of the *Pathname* attribute to be used in the response.

Values Decimal (0..65535)

RESPONSE Error: ... in the standby LSP attribute does not have Service Category as standby value.

Description The *Check Prov* command produces this response when an *Lsp* has been added to a *standbyLsp* but has a non-standby value.

System Action: The *Check Prov* fails.

Operator Action: Either remove the *Lsp* component with a non-standby *serviceCategory* value from the *standbyLsp* attribute or change it's *serviceCategory* value to ***standby***.

ATTRIBUTE nonStandbyLsp

Description This attribute specifies the component name of the *Lsp Msc* to be used in the response.

Values The name of the component

RESPONSE Error:Each non-standby Lsp must have a unique serviceCategory. ... has duplicate serviceCategory.

Description

The *Check Prov* command produces this response when multiple *Lsp* components have been provisioned under the same *LspGroup* components using the same non-standby *serviceCategory*.

System Action: The *Check Prov* fails.

Operator Action: Ensure that each of the *Lsp* components provisioned under an *LspGroup* component has a unique non-standby *serviceCategory*.

ATTRIBUTE mplsMscUniqScError

Description

This attribute indicates the component name of the *Lsp Msc* to be used in the response.

Values

The name of the component

RESPONSE Error:... standby list cannot include a primary Lsp.

Description

The *Check Prov* command produces this response when a *standbyLsp* has been provisioned to include a non-standby LSP.

System Action: The *Check Prov* fails.

Operator Action: Either remove the *Lsp* instance with a non-standby *serviceCategory* value from the *standbyLsp* or change the *serviceCategory* value to ***standby***.

ATTRIBUTE mplsMscNonStandbyInListError

Description

This attribute indicates the component name of the standby list to be used in the response.

Values

The name of the component

RESPONSE Error:A standby Lsp cannot appear in more than one standby list. ... and ... include the same Lsp.

Description

The *Check Prov* command produces this response when a standby LSP has been included in more than one *standbyLsp*.

System Action: The *Check Prov* fails.

Operator Action: Remove the *Lsp* component instance value from one of the *standbyLsp*.

ATTRIBUTE firstStandbyInOnePlusListError

Description

This attribute indicates the component name of the *standbyLsp* to be used in the response.

Values

The name of the component

ATTRIBUTE secondStandbyInOnePlusListError

Description

This attribute indicates the component name of the *standbyLsp* to be used in the response.

Values

The name of the component

RESPONSE Error:Standby Lsp ... does not appear in any standby list.

Description

The *Check Prov* command produces this response when a standby LSP has not been added to any *standbyLsp*.

System Action: The *Check Prov* fails.

Operator Action: Either change the *Msc* component *serviceCategory* attribute value to a non-standby value or add it to a *standbyLsp*.

ATTRIBUTE mpIsMscHangingStandbyError

Description

This attribute indicates the component name of the Lsp to be used in the response.

Values

The name of the component

RESPONSE Error:A Path component must have at least one ... subcomponent.

Description

The *Check Prov* command produces this response when no *Hop* components have been provisioned under the *Path* component.

System Action: The *Check Prov* fails.

Operator Action: Provision at least one *Hop* component under each *Path* component.

ATTRIBUTE pathNoHopsError

Description

This attribute indicates the name of the *Hop* subcomponent used in the response.

Values

Decimal (0..65535)

RESPONSE Error:The total number of Path components has exceeded the allowable limit of ... per Mpls component.

Description

The *Check Prov* command produces this response when the number of *Path* components provisioned exceeds a preset value.

System Action: The *Check Prov* fails.

Operator Action: Reduce the number of *Path* components provisioned.

ATTRIBUTE mplsPathTooManyPathsError

Description

This attribute indicates the maximum number of *Path* components that can be provisioned on a switch under a *Mpls* component. This value is a constant set within the software.

Values

Decimal (0..65535)

RESPONSE Error:Hop ... attribute is inadmissible. Choose a valid Class A, B or C non-reserved address.

Description

The *Check Prov* command produces this response when the IpV4 address for this *Hop* component is not a valid Class A,B or C non-reserved address.

System Action: The *Check Prov* fails.

Operator Action: Provision the *IpV4address* attribute of this *Hop* component using a valid Class A,B or C non-reserved address.

ATTRIBUTE pathHopInvalidAddrError

Description

This attribute indicates the name of the *IpV4Address* attribute to be used in the response.

Values

Decimal (0..65535)

RESPONSE Error:The total number of Hop components has exceeded the allowable limit of ... per Mpls component.

Description

The *Check Prov* command produces this response when the number of *Hop* components provisioned exceeds a preset number.

System Action: The *Check Prov* fails.

Operator Action: Reduce the number of *Hop* components provisioned.

ATTRIBUTE mplsPathHopTooManyHopsError

Description

This attribute indicates the maximum number of *Hop* components that can be provisioned on a switch under a *Virtual Router*. This value is a constant set within the software.

Values

Decimal (0..65535)

RESPONSE Error:An LspGroup component must have one ... subcomponent.

Description

The *Check Prov* command produces this response when a *ForwardingEquivalenceClass* component has not been provisioned under the *LspGroup* component.

System Action: The *Check Prov* fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Provision a *ForwardingEquivalenceClass* component under the *LspGroup* component.

ATTRIBUTE lspGroupMissingIpFwdError

Description

This attribute indicates the name of the *ForwardingEquivalenceClass* component to be used in the response.

Values

Decimal (0..65535)

RESPONSE Error:The total number of LspGroup components has exceeded the allowable limit of ... per VirtualRouter.

Description

The *Check Prov* command produces this response when the number of *LspGroup* components provisioned exceeds a preset number.

System Action: The *Check Prov* fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Reduce the number of *LspGroup* components provisioned.

ATTRIBUTE mplsLspGTooManyLspGsError

Description

This attribute indicates the maximum number of *LspGroup* components that can be provisioned on a switch under a *VirtualRouter* component. This value is a constant set within the software.

Values

Decimal (0..65535)

RESPONSE Error:Duplicate ipv4Elem value or masked Ipv4 address with another LspGroup component. The duplicate address and length is ...,....

Description

The *Check Prov* command produces this response when the provisioned *ipv4Element* instance value of the *Ipv4Epa* subcomponent or the IP address defined by the combination of *ipv4Element* and *ipv4Pref* values (masked IP address) is duplicated under another *LspGroup* component.

System Action: The *Check Prov* command fails.

Operator Action: Ensure that the IP address represented by each *Ipv4Epa* component is unique under the *Mpls* component. This includes both uniqueness of the *ipv4Element* instance value along and the IP address defined by combining *ipv4Element* and *ipv4Pref* instance values.

ATTRIBUTE ipV4DuplicateAddrError

Description

This attribute indicates the *ipv4Element* to be used in the response.

Values

IP address

ATTRIBUTE ipV4DuplicateAddrLengthError

Description

This attribute indicates the *ipv4Pref* to be used in the response.

Values

Decimal (1..32)

RESPONSE Error:The timeslot provisioned for Ccst has not been provisioned in the Channel timeslot list.

Description

A *Check Prov* command produces this error response if the *Channel timeslot* attribute does not contain the timeslot provisioned for the *Ccst* component. Note that if the *Ccst timeslot* attribute is set to ***autoConfigure***, then the *Channel timeslot* attribute must contain ***16*** for E1 or ***24*** for DS1.

System action: No *Activate Prov* command will be accepted until a subsequent *Check Prov* completes without errors.
Operator action: Provision the *Channel timeslot* attribute to include the timeslot used by *Ccst*.

ATTRIBUTE conflictingComponent

Description: This attribute identifies the *Channel* component for which the incorrect *timeslot* provisioning has been detected.

Values: The name of the component

RESPONSE Error:PModule subcomponent instance numbers must range contiguously from 1 to ... if the Shelf Card cardType attribute is ....

Description: A *Check Prov* command produces this error response when a *Vsp* component has an incorrect number of *PModule* subcomponent instances for the provisioned card type.

12 *PModule* instances are required on a ***12mVspAal*** or ***Vsp2*** card.

24 *PModule* instances are required on a ***2pGeMmSrVsp3*** card.

23 *PModule* instances are required on a ***2pOC3ChSmIrVsp3*** card.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: Provision the number of *PModule* components appropriately for the card type.

ATTRIBUTE vspPModuleCount

Description: This attribute indicates the required number of *PModule* subcomponents.

Values:
12
24
23

ATTRIBUTE vspCardType

Description: This attribute indicates the card type for the *Vsp* component.

Values:
12mVspAal
Vsp2

2pGeMmSrVsp3
2pOC3ChSmIrVsp3

RESPONSE Error: The value specified for the ... attribute is invalid for this card type.

Description: A *Check Prov* command produces this response when a semantic check fails concerning an MSA card.

ATTRIBUTE attribute

Description: This is the attribute involved in the response.

Values: Decimal (1..65535)

RESPONSE Error:.....Reason: on MSA cards, ...

Description: A Check Prov command produces this response when a semantic check escape fails on an MSA card

ATTRIBUTE attribute

Description: This is the main attribute involved in the response.

Values: Decimal (1..65535)

ATTRIBUTE attributeHexValueMustBe

Description: This is the hex value that must be applied to the attribute

Values: Hex (H.0..H.ffffffff)

RESPONSE Warning:Traffic using LANE service will not be forwarded to any Lp with the following Lpt(s), since the laneClient feature is not provisioned in the feature list of those Lpt(s):

Description: A *CHECK* command produces this response if the ‘laneClient’ feature is not provisioned on an ATM *Lpt* that has any of the features: atmUni, atmIisp, atmPnni; or an *Lpt* that has any of the features: ip, ipx, bridge.

ATTRIBUTE component

Description: This attribute specifies the identity of each *Lpt* that does not have the feature ‘laneClient’ provisioned on it.

List of: The name of the component

RESPONSE IpPing: Rx ... from ... for ...: icmpSeq=... ...

Description This response indicates that the ping to the specified IP address was unsuccessful due to an ICMP error.

ATTRIBUTE type

Description This attribute indicates the type of ICMP error received that correlates to an outstanding echo request. ICMP errors that are reported include all variations of unreachable errors, and the time exceeded error. Refer to RFC 792 for details on ICMP.

Values String (0..20, ASCII)

ATTRIBUTE sourceIpAddr

Description This attribute indicates the IP address of which the unreachable ICMP packet was originated.

Values IP address

ATTRIBUTE destIpAddr

Description This attribute indicates the IP address of the intended destination of the echo request.

Values IP address

ATTRIBUTE sequence

Description This attribute indicates the sequence number of the failed echo request.

Values Decimal (0..4294967295)

ATTRIBUTE data

Description This attribute indicates any other relevant data in the ICMP error, such as the MTU in an ‘unreachable - need fragment’ ICMP error.

Values String (0..20, ASCII)

RESPONSE Reconnect command successful, connection ....

Description — The *Reconnect* command produces this response to indicate that the connection was successfully established using the requested path.

ATTRIBUTE currentPath

Description — This attribute specifies the path in use after the *Reconnect* command.

Values — with primary path
with alternate path
using PNNI routing

RESPONSE Reconnect not successful, connection ....

Description — The *Reconnect* command produces this response to indicate that the connection could not be established using the requested path.

ATTRIBUTE currentPath

Description — This attribute specifies the path in use after the *Reconnect* command.

Values — with primary path
with alternate path
using PNNI routing
not established

RESPONSE .....

Description — This indicates the number of components which generated warnings and the number of components which generated errors that could not be displayed due to volume limitations.

ATTRIBUTE warningCount

Description — This attribute indicates the number of components that have generated warnings that have not been displayed.

Values — Decimal (0..4294967295)

ATTRIBUTE errorCount

Description	This attribute indicates the number of components that have generated errors that have not been displayed.
Values	Decimal (0..4294967295)

RESPONSE Error:An Lsp component must have a ... subcomponent provisioned.

Description	The *Check Prov* command produces this response when the specified component name cannot be found in the edit view. **System Action**: The *Check Prov* command fails. **Operator Action**: Provision the component indicated as missing component under this *Lsp* component.

ATTRIBUTE mplsLspGLspMissingSubCompError

Description	This attribute indicates the name of the missing subcomponent to be used in the response.
Values	Decimal (0..65535)

RESPONSE Error:A ... subcomponent must be provisioned under the Fec component.

Description	The *Check Prov* command produces this response when the specified component name cannot be found in the edit view. **System Action**: The *Check Prov* fails. **Operator Action**: Provision an *IpV4Epa* subcomponent under this *Fec* component.

ATTRIBUTE ipFwdPolMissingSubCompError

Description	This attribute contains the name of the *IpV4Epa* subcomponent to be used in the response.
Values	Decimal (0..65535)

RESPONSE Error:When the frequency attribute is set to veryFrequent, ... must equal ....

Description — The *Check Prov* command produces this response when the *frequency* attribute has been set to ***veryFrequent*** and either the *peakDataRate* does not equal the *committedDataRate* or the *peakBurstSize* does not equal the *committedBurstSize*.

System Action: The *Check Prov* fails.

Operator Action: Alter the attributes to meet the required conditions.

ATTRIBUTE mplsCrLdpQosDataPeakError

Description — This attribute indicates the name of one of the *CrLdpQos* attributes to be used in the response.

Values — Decimal (0..65535)

ATTRIBUTE mplsCrLdpQosDataCommittedError

Description — This attribute indicates the name of one of the *CrLdpQos* attributes to be used in the response.

Values — Decimal (0..65535)

RESPONSE Error: The following have duplicate IP addresses. (At most 20 components are shown.)

Description — A *Check Prov* command generates this response if two or more linked components have the same IP address. The first component has this Ip address will be recognized. But the second and more with same Ip address will be listed under this response.

ATTRIBUTE illegalFriDuplicated

Description — This attribute contains a list of the offending Frame Relay interfaces.

List of — The name of the component

List Size — 20

RESPONSE Warning:This will disrupt all the BNX Dlcis under ....

Description — The *Check Prov* command generates this response when the attribute *linkToIpServer* and/or *ipAddress* have been changed.

ATTRIBUTE frUniName

Description — This attribute indicates the component name of its parent: *FrUni* or *FrNni*.

Values — The name of the component

RESPONSE Cannot Unlock - attribute ... is not set to unlocked.

Description — This error response is generated when an operator attempts to *Unlock* a component whose currently provisioned administrative status is ***permLocked***.

System action: the *Unlock* command is ignored.
Operator action: if desired, change the value provisioned for the indicated attribute to ***unlocked***, then retry the original *Unlock* command. Note that doing this will cause the component to attempt to go into service whenever a FP reload occurs.

ATTRIBUTE attribute

Description — This attribute identifies the provisioned administrative status attribute.

Values — Decimal (0..65535)

RESPONSE node id = ... port id = ...

Description — This response contains the information for one hop in a computed route returned as the result of issuing the *Run* command on the *RouteFinder* component.

ATTRIBUTE nodeId

Description — This attribute specifies the node ID of a logical node at the near end of the hop.

Values — String (22, Hex)

ATTRIBUTE portId

Description	This attribute indicates the port ID of the PNNI interface leaving the node identified by the *nodeId* attribute.
Values	Decimal (0..4294967295)

RESPONSE node id = ...

Description	This response contains the information for one hop with an unknown port ID in a computed route returned as the result of issuing the Run verb on the RouteFinder component.

ATTRIBUTE nodeId

Description	This attribute specifies the node ID of a logical node at the near end of the hop.
Values	String (22, Hex)

RESPONSE Route ...: Optimal Path Metric Value : ...

Description	This response contains the header line for one computed route returned as the result of issuing the *Run* command on the *RouteFinder* component.

ATTRIBUTE route

Description	This attribute specifies the route number of one of the routes returned as the result of issuing the *Run* command on the *RouteFinder* component.
Values	Decimal (1..15)

ATTRIBUTE optMetricValue

Description	This attribute indicates the results of the optimization metric for the best routing path found.
Values	Decimal (0..4294967295)

RESPONSE Error:Duplicated remote end is found in ....

Description

The *Check Prov* command generates this response when there are duplicated *calledIpAddress* and *calledDlci* pairs or *backupCalledIpAddress* and *backupCalledDlci* pairs in *BnxIwf* components under the same *FrUni* or *FrNni*.

System action: No *Activate* command is accepted until the provisioning information is corrected.

Operator action: Change one or more of the attributes of the duplicated *BnxIwf* components (*calledIpAddress*, *calledDlci*, *backupCalledIpAddress,* or *backupCalledIpAddress*) to make the remote ends unique.

ATTRIBUTE illegalFriDuplicated

Description

This attribute contains an offending *BnxIwf* component.

Values

The name of the component

RESPONSE Error: The aggregateNet ... is a host address. Use network address for the corresponding aggregateMask

Description

This response is generated when host address is used to aggregate routes

ATTRIBUTE ospfAggregateNetAddress

Description

This attribute contains the net address

Values

IP address

RESPONSE DPRS MCS switched path associated with McsMgr ... ...

Description

This response is returned when the operator issued a *ping* command without the -rtd option and the data path currently being used for this FR VC is a pre-determined DPRS MCS switched path.

When data traffic of this FR VC is carried over a DPRS MCS switched path, the *ping* command should be issued with the -rtd option and meant to get the round-trip-delay information of this switched path.

However, if information about this switched path is needed, please refer to the component “McsMgr DprsMcsEpG/<x> Ep/<y> EpD” associated with this switched path. The steps are as follow (please note that <x> and <y> should be replaced using the actual values displayed in this response):
1) Display the attribute “transportConnectionPreference” under this component to see how this path is setup (using PORS or ATM).
2) If the value is “porsOnly”, the path information can be obtained using “display McsMgr DprsMcsEpG/<x> Ep/<y> LCo” and looking at the value of attribute “path”. Otherwise, the value for attribute “transportConnectionPreference” is “atmOnly”. In this case, you have to check the attribute “nextHop” under component: “McsMgr DprsMcsEpG/<x> Ep/<y> AtmCon” and trace the same attribute manually hop-by-hop to get the path information.

ATTRIBUTE vcsEpG

Description

This attribute indicates the group number of the DPRS MCS endpoint associated with the switched path.

Values

Decimal (1..8191)

ATTRIBUTE vcsEp

Description

This attribute indicates the Ep number of the DPRS MCS endpoint associated with the switched path.

Values

Decimal (1..256)

RESPONSE

Description

The *Trace* command produces this response when the command completes normally. This is only the initial part of the complete response. The complete response includes multiple instances of *AtmTracePartialResponse* as well.

The following is an example of the complete response:

Trace status = Trace Completed Normally
Src port Id=001e0001
Src port name =EM/PARIS Atmif/30

Node Id
=60A0391111111111111111111111110090CF55E80060
Node name = PARIS
Port Id =0700001
Port name= EM/PARIS Atmif/112

...

Node Id
=60A0391111111111111111111111110090CF55E81163
Node name = ENGLAND
Port Id =0700001
Port name= EM/ENGLANG Atmif/112

...

Node Id =
60A0391111111111111111111111110090CF55E81163
Node name = MOSCOW
Port Id =0700001
Port name= EM/MOSCOW Atmif/112

ATTRIBUTE status

Description

This attribute indicates the status of the trace. The string should be one of the following:

Completed normally*:* The trace completed normally.

***Incomplete**:* Partial trace returned.

***Exceeded information element length limitations**:* The number of traced nodes exceeded the maximum number of hops.

***Exceeded message length limitations**:* The message length exceeded the maximum allowed size.

Values

Completed normally
Incomplete
Exceeded information element length limitations
Exceeded message length limitations

ATTRIBUTE srcPortId

Description

This attribute indicates the trace source port identifier used for this connection.

Values

Decimal (0..4294967295)

ATTRIBUTE srcPortName

Description

This attribute indicates the node name and the name of the source port used for this connection. This attribute only appears in the trace result for the trace source hop.

Values

String (40, ASCII)

RESPONSE Error: The policy described by this component duplicates or conflicts with the policy described by ....

Description

A *Check Prov* command produces this response if the addition, deletion, or change of an *EgressPolicy* or *NetworkAddress* component results in an inconsistent set of egress policies.

ATTRIBUTE netAddrDupName

Description

This attribute contains the name of the conflicting *NetworkAddress* component.

Values

The name of the component

RESPONSE Error: ... encapType must be llcEncap.

Description — A *Check Prov* command produces this response when the *encapType* attribute of the linked *AtmMpe* is not ***llcEncap***.

ATTRIBUTE atmMpeName

Description — This attribute contains the name of the *AtmMpe* component.

Values — The name of the component

RESPONSE Error: The combination of attributes ... and ... is invalid because there are non-zero bits in the address which lie outside the mask.

Description — A *Check Prov* command produces this response when there are non-zero bits in the *sourceAddress* or *destinationAddress* which lie outside the corresponding mask.

ATTRIBUTE invalidAddress

Description — This attribute contains the numeric ID of the attribute with the invalid address.

Values — Decimal (1..65535)

ATTRIBUTE invalidMask

Description — This attribute contains the numeric ID of the attribute with the invalid mask.

Values — Decimal (1..65535)

RESPONSE Error: More than one Virtual Media Interface component linked to Vr/....

Description — The *Check* command produces this response if more than one *Interface* of the given *VirtualMedia* is linked to a given *VirtualRouter*. Delete any additional *VirtualMedia Interfaces*, or link them to another *VirtualRouter*

ATTRIBUTE vrId

Description — This attribute indicates the name of the *VirtualRouter*.

Values — String (1..8, ASCII)

RESPONSE The install version ... does not exist.

Description

The *Install* command generates this response when the install file version specified for the fabric application does not exist.
System action: The command was not accepted.
Operator action: Specify another fabric application version to install, or download the version first from the SDS site.

ATTRIBUTE file

Description

This attribute is the name of the install file to be loaded.

Values

String (1..50, ASCII)

RESPONSE Switch side trace result:

Description

The *Trace* command produces this response when the command completes normally. This is only the initial part of the complete response. The complete response includes multiple instances of *AtmTracePartialResponse* as well.

An example of the complete response is:
Switch side trace result:

Trace status = Trace Completed Normally.
Src port Id=001e0001
Src port name = EM/PARIS Atmif/30

Node Id=60A0391111111111111111111110090CF55E80060
Node name = PARIS
Port Id =0700001
Port name = EM/PARIS Atmif/112

...

Node Id=60A0391111111111111111111110090CF55E81163
Node name = ENGLAND
Port Id =0700001
Port name= EM/ENGLANG Atmif/112

...

Node Id=60A0391111111111111111111110090CF55E81163
Node name = MOSCOW
Port Id =0700001
Port name= EM/MOSCOW Atmif/112

ATTRIBUTE status

Description

This attribute indicates the status of the trace. The string is one of the following:

Completed normally*:* The trace completed normally.

Incomplete*:* Partial trace returned.

Exceeded information element length limitations*:* The number of traced nodes exceeded the maximum number of hops.

Exceeded message length limitations*:* The message length exceeded the maximum allowed size.

Values

Completed normally
Incomplete
Exceeded information element length limitations
Exceeded message length limitations

ATTRIBUTE srcPortId

Description

This attribute indicates the port identifier value used for this connection.

Values

Decimal (0..4294967295)

ATTRIBUTE srcPortName

Description

This attribute indicates the node name and the name of the source port used for this connection on the ingress side. This attribute only appears in the trace results for the trace source hop.

Values

String (40, ASCII)

RESPONSE Linkside trace result:

Description

The *Trace* command produces this response when the command completes normally. This is only the initial part of the complete response. The complete response includes multiple instances of *AtmTracePartialResponse* as well.

The following is an example of the complete response:
Linkside trace result:

Trace status = Trace Completed Normally.
Src port Id=001e0001
Src port name =EM/PARIS Atmif/30

Node Id
=60A0391111111111111111111111110090CF55E80060
Node name = PARIS
Port Id =0700001
Port name = EM/PARIS Atmif/112

...

Node Id

=60A0391111111111111111111111110090CF55E81163
Node name = ENGLAND
Port Id =0700001
Port name= EM/ENGLANG Atmif/112

...

Node Id
=60A0391111111111111111111111110090CF55E81163
Node name = MOSCOW
Port Id =0700001
Port name = EM/MOSCOW Atmif/112

ATTRIBUTE status

Description

This attribute indicates the status of the trace. The string is one of the following:

Completed normally*:* The trace completed normally.

Incomplete*:* Partial trace returned.

Exceeded information element length limitations*:* The number of traced nodes exceeded the maximum number of hops.

Exceeded message length limitations*:* The message length exceeded the maximum allowed size.

Values

Completed normally
Incomplete
Exceeded information element length limitations
Exceeded message length limitations

ATTRIBUTE srcPortId

Description

This attribute indicates the port identifier value used for this connection.

Values

Decimal (0..4294967295)

ATTRIBUTE srcPortName

Description

This attribute indicates the node name and the name of the source port used for this connection on the ingress side. This attribute only appears in the trace result for the trace source hop.

Values

String (40, ASCII)

RESPONSE

Description

The *Trace* command produces this response, or multiple instances of this response, when the path trace test connection completes normally. This partial response is also used by the connection trace to produce the complete response.

Multiple instances of this response are part of the complete response as show below:

Node Id=60A0391111111111111111111111110090CF55E80060
Node name = PARIS
Port Id =0700001
Port name= EM/PARIS Atmif/112
...

Node Id=60A0391111111111111111111111110090CF55E81163
Node name = ENGLAND
Port Id =0700001
Port name= EM/ENGLANG Atmif/112
...

Node Id=60A0391111111111111111111111110090CF55E81163
Node name = MOSCOW
Port Id =0700001
Port name= EM/MOSCOW Atmif/112

ATTRIBUTE vpiVci

Description

This attribute indicates the VPI.VCI values are used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for ATM interfaces only.

For the connection trace, the VPI.VCI values are included in the

trace when the *-s* option is specified.

For the test connection, as defined by the specification, the VPI.VCI values are never included when the connection is released at the destination.

Values: Integer Sequence (0..4095; 0..65535)

ATTRIBUTE dlci

Description: This attribute indicates the DLCI value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages. This attribute is displayed for FrAtm interfaces only.

For the connection trace, the VPI.VCI values are included in the trace when the *-s* option is specified.

For the test connection, as defined by the specification, the VPI.VCI values are never included when the connection is released at the destination.

Values: Decimal (0..1023)

ATTRIBUTE callReference (callref)

Description: This attribute indicates the call reference value used for this hop on the ingress side. This is the ingress side with respect to the trace or setup messages.

For the connection trace, the call reference value is included in the trace when the *-a* option is specified.

For the test connection, as defined by the specification, the call reference value is never included when the connection is released at the destination.

Values: Hex (H.0..H.ffffff)

ATTRIBUTE endPointReference

Description: This attribute indicates the end point reference value used for this hop on the ingress side. This is the ingress side with respect to the

trace or setup messages.

For the connection trace, the end point reference value is included in the trace when the *-a* option is specified.

For the test connection, as defined by the specification, the end point reference value is never included when the connection is released at the destination.

Values: Hex (H.0..H.ffff)

ATTRIBUTE nodeId

Description: This attribute indicates the lowest level node Id traversed for this hop.

Values: String (22, Hex)

ATTRIBUTE nodeName

Description: This attribute indicates the *nodeName* under the *ModuleData* component for this hop. Only Nortel Networks Multiservice Switches provide this information by including it in the Vendor Specific group.

Values: String (15, ASCII)

ATTRIBUTE portId

Description: This attribute indicates the port identifier value for this hop on the egress side. This is the egress side with respect to the trace or setup messages.

Values: Decimal (0..4294967295)

ATTRIBUTE portName

Description: This attribute indicates the port name for this hop on the egress side. This is the egress side with respect to the trace or setup messages. Only Nortel Networks Multiservice Switches provide this information by including it in the Vendor Specific group.

Values: String (55, ASCII)

ATTRIBUTE pnniTraceContRefusalIndPresent (refusal)

Description

This attribute indicates whether the “PNNI Trace Continuation Refusal” indicator is present. “PNNI Trace Continuation Refusal” indicator indicates that this hop has refused to participate in the trace.

This is not applicable for a connection trace because this connection has already been established.

Values

absent
present

ATTRIBUTE crankbackDestNodeIndPresent (dest)

Description

This attribute indicates whether the “PNNI Crankback Received at Trace Destination Node” indicator is present. The “PNNI Crankback Received at Trace Destination Node” indicator indicates that this hop is acting as a trace destination node and has received a crankback for this call from a non-PNNI interface.

This is not applicable for a connection trace because this connection has already been established.

Values

absent
present

ATTRIBUTE pnniCrankbackGapIndPresent (gap)

Description

This attribute indicates whether the “PNNI Crankback Gap” indicator is present. The “PNNI Crankback Gap” indicator indicates that the call has been subjected to a crankback, however, no Trace Transit List IE was returned by the node initiating the crankback.

This is not applicable for a connection trace because this connection has already been established.

Values

absent
present

ATTRIBUTE crankBackCause (cause)

Description

This attribute indicates the crankback cause. Please refer to the Private-Network-to-Network-Interface Specification Version 1.0 for more information.

This is not applicable for a connection trace because this connection has already been established.

For the test connection, this attribute is present when the *traceCrankback* is set to ***Yes.***

Values

Decimal (0..1000)

ATTRIBUTE blockedTransitType (type)

Description

This attribute indicates the blocked transit type.

This is not applicable for a connection trace because this connection has already been established.

For the test connection, this attribute is present when the *traceCrankback* is set to ***Yes***.

Values

Succeeding end block
Blocked node
Blocked link

ATTRIBUTE blockedNodeId (bNodeId)

Description

This attribute indicates the blocked node Id during the call setup request. The blocked node Id identifies the logical node where the connection or party has been blocked.

This attribute is present when the *blockedTransitType* attribute is the ***Blocked node.***

Values

String (22, Hex)

ATTRIBUTE blockedLinkPrecedingNodeId (pNodeId)

Description

This attribute indicates the blocked link's preceding node Id during the call setup request. The blocked link's preceding node Id identifies the logical node preceding a link where the

connection or party has been blocked.

This attribute is present when the *blockedTransitType* attribute is ***Blocked link***.

Values String (22, Hex)

ATTRIBUTE blockedLinkPortId (bPortId)

Description This attribute indicates the blocked link's port identifier value used for this connection during the call setup request. The blocked link's port identifier identifies a logical port of the blocked link's preceding node identifier.

This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***

Values Decimal (0..4294967295)

ATTRIBUTE blockedLinkSucceedingNodeId (sNodeId)

Description This attribute indicates the blocked link's succeeding node Id during the call setup request. The blocked link's succeeding node Id identifies the logical node succeeding a link where the connection or party has been blocked.

This attribute is present when the *blockedTransitType* attribute is ***Blocked link.***

Values String (22, Hex)

ATTRIBUTE dstVpiVci

Description This attribute indicates the VPI.VCI values on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is displayed for ATM interfaces only.

For the connection trace, the VPI.VCI values are included in the trace when the *-s* option is specified.

For the test connection, as defined by the specification, the

VPI.VCI values are never included when the connection is released at the destination.

Values: Integer Sequence (0..4095; 0..65535)

ATTRIBUTE dstDlci

Description: This attribute indicates the DLCI value on the destination side. This attribute only appears in the trace result for the trace destination node. This attribute is only displayed for FrAtm interfaces.

For the connection trace, the VPI.VCI values are included in the trace when the *-s* option is specified.

For the test connection, as defined by the specification, the VPI.VCI values are never included when the connection is released at the destination.

Values: Decimal (0..1023)

ATTRIBUTE dstCallReference

Description: This attribute indicates the call reference value on the destination side. This attribute only appears in the trace result for the trace destination node.

For the connection trace, the call reference value is included in the trace when the *-a* option is specified.

For the test connection, as defined by the specification, the call reference value is never included when the connection is released at the destination.

Values: Hex (H.0..H.ffffff)

ATTRIBUTE dstEndPointReference

Description: This attribute indicates the end point call reference value on the destination side. This attribute only appears in the trace result for the trace destination node.

For the connection trace, the end point reference value is included in the trace when the *-a* option is specified.

For the test connection, as defined by the specification, the end point reference value is never included when the connection is released at the destination.

Values: Hex (H.0..H.ffff)

ATTRIBUTE specifiedPath

Description: This attribute indicates whether this hop is the originator of this manually configured path. Only Nortel Networks Multiservice Switches provide this information by including it in the Vendor Specific group.

Values: no
yes

RESPONSE Syntax Error(s):

Description: A *Set* command produces this response when a syntax error is detected in an attribute whose value is a regular expression.

ATTRIBUTE errorString3

Description: This attribute contains the syntax error when an invalid character is detected in the expression.

Values: String (1..255, ASCII)

ATTRIBUTE errorString30

Description: This attribute contains the syntax error when duplicate special characters are found.

Values: String (1..255, ASCII)

RESPONSE Connection failed or not enough resources.

Description

The *Trace* command produces this response to indicate that there are not enough resources and displays the cause identifier for the operator to look at.

System action: None.

Operator action: Look at the cause identifier, change the proper parameters, and try this command again.

ATTRIBUTE causeId

Description

This attribute indicates the cause code value to identify the failure.

Values

Decimal (0..1000)

RESPONSE

Description

The *Trace* command produces this response when the vendor specific information exists for one hop in the trace record. This is part of the complete response. The complete response may include multiple instances of this response.

ATTRIBUTE length

Description

This attribute indicates the length of a vendor specific information group.

Values

Decimal (0..11)

ATTRIBUTE organizationUniqueId (oui)

Description

This attribute indicates the Organization Unique Identifier (OUI) of a node that is not a Nortel Networks Multiservice Switch.

Values

String (3, Dashed Hex)

ATTRIBUTE data

Description

This attribute indicates the contents of a vendor specific information group.

Values

String (1..8, Hex)

RESPONSE Error: The value of ripInterface, ..., does not match any RIP interface address provisioned on this routing component.

Description — A *Check Prov* command produces this response when the attribute *ripInterface* is set to an address that does not match any *logicalIf* address on this routing component (*Vr*, *Rtr* or *Vrf*) that has a *RipIf*.

ATTRIBUTE invalidRipInterfaceAddress

Description — This attribute contains value of the invalid *ripInterface* address.

Values — IP address

RESPONSE Error: The value of ripNeighbor, ..., is not a valid IP address for a RIP neighbor.

Description — A *Check Prov* command produces this response when the attribute *ripNeighbor* is set to an address that does not belong to any Class A, B or C network.

ATTRIBUTE invalidRipNbrAddress

Description — This attribute contains value of the invalid *ripNeighbor* address.

Values — IP address

RESPONSE Error: The value of routeReflectorCluster should not be ....

Description — The *Check Prov* command produces this response when attribute *routeReflector* of *Bgp* component is ***true*** and the *routeReflectorCluster* attribute is ***0.0.0.0*** or ***255.255.255.255***.

ATTRIBUTE invalidBgpRouteReflectorClusterId

Description — This attribute contains the invalid route reflector cluster identifier.

Values — IP address

RESPONSE Error: Peer ... cannot be a client if the routeReflector attribute of BGP is false.

Description — A *Check Prov* command produces this response when the peer is specified as a client but the attribute *routeReflector* of *Bgp* component is not ***true***

ATTRIBUTE inwIpBgpRouteReflectorClient

Description	This attribute contains the IP address of the peer that is provisioned as a client
Values	IP address

RESPONSE Error: Extenal peer ... cannot be a client of a routeReflector.

Description	A *Check Prov* command produces this response when an external peer is provisioned as a client of a Route Reflector.

ATTRIBUTE inwIpBgpRrExternalClientAddress

Description	This attribute contains the IP address of the external peer that is provisioned as a client
Values	IP address

RESPONSE There are ... records available for storage.

Description	The *Start* command produces this response indicating the number of records available to be stored. **System action**: None. **Operator action**: If the number of records available is zero, the operator should stop and clear some of the existing filters on this *Lp* or increase the value of *Lp/n Eng PTrace Ov maxTraceRecords*.

ATTRIBUTE recordsAvailable

Description	This attribute indicates the number of available records stored on this *Lp*.
Values	Decimal (0..200)

RESPONSE Error:The encryption key length must be ... hex digits.

Description

A *Check Prov* command produces this response when *encAlgorithm* attribute is set to ***des*** or ***3des***, but the length of *encKey* attribute is not correct.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: Ensure the length of *encKey* attribute is correct for the *encAlg* attribute.

ATTRIBUTE encKeySize

Description

The attribute indicates the correct length for the encryption key.

Values

Decimal (0; 16; 48)

RESPONSE Error:The authentication key length must be ... hex digits.

Description

A *Check Prov* command produces this response when *authAlgorithm* attribute is set to ***md5*** or ***sha1***, but the length of *authKey* attribute is not correct (32 or 40).

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: Ensure the length of *authKey* attribute is valid for the *authAlg* attribute.

ATTRIBUTE authKeySize

Description

The attribute indicates the correct length for the authentication key.

Values

Decimal (0; 32; 40)

RESPONSE Warning:You must now set the key(s) for the new component:...

Description

A *Copy Prov* command produces this warning when a new *Vr/<string> Ip Spd/<string> Policy/<string> Sa/ <secDestination, secProtocol, spi> ManualEspSa* component is created from an existing one. All attribute values are copied to the new component, except for the *authKey* and/or *encKey* attributes. For security reasons, those attribute values are not copied from one component to another.

System action: The *authKey* and/or *encKey* attributes for the new *ManEspSa* component are set to empty strings. Any subsequent *Check Prov* command involving the new component will fail unless the keys have been set to new values by the operator.

Operator action: *Set* the *authKey* and/or *encKey* attributes for the new *ManEspSa* component.

ATTRIBUTE componentName

Description

The attribute indicates the component whose keys must be set.

Values

The name of the component

RESPONSE Error:The Ip Address ... must be a subnet address given provisioned netMask.

Description

A *Check Prov* command produces this response when it detects that the IP address of this *IpLogicalInterface* or *Interface* is not a subnet address given the provisioned *netMask*, and this *ProtocolPort* or *Interface* is linked to a *VirtualMedia Interface* or *Loopback Interface* component whose *mode* is set to ***alwaysUpSummaryInterface***.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Change the value of IP address to a subnet address given the provisioned *netMask*.

ATTRIBUTE invalidAddress

Description	This attribute contains the value of invalid IP address.
Values	IP address

RESPONSE Released with :

Description	The Trace command produces this response to indicate the cause and diagnostic code for why the connection was relaesed. System action: None. Operator action: To debug why the connection failed.

ATTRIBUTE causeCode

Description	This attribute contains the cause code in the transmitted signaling message that contains the CAUSE information element. The cause code is used to describe the reason for generating certain signaling messages.
Values	Decimal (0..255)

ATTRIBUTE diagCode

Description	This attribute contains the diagnostic code in the last transmitted signaling message. The diagnostic code is contained in the CAUSE information element and identifies an information element type or timer type. The diagnostic code is present only if a procedural error is detected by the signaling protocol. A diagnostic code is always accompanied by the cause code. If there is no failure, this attribute is set to NULL.
Values	String (0..8, ASCII)

RESPONSE Error:echoCancellationTailLength on a ... card must be set to one of the following values:...

Description

A *Check Prov* command produces this response if the user sets the *echoCancellationTailLength* attribute to an inappropriate value for the card in use.

A value of ***32*** or ***autoConfigure*** is allowed on a ***12mVspAal*** card.

A value of ***32***, ***48*** or ***autoConfigure*** is allowed on a ***Vsp2*** card.

A value of ***64***, ***128*** or ***autoConfigure*** is allowed on a ***2pGeMmSrVsp3*** card.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *echoCancellationTailLength* attribute is set to the appropriate value for the card being used

ATTRIBUTE vgsCardType

Description: This attribute indicates the card type being used.

Values:
12mVspAal
Vsp2
2pGeMmSrVsp3

ATTRIBUTE vgsBragEcanTailLength

Description: This attribute indicates the allowed values for the *echoCancellationTailLength* attribute.

List of:
autoConfigure
32
48
64
128

List Size: 4

RESPONSE

Description This collected event represents the security logs for an SNMP set request. Several such logs may be required for a single set PDU.

ATTRIBUTE managerIpAddress

Description This attribute is the IP address and port of the SNMP Management station (Manager) that issued the set request. It is in the format of IPaddress-162.

Values String (1..255, ASCII)

ATTRIBUTE snmpCommand

Description This attribute is the command that was received by the SNMP Agent (for example, Set mscLpDS1ChanTimeslotDataRate.8.0.0 1).

Values String (1..255, ASCII)

ATTRIBUTE cliCommand

Description This attribute is the command line interface (CLI) equivalent of the command that was received by the SNMP Agent (for example, set lp/8 ds1/0 chan/0 timeslotDataRate doNotOverride). There is no equivalent CLI command for a Standard MIB variable set request.

Values String (1..255, ASCII)

ATTRIBUTE response

Description This attribute is the success/failure indicator of the command that was entered. In the case of a failure, a meaningful response message will be provided when possible. In most cases, this is the same message received if the command is entered via the CLI interface. Otherwise the message may be one of these responses defined under the *SNMP* component:
SnmpAgentResourceUnavailable,
SnmpAgentForcedOutProvMode,
SnmpAgentReqFullSemantic,
SnmpAgentUnknownCommunity,
SnmpAgentReadonlyCommunity,
SnmpAgentReadonlyManager,

SnmpAgentUnknownManager,
SnmpAgentRespPDUTooBig,
SnmpAgentViewInvalidOid,
SnmpAgentViewExcluded,
SnmpAgentViewNotLeafNode,
SnmpAgentViewNotWritable,
SnmpAgentViewWrongType,
SnmpAgentAddCompError,
SnmpAgentSetAttrError,
SnmpAgentGeneralErrors,
SnmpAgentCpResetErr

Values: String (1..275, ASCII)

RESPONSE Error:...An invalid object identifier found in VarBind ....

Description: An SNMP set request produces this response when the SNMP set request has an invalid object identifier.

System action: the command terminates without having done anything.

Operator action: Validate the object identifier.

ATTRIBUTE attributeInError

Description: This attribute contains the index of the SNMP VarBind that caused this error.

Values: Decimal (1..1000)

RESPONSE Error:...The object identifier specified in VarBind ... is excluded by the view.

Description

An SNMP set request produces this response when the SNMP set request has an object identifier that is excluded by the SNMP view.

This can represent a security breach.

System action: the command terminates without having done anything.

Operator action: Use an appropriate view or reconfigure the current one.

ATTRIBUTE attributeInError

Description

This attribute contains the index of the SNMP VarBind that caused this error.

Values

Decimal (1..1000)

RESPONSE Error:...The object identifier specified in VarBind ... is not a leaf node.

Description

An SNMP set request produces this response when the SNMP set request has an object identifier that is not a leaf node.

System action: the command terminates without having done anything.

Operator action: none.

ATTRIBUTE attributeInError

Description

This attribute contains the index of the SNMP VarBind that caused this error.

Values

Decimal (1..1000)

RESPONSE Error:...The object identifier spcified in VarBind ... is not writable.

Description

An SNMP set request produces this response when the SNMP set request has an object identifier that is not writable.

System action: the command terminates without having done anything.

Operator action: Validate the object identifier.

ATTRIBUTE attributeInError

Description

This attribute contains the index of the SNMP VarBind that caused this error.

Values

Decimal (1..1000)

RESPONSE Error:...The value specified in VarBind ... has the wrong type.

Description

An SNMP set request produces this response when the SNMP set request has an object identifier with a wrong type.

System action: the command terminates without having done anything.

Operator action: Validate the type of the object identifier.

ATTRIBUTE attributeInError

Description

This attribute contains the index of the SNMP VarBind that caused this error.

Values

Decimal (1..1000)

RESPONSE Error:...Set failed on VarBind ... with the error status: ....

Description

An SNMP set request produces this response when the SNMP set request failed on a Standard MIB variable.

System action: the command terminates without having done anything.

Operator action: Check the logs for the SNMP error status.

ATTRIBUTE snmpVarBindIndex

Description	This attribute contains the index of the SNMP VarBind that caused this error.
Values	Decimal (1..1000)

ATTRIBUTE snmpErrorCode

Description	This attribute contains the SNMP error status (RFC1905).
Values	tooBig noSuchName badValue readOnly genErr noAccess wrongType wrongLength wrongEncoding wrongValue noCreation inconsistenValue resourceUnavailable commitFailed undoFailed authorizationError notWritable inconsistenName lastError

RESPONSE Error:...Set failed on Component ... with the error status: ....

Description

An SNMP set request produces this response when the SNMP set request failed on adding a component.

System action: the command terminates without having done anything.

Operator action: Check the logs for the SNMP error status.

ATTRIBUTE snmpFailedCompName

Description	This attribute contains the component name the set request failed on.
Values	The name of the component

ATTRIBUTE snmpAddErrorCode

Description	This attribute contains the SNMP error status (RFC1905).
Values	genErr wrongValue inconsistenName

RESPONSE Error:...Set failed on Attribute ..... with the error status: ....

Description	An SNMP set request produces this response when the SNMP set request failed on setting an attribute. **System action**: the command terminates without having done anything. **Operator action**: Check the logs for the SNMP error status.

ATTRIBUTE snmpFailedSetCompName

Description	This attribute contains the component name the set request failed on.
Values	The name of the component

ATTRIBUTE snmpFailedAttrName

Description	This attribute contains the attribute name the set request failed on.
Values	Decimal (1..65535)
Replication	The name of the component

ATTRIBUTE snmpSetErrorCode

Description	This attribute contains the SNMP error status (RFC1905).
Values	genErr wrongLength

wrongValue
inconsistenName

RESPONSE Error:The dscpToMatch attribute must contain at least one value.

Description

A *Check Prov* command produces this response if the *dscpToMatch* attribute of the *BehaviorAggregate* component does not contain at least one value.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that the *dscpToMatch* attribute contains at least one value.

ATTRIBUTE ba1

Description

This attribute specifies the *BehaviorAggregate* component where the *dscpToMatch* attribute is empty.

Values

The name of the component

RESPONSE Error:The following BehaviorAggregate components contain conflicting dscpToMark values:

Description

A *Check Prov* command produces this response if the *dscpToMark* attribute of any two *BehaviorAggregate* subcomponents of the same *IngressServices* or the same *EgressServices* specify the same DSCP value.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Remove one of the two conflicting *BehaviorAggregate* components, or ensure that the two *dscpToMark* attributes specify different DSCP values.

ATTRIBUTE ba1

Description

This attribute specifies the first of two conflicting *BehaviorAggregate* components.

Values	The name of the component

ATTRIBUTE ba2

Description	This attribute specifies the second of two conflicting *BehaviorAggregate* components.
Values	The name of the component

RESPONSE Error:The following BehaviorAggregate components contain conflicting dscpToMatch values:

Description

A *Check Prov* command produces this response if any value specified by the *dscpToMatch* attribute appears in two different *BehaviorAggregate* subcomponents of the same *IngressServices* or of the same *EgressServices*.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Remove one of the two conflicting *BehaviorAggregate* components, or ensure that the two *dscpToMatch* attributes specify disjoint sets of DSCP values.

ATTRIBUTE ba1

Description	This attribute specifies the first of two conflicting *BehaviorAggregate* components.
Values	The name of the component

ATTRIBUTE ba2

Description	This attribute specifies the second of two conflicting *BehaviorAggregate* components.
Values	The name of the component

RESPONSE Error:One of the following two PerHopBehavior subcomponent instances must be removed:

Description

A *Check Prov* command produces this response if two *PerHopBehavior* subcomponents instance values are equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Remove one of the two conflicting *PerHopBehavior* components.

ATTRIBUTE phb1

Description

This attribute specifies the first of two conflicting *PerHopBehavior* components.

Values

The name of the component

ATTRIBUTE phb2

Description

This attribute specifies the second of two conflicting *PerHopBehavior* components.

Values

The name of the component

RESPONSE Error:The media ... is not supported for a Virtual Router that is linked to a VpnXc card.

Description

The *Check Prov* command produces this response when a *VirtualRouter* is linked to a ***VpnXc*** card, and it has a *ProtocolPort* that is linked to a media which is not supported for a ***VpnXc*** based Virtual Router.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: One of the following actions should be taken:
- delete the *ProtocolPort* that is linked to the unsupported media, or
- set the value of the *virtualRouterProcessor* attribute for the *VirtualRouter* to ***Lp/0***, or
- move the *ProtocolPort* to a *VirtualRouter* whose *virtualRouterProcessor* attribute value is ***Lp/0***.

ATTRIBUTE media

Description

This attribute indicates the component name of the unsupported media.

Values

The name of the component

RESPONSE Error:The ... feature does not support ... trace receiver.

Description

The *Start* command produces this response when attempted against a service trace receiver that is not supported by the targeted trace service.

System action: The *Start* command has no effect.

Operator action: Check the specified receiver type against the type of service trace as following, correct the receiver name in service *SrvTrace rcvr* attribute, then enter *Start* command again.

Currently, Frame Relay Trace features support ***X25***, ***FrameRelay*** and ***ATM*** receivers, and ATM Trace features support ***FrAtm*** and ***ATM*** receivers.

ATTRIBUTE serviceTraceFeature

Description	This attribute indicates the name of service trace feature.
Values	String (0..20, ASCII)

ATTRIBUTE rcvrFeature

Description	This attribute indicates the name of trace receiver feature.
Values	String (0..20, ASCII)

RESPONSE Error:The dscpToMark attribute is not equal to the instance value of a PerHopBehavior subcomponent of the Vr DifferentiatedServicesDomain

Description

A *Check Prov* command produces this response if the *dscpToMark* attribute value of the *BehaviorAggregate* subcomponent of the *IngressServices* is not equal to the instance value of a *PerHopBehavior* subcomponent under the *VirtualRouter DifferentiatedServicesDomain.*

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that the *dscpToMark* attribute of the *BehaviorAggregate* subcomponent of the *IngressServices* is equal to the instance value of a *PerHopBehavior* subcomponent under the *VirtualRouter DifferentiatedServicesDomain.*

ATTRIBUTE ba1

Description	This attribute specifies the *BehaviorAggregate* component where the *dscpToMark* attribute is out of range.
Values	The name of the component

RESPONSE Error:The following component,..., is incompatible with the use of a VrAp component in this Nsta/n Vgs hierarchy.

Description

A *Check Prov* command produces this response if a user tries to provision one of the following components under the same *Nsta/n Vgs* component tree where the *VrAp* component is provisioned: *Nap, Aap, Pap, SpvcAp, IpIf* and *VCac*.

System action: The *Check Prov* command fails. No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that no such component is provisioned within a *Nsta/n Vgs* component hierarchy which contains a *VrAp* component.

ATTRIBUTE disallowedCompName

Description

This attribute contains the name of the disallowed component.

Values

The name of the component

RESPONSE Error:Duplicate IP addresses are assigned to the following components:...

Description

A *Check Prov* command generates this response if the same IP address is assigned to two or more components which have *VrAp* subcomponents associated with the same *Vr/n* component instance.

System action: The *Check Prov* command fails. No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the IP addresses are unique for all components with *VrAp* subcomponents associated with the same *Vr/n* component instance.

ATTRIBUTE vgsCheckDuplicateErrCmpnt

Description

This attribute contains the names of the components for which this check fails.

List of

The name of the component

RESPONSE Error:The ... component must have its mode attribute set to alwaysUpInterface.

Description

A *Check Prov* command generates this response if the *Vm/n If/m* instance has a *Mode* attribute value other than ***alwaysUpInterface***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *Vm/n If/m* instance associated with this *VrAp* component has the *mode* attribute set to ***alwaysUpInterface***.

ATTRIBUTE vrapCheckVmIfMode

Description

This attribute contains the name of the *Vm/n If/m* component for which this check fails.

Values

The name of the component

RESPONSE Error:The udpPortBase attribute must equal 16384, 32768 or 49152 when provisioned on a ... card.

Description

A *Check Prov* command produces this response if the user tries to provision a *udpPortBase* value other than ***16384***, ***32768*** or ***49152*** when the *Shelf Card cardType* attribute is of the specified type.

System action: no *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Provision the *udpPortBase* attribute with a value of ***16384***, ***32768*** or ***49152***.

ATTRIBUTE vgsCardType

Description

This attribute indicates the card type being used.

Values

2pGeMmSrVsp3
2pOC3ChSmIrVsp3

RESPONSE Error:The tosMask attribute of the following components are not equal:

Description

A *Check Prov* command produces this response if the *tosMask* attribute of all *EgressCosTreatment* subcomponents of the *CosPolicyGroup* are not equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that the *tosMask* attribute of all *EgressCosTreatment* subcomponents of the *CosPolicyGroup* are equal.

ATTRIBUTE inwIpPolEgressCosTmtTosMask1

Description

This attribute specifies the first of two *EgressCosTreatment* components where the *tosMask* attributes are not equal.

Values

The name of the component

ATTRIBUTE inwIpPolEgressCosTmtTosMask2

Description

This attribute specifies the second of two *EgressCosTreatment* components where the *tosMask* attributes are not equal.

Values

The name of the component

RESPONSE Error:The provisioned IP address must not be a broadcast address within the provisioned subnetMask.

Description

A *Check Prov* command produces this response if the IP Address is a broadcast address with in the *subnetMask*.

System Action: no *Activate Prov* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator Action: Provision a non-broadcast IP address.

ATTRIBUTE broadcastIpAddress

Description

This attribute contains the value of the broadcast IP address.

Values

IP address

RESPONSE The following patched AVs reference the AV that you are attempting to remove. To remove the AV in question,first remove the patched AVs.

Description

The *Remove* command produces this response when the *AV* cannot be removed because there is a dependent patched *AV* present on the disk. Because of the relationship between a patched *AV* and its parent *AV*, the parent *AV* cannot be removed while it has patched *AV*s present on the disk, regardless of whether the patched *AV*s are currently in use.

System action: The *AV* is not removed.

Operator action: If the patched *AV*s are no longer in use, remove these *AV*s, and then remove the original *AV*. If the patched *AV*s are still in use, this *AV* cannot be removed.

ATTRIBUTE listOfFileNames

Description

This attribute is a list of patched *AV*s that are based on the AV that the user is attempting to remove.

List of

String (1..30, ASCII)

RESPONSE Warning:The discardPriority attribute of the following components specify different drop precedence selection methods:

Description

A *Check Prov* command produces this response if the *discardPriority* attribute of one or more, but not all, of the *IngressCosTreatment* subcomponents of the *CosPolicyGroup* is set to ***unchanged***.

System Action: The *Check Prov* will complete if there are no errors, however if the *CosPolicyGroup* component is used and the view is activated, then the Class of Service (CoS) to drop precedence mapping will not always apply.

Operator Action: Ensure that the *discardPriority* attribute of all *IngressCosTreatment* subcomponents of the *CosPolicyGroup* are either all set to ***unchanged*** or each set individually to ***high***, ***medium***, or ***low***.

ATTRIBUTE inwIpIngressCosTmtPortDp1

Description: This attribute specifies the first of two *IngressCosTreatment* components where the *discardPriority* attributes conflict.

Values: The name of the component

ATTRIBUTE inwIpIngressCosTmtPortDp2

Description: This attribute specifies the second of two *IngressCosTreatment* components where the *discardPriority* attributes conflict.

Values: The name of the component

RESPONSE Error:...Reason: When tariffTimeChangeTrigger is enabled, times specified in the collectionTimes attribute of the Collector/Accounting component must be no less than 4 hours apart. Times ... and ... are less than 4 hours apart.

Description: A *Check Prov* command generates this response when any two values of the *collectionTimes* attribute (defined in *Collector/Accounting* component) are less than 4 hours apart.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the values of the *collectionTimes* attribute are at least 4 hours apart.

ATTRIBUTE invalidTimeFirstOfPairTtct

Description: This is the first of a pair of times which are too close together.

Values: Time (HM)

ATTRIBUTE invalidTimeSecOfPairTtct

Description: This is the second of a pair of times which are too close together.

Values: Time (HM)

RESPONSE Error:...Reason: When tariffTimeChangeTrigger is enabled, times specified in the collectionTimes attribute of the Collector/Accounting component must be no less than 4 hours apart. Times ... and ... are less than 4 hours apart.

Description

A *Check Prov* command generates this response when any two values of the *collectionTimes* attribute (defined in *Collector/Accounting* component) are less than 4 hours apart.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the values of the *collectionTimes* attribute are at least 4 hours apart.

ATTRIBUTE invalidTimeFirstOfPairTtct

Description

This is the first of a pair of times which are too close together.

Values

Time (HM)

ATTRIBUTE invalidTimeSecOfPairTtct

Description

This is the second of a pair of times which are too close together.

Values

Time (HM)

RESPONSE Warning:The ... attribute will be ignored when the ClsDef component is provisioned.

Description

The *Check Prov* command produces this response when the *ClsDef* component is provisioned.

System Action: The *Check Prov* passes.

Operator Action: No operator action required.

ATTRIBUTE mplsRsvpQosClsBwWarning

Description

This attribute indicates the name of the *Bandwidth* attribute to be used in the response.

Values

Decimal (0..65535)

RESPONSE The following patches are mutually exclusive and cannot beprovisioned together:

Description

The check Prov command produces this response when two or more Reset patches provisioned in the *Sw patchList* are found to be patching the same object file. Such patches cannot be activated together and are mutually exclusive.

System action: Semantic check is failed. No patches are loaded. The current view is unchanged.

Operator action: If a patch is required that reflects all the solutions found in the patches in question, contact your customer support representative in order to obtain a composite patch. If only one of the patches is required, remove all of the other flagged patches from the *Sw Patchlist*.

ATTRIBUTE duplicatePatchObjList

Description

This attribute indicates a list of Reset patches that cannot be provisioned together because they patch the same object file.

List of

String (1..30, ASCII)

RESPONSE The following Reset patches in the Sw patchList are incompatible with the patched AVs in the Sw Avl:

Description

The check prov command produces this response when a conflict is detected between a patched *AV* (new application version based on an existing, released *AV*) and a Reset patch provisioned in the *Sw patchList*. Such conflicts arise when both patches are patching the same object file.

System action: Semantic check is failed. No patches are loaded. The current view is unchanged.

Operator action: If a patch is required that reflects all the solutions found in the patches in question, contact your customer support representative in order to obtain a composite patch. If only the patched *AV* is required, remove all of the flagged patches from the Sw *Patchlist*.

ATTRIBUTE patchPdAvConflictList

Description	This attribute indicates a list of patches (patched *AV*s and Reset patches from the *Sw patchList*) that cannot be provisioned together because they patch the same object file.
List of	String (1..30, ASCII)

RESPONSE Warning:The cpEquipmentProtection attribute has been changed.Standby CP (card ...) will restart when this view is activated.

Description	This response is issued when the standby CP will be restarted due to a change in the *cpEquipmentProtection* attribute.

ATTRIBUTE cpepCardNumberReset

Description	The card number of the standby CP card which will be reset when the provisioning view is activated.
Values	Decimal (0..15)

RESPONSE Error:An Lsp component must have a ... or a ... subcomponent provisioned when an AtmSap component is provisioned under the LspG component.

Description	The *Check Prov* command produces this response when one of the specified components cannot be found in the edit view. **System Action**: The *Check Prov* fails. **Operator Action**: Provision the component indicated as missing component under this *Lsp* component.

ATTRIBUTE mplsLspGLspOneOfTwoSubCompError

Description	This attribute indicates the name of the missing subcomponent to be used in the response.
Values	Decimal (0..65535)

ATTRIBUTE mplsLspGLspOneOfTwoRsvpQosError

Description	This attribute indicates the name of the other component to be used in the response.
Values	Decimal (0..65535)

RESPONSE Error: The value of peerIpAddress, ..., does not match the address of any peer of the associated VCG virtual router.

Description

A *Check Prov* command produces this response when the value of
attribute *peerIpAddress* does not match the address of any BGP peer of the associated VCG virtual router.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that the value of the *peerIpAddress* attribute of the *MBgp ImportPolicy/n* subcomponent under this *VirtualRouter* matches the instance value of one of the *Bgp Peer/ <peerIpAddress>* subcomponents under the associated VCG *VirtualRouter.*

ATTRIBUTE invalidPeerAddress

Description

This attribute contains the invalid *peerIpAddress* value.

Values

IP address

RESPONSE Error: The address ... is not a valid IP network address prefix.

Description

A *Check Prov* command produces this response when the address prefix defined by the *Network* component is not a valid IP network address prefix. Examples include all 0's (***0.0.0.0***) or all 1's (***255.255.255.255***).

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Provision the *prefix* and *length* attributes of the specified *Network* component to be a valid non-reserved address prefix.

ATTRIBUTE invalidAddress

Description

This attribute contains the value of the invalid address prefix.

Values

IP address

RESPONSE Warning:The ... attribute will be ignored when the Lsp component has an RsvpQos subcomponent.

Description

The *Check Prov* command produces this response when the *Lsp* component has an *RsvpQos* component provisioned and the *PathOnDemand* attribute has been set to ***enabled***.

System Action: The *Check Prov* command passes.

Operator Action: No operator action required.

ATTRIBUTE mplsTeRsvpQosWarning

Description

This attribute indicates the name of the attribute to be used in the response.

Values

Decimal (0..65535)

RESPONSE Error:An Lsp component must not have a ... subcomponent provisioned when a StaticRoute subcomponent is provisioned.

Description

The *Check Prov* command produces this response when the specified component name is found in the edit view.

System Action: The *Check Prov* fails.

Operator Action: Remove the component indicated under this *Lsp* component.

ATTRIBUTE mplsLspGLspNotAllowedCompError

Description

This attribute indicates the name of the component to be used in the response.

Values

Decimal (0..65535)

RESPONSE Warning:Duplicate IP addresses are assigned to the following components:...

Description

A *Check Prov* command generates this response if the same IP address is assigned to two or more components within any *Nsta/n Vgs* components hierarchy.

System action: None.

Operator action: Ensure that the duplication of IP addresses do not cause a problem.

ATTRIBUTE vgsCheckDuplicateWngCmpnt

Description

This attribute contains the names of the components for which duplicate IP addresses are identified by this check.

List of

The name of the component

RESPONSE Warning:tdmLogLaw is recommended to take one of the following values:...

Description

A *Check Prov* command produces this response if the user sets the *tdmLogLaw* attribute to an inappropriate value for the card in use.

A value of ***aLaw*** or ***autoConfigure*** is recommended for an ***E1*** port.

A value of ***muLaw*** or ***autoConfigure*** is recommended for an ***DS1*** port.

System action: An *Activate Prov* command will be accepted with a warning being generated.

Operator action: Ensure that the *tdmLogLaw* attribute is set to the appropriate value for the TDM interface being used.

ATTRIBUTE vgsBragTdmLogLaw

Description	This attribute indicates the allowed values for the *tdmLogLaw* attribute.
List of	muLaw aLaw autoConfigure
List Size	2

RESPONSE Warning:The provisioned ATM Sustained Cell Rate may be too small if all timeslots are active.

Description	A *Check Prov* command produces this response if the user tries to provision a sustained cell rate which is less than the minimum value that would be required for a given connection. This value is altered when fax idle suppression or silence suppression is enabled. **System action:** None. **Operator action:** Ensure that the Sustained Cell Rate is acceptable.

ATTRIBUTE subComponent

Description	The name of the related component which contains the Sustained Cell Rate. It may be one of the following: *AtmIf/n Vcc/m Vcd Tm.* *Nsta/n Conn/m Aap* *Nsta/n Conn/m SpvcAp*"
Values	The name of the component

ATTRIBUTE nstaSustainedCellRate

Description	The calculated value of the sustained cell rate.
Values	Decimal (0..2147483647)

RESPONSE Error: FrUni DirectConnection and Dlci ... are mutually exclusive.

Description

The *Check Prov* command generates this response when a *DirectConnection* component is provisioned under the *FrUni* component, and a *BnxIwf* or *IpConnection* subcomponent is provisioned under a *Dlci* subcomponent of the same *FrUni*.

System Action: The *Check Prov* command fails. An *Activate Prov* command will not be accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Delete the *DirectConnection* component under the *FrUni*.
or
Delete the *Dlci* with the *BnxIwf* or *IpConnection* subcomponent provisioned under it.
or
Replace the *BnxIwf* or *IpConnection* component under the indicated *Dlci* with a *DirectCall* component.

ATTRIBUTE frUniDlciMutualExclusiveNetCmpnt

Description

This attribute indicates the *Dlci* subcomponent that is mutually exclusive to the *DirectConnection* subcomponent.

Values

Decimal (1..65535)

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify all addresses, the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* subcomponents of the *CosPolicyGroup*:

1. The values of the *assignedCos* attribute of the parent *Policy* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are zero.
4. The values of the *portNumberRange* attributes are equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify all addresses, the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* subcomponents of the *DiffServProfile*:

1. The values of the *assignedPhb* attribute of the parent *MfMap* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are zero.
4. The values of the *portNumberRange* attributes are equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify the same addresses, the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* components under the *CosPolicyGroup*:

1. The values of the *assignedCos* attribute of the parent *Policy* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are equal and not zero.
4. The values of the *prefix* attributes are equal up to the prefix length.
5. The values of the *portNumberRange* attributes are equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify the same addresses, the same port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* components under the *DiffServProfile*:

1. The values of the *assignedPhb* attribute of the parent *MfMap* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are equal and not zero.
4. The values of the *prefix* attributes are equal up to the prefix length.
5. The values of the *portNumberRange* attributes are equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify all addresses, all port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* subcomponents of the *CosPolicyGroup*:

1. The values of the *assignedCos* attribute of the parent *Policy* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are zero.
4. The values of the *portNumberRange* attributes are not specified.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify all addresses, all port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* subcomponents of the *DiffServProfile*:

1. The values of the *assignedPhb* attribute of the parent *MfMap* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are zero.
4. The values of the *portNumberRange* attributes are not specified.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify the same addresses, all port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* components under the *CosPolicyGroup*:

1. The values of the *assignedCos* attribute of the parent *Policy* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are equal.
4. The values of the *prefix* attributes are equal up to the prefix length.
5. The values of *portNumberRange* attributes are not specified.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE Error:The following IpAddrLayer4Flow components conflict with each other because they both specify the same addresses, all port numbers, and the same protocol:

Description

A *Check Prov* command produces this response if the following conditions are all true for two *IpAddrLayer4Flow* components under the *DiffServProfile*:

1. The values of the *assignedPhb* attribute of the parent *MfMap* components are not equal.
2. The values of the *protocol* attributes are equal.
3. The values of the *prefixLength* attributes are equal.
4. The values of the *prefix* attributes are equal up to the prefix length.
5. The values of *portNumberRange* attributes are not specified.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that at least one of the following conditions is true for the two *IpAddrLayer4Flow* components:

1. The *protocol* attributes have different values.
2. The *prefix* and *prefixLength* attributes specify different IP address ranges.
3. The *portNumberRange* attributes specify non-overlapping port ranges.

ATTRIBUTE flow1

Description

This attribute specifies the first of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

ATTRIBUTE flow2

Description

This attribute specifies the second of two conflicting *IpAddrLayer4Flow* components.

Values

The name of the component

RESPONSE Error:The ... attribute does not conform to required syntax.

Description

A *Check Prov* command produces this response if the value of one of the termination identifier format attributes does not comply with the relevant termination identifier syntax.

The termination identifier syntax is described in NTP NN10600-780.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Provision the attribute to comply with the termination identifier syntax.

ATTRIBUTE formatAttribute

Description

The name of the *Mgc* termination ID format attribute which is at fault.

Values

ds3Format
e1Format
stmnVc4Vc12Format
stsnOcnVt15Format
ipFormat
aal2Format

RESPONSE Error:stateChangeSignalingMode on a ... card must be set to ....

Description

A *Check Prov* command produces this response if the user tries to provision the *stateChangeSignalingMode* attribute with a value incompatible with the current VSP card type.

System action: The *Check Prov* command fails. No *Activate Prov* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *stateChangeSignalingMode* attribute is set to the appropriate value for the current VSP card being used.

ATTRIBUTE vgsCardType

Description: This attribute indicates the VSP card type currently being used by PVG.

Values:
12mVspAal
Vsp2
2pOC3ChSmIrVsp3
Vsp2W

ATTRIBUTE vgsStateChangeSignalingMode

Description: This attribute indicates the current setting of *Mgc stateChangeSignalingMode* attribute.

Values:
proprietary
itu

RESPONSE Error:The expanded form of ... may exceed 64 characters in length.

Description: A Check Prov command produces this response if the maximum possible length of a termination ID is greater than 64 characters.

Expansion of the termination ID formats is described in NTP NN10600-780.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Provision the format attribute to produce termination IDs whose maximum length is no greater than 64 characters.

ATTRIBUTE formatAttribute

Description: The name of the *Mgc* termination ID format attribute, which is at fault.

Values:
ds3Format
e1Format
stmnVc4Vc12Format
stsnOcnVt15Format

ipFormat
aal2Format

RESPONSE Error:The following format attributes will result in identical termination IDs:...

Description

A *Check Prov* command produces this response if any of the following attributes result in identical termination IDs when expanded:

ds3Format
e1Format
stmnVc4Vc12Format
stsnOcnVt15Format
ipFormat
aal2Format

Expansion of the termination ID formats is described in NTP NN10600-780.

System action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Provision the relevant termination ID format attributes to produce unique termination IDs.

ATTRIBUTE equalAttributes

Description

A list of *Mgc* termination ID format attribute names.

List of

ds3Format
e1Format
stmnVc4Vc12Format
stsnOcnVt15Format
ipFormat
aal2Format

RESPONSE Error:The Rd or Rt instance value ... specified is not valid.

Description

A *Check Prov* command produces this response when the *Rd* or *Rt* value specified for this VRF is not valid. Valid syntax values can be one of two types, type 0 or type 1.

Type 0 syntax is represented as AS:index, where AS is a valid 2 byte autonomous system number and index is a valid 4 byte integer.

Type 1 syntax is represented as IPAddr:index, where IPADDR is a valid non-zero IP Address and index is a valid 2 byte integer.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Delete the *RouteDistinguisher* or *RouteTarget* component which is causing the semantic check to fail. Add the *RouteDistinguisher* or *RouteTarget* value to be a valid value as specified above.

ATTRIBUTE invalidRdRtValue

Description

This attribute contains the instance value of the invalid *RouteDistinguisher* or *RouteTarget*.

Values

String (3..21, ASCII)

RESPONSE Error:The Rd instance value ... specified must be unique across all Vrfs.

Description

A *Check Prov* command produces this response when the *Rd* instance value specified for this *VpnRouteForwarder* already exists for another *Vrf*.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that the *RouteDistinguisher* instance value specified is unique across all *Vrfs*.

ATTRIBUTE nonUniqueRdValue

Description	This attribute contains the instance value of the duplicate *RouteDistinguisher*.
Values	String (3..21, ASCII)

RESPONSE Provisioned file is saved under a new version .... Use -force to attempt loading.

Description

A *Load* command generates this response when the application version in the provisioning file is newer than the current running software version on the shelf. The saved data of some components may be lost while loading this file.

System action: The *Load* command is not executed.
Operator action: Use *-force* to attempt loading.

ATTRIBUTE versionName

Description	This attribute indicates the application version in the provisioning file being loaded.
Values	String (1..30, ASCII)

RESPONSE Warning:The type of component ... has changed.The provisioned data for this component will be lost.

Description

The *Load* command generates this response when the component type in the current running software is different from the component type in the software being loaded. The saved provisioned data for the component will be lost upon activation.

System action: Display partial warning message and continue loading.
Operator action: Note that the component has changed its type; therefore, its attributes will have default values.

ATTRIBUTE component

Description	This attribute contains the name of the component which has changed its type.
Values	The name of the component

RESPONSE Error:...

Description This error response is generated during the *CheckProv* command. It is generated if the framingType of the framer for the *TdmaIwfBearerChannel* does not match the card type to which the *TdmaIwfBearerChannel* is being provisioned or the *TdmaIwfBearerChannel* is being placed on an unknown card type.

ATTRIBUTE tdmaIwfBcUnknownCardType

Description This attribute indicates the *TdmaIwfBearerChannel* has an unknown card type.

Values Decimal (0)

ATTRIBUTE tdmaIwfMvpFramingTypeError

Description This attribute indicates that the *TdmaIwfBearerChannel*'s framing type does not match its DS1Mvp or E1Mvp card type.

Values Decimal (0)

ATTRIBUTE tdmaIwfMtxFramingTypeError

Description This attribute indicates that the *TdmaIwfBearerChannel*'s framing type does not match its DS1C or E1C card type.

Values Decimal (0)

RESPONSE Error:...

Description This error response is generated when an IP address is not set for this *TdmaIwfCallServer* or the IP address is already being used by another *TdmaIwfCallServer*.

ATTRIBUTE tdmaIwfCsIpAddressUnset

Description This attribute indicates the *TdmaIwfCallServer* added a *TdmaIwfLogicalProcessor* that is being used by another *TdmaIwfCallServer*.

Values Decimal (0)

ATTRIBUTE tdmaIwfCsIpAddressInUse

Description	This attribute indicates the *TdmaIwfCallServer* added a *TdmaIwfLogicalProcessor* that is being used by another *TdmaIwfCallServer*.
Values	Decimal (0)

RESPONSE Error:...

Description	This error response is generated when a *virtualRouterName* set for this *TdmaIwfCallServer* is not set or is set to a non-provisioned *virtualRouterName*.

ATTRIBUTE tdmaIwfVrAttrUnset

Description	A *CheckProv* command produces this response if the *virtualRouterName* attribute of this *TdmaIwfCallServer* is not set or references a nonexistent *virtualRouterName*.
Values	Decimal (0)

ATTRIBUTE tdmaIwfInvalidVrSet

Description	This attribute indicates the *virtualRouterName* set for this *TdmaIwfCallServer* has not been provisioned.
Values	Decimal (0)

RESPONSE Error:...

Description	This error response is generated when the *TdmaIwfCallServer TdmaIwfLogicalProcessor* instance is not added , another *TdmaIwfCallServer* already has that *TdmaIwfLogicalProcessor*, or the user is attempting to provision a service other than TDMA asynchronous data call.

ATTRIBUTE tdmaIwfLpInUse

Description	This attribute indicates the *TdmaIwfCallServer* added a *TdmaIwfLogicalProcessor* that is being used by another *TdmaIwfCallServer*.
Values	Decimal (0)

ATTRIBUTE tdmaIwfAsyncDataOnlySupported

Description	This attribute indicates the supported service provisioned for the *TdmaIwfCallServer* includes another service or services other than asynchronous data only.
Values	Decimal (0)

ATTRIBUTE tdmaIwfTdmaOnlySupported

Description	This attribute indicates the supported technology provisioned for the *TdmaIwfCallServer* includes something other than TDMA only.
Values	Decimal (0)

RESPONSE Error:...

Description	This error response is generated during the *CheckProv* command. It is generated if the following occurs: 1) the *TdmaIwfBearerChannel* has no corresponding *TdmaIwfCallServer*. 2) the *TdmaIwfLogicalProcessor* between corresponding *TdmaIwfBearerChannel* and *TdmaIwfCallServer* does not match. 3) the *LogicalProcessor* and its main card do not match. The correspondence between the two components is established by way of the first index of the *TdmaIwfBearerChannel* and the index of the *TdmaIwfCallServer*.

ATTRIBUTE tdmaIwfCallServerNotProvisioned

Description	This attribute indicates the corresponding *TdmaIwfCallServer* is not provisioned.
Values	Decimal (0)

ATTRIBUTE tdmaIwfLpConflict

Description	This attribute indicates the *TdmaIwfLogicalProcessor* linked by the corresponding *TdmaIwfCallServer* and *TdmaIwfBearerChannel* is not the same.
Values	Decimal (0)

ATTRIBUTE tdmaIwfLpError

Description	This attribute indicates that the *LogicalProcessor*'s instance number does not match the card number to which it is provisioned. The user must reprovision the LogicalProcessor so that it matches the card number.
Values	Decimal (0)

RESPONSE Error: ...

Description	The *CheckProv* command produces this response if the *timeslots* attribute of the *Channel* component associated with this bearer channel contains more than one timeslot." This error message is used to specify an *applicationFramerName* for the *TdmaIwfFramer* subcomponent of the *TdmaIwfBearerChannel* that specifies a *Channel,* which has its timeslots set to more than one timeslot. An error is also generated when the *TdmaIwfFramer* subcomponent of the *TdmaIwfBearerChannel* that specifies a *Channel* which has its timeslot set to 16 on an E1 MVP card. Since *timeslot* 16 is reserved for signalling on an E1 MVP card, the *TdmaIwfBearerChannel* cannot be provisioned against this channel.

ATTRIBUTE tdmaIwfMoreThanOneChannel

Description	This attribute indicates the more than one timeslot is attempting to be provisioned against a channel.
Values	Decimal (0)

ATTRIBUTE tdmaIwfChan16

Description	This attribute indicates timeslot 16 is attempting to be provisioned on the E1 MVP or the E1C card.
Values	Decimal (0)

ATTRIBUTE tdmaIwfTimeslotNotOneGreater

Description	This attribute indicates the timeslot selected is not one greater than the channel provisioned in the Framer interfaceName.
Values	Decimal (0)

RESPONSE Error:...

Description This error response is generated when a *Virtual Router* set for *this GsmIwfCallServer* is not set or is set to a non-provisioned *Virtual Router*.

ATTRIBUTE gsmIwfVrAttrUnset

Description This attribute indicates the Virtual Router attribute for GsmIwfCallServer is not set.

Values Decimal (0)

ATTRIBUTE gsmIwfInvalidVrSet

Description This attribute indicates the *Virtual Router* set for this *GsmIwfCallServer* has not been provisoned or is inconsistent across other *GsmIwfCallServers*. *GsmIwfCallServers* on a centralized IWF (Interworking Function) must all share the same *Virtual Router*.

Values Decimal (0)

RESPONSE Error:...

Description This error response is generated when the *GsmIwfCallServer* Logical Processor subcomponent is not added or another *GsmIwfCallServer* already has that Logical Processor.

ATTRIBUTE gsmIwfNoCallServerLp

Description This attribute indicates the *GsmIwfCallServer* has no Logical Processor subcomponent.

Values Decimal (0)

ATTRIBUTE gsmIwfLpInUse

Description This attribute indicates the *GsmIwfCallServer* added a Logical Processor that is being used by another *GsmIwfCallServer*.

Values Decimal (0)

RESPONSE Error:...

Description

This error response is generated when
1) the *GsmIwfBearerChannel* has no corresponding *GsmIwfCallServer*.
2) the logical processor between corresponding *GsmIwfBearerChannel* and *GsmIwfCallServer* does not match. The correspondence between the two components is established by way of the first index of the *GsmIwfBearerChannel* and the index of the *GsmIwfCallServer*.

ATTRIBUTE gsmIwfCallServerNotProvisioned

Description

This attribute indicates the corresponding *GsmIwfCallServer* is not provisioned. The corresponding *GsmIwfCallServer* must have the same trunk group number as *GsmIwfBearerChannel*.

Values

Decimal (0)

ATTRIBUTE gsmIwfLpConflict

Description

This attribute indicates the logical processor linked by the corresponding *GsmIwfCallServer* and *GsmIwfBearerChannel* is not the same.

Values

Decimal (0)

RESPONSE ERROR:...

Description

The IP address cannot be 0.0.0.0 because devices that wants to communicate with IPI system requires the IP address.

ATTRIBUTE ipiInvalidIpAddrAttr

Description

The Ip Address must have a valid IP value.

Values

Decimal (0..2147483647)

ATTRIBUTE ipiInvalidSubnetMaskAttr

Description

There cannot be 1's after 0's in IPIFR subnet mask value because this is what distinguish a subnet mask from a host address. For example, 255.255.0.0 is a valid subnet mask, while 255.255.0.1 is a
host address and therefore invalid as a subnet mask.

Values Decimal (0..2147483647)

RESPONSE LAPS request of equal or higher priority already in effect.

Description This response is issued when the APS request invoked by this command entered is of lower priority than the APS requests already present on the *Laps*.
System Action: None
Operation Action: The *clear Laps/n* command clears the current outstanding value of the *nearEndRequest* attribute. The command can be re-issued with a higher *nearEndRequest* attribute value.

ATTRIBUTE lapsResponseText

Description This response text gives the specific reason why the command was ignored. For example, "Far end is transmitting ***signalFail*** on protection", and a suggested alternative, such as "Use '*switch -force*' to override the ***signalFail***".

Values String (0..256, ASCII)

RESPONSE Error: All AtmTConn subcomponents must have a unique combination of remoteAddress and vcci attributes.

Description

A *Check Prov* command produces this response if the user has added at least two *AtmTConn* subcomponents under a *Vgs* component which have the same value for their *remoteAddress* attribute and also have the same value for their *vcci* attribute.

System action: no *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Use unique *remoteAddress* and *vcci* attribute pairing under this *Vgs* component.

ATTRIBUTE relatedComponent

Description This attribute identifies the component in which the error was detected.

Values The name of the component

RESPONSE .....

Description

This response describes the attributes specific to an Alarm Event.

ATTRIBUTE activeListStatus

Description

This mandatory attribute is the active alarm list status. This is equivalent to the DPN-100 Alarm Type field and is used by the MDM to add (upon receiving a SET alarm) and delete (on receiving a CLEAR alarm) alarms from the alarm displays.

Values

message (MSG)
set (SET)
clear (CLR)

ATTRIBUTE severity

Description

This mandatory attribute is the severity of the alarm which should indicate what priority that fixing this problem should be given. All values are OSI-defined; refer to CCITT X.733 for a more complete description.

Values

indeterminate
critical
major
minor
warning
cleared

ATTRIBUTE alarmType

Description

This mandatory attribute is the alarm type field as defined by OSI which is used to indicate a broad category of what is wrong. The first 6 values are OSI-defined; refer to CCITT X.733 (for the first 5) and CCITT X.736 (for the last) for a more complete description.

The value *operator* is used when an alarm is issued due to an operator command. The values *debug* and *unknown* are for compatibility with DPN-100 and are used for debugging alarms and for those which do not fit any of the above, respectively.

Values	communications qualityOfService processing equipment environmental security operator debug unknown

ATTRIBUTE probableCause

Description	This mandatory attribute is the probable cause for the alarm which usually qualifies the Alarm Type field. Most values are OSI-defined; refer to CCITT X.733 and X.736 for a more complete description. Some Nortel Networks proprietary causes are added to be more descriptive in cases where no OSI-defined cause is appropriate.
Values	lossOfSignal lossOfFrame framingError localTransmissionError remoteTransmissionError callEstablishmentError degradedSignal commSubsystemFailure commProtocolError lanError dteDceInterfaceError responseTimeExcessive queueSizeExceeded bandwidthReduced retransmissionRateReduced thresholdCrossed performanceDegraded congestion atOrNearCapacity storageCapacityProblem versionMismatch corruptData cpuCyclesLimitExceeded

softwareError
softwareProgramError
softwareProgramTermination
fileError
outOfMemory
underlyingResourceUnavailable (underlyingResourceUnavail)
applicationSubsystemFailure
configurationError
powerProblem
timingProblem
processorProblem
datasetModemError
multiplexorProblem
receiverFailure
transmitterFailure
outputDeviceError
inputDeviceError
ioDeviceError
equipmentFailure
adapterError
duplicateInfo
infoMissing
infoModification
infoOutOfSequence
unexpectedInfo
denialOfService
outOfService
proceduralError
otherOperational
cableTamper
intrusionDetection
otherPhysical
authenticationFailure
breachOfConfidence
nonRepudiationFailure
unauthorizedAccess
otherSecurityService
delayedInfo
keyExpired
outOfHoursActivity
enclosureDoorOpen

excessiveVibration
fireDetected
floodDetected
heatVentCoolingProblem
humidityUnacceptable
leakDetected
materialSupplyExhausted
pressureUnacceptable
pumpFailure
temperatureUnacceptable
toxicLeakDetected
operationalCondition
debugging
unknown
inactiveVirtualCircuit
networkServerIntervention
activeVirtualCircuit

ATTRIBUTE ntpIndex

Description: This mandatory attribute is an 8-digit code that is an index into NTP NN10600-230 which provides a more detailed description of the alarm and possible actions to take. The first 4 digits indicate a "grouping" of alarms (a set of alarms common to a particular subsystem or component, etc.). The last 4 digits are a subindex arbitrarily assigned by the application which is responsible for the "group".

Values: BCD (8)

ATTRIBUTE notificationId

Description: This mandatory attribute is the notification Id of the alarm. The high-order byte is the slot number of the *Card* from which this alarm originated. The low-order 24 bits contain a sequence number which increases each time an alarm is generated. Thus, this id provides a simple way of uniquely identifying an alarm as well as the order in which alarms are generated on a card. For cross-card ordering, one would have to look at the time stamp (see ***dateAndTime***).

Values: Hex (H.0..H.ffffff)

ATTRIBUTE relatedComponentNames

Description	This mandatory attribute is a list of the names of any components related to the component (that is, the one in the header FIELD) against which this alarm is raised. It typically contains at least the *LP* and possibly the *Card* on which the originating component resides.
List of	The name of the component

ATTRIBUTE operatorData

Description	This optional attribute is additional hexadecimal information for the network operator to use. Other than for software alarms, it should be described in NTP NN10600-230.Note: The total number of bytes in comment, operator, and internal data may not exceed 750 bytes.
Values	String (0..750, Hex)

ATTRIBUTE pid

Description	This optional attribute is a string representation of the internal process id (PID) of the process that generated the alarm (for internal use only).
Values	String (0..25, ASCII)

ATTRIBUTE fileName

Description	This optional attribute is an internal file name (for internal use only).
Values	String (0..255, ASCII)

ATTRIBUTE fileLineNumber

Description	This optional attribute is an internal line number in the file (see **fileName**) referred to above (for internal use only).
Values	Decimal (0..4294967295)

ATTRIBUTE fileVersion

Description	This optional attribute is a version indicator of the file (**filename**) referred to above (for internal use only).

Values String (0..255, ASCII)

ATTRIBUTE internalData

Description This optional attribute is additional internal hexadecimal information for internal use only. It does not have to be described in NTP NN10600-230.
Note: The total number of bytes in comment, operator, and internal data may not exceed 750 bytes.

Values String (0..750, Hex)

ATTRIBUTE commentData

Description This optional attribute is additional textual information for the network operator to use. Other than for software alarms, if it is not self-explanatory, it should be described in NTP NN10600-230.
Note: The total number of bytes in comment, operator, and internal data may not exceed 750 bytes.

Values String (0..750, ASCII)

RESPONSE The software migration is paused, pause reason:...To resume, type Continue Prov. To stop, type Stop Prov.

Description The *Activate Prov* command generates this message during a Hitless Software Migration when issued without the -noPause option and when certain software errors are generated or when the list of LPs participating in the Hitless Software Migration is changed before the migration shelf is ready.
Activate Prov command always generates this message during a Hitless Software Migration when issued with *-pause* option.
This response indicates that the software migration is paused. The operator can decide to resume by typing *Continue Prov* or to roll back to the existent software version by typing *Stop Prov*. The migration will pause as long as no action is taken by the operator.

ATTRIBUTE pcsString

Description This attribute indicates the different reasons for a pause in Hitless Software Migration. Listed are different pause reasons for the corresponding LPs listed in the *PcsProvisioningActivateSwMigWillPause* response.

If the *Activate Prov* command is issued with the *-pause* option, a pause reason is displayed indicating that the migration is paused due to an operator request.

Values String (0..968, ASCII)

RESPONSE Error: ... Snmp requires the V3 component to be provisioned when the ... attribute has the v3 bit set.

Description This error message is generated in response to a *Check Prov* command when a *Vr/x Snmp supportedVersions* attribute has a provisioned value with the ***v3*** bit set and the *V3* component has not been provisioned.

System action: The provisioning view cannot be activated.

Operator action: Provision the *V3* component or change the value of the *Vr/x Snmp supportedVersions* attribute.

ATTRIBUTE attributeInError

Description This attribute indicates the numeric ID for the *supportedVersions* attribute that has not been properly set.

Values Decimal (1..65535)

RESPONSE Error: The specified mask ... is not a valid contiguous mask.

Description This error message appears in response to a Check Prov command
when the value of a specified mask is provisioned with an invalid discontiguous mask.
1. The semantic check function will check for the contiguity of the mask
by checking if there are contiguous 1's.

ATTRIBUTE invalidMask

Description This attribute contains the value of the invalid mask.

Values IP address

RESPONSE RpHash: RP address of group ... is ..., where the first attribute is the group address, and the second one is the RP address.

Description This response indicates the Rp for the given multicast group.

ATTRIBUTE gAddr

Description This attribute represents the multicast group address for which RP is sought.

Values IP address

ATTRIBUTE rpAddr

Description This attribute indicates the IP address of the RP.

Values IP address

RESPONSE RpHash: no RP address was found for group ...

Description This response indicates that *RpHash* to the given multicast group (IP) address was unsuccessful.

ATTRIBUTE gAddr

Description This attribute specifies the group IP address for which no RP was found.

Values IP address

RESPONSE Error: There is no Domain component of instance ... provisioned under Mcast.

Description A *Check* Prov command produces this response when an attempt is made to add a Domain under PimSm component without provisioning a Domain component of the same instance under *Mcast*.

ATTRIBUTE domainInstance

Description This attribute indicates the domain instance.

Values Decimal (0..3)

RESPONSE Error:The ... attribute must be set.

Description — A *Check* Prov command produces this response if the user has not provisioned the *candidateBsrAddrAssignment* attribute.

ATTRIBUTE invalidType

Description — This attribute contains the numeric ID of the attribute which was left unprovisioned.

Values — Decimal (1..65535)

RESPONSE Error:The ... attribute must be set.

Description — A *Check* Prov command produces this response if the user has not provisioned the *candidateRpAddrAssignment* attribute.

ATTRIBUTE invalidType

Description — This attribute contains the numeric ID of the attribute which was left unprovisioned.

Values — Decimal (1..65535)

RESPONSE Error: The address attribute must be linked to a LogicalIf under Vr instance ... .

Description — A *Check* Prov command produces this response when an attempt is made to link the *address* attribute to a LogicalIf under different Vr instance.

ATTRIBUTE vrInstance

Description — This attribute indicates the Vr instance.

Values — String (1..8, ASCII)

RESPONSE Error: The address attribute must be linked to the LogicalIf under Vr instance ... .

Description — A *Check* Prov command produces this response when an attempt is made to link the *address* attribute to a LogicalIf under different Vr instance.

ATTRIBUTE vrInstance

Description — This attribute indicates the Vr instance.

Values String (1..8, ASCII)

RESPONSE Error: There is no Domain component of instance ... provisioned under PimSm.

Description A *Check* Prov command produces this response when an attempt is made to change the mcastDomain attribute under IpPort without provisioning a Domain component of the same instance under *PimSm*.

ATTRIBUTE domainInstance

Description This attribute indicates the domain instance.

Values Decimal (0..3)

RESPONSE Error: The specified mask ... is not a valid contiguous mask.

Description A *Check* Prov command produces this response when an attempt is made to provision a Group component with an invalid (discontiguous) mask.

ATTRIBUTE invalidMask

Description This attribute contains the index value of the invalid mask.

Values IP address

RESPONSE Error: The combination of address ... and mask ... is invalid because there are non-zero bits in the address which lie outside the mask.

Description A *Check* Prov command produces this response when an attempt is made to provision a Group component with non-zero bits in the IP Address which lie outside the corresponding mask.

ATTRIBUTE invalidAddress

Description This attribute contains the index value of the invalid IP address.

Values IP address

ATTRIBUTE invalidMask

Description This attribute contains the index value of the invalid mask

Values IP address

RESPONSE Error: The combination of Group Address ... and Mask... for this component is not valid. The trailing zerosin the GroupAddress should match those for the Mask.

Description	A *Check* Prov command produces this response when a Group component is added with an invalid GroupAddress and Mask pair. The “anded’ value of the Group Address and Mask pair should be the same as the Group Address.

ATTRIBUTE invalidAddrInPair

Description	This attribute contains the value of the invalid group addr.
Values	IP address

ATTRIBUTE invalidMaskInPair

Description	This attribute contains the value of the invalid mask.
Values	IP address

RESPONSE The following LPs will be reset when the shelf switches over to the new software, because mate cards are unavailable: ....The software migration will be paused. The migration can be stopped by issuing the Stop Prov command.

Description	The *Activate Prov* command generates this message during a Hitless Software Migration when issued without the *-noPause* option and when the list of LPs participating in the Hitless Software Migration is changed before the migration shelf is ready. Such a change occurs when the configured mate card of an LP becomes unavailable during migration. The response indicates that the software migration will be paused. The operator can stop the migration at this point by issuing the *Stop Prov* command.

ATTRIBUTE pcsLp

Description	This attribute lists the LPs that were participating in the Hitless Software Migration in the beginning, but they are no longer participating, because their configured mate cards are unavailable.
List of	The name of the component
List Size	8

RESPONSE Error: ... in the linkToMulStaticGp list of the LogicalIf under the IpPort must belong to the same domain as provisioned under the mcastDomain attribute of the IpPort component.

Description	his error message appears when a static route linked to the Logical If belongs to a domain other than that provisioned under the mcastDomain attribute of the IpPort.

ATTRIBUTE mulStaticRouteEntry

Description	This attribute contains the name of the *Mcast Static RouteEntry* component.
Values	The name of the component

RESPONSE Warning:IP multicast traffic will not be forwarded to any protocol port on Lp(s) with the following Lpt(s), since the feature ipMcast is not provisioned in the featureList of those Lpt(s):

Description	This response is produced by the *Check Prov* command if the user has not provisioned the ***ipMcast*** feature on any FP when the multicast component is provisioned.

ATTRIBUTE component

Description	The list of *Lpt* which does not have the feature ***ipMcast*** provisioned on it.
List of	The name of the component

RESPONSE This Ep is disabled due to transport priority overlap, pinging its associated Ep ... instead.

Description	This response indicates that a ping query packet could not be sent to the remote *Ep* because the *Ep* has been disabled due to Transport Priority overlap. **System action**: The associated Ep is pinged instead. **Operation action**: Non - wait for reply from ping.

ATTRIBUTE ComponentName

Description	This attribute indicates the component name of the associated *Ep*.
Values	String (0..46, ASCII)

RESPONSE When the shelf switches over to the new software load, ... will experience a service outage due to provisioning reasons.

Description	The *Activate Prov* command generates this message on the service active shelf at the beginning of a hitless software migration to provide a list of Logical Processors that will be reset for provisioning reasons. The response to indicate that the software migration can be stopped at this point would follow later.

ATTRIBUTE pcsLpProv

Description	This attribute lists the LPs that are not participating in the Hitless Software Migration for configuration reasons. This includes LPs that are provisioned without a spare card and LPs in 1forN configuration.
List of	The name of the component
List Size	16

RESPONSE When the shelf switches over to the new software load, ... will experience a service outage due to operational reasons.

Description	The *Activate Prov* command generates this message on the service active shelf at the beginning of a hitless software migration to provide a list of Logical Processors that will be reset for operational reasons. This message is generated only if the list of LPs is not empty. At this point the operator can stop the migration.

ATTRIBUTE pcsLpOper

Description	This attribute lists the LPs that are not participating in the Hitless Software Migration for operational reasons. This includes LPs that have cards with standby services unavailable.
List of	The name of the component
List Size	16

RESPONSE Error:The number of instances of the AtmTConn component must not exceed ... on a ... card.

Description

A *Check Prov* command produces this response if the user tries to provision more than the maximum number of *AtmTrunkConnection* components under a *Vgs*.

The limit is ***1022***.

System action: No *Activate Prov* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the number of instances of the *AtmTConn* component under a specific *Vgs* does not exceed the maximum.

ATTRIBUTE vgsMaxNumberOfAtmTConns

Description

This attribute indicates the maximum allowed number of *AtmTConns* components

Values

1022

ATTRIBUTE vgsCardType

Description

This attribute indicates the card type being used.

Values

Vsp2
2pGeMmSrVsp3
2pOC3ChSmIrVsp3
Vsp2W

RESPONSE Error: The IpPort subcomponent of ... must have only a single logical interface.

Description

A *Check Prov* command generates this response if more than one *LogicalInterface*, and therefore more than one subnet, is provisioned under the *IpPort*.

ATTRIBUTE protocolPortName

Description

This attribute indicates the component name of the linked *ProtocolPort*.

Values	The name of the component

RESPONSE Error: The following are not on the same subnet as the linked ProtocolPort. (At most 20 components are shown.)

Description	A *Check Prov* command generates this response if one or more linked components are on a different subnet than the *ProtocolPort* to which the *FrIpServer* is linked. Each *FrIpServer* supports only a single subnet. This error could be caused by an incorrect *ipAddress* attribute under the linked *BnxProtocol* or by an incorrect subnet specification (*LogicalInterface* subcomponent) for the *IpPort* subcomponet of the linked *ProtocolPort*.

ATTRIBUTE illegalFri

Description	This attribute contains a list of the offending Frame Relay interfaces.
List of	The name of the component
List Size	20

RESPONSE Error: The following are not located on the same LogicalProcessor as the FrIpServer. (At most 20 applications are shown)

Description	A *Check Prov* command generates this response if one or more of the linked Frame Relay interfaces are on a different *LogicalProcessor* than the *FrIpServer*.

ATTRIBUTE illegalFriWrongLP

Description	This attribute contains a list of the offending Frame Relay interfaces.
List of	The name of the component

RESPONSE

Description	This real-time statistics event contains the attributes for the PCS performance measurement (real-time statistics) record.

ATTRIBUTE cpuUtilAvg

Description	This attribute indicates an average processor utilization level over the specified collection interval. The CPU utilization is averaged over a set of one-minute integration intervals.
Values	Decimal (0..100)
Units	%

ATTRIBUTE localMemUsageAvg

Description	This attribute indicates the average percentage of PEV local message blocks in use over the PM time interval
Values	Decimal (0..100)
Units	%

RESPONSE

Description	This collected performance measuring component describes the attributes contained in an ATM RtStats record. These measurements are generated by the ATM interface.

ATTRIBUTE linkCapacity

Description	This attribute indicates the physical capacity of this ATM interface.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE rxTotalCell

Description	This attribute indicates the number of cells with CLP=0+1 received during the collection interval.
Values	Long Integer

ATTRIBUTE txTotalCell

Description	This attribute indicates the number of cells with CLP=0+1 transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE txCellDiscards

Description	This attribute indicates the number of cells with CLP=0+1 which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE rxCellDiscards

Description	This attribute indicates the number of cells CLP=0+1 which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE txCbrDiscards

Description	This attribute indicates the number of cells with CLP=0+1 which are discarded before being transmitted during the collection interval by ATM CBR service category.
Values	Long Integer

ATTRIBUTE txRtVbrDiscards

Description	This attribute indicates the number of cells with CLP=0+1 which are discarded before being transmitted during the collection interval by ATM RtVBR service category.
Values	Long Integer

ATTRIBUTE txNrtVbrDiscards

Description	This attribute indicates the number of cells with CLP=0+1 which are discarded before being transmitted during the collection interval by ATM NrtVBR service category.
Values	Long Integer

ATTRIBUTE txUbrDiscards

Description	This attribute indicates the number of cells with CLP=0+1 which are discarded before being transmitted during the collection interval by ATM UBR service category.
Values	Long Integer

ATTRIBUTE remoteAtmIfLabel

Description	This attribute indicates the remote ATM interface, as provisioned in the *remoteAtmInterfaceLabel* attribute.
Values	String (0..60, ASCII)

ATTRIBUTE rxCbrTotalCell

Description	This attribute indicates the total number of ATM cells in the CBR service category, with CLP=0+1, received by the ATM interface during the collection interval.
Values	Long Integer

ATTRIBUTE rxRtVbrTotalCell

Description	This attribute indicates the total number of ATM cells in the RtVBR service category, with CLP=0+1, received by the ATM interface during the collection interval.
Values	Long Integer

ATTRIBUTE rxNrtVbrTotalCell

Description	This attribute indicates the total number of ATM cells in the NrtVBR service category, with CLP=0+1, received by the ATM interface during the collection interval.
Values	Long Integer

ATTRIBUTE rxUbrTotalCell

Description	This attribute indicates the total number of ATM cells in the UBR service category, with CLP=0+1, received by the ATM interface during the collection interval.
Values	Long Integer

ATTRIBUTE txCbrTotalCell

Description	This attribute indicates the total number of ATM cells in the CBR service category, with CLP=0+1, transmitted by the ATM interface during the collection interval. This total includes conforming cells and cells that violated their traffic contract at all points in the network.

Values	Long Integer

ATTRIBUTE txRtVbrTotalCell

Description	This attribute indicates the total number of ATM cells in the RtVBR service category, with CLP=0+1, transmitted by the ATM interface during the collection interval. This total includes conforming cells and cells that violated their traffic contract at all points in the network.
Values	Long Integer

ATTRIBUTE txNrtVbrTotalCell

Description	This attribute indicates the total number of ATM cells in the NrtVBR service category, with CLP=0+1, transmitted by the ATM interface during the collection interval. This total includes conforming cells and cells that violated their traffic contract at all points in the network.
Values	Long Integer

ATTRIBUTE txUbrTotalCell

Description	This attribute indicates the total number of ATM cells in the UBR service category, with CLP=0+1, transmitted by the ATM interface during the collection interval. This total includes conforming cells and cells that violated their traffic contract at all points in the network.
Values	Long Integer

RESPONSE Continue Prov failed due to a pausable event, pause reason: ...Use -force option to continue the migration. To abort migration type Stop Prov.

Description

The *Continue Prov* command generates this error message when the Hitless Software Migration is paused and there are pausable events.
The *Continue Prov* command will succeed only if the pausable events are all cleared.
The operator can decide to force the migration switchover to resume by typing *Continue -force Prov* or to abort the software migration by typing *Stop Prov*.
The migration will pause as long as no action is taken by the operator.

ATTRIBUTE pcsString

Description

This attribute indicates the reason why the *Continue Prov* command failed. The failure is caused by some pausable events that have occurred. These events include pausable alarms, software alarms generated on the migration shelf, applications nacking the provisioning data, and applications not ready for switchover.

Values

String (0..968, ASCII)

RESPONSE Error:The interfaceName attribute must be provisioned to link to an instance of ... component local to this card.

Description

A *Check Prov* command produces this response if the *interfaceName* attribute on components existing under this *Vgs* component has not been set to link to a *Chan, DS1 or E1* component on this card.
The following Components support this response:

Tag: *interfaceName* must link to a local *Chan* Component.
Q921: *interfaceName* must link to a local *Chan* Component.
LapV5: *interfaceName* must link to a local *Chan* Component.
V5Link: *interfaceName* must link to a local *DS1* or *E1* Component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Set the *interfaceName* attribute to link to an instance of the suggested component on this card.

ATTRIBUTE interfaceNameLinkedComponent

Description

The name of the component to link to.

Values

String (0..15, ASCII)

RESPONSE Error:The ... attribute must be provisioned to link to an instance of the ... component under this Vgs.

Description

A *Check Prov* command produces this response if the specified attribute has not been set to an instance of the specified component type existing under this *Vgs* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Set the specified attribute to link to an instance of the specified component type existing under this *Vgs* component.

ATTRIBUTE profileLinkAttribute

Description	The name of the attribute to link.
Values	profile casDefinition

ATTRIBUTE profileLinkComponent

Description	The name of the component to link to.
Values	TdmNetworkProfile Q921Profile CasDefn

RESPONSE Error:Each DS1 or E1 component cannot have more than one Chan subcomponent associated with an instance of the ... component.

Description

A *Check Prov* command produces this response if a *DS1* or *E1* componenent has more that one *Chan* subcomponents linked to the specified component type.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that each *DS1* or *E1* componenent has no more than one *Chan* subcomponents linked to the specified component type.

ATTRIBUTE maxCompLinkedComponent

Description	The name of the linked component.
Values	Tag Q921

RESPONSE Error:The lineType attribute of the ... component provisioned in the interfaceName attribute must take one of the following values:...

Description

A *Check Prov* command produces this response if the *linetype* attribute of the indicated component is of the incorrect type.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Change the *lineType* attribute of the indicated component to one of the recommended values.

ATTRIBUTE priComponentName

Description

This attribute indicates the component for which this check fails.

Values

The name of the component

ATTRIBUTE priLineType

Description

This attribute indicates the allowed values for the *lineType* attribute.

List of

d4
esf
ccs
cas
d4Cas
esfCas

List Size

6

RESPONSE Error:The ... component may only have one of the following signaling type subcomponents provisioned:....

Description

A *Check Prov* command produces this response if the user tries to provision multiple signaling type subcomponents under the same parent component.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the parent component has only one signaling type subcomponent provisioned.

ATTRIBUTE parentComponent

Description

This attribute indicates the name of the parent component.

Values

Brag
BragS

ATTRIBUTE vgsSignalingSubcomponent

Description

This attribute lists all the signaling type subcomponents currently provisioned under the parent component.

List of

Q921
V5Link
Cas

List Size

3

RESPONSE Error:The ... component specified in the interfaceName attribute must have a Tc subcomponent.

Description

A *Check Prov* command produces this response if the indicated component specified in the *interfaceName* attribute does not have a *Tc* subcomponent.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure the indicated component has a *Tc* subcomponent.

ATTRIBUTE chanComponentName

Description This attribute indicates the component for which this check fails.

Values The name of the component

RESPONSE Error: The address ... is not a valid IP network address prefix.

Description A *Check Prov* command produces this response when the address prefix defined by the *Network* component is not a valid IP network address prefix. Examples include all 0's (***0.0.0.0***) or all 1's (***255.255.255.255***).

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Provision the *prefix* and *length* attributes of the specified *Network* component to be a valid non-reserved address prefix.

ATTRIBUTE invalidAddress

Description This attribute contains the value of the invalid address prefix.

Values IP address

RESPONSE node id = ...node name@level = ...port id = ...interface name = ...

Description This response contains the information for one hop in a computed route returned as the result of issuing the *Run* command on the *RouteFinder* component.

ATTRIBUTE nodeId

Description This attribute specifies the node ID of a logical node at the near end
of the hop.

Values String (22, Hex)

ATTRIBUTE nodeName

Description	This attribute specifies the node name of a logical node at the near end of the hop. This attribute is NULL, if the node name is not provisioned under the *ModuleData* component.
Values	String (0..19, ASCII)

ATTRIBUTE portId

Description	This attribute indicates the port ID of the PNNI interface leaving the node identified by the *nodeId* attribute.
Values	Decimal (0..4294967295)

ATTRIBUTE interfaceName

Description	This attribute indicates the name of the PNNI interface attached to the node identified by the *nodeId* attribute. This attribute's value can take one of the following forms: (a) ***AtmIf/<1-4095>*** - If the interface is an ATM interface. (b) ***AtmIf/<1-4095> Vpt/<1-4095>*** - If the interface is a VPT interface. (c) Values ***<0-4294967295>*** - If the link is a logical link. This attribute is left blank for a node that is not a Nortel Networks Multiservice Switch.
Values	String (0..19, ASCII)

RESPONSE node id = ...node name@level = ...

Description	This response contains the information for one hop with an unknown port ID in a computed route returned as the result of issuing the *Run* command on the *RouteFinder* component.

ATTRIBUTE nodeId

Description	This attribute specifies the node ID of a logical node at the near end of the hop.
Values	String (22, Hex)

ATTRIBUTE nodeName

Description: This attribute specifies the node name of a logical node at the near end of the hop. This attribute is NULL, if the node name is not provisioned under the *ModuleData* component.

Values: String (0..19, ASCII)

RESPONSE Error:The total number of ... components must not exceed ... on a ... card.

Description: A *Check Prov* command produces this response if the user tries to provision more than the maximum allowed number of *Q921*, *LapV5* or *Cas* components in the same *Vgs hierarchy.*

A maximum of 40 *Q921* or *LapV5* component instances is allowed on a ***Vsp2*** or ***12mVspAal*** card.

A maximum of 84 *Q921* or *Cas* component instances is allowed on a ***2pGeMmSrVsp3*** card.

A maximum of 64 *LapV5* component instances is allowed on a ***2pGeMmSrVsp3*** card.

A maximum of 84 *Q921* component instances is allowed on a ***2pOC3ChSmIrVsp3*** card.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the number of *Q921, LapV5* and *Cas* component instances under a given *Vgs* component is appropriate for the card being used.

ATTRIBUTE vgsNumberOfSignalingComponents

Description: This attribute indicates the maximum allowed number of signaling components.

Values:
40
64
84

ATTRIBUTE vgsCardType

Description	This attribute indicates the card type being used.
Values	12mVspAal Vsp2 2pGeMmSrVsp3 2pOC3ChSmIrVsp3 Vsp2W

ATTRIBUTE vgsSignalingComponent

Description	This attribute lists the names of the inappropriately provisioned signaling components.
List of	Q921 LapV5 Cas
List Size	3

RESPONSE Invalid Instance

Description	The *Add* command generates this response when the component instance has invalid characters. All printable ascii characters are valid except ‘<‘ ‘>’ ‘/’ ‘:’ ‘*’ ‘“‘ and whitespaces. **System action:** The *Add* command fails. **Operator action:** Update the software on the MDM. The *Help* command can be used to list the appropriate instance values.

ATTRIBUTE value

Description	The attribute indicates the value of a Fed as an ascii string for error details.
Values	String (0..255, ASCII)

RESPONSE Error:The noServiceResponse attribute must be set to noResponse when the lineType of the primary rate port is ....

Description

A *Check Prov* command produces this response if the *noServiceResponse* attribute is set to anything other than ***noResponse***, and the *lineType* of the primary rate port is set to ***cas***, ***d4Cas***, or ***esfCas***. This applies to the following card types: ***2pDS3cAal***, ***32pE1Aal*** and ***2pOC3ChSmIrVsp3***.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: Set the value of the *noServiceResponse* attribute (under the *Tc* component) to ***noResponse***.

ATTRIBUTE priLineType

Description

This attribute indicates the current value of the primary rate port's *lineType* attribute.

Values

cas
d4Cas
esfCas

RESPONSE Error:The total number of Isis components provisioned (...) exceeds the allowable maximum of ... instance(s).

Description

The *Check Prov* command produces this response when the maximum supported number of *Isis* components is exceeded.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator Action: Delete sufficient *Isis* subcomponents until the provisioned number is within the specified allowable limits.

ATTRIBUTE inwIpIsisIsisCount

Description

This attribute indicates the number of provisioned *Isis* components.

Values

Decimal (0..65535)

ATTRIBUTE inwIpIsisCountLimit

Description This attribute indicates the maximum number of *Isis* components.

Values Decimal (1..65535)

RESPONSE Error:The total number of Net components provisioned (...) exceeds the allowable maximum of ... instances per Isis component.

Description The *Check Prov* command produces this response when the maximum supported number of *Net* components per *Isis* instance is exceeded.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator Action: Delete sufficient *Net* subcomponents until the provisioned number is within the specified allowable limits.

ATTRIBUTE inwIpIsisNetCount

Description This attribute indicates the number of provisioned *Net* components found for this *Isis* instance.

Values Decimal (0..65535)

ATTRIBUTE inwIpIsisNetCountLimit

Description This attribute indicates the maximum number of *Net* subcomponents per *Isis* instance.

Values Decimal (1..65535)

RESPONSE Error:The total number of IsisIf components provisioned (...) exceeds the allowable maximum of ... instances per ProtocolPort component.

Description

The *Check Prov* command produces this response when too many *IsisIf* components are provisioned under the same *ProtocolPort* component.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator Action: Delete *IsisIf* component instances until the number provisioned, under the same *ProtocolPort* component, equals or is less than the specified limit.

ATTRIBUTE inwIpIsisIfInstanceCount

Description

This attribute indicates the number of provisioned *IsisIf* components found under the associated *ProtocolPort*.

Values

Decimal (0..65535)

ATTRIBUTE inwIpIsisIfInstanceCountLimit

Description

This attribute indicates the maximum number of *IsisIf* subcomponents per *ProtocolPort* instance.

Values

Decimal (1..65535)

RESPONSE The ... component has more than one settable link attribute. The -attribute option is required.

Description

The *find* command generates this response when the component specified by the *-freelinks* option has more than one link attribute. The user must specify one of the attributes via the *-attribute* option.

System action: The *Find* command is not executed
Operator action: Reissue the command with the *-attribute* option

ATTRIBUTE component

Description	This attribute contains the name of the component that was specified in the command.
Values	The name of the component

RESPONSE The attribute ... is not a settable link.

Description	This error response is generated when the operator specifies a non-settable link attribute for the -attribute option of the *Find* command. **System action**: The *Find* command is not executed **Operator action**: None

ATTRIBUTE attribute

Description	This attribute identifies the invalid attribute.
Values	String (0..255, ASCII)

RESPONSE The specified attribute is ambiguous with ....

Description	The *Find* command generates this error response if the attribute specified in the *-attribute* option is ambiguous for the given component class. **System action**: The *Find* command is not executed **Operator action**:Reenter the command, supplying an appropriate attribute name

ATTRIBUTE listOfAmbiguities

Description	This attribute contains the list of attributes that are ambiguous matches with the specified attribute.
Values	String (0..255, ASCII)

RESPONSE The ... component has no settable link attributes.

Description

The *Find* command generates this response when the component specified in the -freelinks option has no link attributes which can be set.

System action: The *Find* command is not executed
Operator action: None

ATTRIBUTE component

Description

This attribute contains the name of the component which was specified in the command.

Values

The name of the component

RESPONSE Warning:When calls are in progress, changing the ... attribute may result in some loss of traffic.

Description

A *Check Prov* command produces this response if the user changes the value of the *lossIntegrationPeriod* or *egressGain* attribute.

The following components support this response:
Brag
BragS
PktProf

System action: None.

Operator action: If calls are present, ensure that traffic disruption is acceptable before activating the provisioning.

ATTRIBUTE vgsPossibleTrafficLossAttribute

Description

The name of the attribute.

Values

lossIntegrationPeriod
egressGain

RESPONSE Error:The ... attribute must not be provisioned with an empty value.

Description

A *Check Prov* command produces this response if the user tries to provision the specified attribute with an empty value.

The following components support this response: *CasDefn* and *LocalAnnouncements*. *fileName* attribute may not have an empty value.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operation action: Provision the specified attribute with a non-empty value.

ATTRIBUTE vgsEmptyAttributeName

Description

The name of the attribute.

Values

Decimal (0..65535)

RESPONSE Error:The value provisioned for the ... attribute must only consist of the following characters:....

Description

A *Set* command produces this response if the user tries to provision a specified attribute with a value that does not consist entirely of the allowed characters.

The following components support this response: *CasDefn* and *LocalAnnouncements*: *fileName* attribute may only contain the following characters: [a..z, A..Z, 0..9, ., _]. *LocalAnnouncements* and *AnnouncementLanguage*: *defaultLanguage* attribute may only contain the following characters: [a..z].

System action: The *Set* command is rejected.

Operation action: Set the specified attribute to a value that only consists of the allowed characters.

ATTRIBUTE vgsAttributeContainingChars

Description	The name of the attribute which has failed the check.
Values	Decimal (0..65535)

ATTRIBUTE vgsCharsAllowed

Description	The list of the allowed characters.
List of	a..z A..Z 0..9 . _
List Size	4

RESPONSE Error:Standby Lsp ... must be provisioned with RsvpQ subcomponent when its primary Lsp sets serviceCategory attribute value to be diffServDomainElsp.

Description	The *Check Prov* command produces this response when a standby LSP having no *RsvpQos* subcomponent is added to the list of LSPs specified in the *StandbyLsp* attribute of a primary LSP whose value of *sc* attribute in *Msc* set to *diffServDomainElsp*. **System Action**: The *Check Prov* fails. **Operator Action**: Provision a *RsvpQos* subcomponent under the standby *Lsp* component.

ATTRIBUTE mplsMscDiffServStandbyLspError

Description	This attribute indicates the component name of the Lsp to be used in the response.
Values	The name of the component

RESPONSE Error:The netMask provisioned in ... forces the ipAddress value to be a broadcast address.

Description

A *Check Prov* command generates this response if the IP address provisioned in the parent component is a broadcast address.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the IP address of the parent component is not set to a broadcast address within the subnet.

ATTRIBUTE vrapBcIpAddrLogIf

Description

This attribute contains the name of the *Vr/n Pp/n Ip LogicalIf/ n.n.n.n* component in which the *netMask* is provisioned.

Values

The name of the component

RESPONSE Error:..., as specified by the subnetAccessName attribute, must have a CustSpec subcomponent.

Description

A *Check Prov* command generates this response if the *Vr/n* component specified by the *subnetAccessName* attribute does not have a *CustSpec* subcomponent provisioned.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Provision a *CustSpec* component under the specified *Vr/n* component instance.

ATTRIBUTE vrapCustSpecVr

Description

This attribute contains the name of the *Vr/n* component for which this check fails.

Values

The name of the component

RESPONSE Error:The featureList attribute of ... must contain ip when a VrAp component is used within this Vgs hierarchy.

Description

A *Check Prov* command generates this response if a user provisions a *VrAp* component on an *Lp* which has not been provisioned to support the ***ip*** feature.

System action: The *Check Prov* command fails. No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that ***ip*** is provisioned in the *featureList* of the *Sw Lpt* referenced from this *Vgs* hierarchy, or replace the *VrAp* with another access point type.

ATTRIBUTE vrapSwLpt

Description

This attribute contains the name of the *Sw Lpt* component.

Values

The name of the component

RESPONSE Warning:The Bgp component provisioned under ... is not supported because at least one other instance of a Vr with a CustSpec component exists. There is also an instance of a Vr with a Vr Pp linked to a 4pGe card.

Description

A *Check Prov* command generates this response if the *Vr Ip Bgp* component is provisioned on a node that has one other instance of *Vr* with *CustSpec* component. In addition, there is an instance of a *Vr Pp* linked to a **4pGe** card.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

ATTRIBUTE invalidCustSpecVrWithBgp

Description

This attribute indicates the name of the *VirtualRouter* component instance to which the *Bgp* component is added.

Values

The name of the component

RESPONSE Error: The ... attribute must be set.

Description

This response is produced by the *Check Prov* command if the user has not provisioned the *linkToEnetIf* attribute.

System action: The *Check Prov* command is failed.

Operator action: The remedial action is to *set* the *linkToEnetIf* attribute to a *La* component

ATTRIBUTE unprovisionedAttribute

Description

This attribute contains the numeric ID of the attribute which was left unprovisioned.

Values

Decimal (1..65535)

RESPONSE Error:One of the following two PerHopBehaviorMap subcomponent instances must be removed:

Description

A *Check Prov* command produces this response if produces this response if two *PerHopBehaviorMap* subcomponents instance values are equal.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Remove one of the two conflicting *PerHopBehaviorMap* components.

ATTRIBUTE phb1

Description

This attribute specifies the first of two conflicting *PerHopBehaviorMap* components.

Values

The name of the component

ATTRIBUTE phb2

Description

This attribute specifies the second of two conflicting *PerHopBehaviorMap* components.

Values

The name of the component

RESPONSE Error:The following two attributes must reference DifferentiatedServicesDomain PerHopBehavior component instances that are assigned equal TrafficClass values.

Description

A *Check Prov* command produces this response if for any of the following pairs of attributes:
ubrClp0ToPhb, *ubrClp1ToPhb*
nrtVbrClp0ToPhb, *nrtVbrClp1ToPhb*
rtVbrClp0ToPhb, *rtVbrClp1ToPhb*
cbrClp0ToPhb, *cbrClp1ToPhb*
if the *TrafficClass* component assigned to the *PerHopBehavior* component instance that matches the first attribute value is not equal to the *TrafficClass* component assigned to the *PerHopBehavior* component instance that matches the second attribute value.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Set the conflicting attributes to *PerHopBehavior* component instance values that satisfy the *TrafficClass* constraint.

ATTRIBUTE clp0

Description

This specifies the first of the two conflicting attributes.

Values

String (0..16, ASCII)

ATTRIBUTE clp1

Description

This specifies the second of the two conflicting attributes.

Values

String (0..16, ASCII)

RESPONSE Error:The following two attributes must reference DifferentiatedServicesDomain PerHopBehavior component instances that are

assigned drop precedence values such that the drop precedence for Clp0 is not higher than that for Clp1.

Description

A *Check Prov* command produces this response if for any of the following pairs of attributes:
ubrClp0ToPhb, *ubrClp1ToPhb*
nrtVbrClp0ToPhb, *nrtVbrClp1ToPhb*
rtVbrClp0ToPhb, *rtVbrClp1ToPhb*
cbrClp0ToPhb, *cbrClp1ToPhb*
if the *dropPrecedence* assigned to the *PerHopBehavior* component instance that matches the first attribute value is higher than the *dropPrecedence* assigned to the *PerHopBehavior* component instance that matches the second attribute value.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Set the conflicting attributes to *PerHopBehavior* component instance values that satisfy the *dropPrecedence* constraint.

ATTRIBUTE clp0

Description

This specifies the first of the two conflicting attributes.

Values

String (0..16, ASCII)

ATTRIBUTE clp1

Description

This specifies the second of the two conflicting attributes.

Values

String (0..16, ASCII)

RESPONSE Error:The media ... is not supported for Interface under Vrf.

Description

A *Check Prov* command produces this response if the *Interface* is a subcomponent of a *Vrf* and an invalid media type is added as a subcomponent of the *Interface*.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Remove the invalid media provisioned under the *Interface* subcomponent.

ATTRIBUTE invalidMedia

Description

Indicates the invalid media.

Values

String (1..20, ASCII)

RESPONSE Error:The media ... is not supported for Interface under Rtr.

Description

A *Check Prov* command produces this response if the *Interface* is a subcomponent of a *Router* and an invalid media type is added as a subcomponent of the *Interface*.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Remove the invalid media provisioned under the *Interface* subcomponent.

ATTRIBUTE invalidMedia

Description

Indicates the invalid media.

Values

String (1..20, ASCII)

RESPONSE Error:The total number of MplsCon components has exceeded the allowable limit of ... per shelf.

Description

The *Check Prov* command generates this response when the number of *MplsCon* components provisioned exceeds a preset number.

System Action: The *Check Prov* command fails.

Operator Action: Reduce the number of *MplsCon* components provisioned.

ATTRIBUTE atmMplsConTooManyMplsConsErr

Description

This attribute indicates the maximum number of *MplsCon* components that can be provisioned on a switch. This value is a constant, set within the software.

Values

Decimal (0..2048)

RESPONSE Error:The ... attribute must take a value within the range -12 to 12 dB.

Description

A *Check Prov* command produces this response if the specified attribute has been provisioned to take a value outside the range -12 to 12 dB and the *featureList* attribute (under the *Lpt* component) is set to ***vgsAtm*** or ***vgsIp***.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the value provisioned for the specified attribute lies within the range -12 to 12 dB.

ATTRIBUTE vgsTdmNetworkProfileRange

Description

The name of the attribute requiring modification.

Values

ingressGain
egressGain

RESPONSE Error:The echoCancelTailLength attribute must be set to ....

Description

A *Check Prov* command produces this response if the *echoCancellationTailLength* attribute has been set to a value other than that specified in the response.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *echoCancellationTailLength* attribute is set to the recommended value.

ATTRIBUTE vgsTdmNetworkProfileEcanTail

Description

The value to set the *echoCancellationTailLength* attribute to.

Values

64
128

RESPONSE Error:The moduleType attribute must take one of the following values:...

Description

A *Check Prov* command produces this response if the *moduleType* attribute is not assigned a recommended value.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Change the *moduleType* attribute to one of the recommended values.

ATTRIBUTE vspPModModuleType

Description

This attribute indicates the allowed values for the *moduleType* attribute.

List of

none
vpm
spm

List Size

2

RESPONSE Error:The NextHop Address ... can not be equal to any Interface address if it belongs to any subnets provisioned under a Vrf.

Description

This error message appears when the value of *NextHop* provisioned for a static *RouteEntry* belongs to one of the subnets provisioned under a
Vrf; however, the *NextHop* address is equal to the index value of some
Interface component.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Change the *NextHop* address not equal to the index value of any *Interface* component.

ATTRIBUTE invalidNextHopAddress

Description

This attribute contains the value of an invalid *NextHop* address.

Values

IP address

RESPONSE Error: The NextHop Address ... does not belong to any of the subnets provisioned under the Rtr.

Description

This error message appears when the value of a *NextHop* provisioned for a static *RouteEntry* does not belong to one of the subnets provisioned under the *Rtr*. Each provisioned *NextHop* should belong to a valid subnet.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Add an *Interface* entry under *Rtr* component or change the *NextHop* address to reflect to one of the subnets provisioned by *Interface* entry.

ATTRIBUTE invalidNextHopAddress

Description

This attribute contains the value of invalid *NextHop* address.

Values

IP address

RESPONSE Error:The NextHop Address ... can not be equal to any Interface address if it belongs to any subnets provisioned under a Rtr.

Description

This error message appears when the value of *NextHop* provisioned for a static *RouteEntry* belongs to one of the subnets provisioned under a
Rtr; however, the *NextHop* address is equal to the index value of some
Interface component.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Change the *Nexthop* address not equal to the index value of any *Interface* component.

ATTRIBUTE invalidNextHopAddress

Description

This attribute contains the value of an invalid *NextHop* address.

Values

IP address

RESPONSE Error: The NextHop Address ... does not belong to any of the subnets provisioned under a Vrf.

Description

This error message appears when the value of a *NextHop* provisioned for a static *RouteEntry* does not belong to one of the subnets provisioned under a *Vrf*. Each provisioned *NextHop* should belong to a valid subnet.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Add an *Interface* entry under *Vrf* component or change the *NextHop* address to reflect to one of the subnets provisioned by *Interface* entry.

ATTRIBUTE invalidNextHopAddress

Description

This attribute contains the value of invalid *NextHop* address.

Values

IP address

RESPONSE Warning:... The value of the following Gsc/... timers must be less than or equal to 40 seconds: ((t3CreateResponse * n3CreateRequest) + (ssfChargingGuardTimer * (ssfChargingGuardRetryAttempts + 1)) + (t7Timer * t7Retries)).

Description

A *Check Prov* command generates this response when the following expression
((*t3CreateResponse* * *n3CreateRequest*) +
(*ssfChargingGuardTimer* *
(*ssfChargingGuardRetryAttempts* + 1)) +
(*t7Timer* * *t7Retries*))
is greater than 40 seconds.

The *t3CreateResponse*, *n3CreateRequest*, *ssfChargingGuardTimer*, *ssfChargingGuardRetryAttempts* attributes belong to the *Sgsn GprsSubscriberControlCp* component.

The *t7Timer, t7Retries* attributes belong to the *Gsc/x GprsPacketFlowManagement* component.

System action: The *Check Prov* command succeeds.

Operator action: It is recommended to ensure that the following expression evaluates to a value less than or equal to 40 seconds:
((*t3CreateResponse* * *n3CreateRequest*) +
(*ssfChargingGuardTimer* *
(*ssfChargingGuardRetryAttempts* + 1)) +
(*t7Timer* * *t7Retries*)).

ATTRIBUTE component

Description

This attribute specifies the *Gsc* component instance that fails because
((t3CreateResponse * n3CreateRequest) +
(ssfChargingGuardTimer *
(ssfChargingGuardRetryAttempts + 1)) +
(t7Timer * t7Retries))
is greater than 40 seconds.

The *t3CreateResponse*, *n3CreateRequest*,

ssfChargingGuardTimer, *ssfChargingGuardRetryAttempts* attributes belong to the *Sgsn GprsSubscriberControlCp* component.

The *t7Timer, t7Retries* attributes belong to the *Gsc/x GprsPacketFlowManagement* component.

Values — Decimal (1..15)

RESPONSE Error:The total number of IsisIf components provisioned (...) exceeds the allowable maximum of ... instances.

Description — The *Check Prov* command produces this response when the maximum supported number of *IsisIf* components is exceeded.

System Action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* command completes without errors.

Operator Action: Delete sufficient *IsisIf* components until the provisioned number is within the specified allowable limits.

ATTRIBUTE inwIpIsisIsisIfCount

Description — This attribute indicates the number of *IsisIf* components.

Values — Decimal (0..65535)

ATTRIBUTE inwIpIsisIsisIfCountLimit

Description — This attribute indicates the maximum number of *IsisIf* components.

Values — Decimal (1..65535)

RESPONSE Error:The packetDelayVariationTolerance attribute can not be set to adaptive on a ... card.

Description

A *Check Prov* command produces this response if the user sets the *packetDelayVariationTolerance* attribute to ***adaptive*** on one of the following cards:

12mVspAal,
Vsp2,
Vsp2W.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *packetDelayVariationTolerance* attribute is set to a value other than ***adaptive***.

ATTRIBUTE vgsCardType

Description

This attribute indicates the card type being used.

Values

12mVspAal
Vsp2
Vsp2W

RESPONSE Error: The specified Address ... is not a valid IP interface address.

Description

This error message appears when the specified IP interface address is an address of class A, B or C. but it is not valid for the interface.

ATTRIBUTE invalidAddress

Description

This attribute contains the value of invalid IP address.

Values

IP address

RESPONSE For security reasons, ... files cannot be deleted.

Description

This response is generated when the operator tries to remove files which should not be deleted for security reasons.

ATTRIBUTE secureFileType

Description

This attribute gives the type of file that is being removed.

Values
log
commit

RESPONSE Setting the ... attribute is not allowed for this data type.

Description
This response is issued whenever a user tries to modify an attribute for a particular type of data due to security reasons.

ATTRIBUTE dataType

Description
This attribute identifies the attribute that cannot be modified by a user.

Values
Decimal (0..4294967295)

RESPONSE For security reasons, ... files cannot be touched.

Description
This response is generated when the operator tries to touch a file which should not be touched for security reasons.

ATTRIBUTE secureFileType

Description
This attribute gives the type of file that is being touched.

Values
log

RESPONSE The following patches are superseded by the released patches listed next to them. These superseded patches need to be replaced with the newer patches in the SW patchList:

Description
This response is issued when there are new released patches that supersede patches already present in the *Sw patchList.* The patches in the *Sw patchList* need to be removed from the patch list and replaced with the patches that supersede them. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfReleasedSuper

Description
This attribute contains the list of released patch pairs. The first patch of the pair is the patch which is to be superseded, the other patch is the one that has superseded the previous patch.

List of
String (1..30, ASCII)

RESPONSE The following patches are released and can be applied, however, the prerequisite patch listed beside each patch is either not eligible for auto-application or is missing from the CP disk:

Description: This response is issued when a prerequisite patch is either missing or ineligible for automatic application, thus preventing the automatic application of the patch in question. The ineligible patch may still be in verification status, or may be in a category that is not eligible for automatic application, or may not be set to Auto-Apply, or may even have conflicting relationships that prohibit the patch from application status. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfReleasedPrereq

Description: This attribute is a list of prerequisite patch pairs that cannot be applied.

List of: String (1..30, ASCII)

RESPONSE The following patches are released and can be added to the Sw patchList:

Description: The *Check Sw AutoPatch* command produces this response when released patches are applicable to the current provisioning and need to be added in the *Sw patchList* attribute.

ATTRIBUTE listOfReleasedPatches

Description: This attribute contains the list of released patches that can be added to the *Sw patchList*.

List of: String (1..30, ASCII)

RESPONSE The following Reset patches are released and should be added to the Sw patchList:

Description: The response is issued when Reset patches are available in released status. Reset patches are not eligible for automatic application, however, such patches that have been declared released should be strongly considered for manual application. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfReleasedResets

Description	This attribute contains the list of released Reset patches that should be added to the *Sw patchList.*
List of	String (1..30, ASCII)

RESPONSE Mutually exclusive released patches exist. Only one patch from each pair can be added to the provisioned patch list:

Description	The *Check Sw AutoPatch* command produces this response when mutually exclusive released patches exist. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command. **Operator Action:** Select one patch from each pair when updating the *SW patchList* attribute. **System Action**: Command *Check Sw AutoPatch* fails

ATTRIBUTE listOfReleasedMutex

Description	This attribute is a list of mutually exclusive released patch pairs.
List of	String (1..62, ASCII)

RESPONSE The following patches have been declared obsolete, with an emergency removal notice. These patches should be removed from the Sw patchList at the earliest opportunity:

Description	This response is issued when there are obsolete patches present in the *Sw patchList*. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfObePatches_c

Description	This attribute contains the list of Obsolete patches that should be removed from the Sw patchList.
List of	String (1..30, ASCII)

RESPONSE The following patches are in verification status and may be manually applied if required (please see patch documentation to determine if you require any of these patches):

Description	This response is issued when there are verification patches relevant to the switch which are not in the *Sw patchList.* These patches may be either TAP or Reset. These patches may be required based on the documentation for each patch. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfVerificationPatches

Description	This attribute contains the list of verification patches relevant to the provisioned software configuration.
List of	String (1..30, ASCII)

RESPONSE The following Reset patches have been superseded by the patches listed next to them. It may be advantageous to replace these patches with the superseding ones:

Description	This response is issued when there are Reset patches in the *Sw patchList* that have been superseded. Refer to each patches' documentation to determine if it is advantageous to supersede the referred patch with the superseded one. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfResetSuper

Description	This attribute contains the list of pairs of Reset patches and the patches of which they are superseded.
List of	String (1..30, ASCII)

RESPONSE The following patches have been declared obsolete due to a defect. These patches should be removed from the Sw patchList:

Description	This response is issued when there are obsolete patches present in the *Sw patchList*. Refer to each patches' documentation to determine if it is advantageous to obsolete the referred patch. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfObsPatches

Description	This attribute contains the list of Obsolete patches that should be removed from the *Sw patchList*.
List of	String (1..30, ASCII)

RESPONSE The following released patches have been superseded by the verification patches listed next to them. It may be advantageous to replace these patches with the superseding ones:

Description	This response is issued when there are verification patches that supersede released patches. Refer to each patches' documentation to determine if it is advantageous to supersede the referred patch with the superseded one. This response is issued when the *all* option is used for the *Check Sw AutoPatch* command.

ATTRIBUTE listOfVerifSuperReleased

Description	This attribute contains the list of released patches and the verification patches by which they are superseded.
List of	String (1..30, ASCII)

RESPONSE The Sw patchList should contain the following patches:

Description	This response is issued every time the *Check Sw AutoPatch* command is run to summarize for the operator what the *Sw patchList* should contain.

ATTRIBUTE listOfFinalPatches

Description	This attribute contains the list of patches generated from the *Check Sw AutoPatch* command that should be in the *Sw patchList* attribute.
List of	String (1..30, ASCII)

RESPONSE

Description	This group contains the real-time collected statistics of the *Vgs* component. These statistics are not collected on ***Vsp2*** or ***12mVspAal cards.***

ATTRIBUTE congestedSeconds (congSec)

Description: This attribute counts how many seconds that new media connection requests have been rejected because the Gateway was busy.

Values: Decimal (0..4294967295)

ATTRIBUTE overloadRejectedCommands (olRejCom)

Description: This attribute counts the control protocol commands that were rejected due to input message buffer overload.

Values: Decimal (0..4294967295)

ATTRIBUTE connectionsSetup (connSetup)

Description: This attribute counts the media connections successfully established by this gateway *Vgs* component and acknowledged to the Controller.

The value wraps to ***0*** when the maximum value is exceeded.

Values: Decimal (0..4294967295)

ATTRIBUTE connectionsLostToPacketNwLoss

Description: This attribute counts the connections lost to Gateway detectable network failures. This includes:
- individual connection media integrity time-outs.
-bulk connection loss due to *ATM VCC* failure or release or associated component deprovisioning.
-bulk connection loss due to local IP media link failure or associated component deprovisioning.

The counter wraps to ***0*** when it exceeds the maximum value.

Values: Decimal (0..4294967295)

ATTRIBUTE connectionsLostToTdmPortLoss

Description: This attribute counts the connections lost to Gateway detectable TDM unavailability since the last DCS real-time statistics request. This includes deprovisioning of a link with active connections.

The counter wraps to ***0*** when it exceeds the maximum value.

Values Decimal (0..4294967295)

ATTRIBUTE activeConnectionsAvg

Description This attribute indicates the average number of connections since the last request.The values are sampled every 1 second and averaged over the period.

Values Decimal (0..4294967295)

ATTRIBUTE activeConnectionsMax

Description This attribute indicates the maximum number of connections at any point since the last request.

Values Decimal (0..4294967295)

ATTRIBUTE activeConnectionsMin

Description This attribute indicates the minimum number of connections at any point since the last request.

Values Decimal (0..4294967295)

RESPONSE No name

Description This group contains the collected statistics of the *DigitCollection* component.

ATTRIBUTE rejectedCollectionRequests

Description This attribute counts the digit collection requests rejected due to lack of resources. A persistent increase indicates an engineered mismatch between demand for and capacity of the digit collection resources.

This counter wraps to zero if its maximum is reached.

Values Decimal (0..4294967295)

RESPONSE No name

Description: This group contains the real-time collected statistics for the H248 component.
These statistics are not collected on ***Vsp2*** or ***12mVspAal*** cards.

ATTRIBUTE failovers

Description: This attribute counts the number of times the gateway has performed failover procedures and attempted contact with another controller since the last DCS real-time statistics poll.

Values: Decimal (0..65535)

ATTRIBUTE txRetransmissions (txRetran)

Description: This attribute counts the number of media gateway control protocol retransmissions sent by the Gateway. Each retransmission of a given transaction will be individually counted.

Values: Decimal (0..4294967295)

ATTRIBUTE rxRetransmissions (rxRetran)

Description: This attribute counts the number of media gateway control protocol retransmissions received by the Gateway. Each retransmission of a given transaction will be individually counted.

Values: Decimal (0..4294967295)

RESPONSE

Description: This collected statistics record contains the CPU resource utilization statistics collected at the real-time collection intervals for the *PBlock* component.
These statistics will not be collected on ***12mVspAal*** and ***Vsp2*** cards.

ATTRIBUTE cpuUtilAvg

Description: This attribute indicates average processing utilization of this *PBlock* component. This value is calculated by taking the average of values sampled at 1 second intervals.

Values: Decimal (0..100)

Units	%

ATTRIBUTE cpuUtilAvgMin

Description	This attribute indicates the minimum average processing utilization of this *PBlock* component.
Values	Decimal (0..100)
Units	%

ATTRIBUTE cpuUtilAvgMax

Description	This attribute indicates the maximum average processing utilization of this *PBlock* component.
Values	Decimal (0..100)
Units	%

RESPONSE For security reasons, ... files cannot be unprotected.

Description	This response is generated when the operator tries to unprotect a file which should not be unprotected for security reasons.

ATTRIBUTE secureFileType

Description	This attribute gives the type of file that is being touched.
Values	log commit

RESPONSE

Description	This RtStats record is generated at the end of each 5-minute collection interval. It contains information related to the *FabricCard* component.

ATTRIBUTE maxFabricTemperature

Description	This attribute indicates the maximum temperature which the Fabric reached during the last collection interval.
Values	Decimal (0..100)
Units	degreeC

RESPONSE

Description	This RtStats collected event record contains statistics related to IP traffic passing through this interface.

ATTRIBUTE linkCapacity

Description	This attribute indicates the maximum bandwidth of the link available to layer 3 packet services.
Values	Long Integer
Units	octet/s

ATTRIBUTE inBytes

Description	This attribute indicates the total number of bytes incoming to this physical interface during the last collection interval. This excludes overhead from layer 2 frame headers.
Values	Long Integer

ATTRIBUTE outBytes

Description	This attribute indicates the total number of bytes outgoing from this physical interface during the last collection interval. This excludes overhead from layer 2 frame headers.
Values	Long Integer

ATTRIBUTE inPackets

Description	This attribute indicates the total number of IP and ARP packets incoming to this physical interface during the last collection interval.
Values	Long Integer

ATTRIBUTE outPackets

Description	This attribute indicates the total number of IP and ARP packets outgoing from this physical interface during the last collection interval.
Values	Long Integer

ATTRIBUTE inLocalTcpPackets

Description	This attribute indicates the total number of TCP packets incoming to this physical interface during the last collection interval and destined to this shelf, with the exception of packets destined to the VSP cards.
Values	Long Integer

ATTRIBUTE inLocalUdpPackets

Description	This attribute indicates the total number of UDP packets incoming to this physical interface during the last collection interval and destined to this shelf, with the exception of packets destined to the VSP cards.
Values	Long Integer

ATTRIBUTE inLocalIcmpPackets

Description	This attribute indicates the total number of ICMP packets incoming to this physical interface during the last collection interval and destined to this shelf, with the exception of packets destined to the VSP cards.
Values	Long Integer

ATTRIBUTE inLocalOspfPackets

Description	This attribute indicates the total number of OSPF packets incoming to this physical interface during the last collection interval and destined to this shelf, with the exception of packets destined to the VSP cards.
Values	Long Integer

ATTRIBUTE inLocalArpPackets

Description	This attribute indicates the total number of ARP packets incoming to this physical interface during the last collection interval and destined to this shelf, with the exception of packets destined to the VSP cards
Values	Long Integer

ATTRIBUTE inLocalPackets

Description	This attribute indicates the total number of packets incoming to this physical interface during the last collection interval and destined to this shelf that do not fit into the TCP, UDP, ICMP, ARP, or OSFP classification.
Values	Long Integer

ATTRIBUTE outLocalTcpPackets

Description	This attribute indicates the total number of TCP packets leaving this interface during the last collection interval, which originated on this shelf, with the exception of packets from the VSP cards.
Values	Long Integer

ATTRIBUTE outLocalUdpPackets

Description	This attribute indicates the total number of UDP packets leaving this interface during the last collection interval, which originated on this shelf, with the exception of packets from the VSP cards.
Values	Long Integer

ATTRIBUTE outLocalIcmpPackets

Description	This attribute indicates the total number of ICMP packets leaving this interface during the last collection interval, which originated on this shelf, with the exception of packets from the VSP cards.
Values	Long Integer

ATTRIBUTE outLocalOspfPackets

Description	This attribute indicates the total number of OSPF packets leaving this interface during the last collection interval, which originated on this shelf, with the exception of packets from the VSP cards.
Values	Long Integer

ATTRIBUTE outLocalArpPackets

Description	This attribute indicates the total number of OSPF packets leaving this interface during the last collection interval, which originated on this shelf, with the exception of packets from the VSP cards.

Values Long Integer

ATTRIBUTE outLocalPackets

Description This attribute indicates the total number of packets leaving the interface during the last collection interval, which originated on this shelf, that do not fit into the TCP, UDP, ICMP, ARP, or OSPF classification.

Values Long Integer

ATTRIBUTE inLocalDiscarded

Description This attribute indicates the total number of malformed IP packets incoming to the interface during the last collection interval. These are packets which are corrupted.

Values Long Integer

ATTRIBUTE outLocalDiscarded

Description This attribute indicates the total number of packets attempting to exit the interface during the last collection interval which were rejected. These are packets which are corrupted or lost due to congestion.

Values Long Integer

ATTRIBUTE inLocalExceptions

Description This attribute indicates the total number of packets received during the last collection interval on this interface and destined for this shelf that require exception handling, with the exception of packets destined to the VSP cards.

Values Long Integer

ATTRIBUTE inFwdExceptions

Description This attribute indicates the total number of packets received during the last collection interval on this interface, not destined for this shelf, that require exception handling.

Values Long Integer

RESPONSE Invalid Logical Processor: Component Lp/... is not currently provisioned.

Description This response is generated when the user issues a *Check Prov* command against an *LpG* that is provisioned with an *Lp* that does not exist in the *Shelf*.

ATTRIBUTE lpgInvalidLpError

Description This attribute indicates the instance value of the *Lp* that does not exist in the Shelf.

Values Decimal (1..15)

RESPONSE Lp/... can not be provisioned under both LpG/... and LpG/... at the same time.

Description This response is generated when the user issues a *Check Prov* command against an *LpG* that is provisioned with an *Lp* already configured under another *LpG*. Any given Lp must be associated to a maximum of one *LpG*.

ATTRIBUTE lpgDuplicateLpInUseError

Description This attribute indicates the instance value of the *Lp* that is duplicated under more than one *LpG*.

Values Decimal (1..15)

ATTRIBUTE lpgFirstLpGNumberError

Description This attribute indicates the instance value of the first *LpG* provisioned with a duplicated *Lp*.

Values Decimal (1..7)

ATTRIBUTE lpgSecondLpGNumberError

Description This attribute indicates the instance value of the second *LpG* provisioned with a duplicated *Lp*.

Values Decimal (1..7)

RESPONSE Provisioning file ... has failed sanity andcannot be loaded.

Description

This response is generated by the *Load* or *Apply* commands when the specified file's sanity is failed.

System action: The command is ignored.
Operator action: Re-enter the command with properly saved provisioning file.

ATTRIBUTE file

Description

This attribute is the name of the file that has failed sanity.

Values

String (1..40, ASCII)

RESPONSE Error:When custType is pvg, and a protected route is provisioned under ... the preConfigFwdPath of ... must be set to enabled.

Description

A *Check Prov* command generates this response if the *preConfigFwdPath* attribute of the *Vr Ip* component is not set to ***enabled*** when a protected route is provisioned and the attribute *custType* of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that *preConfigFwdPath* of the *Vr Ip* component is set to ***enabled***.

ATTRIBUTE vrComponentName

Description

This attribute indicates the name of the *Vr* component instance under which the protected route is provisioned.

Values

The name of the component

ATTRIBUTE vrIpComponentName

Description

This attribute indicates the name of the *Vr Ip* component.

Values

The name of the component

RESPONSE Error:When custType is pvg, and a protected route is provisioned under ... the defaultProtectedFailureBehavior of ... must be set to discard.

Description

A *Check Prov* command generates this response if the *defaultProtectedFailureBehavior* attribute of the *Vr Ip Static* component is not set to ***discard*** when a protected route is provisioned and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that *defaultProtectedFailureBehavior* attribute of the *Vr Ip Static* component is set to ***discard*** when a protected route is provisioned and the attribute *custType* of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE vrComponentName

Description

This attribute indicates the name of the *Vr* component instance under which the protected route is provisioned.

Values

The name of the component

ATTRIBUTE vrIpStaticComponentName

Description

This attribute indicates the name of the *Vr Ip Static* component.

Values

The name of the component

RESPONSE Error:When custType is pvg, the heartbeatDeadInterval of protected route...must be set to sameAsStatic.

Description

A *Check Prov* command generates this response if the *heartbeatDeadInterval* attribute of the *Vr Ip Static Route* component is not set to ***sameAsStatic*** when the route is a protected route and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that *heartbeatDeadInterval* of the *Vr Ip Static Route* component is set to ***sameAsStatic***.

ATTRIBUTE protectedRouteName

Description: This attribute indicates the name of the *Vr Ip Static Route* component instance which is a protected route.

Values: The name of the component

RESPONSE Warning:When custType is pvg, setting the defaultHeartbeatFailureBehavior of ... to hard may result in removal of a protected route if the heartbeat fails.

Description: A *Check Prov* command generates this response if the *defaultHeartbeatFailureBehavior* attribute of the *Vr Ip Static* component is set to ***hard*** when a protected route is provisioned and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

ATTRIBUTE vrIpStaticComponentName

Description: This attribute indicates the name of the *Vr Ip Static* component.

Values: The name of the component

RESPONSE Error:When custType is pvg, and a protected route is provisioned under ... the defaultHeartbeatDeadInterval of ... must not be disabled.

Description: A *Check Prov* command generates this response if the *defaultHeartbeatDeadInterval* attribute of the *Vr Ip Static* component is not set to a value other than ***disabled*** when a protected route is provisioned.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that *defaultHeartbeatDeadInterval* attribute of *Vr Ip Static* component is not ***disabled*** when a protected route is provisioned.

ATTRIBUTE vrComponentName

Description	This attribute indicates the name of the *Vr* component instance under which the protected route is provisioned.
Values	The name of the component

ATTRIBUTE vrIpStaticComponentName

Description	This attribute indicates the name of the *Vr Ip Static* component.
Values	The name of the component

RESPONSE

Description	This real-time statistics event contains the attributes for the *Shelf* performance measurement (real-time statistics) record.

ATTRIBUTE criticalSetAlarms

Description	This attribute indicates the number of critical alarms that were set during the last collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE majorSetAlarms

Description	This attribute indicates the number of major alarms that were set during the last collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE minorSetAlarms

Description	This attribute indicates the number of minor alarms that were set during the last collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE criticalClearAlarms

Description	This attribute indicates the number of critical alarms that were cleared during the last collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE majorClearAlarms

Description	This attribute indicates the number of major alarms that were cleared during the last collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE minorClearAlarms

Description	This attribute indicates the number of minor alarms that were cleared during the last collection interval.
Values	Decimal (0..4294967295)

RESPONSE Error:The following two PolicedPhb components conflict with each other because they have the same component instance value:

Description	Two *Meter* subcomponents of one *PolicerProfile* component must not have *PolicedPhb* subcomponents with equal component instance values. **System Action**: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors. **Operator Action**: Remove one of the conflicting *PolicedPhb* components.

ATTRIBUTE phb1

Description	This attribute specifies the first of two conflicting *PolicedPhb* components.
Values	The name of the component

ATTRIBUTE phb2

Description	This attribute specifies the second of two conflicting *PolicedPhb* components.
Values	The name of the component

RESPONSE Error:When custType is pvg and the mode of ... is interVrConnection the destination of the static route...must be the IP subnet defined for a Vsp card.

Description

A *Check Prov* command generates this response if the destination of the *Vr Ip Static Route* component is not an IP subnet defined for the *Nsta Vgs IpMConn* component on a VSP card when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the destination of the *Vr Ip Static Route* component is an IP subnet defined for the *Nsta Vgs IpMConn* component on a VSP card when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE vmIfComponentName

Description

This attribute indicates the name of the *Vm If* component instance.

Values

The name of the component

ATTRIBUTE staticRouteComponentName

Description

This attribute indicates the name of the *Vr Ip Static Route* component instance.

Values

The name of the component

RESPONSE Error:When custType is pvg and the mode of ... is interVrConnection the static route...is not allowed.

Description

A *Check Prov* command generates this response if a default *RouteEntry/0.0.0.0* is provisioned when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that no default *RouteEntry/0.0.0.0* is provisioned when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE vmIfComponentName

Description

This attribute indicates the name of the *Vm If* component instance.

Values

The name of the component

ATTRIBUTE discardDefaultStaticRouteName

Description

This attribute indicates the name of the default *Vr Ip Static Route* component instance.

Values

The name of the component

RESPONSE Error:When the custType is pvg the lacpMode of ... must be passive.

Description

A *Check Prov* command generates this response if the *lacpMode* attribute of the *Lag* component is not set to ***passive*** when the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *lacpMode* attribute of the *Lag* component is set to ***passive*** when the attribute *custType* of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE lagInstanceName

Description This attribute indicates the name of the *Lag* component instance.

Values The name of the component

RESPONSE Warning:When custType is pvg and there is at least one Vr Pp linked to a 4pGe card it is recommended that the phbRoutingSource of ... should be set to cs1.

Description A *Check Prov* command generates this response if the *phbRoutingSource* attribute of the *Vr Dsd* component is not set to ***cs1*** when a *Vr Pp* component is linked to a ***4pGe*** card and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

ATTRIBUTE vrDiffServDomainName

Description This attribute indicates the name of the *Vr Dsd* component instance.

Values The name of the component

RESPONSE Warning:When custType is pvg and there is at least one Vr Pp linked to a 4pGe card it is recommended that the phbGeneralSource of ... should be set to df.

Description A *Check Prov* command generates this response if the *phbGeneralSource* attribute of the *Vr Dsd* component is not set to ***df*** when a *Vr Pp* component is linked to a ***4pGe*** card and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

ATTRIBUTE vrDiffServDomainName

Description This attribute indicates the name of the *Vr Dsd* component instance.

Values The name of the component

RESPONSE Warning:When custType is pvg it is recommended that the baMode of ... should be set to preserve.

Description

A *Check Prov* command generates this response if the *baMode* attribute of the *Vr Ip DiffServ Is* component is not set to ***preserve*** when the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

ATTRIBUTE vrIpDiffServIsName

Description

This attribute indicates the name of the *Vr Ip DiffServ Is* component.

Values

The name of the component

RESPONSE Warning:When custType is pvg the value of minimumLinks in all of the following Lag components is recommended to be the same as they are all linked to the same Vr....

Description

A *Check Prov* command generates this response if different *minimumLinks* values are assigned to *Lag* component instances which are linked to the same *Vr* component instance when the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

ATTRIBUTE lagInstanceList

Description

This attribute contains the list of the *Lag* component instances which are linked to the same *Vr* but have different values of *minimumLinks*.

List of

The name of the component

RESPONSE Warning:When custType is pvg and ... is used as a protected default route the minimumLinks of ... may be too low to provide flow protection during port failures if the flow rate exceeds the throughput of the ... active links.

Description

A *Check Prov* command generates this response when the *custType* attribute of the *Vr CustSpec* component is ***pvg*** and the *Lag* is used as a protected default route but has its *minmumLinks* set to a value which is too low.

System action: No action is required from the system.

Operator action: No action is expected from the operator.

ATTRIBUTE lagInstanceName

Description

This attribute indicates the name of the *Lag* component instance.

Values

The name of the component

ATTRIBUTE valueOfMinimumActiveLinks

Description

This attribute indicates the value of the *minimumLinks* of the *Lag* component instance.

Values

Decimal (1..31)

ATTRIBUTE numberOfActiveLinks

Description

This attribute indicates the number of the *Lag Link* component instances.

Values

Decimal (1..31)

RESPONSE Software patching failed due to the following reason:.....

Description

The *Activate Prov* command generates this error response when an event occurs preventing hitless software patching to proceed.

ATTRIBUTE pcsHspAbortReason

Description

This attribute indicates why Hitless Software Patching has been aborted.

Values

Abort reason undetermined.
A software error occured.

HSP stopped via StopProv'command.'
LP involved in patching went offline unexpectedly:
LP could not load software:

ATTRIBUTE pcsString

Description: This attribute may be used to provide further information.

Values: String (0..320, ASCII)

RESPONSE Continue Prov failed due to a pausable event, pause reason: .....The -force option will continue the software patching, but service outages may occur. To abort type Stop Prov.

Description: The *Continue Prov* command generates this response during Hitless Software Patching when issued without the *-force* option and when certain conditions are not met. The *Continue Prov* command will succeed only if the pausable events are all cleared. The operator can decide to force the Hitless Software Patching to resume by typing *Continue -force Prov* or to abort the Hitless Software Patching by typing *Stop Prov*.
System action: The *Continue Prov* command will resume software patching if the pausable conditions have been cleared. The *Continue -force Prov* command will ignore the pausable events and resume with the software patching. The *Stop Prov* command will cause a rollback to the current view software.
Operator action: Follow appropriate procedures for software patching.

ATTRIBUTE pcsHspTransferOfServices

Description: This attribute indicates which LPs failed to transfer their services to another processor card within the allotted time.

Values: String (0..320, ASCII)

ATTRIBUTE pcsHspCannotTransferServices

Description: This attribute indicates which LPs cannot transfer their services to another processor card.

Values: String (0..1120, ASCII)

ATTRIBUTE pcsHspProvidingServices

Description	This attribute indicates which LPs failed to indicate that they are providing service within the allotted time.
Values	String (0..320, ASCII)

ATTRIBUTE pcsHspPausibleAlarm

Description	This attribute indicates the LPs which have pausable alarms issued against it.
Values	String (0..320, ASCII)

ATTRIBUTE pcsHspAppsNotReady

Description	This attribute indicates which LPs have applications which are not ready.
Values	String (0..320, ASCII)

RESPONSE The software patching is paused because of the following reason:.....To resume, type Continue Prov. To stop, type Stop Prov.

Description	The *Activate Prov* command generates this response during Hitless Software Patching when issued without the *-noPause* option and when certain conditions are not met. The *Activate Prov* command always generates this message during Hitless Software Patching when issued with the *-pause* option. This response indicates that the software migration is paused. The Hitless Software Patching will pause as long as no action is taken by the operator. **System action**: The *Continue Prov* command will resume software patching if the pausable conditions have been cleared. The *Stop Prov* command will cause a rollback to the current view software. **Operator action**: Follow appropriate procedures for software patching.

ATTRIBUTE pcsHspTransferOfServices

Description	This attribute indicates which LPs failed to transfer their services to another processor card within the allotted time.

Values String (0..320, ASCII)

ATTRIBUTE pcsHspCannotTransferServices

Description This attribute indicates which LPs cannot transfer their services to another processor card.

Values String (0..1120, ASCII)

ATTRIBUTE pcsHspProvidingServices

Description This attribute indicates which LPs failed to indicate that they are providing service within the allotted time.

Values String (0..320, ASCII)

ATTRIBUTE pcsHspPausibleAlarm

Description This attribute indicates the LPs which have pausable alarms issued against it.

Values String (0..320, ASCII)

ATTRIBUTE pcsHspAppsNotReady

Description This attribute indicates which LPs have applications which are not ready.

Values String (0..320, ASCII)

ATTRIBUTE pcsHspPauseOptionIssued

Description This attribute indicates that the *Activate Prov* command was issued with the *-pause* option.

Values String (0..320, ASCII)

RESPONSE The following LPs will participate in software patching: ... The patching can be stopped by issuing the Stop Prov command.

Description The *Activate Prov* command generates this response at the beginning of Hitless Software Patching, providing a list of Logical Processors that will be participating. At this point the operator can stop the Hitless Software Patching by issuing the *Stop Prov* command.

ATTRIBUTE pcsLpOper

Description	This attribute lists the LPs that are participating in the Hitless Software Patching.
List of	The name of the component
List Size	16

RESPONSE Error:The tunnelDestinationAddress ... must be one of the public tunnel addresses of the remote tunnel endpoints.

Description	The *Check Prov* command produces this response if an invalid IP address, specified for the tunnel endpoint, is not listed with the public tunnel addrsses of the remote tunnel endpoints. The *tunnelDestinationAddress* must be specified in the *destinationAddresses* attribute of the *InwIpTunnelMsep* component or the *destinationAddress* attribute of the *InwIpTunnelSep* component in the same shared domain.

ATTRIBUTE invalidTda

Description	This attribute specifies the invalid IP address of the *tunnelDestinationAddress* attribute.
Values	IP address

RESPONSE Error: The linkDestinationAddress can not be set to ....

Description	This error message appears when the provisioned media is not *Ppp* and the attribute *linkDestinationAddress* is provisioned with a non-zero value. System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors. Operator Action: Change the provisioned *linkDestinationAddress* under the *Interface* component.

ATTRIBUTE invalidLinkDestAddress

Description	This attribute contains the value of the invalid *linkDestinationAddress*.

Values IP address

RESPONSE Error: Some features in the Sw Lpt featureList attribute are not supported by the service bundle: ...

Description This response group informs the user that not all features in the *Sw Lpt featureList* are supported by the service bundle. The features not supported by the service bundle are also listed.
System action: The *Check Prov* command has failed. No *Activate Prov* command will be accepted until a subsequent *Check Prov* command completes without errors.
Operator action: Set the ***serviceBundleName*** attribue to a valid service bundle name. The valid bundle names for a ***16pOC3PosAtm*** card are:
allServices
mplsAtmIp
porsAtmIp
Note that service bundle ***allServices*** cannot be used with a card whose product code starts with NTHW44.

ATTRIBUTE rspNpuListOfUnsupportedFeatures

Description This attribute indicates the names of the features that are not supported by the provisionined service bundle.

Values String (0..255, ASCII)

RESPONSE Error:When the vgsIp feature is provisioned on a ... card, ... must be set to one of the following values:...

Description A *Check Prov* command produces this response if either of the attributes *defaultVoiceRate* or *tone2100Rate* has been set to ***32kG726*** and the feature ***vgsIp***, which is not capable of supporting G.726 on the current VSP card type, has been provisioned.

System action: No *Activate Prov* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Check to see if the feature ***vgsIp*** is required. If so, modify the attribute *tone2100Rate* to ***64kG711***, or modify the attribute *defaultVoiceRate* to either ***64kG711*** or ***8kG729***.

ATTRIBUTE vgsCardType

Description	This attribute indicates the VSP card type currently being used by PVG.
Values	2pOC3ChSmIrVsp3

ATTRIBUTE vgsPktProfAttributeName

Description	This attribute indicates which *PktProf* component attribute is being checked against the ***vgsIp*** feature.
Values	defaultVoiceRate tone2100Rate

ATTRIBUTE vgsPktProfAttributeValues

Description	This attribute indicates the allowed values for the *PktProf* component attribute that is being checked against the ***vgsIp*** feature.
List of	64kG711 8kG729
List Size	2

RESPONSE

Description	The following describes the attributes of the hardware diagnostic test to be displayed automatically at the end of the test.

ATTRIBUTE status

Description	This attribute records the current status of the hardware diagnostic test. ***passed*** - indicates that the hardware diagnostic test passed. ***failed*** - indicates that the hardware diagnostic test failed. ***running*** - indicates that the hardware diagnostic test is currently running. ***notYetRun*** - indicates that hardware diagnostic have not yet run on this card. ***notSupported*** - indicates that the card does not support the running of the hardware diagnostic test.

Values	passed failed running notYetRun notSupported

ATTRIBUTE causeOfTermination

Description	This attribute records the reason the hardware diagnostic test ended. It contains one of the following values: ***neverStarted***: the card test has not been started. ***testRunning***: the card test is currently running. ***testRanToCompletion***: the hardware diagnostic test ran to completion. ***stoppedByOperator***: a *Stop* command was issued. ***targetFailed***: the target card became non-operational.
Values	neverStarted testRunning testRanToCompletion stoppedByOperator targetFailed

ATTRIBUTE startTime

Description	This attribute records the time at which the test was started.
Values	Time (DHMS)

ATTRIBUTE elapsedTime

Description	This attribute displays the number of minutes that the test has been running.
Values	Decimal (0..1440)
Units	minutes

RESPONSE Warning: Lp/... will be reset due to modifications to the Lp/... Npu component if this is an NTHW44 FP. All other FP types are not affected.

Description

The *Check Prov* command generates this response after the user has made a change to the *Lp Npu* component and the change is a critical change to the *Lp* component. Activation of the provisioning data will cause the card to be reset. Currently the only critical change is that of changing the ***serviceBundleName*** attribue on an NTHW44 FP. On a card whose product code does not start with NTHW44 the card will not be reset.
System action: The *Check Prov* command has just been executed. Continuing with an *Activate Prov* command will cause the card to be reset.
Operator action: The choices are:
1) Continue with the *Activate Prov* command and allow the card to be reset.
2) Use the *Copy Prov* command to undo all the provisioning changes.
3) Undo the change to the *Lp Npu* component and then issue the *Check Prov* command and the *Activate Prov* command.

ATTRIBUTE rspNpuLpCriticalChgAttrib1

Description

This attribute indicates the *Lp* component instance that is to be reset.

Values

Decimal (0..15)

ATTRIBUTE rspNpuLpCriticalChgAttrib2

Description

This attribute indicates the *Lp* component instance that is to be reset.

Values

Decimal (0..15)

RESPONSE Opened ... files cannot be protected.

Description

This response is generated when the operator tries to protect an opened file which should not be protected.

ATTRIBUTE secureFileType

Description

This attribute gives the type of file that is being protected.

Values

log

RESPONSE Error:An Mpls component must have an RsvpTe component provisioned under the ... component.

Description

The *Check Prov* command produces this response when the *Mpls* component has been provisioned under the *Router* component but no *RsvpTe* component has been provisioned under this *Router* component.

System Action: The *Check Prov* fails.

Operator Action: Provision an *RsvpTe* component under the *Router* component.

ATTRIBUTE noRsvpTeCompErr

Description

This attribute indicates the name of the *Router* component used in the response.

Values

The name of the component

RESPONSE Error: The ... attribute value of ... for the component ... is invalid. Use a valid Class A, B or C non-reserved address.

Description

The *Check Prov* command produces this response when an invalid IP address has been provisioned for the specified component.

System Action: The *Check Prov* fails.

Operator Action: The specified attribute value for the component should be changed to a valid Class A, B or C non-reserved address.

ATTRIBUTE lspInvalidEpaErrorAttr

Description

This attribute indicates which attribute under the *Lsp* component is in error.

Values

Decimal (0..65535)

Replication

The name of the component

ATTRIBUTE lspInvalidEpaErrorVal

Description This attribute indicates the invalid IP address that was provisioned.

Values IP address

ATTRIBUTE lspInvalidEpaErrorComp

Description This attribute indicates which component contains that invalid IP address.

Values The name of the component

RESPONSE Error:The ... attribute under ... cannot be set to ... when this component is provisioned to be a primary LSP.

Description The *Check Prov* command produces this response when the *addToIpRdb* attribute has been set to an invalid value for the specified *Lsp* component which has been provisioned to be a primary LSP.

System Action: The *Check Prov* fails.

Operator Action: The attribute value should either be changed to a valid value or the *Lsp* component should be provisioned to be a standby LSP.

ATTRIBUTE lspPlspAddToIpRdbErrorAttr

Description This attribute indicates which attribute under the *Lsp* component is in error.

Values Decimal (0..65535)

Replication The name of the component

ATTRIBUTE lspPlspAddToIpRdbErrorComp

Description This attribute indicates which component is in error.

Values The name of the component

ATTRIBUTE lspPlspAddToIpRdbErrorVal

Description This attribute indicates which *Lsp* attribute value is invalid.

Values	false true sameAsPrimaryLsp (sameAsPLsp)

RESPONSE Error:The ... component has an invalid instance value. Use a valid class A, B or C non-reserved IP address.

Description	The *Check Prov* command produces this response when the specified component has been provisioned with an invalid IP address. **System Action**: The *Check Prov* fails. **Operator Action**: The component must be re-added using a valid class A, B or C non-reserved address.

ATTRIBUTE IspRaInvalidInstanceErrorComp

Description	This attribute indicates which component has been provisioned with an invalid instance.
Values	The name of the component

RESPONSE Error:The maximum number of ... Lsp components per Mpls component has been exceeded.

Description	The *Check Prov* command produces this response when the maximum number of allowable *Lsp* components have been exceeded for this *Mpls* component. **System Action**: The *Check Prov* fails. **Operator Action**: Delete some of the *Lsp* components to bring the total number below the maximum allowed value.

ATTRIBUTE IspMaxLspErrorVal

Description	This attribute indicates the maximum number of *Lsp* components allowed on the *Mpls* component.
Values	Decimal (0..65535)

RESPONSE Error:The ... attribute for the component ... cannot have a value of ....

Description

The *Check Prov* command produces this response when *primaryLsp* attribute is set to a value of ***0***.

System Action: The *Check Prov* fails.

Operator Action: The *primaryLsp* attribute of this *Lsp* component must be provisioned with a valid *Lsp* instance value.

ATTRIBUTE lspZeroPLspErrorAttr

Description

This attribute indicates which attribute under the *Lsp* component is in error.

Values

Decimal (0..65535)

Replication

The name of the component

ATTRIBUTE lspZeroPLspErrorComp

Description

This attribute indicates which component is in error.

Values

The name of the component

ATTRIBUTE lspZeroPLspErrorValue

Description

This attribute indicates the value which is invalid for the specified attribute.

Values

Decimal (0..65535)

RESPONSE Error:An ... subcomponent cannot exist under ... when either the addToIpRdb attribute is set to false or the primaryLsp attribute is not the same as the instance value for this Lsp.

Description

The *Check Prov* command produces this response when either an *Lsp* component hase been provisioned to be a primary LSP with the *addToIpRdb* attribute set to ***false*** and provisioned with *IpV4ReachableAddress* subcomponents or the *Lsp* component has been provisioned to be a standby LSP and provisioned with *IpV4ReachableAddress* subcomponents.

System Action: The *Check Prov* fails.

Operator Action: If the *Lsp* component is a primary LSP, then the operator should either set the *addToIpRdb* attribute to ***true*** or delete the *IpV4ReachableAddress* subcomponents for this *Lsp* component.

If the *Lsp* component is a standby LSP, then the *IpV4ReachableAddress* subcomponents must be deleted for this LSP.

ATTRIBUTE IspNoRaAllowedErrorSubComp

Description

This attribute indicates which subcomponent type is not allowed to exist under this *Lsp* component.

Values

Decimal (0..65535)

Replication

The name of the component

ATTRIBUTE IspNoRaAllowedErrorComp

Description

This attribute indicates which *Lsp* component is in error.

Values

The name of the component

RESPONSE Error:The ... attribute under ... cannot be set to ... when this component is provisioned to be a primary LSP.

Description

The *Check Prov* command produces this response when the *alarmControl* attribute has been set to ***sameAsPrimaryLsp*** for an *Lsp* component that has been provisioned to be a primary LSP.

System Action: The *Check Prov* fails.

Operator Action: The *alarmControl* attribute for the specified *Lsp* component must be changed from ***sameAsPrimaryLsp*** to some other value or the *Lsp* component must be provisioned to be a standby LSP.

ATTRIBUTE lspPlspAlarmErrorAttr

Description

This attribute indicates which attribute under the *Lsp* component is in error.

Values

Decimal (0..65535)

Replication

The name of the component

ATTRIBUTE lspPlspAlarmErrorComp

Description

This attribute indicates which component is in error.

Values

The name of the component

ATTRIBUTE lspPlspAlarmErrorVal

Description

This attribute indicates which *Lsp* attribute value is invalid.

Values

none
critical (crit)
major (maj)
sameAsPrimaryLsp (sameAsPLsp)

RESPONSE Error:The ... attribute under ... cannot be set to ... when this component is provisioned to be a primary LSP.

Description

The *Check Prov* command produces this response when the specified attribute has been provisioned to use an invalid value for the specified *Lsp* component which has been provisioned to be a primary LSP.

System Action: The *Check Prov* fails.

Operator Action: The attribute should be set to a valid value or the *Lsp* component should be provisioned to be a standby LSP.

ATTRIBUTE lspPlspBmOvErrorAttr

Description

This attribute indicates which attribute under the *Lsp* component is in error.

Values

Decimal (0..65535)

Replication

The name of the component

ATTRIBUTE lspPlspBmOvErrorComp

Description

This attribute indicates which *Lsp* component is in error.

Values

The name of the component

ATTRIBUTE lspPlspBmOvErrorVal

Description

This attribute indicates which *Lsp* attribute value is invalid.

Values

false
true
sameAsPrimaryLsp (sameAsPLsp)

RESPONSE Error:The ... attribute under ... cannot be set to ... when this component is provisioned to be a primary LSP.

Description

The *Check Prov* command produces this response when the *bandwidth* attribute is set to ***sameAsPrimaryLsp*** for an *Lsp* component that is provisioned to be a primary LSP.

System Action: The *Check Prov* fails.

Operator Action: The *bandwidth* attribute for this *Lsp* must be changed to any value other than ***sameAsPrimaryLsp***.

ATTRIBUTE lspPlspBwErrorAttr

Description

This attribute indicates which attribute under the *Lsp* component is in error.

Values

Decimal (0..65535)

Replication

The name of the component

ATTRIBUTE lspPlspBwErrorComp

Description

This attribute indicates which *Lsp* component is in error.

Values

The name of the component

ATTRIBUTE lspPlspBwErrorVal

Description

This attribute indicates the *Lsp* attribute value which is invalid.

Values

sameAsPrimaryLsp (sameAsPLsp)

RESPONSE Error:The ... attribute under ... cannot be set to ... when this component is provisioned to be a primary LSP.

Description

The *Check Prov* command produces this response when the specified attribute has been set to use an invalid value for the specified primary LSP component.

System Action: The *Check Prov* fails.

Operator Action: The attribute should be set to a valid value or the *Lsp* component should be provisioned to be a standby LSP.

ATTRIBUTE lspPlspSlspErrorAttr

Description	This attribute indicates which attribute under the *Lsp* component is in error.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE lspPlspSlspErrorComp

Description	This attribute indicates which *Lsp* component is in error.
Values	The name of the component

ATTRIBUTE lspPlspSlspErrorVal

Description	This attribute indicates which *Lsp* attribute value is invalid.
Values	Decimal (0..65535)

RESPONSE Error:The ... attribute under ... must be set to ... when this component is provisioned to be a standby LSP.

Description

The *Check Prov* command produces this response when the specified attribute has been set to an invalid value for the specified standby LSP component.

System Action: The *Check Prov* fails.

Operator Action: The attribute should be set to a valid value or the *Lsp* component should be provisioned to be a primary LSP.

ATTRIBUTE lspNonZeroEpaErrorAttr

Description	This attribute indicates which attribute under the *Lsp* component is in error.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE lspNonZeroEpaErrorComp

Description	This attribute indicates which *Lsp* component is in error.
Values	The name of the component

ATTRIBUTE lspNonZeroEpaErrorVal

Description This attribute indicates the invalid *Lsp* attribute value.

Values IP address

RESPONSE Error:The maximum value of ... Hop components per Path component has been exceeded for this ... component.

Description The *Check Prov* command produces this response when number of *Hop* components exceeds the maximum allowable number of *Hop* components for a *Path* component.

System Action: The *Check Prov* fails.

Operator Action: The operator will have to delete some of the *Hop* components for the specified *Path* component.

ATTRIBUTE pathMaxHopPerPathErrorVal

Description This attribute indicates the maximum number of *Hops* components allowed for a *Path* component.

Values Decimal (0..65535)

ATTRIBUTE pathMaxHopPerPathErrorComp

Description This attribute indicates which *Path* component has too many *Hop* components provisioned.

Values The name of the component

RESPONSE Error:The allowed maximum of ... Path components for an Mpls component has been exceeded.

Description The *Check Prov* command produces this response when the number of provisioned *Path* components exceeds the maximum number of allowable *Path* components for an *Mpls* component.

System Action: The *Check Prov* fails.

Operator Action: The operator will have to delete some of the *Path* components to bring the total number of *Path* components below the maximum allowed value.

ATTRIBUTE pathMaxPathErrorAttr

Description	This attribute indicates the maximum value for the number of provisioned *Path* components.
Values	Decimal (0..65535)

RESPONSE Warning:The component ... has changed and is specified in the pathName attribute for .... This new path will not take effect until this Lsp is locked and then unlocked.

Description

The *Check Prov* command produces this response when a provisioning change has occurred to a *Path* component which is being used by an existing *Lsp* component.

System Action: The *Check Prov* issues a warning.

Operator Action: If the operator requires the affected *Lsp* components to use the updated *Path* component then the *Lsp* components will have to be locked and then unlocked.

ATTRIBUTE pathCompNameWarningPathComp

Description	This attribute indicates which Path component has been changed.
Values	The name of the component

ATTRIBUTE pathCompNameWarningLspComp

Description	This attribute indicates which *Lsp* component is affected by the changed *Path* component.
Values	The name of the component

RESPONSE Error:The component ... must have at least one Hop subcomponent provisioned.

Description

The *Check Prov* command produces this response when the specified *Path* component does not have at least one *Hop* subcomponent provisioned.

System Action: The *Check Prov* fails.

Operator Action: Provision at least one *Hop* subcomponent for this *Path* component.

ATTRIBUTE pathNoHopsErrorComp

Description: This attribute indicates which *Path* component requires a *Hop* subcomponent.

Values: The name of the component

RESPONSE Error:The ... component is provisioned to use ... as a ... LSP but ... is not provisioned.

Description: The *Check Prov* command produces this response when an *Lsp* component is provisioned to use another *Lsp* component as either a primary or standby LSP but the second *Lsp* component does not exist.

System Action: The *Check Prov* fails.

Operator Action: The second *Lsp* component should be provisioned to act as a primary or standby LSP for the first *Lsp* component or the first *Lsp* component should be provisioned to use another *Lsp* component as the primary or standby LSP.

ATTRIBUTE lspPlspSlspNotProvErrorComp

Description: This attribute indicates the first *Lsp* component that is in error.

Values: The name of the component

ATTRIBUTE lspPlspSlspNotProvErrorComp1

Description: This attribute indicates the second *Lsp* component that is specified in the attribute of the first *Lsp* component.

Values: The name of the component

ATTRIBUTE lspPlspSlspNotProvErrorType

Description: This attribute indicates whether the second *Lsp* component was to be used as a primary or standby LSP.

Values:
primary
standby

ATTRIBUTE lspPlspSlspNotProvErrorComp2

Description This attribute indicates the second *Lsp* component which does not exist.

Values The name of the component

RESPONSE Error:When the ... ... attribute value is set to ..., the ... ... attribute value must be set to ....

Description The *Check Prov* command produces this response when the *standbyLsp* attribute or the *primaryLsp* attribute has been set to a value for an *Lsp* component which does not correspond to the *primaryLsp* attribute or the *standbyLsp* attribute for another *Lsp* component.

System Action: The *Check Prov* fails.

Operator Action: The specified attribute value for the first component should match the specified attribute value for the second component.

ATTRIBUTE lspSlspPlspErrorComp

Description This attribute indicates the first *Lsp* component that is in error.

Values The name of the component

ATTRIBUTE lspSlspPlspErrorAttr

Description This attribute indicates which attribute is in error for the first *Lsp* component.

Values Decimal (0..65535)

Replication The name of the component

ATTRIBUTE lspSlspPlspErrorVal

Description This attribute indicates which *Lsp* attribute value is invalid.

Values Decimal (0..65535)

ATTRIBUTE lspSlspPlspErrorComp1

Description This attribute indicates the second *Lsp* component that is in error.

Values	The name of the component

ATTRIBUTE lspSlspPlspErrorAttr1

Description	This attribute indicates which attribute is in error for the second *Lsp* component.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE lspSlspPlspErrorVal1

Description	This attribute indicates which Lsp attribute value is invalid.
Values	Decimal (0..65535)

RESPONSE Warning:The ... attribute under ... should be set to ... when this component is provisioned to be a standby LSP.

Description	The *Check Prov* command produces this response when the specified attribute has been set to an invalid value for the specified standby LSP component. **System Action**: The *Check Prov* issues a warning. **Operator Action**: The attribute should be set to a valid value or the *Lsp* component should be provisioned to be a primary LSP.

ATTRIBUTE lspSlspAddToIpRdbErrorAttr

Description	This attribute indicates which attribute under the *Lsp* component is associated with this warning
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE lspSlspAddToIpRdbErrorComp

Description	This attribute indicates which *Lsp* component is associated with this warning.
Values	The name of the component

ATTRIBUTE lspSlspAddToIpRdbErrorVal

Description	This attribute indicates which *Lsp* attribute value is invalid.
Values	false true sameAsPrimaryLsp (sameAsPLsp)

RESPONSE Warning:The ... attribute under ... should be set to ... when this component is provisioned to be a standby LSP.

Description	The *Check Prov* command produces this response when the specified attribute has been set to an invalid value for the specified standby LSP component. **System Action**: The *Check Prov* issues a warning. **Operator Action**: The attribute should be set to a valid value or the *Lsp* component should be provisioned to be a primary LSP.

ATTRIBUTE lspSlspBmOvErrorAttr

Description	This attribute indicates which attribute under the *Lsp* component is associated with this warning.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE lspSlspBmOvErrorComp

Description	This attribute indicates which *Lsp* component is associated with this warning.
Values	The name of the component

ATTRIBUTE lspSlspBmOvErrorVal

Description	This attribute indicates which *Lsp* attribute value is invalid.
Values	false true sameAsPrimaryLsp (sameAsPLsp)

RESPONSE Error:The ... attribute value of ... for the component ... is invalid. This value is linked to a component which either does not exist or it is not a Path component.

Description

The *Check Prov* command produces this response when the specified attribute has been set to link to a component which is either not a *path* component or has been set to link to a *path* component which does not exist.

System Action: The *Check Prov* fails.

Operator Action: The attribute value should be changed to link to a valid *path* component.

ATTRIBUTE lspPathNameInvalidAttr

Description

This attribute indicates which attribute under the *Lsp* component is in error.

Values

Decimal (0..65535)

Replication

The name of the component

ATTRIBUTE lspPathNameInvalidComp

Description

This attribute indicates the invalid component name used for the attribute in error.

Values

The name of the component

ATTRIBUTE lspPathNameInvalidComp1

Description

This attribute indicates the *Lsp* component that is in error.

Values

The name of the component

RESPONSE Error:The ... attribute under ... must not be set when this component is provisioned to be a standby LSP.

Description

The *Check Prov* command produces this response when the specified attribute has been set for the standby LSP component.

System Action: The *Check Prov* fails.

Operator Action: The specified attribute must be cleared of its provisioned value or the *Lsp* component must be provisioned to be a primary LSP.

ATTRIBUTE lspDoNotSetSlspErrorAttr

Description

This attribute indicates which attribute under the *Lsp* component is in error.

Values

Decimal (0..65535)

Replication

The name of the component

ATTRIBUTE lspDoNotSetSlspErrorComp

Description

This attribute indicates which *Lsp* component is in error.

Values

The name of the component

RESPONSE Error:The duplicate address and prefix length of ...,... was detected for components:... and ....

Description

The *Check Prov* command produces this response when a duplicate address and prefix length is detected between two components. This error could result from the duplication from any combination of *endPointAddress* attribute values under the *Lsp* component and the *IpV4ReachableAddress* instance value. The address that is duplicated may or may not be a masked address.

System Action: The *Check Prov* fails.

Operator Action: The two components in question should be re-provisioned such that the IP addresses are no longer duplicated.

ATTRIBUTE lspDupIpV4AddrErrorAddr

Description This attribute indicates which IP address has been duplicated.

Values IP address

ATTRIBUTE lspDupIpV4AddrErrorAddrLen

Description This attribute indicates which prefix length is being used for this IP address.

Values Decimal (0..65535)

ATTRIBUTE lspDupIpV4AddrErrorComp

Description This attribute indicates the first component that has the duplicated IP address.

Values The name of the component

ATTRIBUTE lspDupIpV4AddrErrorComp1

Description This attribute indicates the second component that has the duplicated IP address.

Values The name of the component

RESPONSE Error:The maximum value of ... Hop components has been exceeded for this component.

Description The *Check Prov* command produces this response when the total number of *Hop* components has exceeded the maximum value allowed for the *Mpls* component.

System Action: The *Check Prov* fails.

Operator Action: Delete some of the *Hop* components to bring the total number below the maximum allowed value.

ATTRIBUTE hopMaxHopPerMplsErrorVal

Description This attribute indicates maximum allowed value for *Hop* components.

Values Decimal (0..65535)

RESPONSE Error:No more than one instance of the ... component may be provisioned under the same Vgs component as this Spd component.

Description

A *Check Prov* command produces this response if more than one instance of each of the following components is provisioned under the same *Vgs* component as this *Spd*:

Mgc,
H248.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that no more than a single instance of each of the above components is provisioned under the same *Vgs* component as this *Spd*.

ATTRIBUTE pvgIpSecSpdComponentType

Description

This attribute indicates the component that is in error.

Values

Mgc
H248

RESPONSE Error:The value of the ikeResponseTimerValue attribute multiplied by the value of the ikeRetryAttempts attribute must be less than 70% of the value of the saTimeToLive attribute in the ... component.

Description

A *Check Prov* command produces this response if the value of the *ikeResponseTimerValue* attribute multiplied by the value of the *ikeRetryAttempts* attribute is greater than 70% of the value of the *saTimeToLive* attribute in the specified *IkeTransform* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the value of the *ikeResponseTimerValue* attribute multiplied by the value of the *ikeRetryAttempts* attribute is less than 70% of the value of the *saTimeToLive* attribute in the specified *IkeTransform* component.

ATTRIBUTE ikeTransformComponentName

Description: This attribute indicates the *ikeTransform* component that contains the attribute *saTimeToLive*.

Values: The name of the component

RESPONSE Error:The ... attribute must reference an instance of the ... component under the same parent Spd as this Policy component.

Description: A *Check Prov* command produces this response if the specified attribute does not link to an instance of the specified component under the same parent *Spd* as this *Policy* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the specified attribute links to an instance of the specified component under the same parent *Spd* as this *Policy* component.

ATTRIBUTE linkAttribute

Description: This attribute indicates the attribute that is in error.

Values: ikePolicy
saProposal

ATTRIBUTE pvgIpSecSpdComponentType

Description: This attribute indicates the component that is in error.

Values: IkePolicy
SaProposal

RESPONSE Error:The value of the saTimeToLive attribute in each of the following components:...must be less than the minimum saTimeToLive attribute value of the following components:...

Description

A *Check Prov* command produces this response if any of the values of *saTimeToLive* in each of the indicated components is greater than the minimum *saTimeToLive* value of all the components listed.

System action: The *Check Prov* command fails. No *Activate Prov* command is accepted until a subsequent *Check Prov* completes without errors.

Operator action: Ensure that the value of *saTimeToLive* in each of the indicated components is less than the minimum *saTimeToLive* value of all the components listed.

ATTRIBUTE securityAssociationTransform

Description

This attribute indicates the list of *securityAssociationTransform* components.

List of

The name of the component

List Size

4

ATTRIBUTE ikeTransform

Description

This attribute indicates the list of *ikeTransform* components.

List of

The name of the component

List Size

4

RESPONSE Error:When custType is pvg and the mode of ... is interVrConnection only one NextHop is allowed under....

Description

A *Check Prov* command generates this response if more than one *NextHop* component is provisioned under the *Vr Ip Static Route* component when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that no more than one *NextHop* component is provisioned under the *Vr Ip Static Route* component when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE vmIfComponentName

Description

This attribute indicates the name of the *Vm If* component instance.

Values

The name of the component

ATTRIBUTE staticRouteComponentName

Description

This attribute indicates the name of the *Vr Ip Static Route* component instance.

Values

The name of the component

RESPONSE Error:When custType is pvg and the mode of ... is interVrConnection only two Vr components can be linked to ....

Description

A *Check Prov* command generates this response if more than two *Vr* components are linked to a *Vm* when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that no more than two *Vr* components are linked to a *Vm* when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE vmIfComponentName

Description

This attribute indicates the name of the *Vm If* component instance.

Values

The name of the component

ATTRIBUTE vmComponentName

Description

This attribute indicates the name of the *Vm* component.

Values

The name of the component

RESPONSE Error:When custType is pvg and the mode of ... is interVrConnection, ... must have a CustSpec subcomponent with a custType of pvg.

Description

A *Check Prov* command generates this response when the *mode* attribute of the *Vm If* component is ***interVrConnection***, the *custType* attribute of this *Vr CustSpec* component is ***pvg*** and there is another *Vr* component linked to the *Vm* component which does not have a *CustSpec* subcomponent with a *custType* of ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the *CustSpec* component is provisioned under the *Vr* component when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE vmIfComponentName

Description

This attribute indicates the name of the *Vm If* component instance.

Values

The name of the component

ATTRIBUTE vrComponentName

Description

This attribute indicates the name of the *Vr* component instance under which the protected route is provisioned.

Values

The name of the component

RESPONSE Error:When custType is pvg and the mode of ... is interVrConnection the routing protocol component...is not allowed.

Description

A *Check Prov* command generates this response if *OspfInterface RipInterface* or *IsisInterface* is provisioned when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that no *OspfInterface RipInterface* or *IsisInterface* is provisioned under the *Vr Pp ipPort LogicalIf* when the *mode* attribute of the *Vm If* component is ***interVrConnection*** and the *custType* attribute of the *Vr CustSpec* component is ***pvg***.

ATTRIBUTE vmIfComponentName

Description

This attribute indicates the name of the *Vm If* component instance.

Values

The name of the component

ATTRIBUTE routingProtocolName

Description

This attribute indicates the routing protocol subcomponent name under the *Vr Pp ipPort LogicalIf* component.

Values

The name of the component

RESPONSE Error: The ... attribute cannot be set for SPVC type AtmMpe interfaces.

Description

This error response is generated by the *Check Prov* command when the *ilsForwarder* attribute of *AtmMpe* component is set for an SPVC type *AtmMpe* interface.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Ensure that the *ilsForwarder* attribute of the *AtmMpe* component is not set. Use of an IlsForwarder card when the *AtmMpe* component is configured for using SPVCs is not applicable.

ATTRIBUTE attribute

Description

This is the name of the attribute causing the error.

Values

Decimal (1..65535)

RESPONSE Error: The ... attribute cannot be set. Set ignored.

Description

This response is used when the operator attempts to set the *instance* attribute of the *Loopback* component.

System Action: The *Set* command is ignored.

Operator Action: None. This attribute cannot be set by the operator.

ATTRIBUTE attribute

Description

This is the name of the attribute that cannot be set.

Values

Decimal (1..65535)

RESPONSE Error: The ... attribute cannot be set. Set ignored.

Description

This response is used when the operator attempts to set the *instance* attribute of the *AtmMpe* component.

System Action: The *Set* command is ignored.

Operator Action: None. This attribute cannot be set by the operator.

ATTRIBUTE attribute

Description

This is the name of the attribute that cannot be set.

Values

Decimal (1..65535)

RESPONSE The following Av(s) do not exist in the provisioned list:

Description

This response is issued when the list of Avs specified for removal does not exist in the already provisioned list. This response is also issued when the list of Avs specified by the operator does not have the right case sensitivity.

ATTRIBUTE listOfAvsNotPresent

Description

This attribute is the list of Avs not present in the already provisioned list.

List of

String (1..30, ASCII)

RESPONSE Error:The ... attribute must not contain a value of 0.0.0.0.

Description

A *Check Prov* command produces this response if the user provisions the specified attribute to contain the value ***0.0.0.0***.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the specified attribute does not contain the value ***0.0.0.0***.

ATTRIBUTE directionAttribute

Description

This attribute indicates the attribute that is in error.

Values srcIpAddress
dstIpAddress

RESPONSE Error:The ... component is not permitted under the same Vgs component as this Spd component.

Description A *Check Prov* command produces this response if the user provisions the specified component in the same *Vgs* hierarchy as this *Spd* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Delete the instance of the specified component.

ATTRIBUTE componentName

Description This attribute indicates the component that must not be provisioned.

Values The name of the component

RESPONSE Warning:This Voice Gateway as a whole is unsecured. The ... component does not have an Spd subcomponent.

Description A *Check Prov* command produces this response if the specified *Ctrl* component does not have an *Spd* subcomponent. Note, this warning is only produced if a different *Ctrl* under this *Vgs* has been provisioned with an *Spd* subcomponent.

System action: A warning is given.

Operator action: It is recommended that an *Spd* subcomponent is provisioned under the specified *Ctrl* component.

ATTRIBUTE ctrlConnComponentName

Description This attribute indicates the *Ctrl* component that does not have a *Spd* subcomponent.

Values The name of the component

RESPONSE Error:The following Policy components must be provisioned in complementary pairs for inbound and outbound directions:...

Description

A *Check Prov* command produces this response if there are any *Policy* subcomponents under this *Spd* component that have not been provisioned with a complementary *Policy* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that all *Policy* components provisioned under this *Spd* component have been provisioned with a complementary *Policy* component.

ATTRIBUTE policyComponentList

Description

This attribute indicates the list of *Policy* components.

List of

The name of the component

RESPONSE Error:The value of the remoteIpAddress attribute must be equal to the value of the initialMgcAddress attribute in the ... component.

Description

A *Check Prov* command produces this response if the value of the *remoteIpAddress* attribute is not be equal to the value of the *initialMgcAddress* attribute in the specified *Mgc* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the value of the *remoteIpAddress* attribute is equal to the value of the *initialMgcAddress* attribute in the specified *Mgc* component.

ATTRIBUTE mgcComponentName

Description

This attribute indicates the *Mgc* component that contains the *initialMgcAddress* attribute.

Values

The name of the component

RESPONSE Error:When the value of the direction attribute is ... then the value of the ... attribute must not be equal to the value of the ipAddress attribute in the ... component.

Description

A *Check Prov* command produces this response if for a particular value of the *direction* attribute, the user provisions the value of the specified attribute to be equal to the value of attribute *ipAddress* in the specified *Ctrl* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the value of the specified attribute is not equal to the value of the *ipAddress* attribute in the specified *Ctrl* component.

ATTRIBUTE direction

Description

This attribute indicates the value of the *direction* attribute.

Values

inbound
outbound

ATTRIBUTE srcDstIpAddr

Description

This attribute indicates the attribute that is in error.

Values

srcIpAddress
dstIpAddress

ATTRIBUTE ctrlComponentName

Description

This attribute indicates the *Ctrl* component that holds the *ipAddress* attribute.

Values

The name of the component

RESPONSE Error:When the value of the direction attribute is ... then the value of the ... attribute must be equal to the value of the ipAddress attribute in the ... component.

Description

A *Check Prov* command produces this response if for a particular value of the *direction* attribute, the value of the specified attribute is provisioned to not be equal to the value of the *ipAddress* attribute in the specified *Ctrl* component.

System action: No *Activate* command will be accepted until a subsequent *Check Prov* command completes without errors.

Operator action: Ensure that the value of the specified attribute is equal to the value of attribute *ipAddress* in the specified *Ctrl* component.

ATTRIBUTE direction

Description

This attribute indicates the value of the *direction* attribute.

Values

inbound
outbound

ATTRIBUTE srcDstIpAddr

Description

This attribute indicates the attribute that is in error.

Values

srcIpAddress
dstIpAddress

ATTRIBUTE ctrlComponentName

Description

This attribute indicates the *Ctrl* component that holds the *ipAddress* attribute.

Values

The name of the component

RESPONSE Error: The value of ... under ... is different from the value under .... All the Ethernet components associated with the same Lag must have their TM EP attributes set to the same values.

Description	This response is issued as the result of a Check Prov or Act Prov command when any of the following attributes, *minimumBandwidthGuarantee, redMode* or *txQueueSize* are not set to the same value for the *Ethernet TM EP* subcomponents. All Ethernet components associated with LAG Links under the same LAG must have their TM EP attributes set to the same values

ATTRIBUTE tmValueId

Description	This attribute contains the numeric identifier of the attribute that does not have the same value set for the other links in the same Lag.
Values	Decimal (0..65535)
Replication	The name of the component

ATTRIBUTE etherTm1ComponentName

Description	This attribute indicates the *Ethernet TM EP* subcomponent which is associated with the *Lag Link* component under checking.
Values	The name of the component

ATTRIBUTE etherTm2ComponentName

Description	This attribute indicates which *Ethernet TM EP* subcomponent has different value setting compared to the component under checking.
Values	The name of the component

RESPONSE Error: The linkDestinationAddress can not be set to ... when the netmask is 255.255.255.255.

Description

This error message appears when
1) the provisioned media is *Ppp,* the value of the *netMask* attribute is ***255.255.255.255*** and the *linkDestinationAddress* is provisioned with a zero value;
2) the provisioned media is *Ppp,* the value of the *netMask* attribute is ***255.255.255.255*** and the *linkDestinationAddress* is provisioned as ***255.255.255.255***.

System Action: The *Check Prov* command fails. No *Activate* command is accepted until a subsequent *Check Prov* completes without errors.

Operator Action: Change the provisioned *linkDestinationAddress* under the *Interface* component.

ATTRIBUTE invalidLinkDestAddress

Description

This attribute contains the value of the invalid *linkDestinationAddress.*

Values

IP address

RESPONSE Error:... is not allowed on this Virtual Router

Description

The *Check Prov* command produces this response when a protocol which is permitted only on the Management Virtual Router has been added to a Virtual Router whose *managementAccess* attribute is ***disabled***.

ATTRIBUTE invalidProtocol

Description

Indicates the invalid protocol.

Values

String (1..20, ASCII)

Collected Statistics

COLLECTED STATS Router VpnRouteForwarder Interface IngressServices MeterStatistics

Description — The statistics record generated by the Router VpnRouteForwarder Interface IngressServices MeterStatistics component.

ATTRIBUTE Rtr Vrf If IS Meter committedInformationRate (cir)

Description — This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.
The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If IS Meter excessInformationRate (eir)

Description — This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize*

(*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be/t)*.

Values — Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If IS Meter committedBurstSize (bc)

Description — This attribute indicates the committed burst size (bc) in bits for the *Meter*.
The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If IS Meter excessBurstSize (be)

Description — This attribute indicates the excess burst size (be) in bits for the *Meter*.
The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If IS Meter measurmentInterval (t)

Description — This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*.
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values — Decimal (0..4294967295)

ATTRIBUTE Rtr Vrf If IS Meter packetsReceived

Description — This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values — Long Integer

ATTRIBUTE Rtr Vrf If IS Meter octetsReceived

Description This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values Long Integer

ATTRIBUTE Rtr Vrf If IS Meter eirPacketsReceived (excessPackets)

Description This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr Vrf If IS Meter eirOctetsReceived (excessOctets)

Description This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr Vrf If IS Meter packetsRemarked

Description This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr Vrf If IS Meter octetsRemarked

Description This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr Vrf If IS Meter packetsDiscarded

Description This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr Vrf If IS Meter octetsDiscarded

Description	This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .
Values	Long Integer

COLLECTED STATS Router VpnRouteForwarder Interface EgressServices MeterStatistics

Description	The statistics record generated by the Router VpnRouteForwarder Interface EgressServices MeterStatistics component.

ATTRIBUTE Rtr Vrf If ES Meter committedInformationRate (cir)

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If ES Meter excessInformationRate (eir)

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).
Values	Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If ES Meter committedBurstSize (bc)

Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*.

The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If ES Meter excessBurstSize (be)

Description This attribute indicates the excess burst size (be) in bits for the *Meter.*
The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If ES Meter measurmentInterval (t)

Description This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter.*
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values Decimal (0..4294967295)

ATTRIBUTE Rtr Vrf If ES Meter packetsReceived

Description This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values Long Integer

ATTRIBUTE Rtr Vrf If ES Meter octetsReceived

Description This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values Long Integer

ATTRIBUTE Rtr Vrf If ES Meter eirPacketsReceived (excessPackets)

Description	This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter eirOctetsReceived (excessOctets)

Description	This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter packetsRemarked

Description	This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter octetsRemarked

Description	This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter packetsDiscarded

Description	This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter octetsDiscarded

Description	This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .
Values	Long Integer

COLLECTED STATS Router VpnRouteForwarder ControlPlaneProtection

Description The statistics record generated by the Router VpnRouteForwarder ControlPlaneProtection component.

ATTRIBUTE Rtr Vrf Cpp isolatedDa

Description This attribute indicates the ip address of the isolated locally destined DA.

Values IP address

ATTRIBUTE Rtr Vrf Cpp isolatedLp

Description This attribute indicates the LP number on which the locally destined address is being isolated.

Values Decimal (0..15)

ATTRIBUTE Rtr Vrf Cpp isolatedCounts

Description This attribute indicates the number of counts that the isolated DA encountered during the last 15 minutes.

Values Decimal (0..65535)

ATTRIBUTE Rtr Vrf Cpp averageFlowRate

Description This attribute indicates the average flow rate of the isolated DA during the isolation period.

Values Decimal (0..65535)

COLLECTED STATS Router Interface IngressServices MeterStatistics

Description The statistics record generated by the Router Interface IngressServices MeterStatistics component.

ATTRIBUTE Rtr If IS Meter committedInformationRate (cir)

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr If IS Meter excessInformationRate (eir)

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be/t)*.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr If IS Meter committedBurstSize (bc)

Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr If IS Meter excessBurstSize (be)

Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr If IS Meter measurmentInterval (t)

Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Values	Decimal (0..4294967295)

ATTRIBUTE Rtr If IS Meter packetsReceived

Description	This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.
Values	Long Integer

ATTRIBUTE Rtr If IS Meter octetsReceived

Description	This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess
Values	Long Integer

ATTRIBUTE Rtr If IS Meter eirPacketsReceived (excessPackets)

Description	This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr If IS Meter eirOctetsReceived (excessOctets)

Description	This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr If IS Meter packetsRemarked

Description: This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values: Long Integer

ATTRIBUTE Rtr If IS Meter octetsRemarked

Description: This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values: Long Integer

ATTRIBUTE Rtr If IS Meter packetsDiscarded

Description: This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values: Long Integer

ATTRIBUTE Rtr If IS Meter octetsDiscarded

Description: This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values: Long Integer

COLLECTED STATS Router Interface EgressServices MeterStatistics

Description: The statistics record generated by the Router Interface EgressServices MeterStatistics component.

ATTRIBUTE Rtr If ES Meter committedInformationRate (cir)

Description: This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.
The provisioned *cir* attribute of the *Meter* component specifies

the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Rtr If ES Meter excessInformationRate (eir)

Description This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be/t)*.

Values Decimal (0..50000000)

ATTRIBUTE Rtr If ES Meter committedBurstSize (bc)

Description This attribute indicates the committed burst size (bc) in bits for the *Meter*.
The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Rtr If ES Meter excessBurstSize (be)

Description This attribute indicates the excess burst size (be) in bits for the *Meter*.
The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Rtr If ES Meter measurmentInterval (t)

Description This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*.
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values	Decimal (0..4294967295)

ATTRIBUTE Rtr If ES Meter packetsReceived

Description	This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.
Values	Long Integer

ATTRIBUTE Rtr If ES Meter octetsReceived

Description	This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess
Values	Long Integer

ATTRIBUTE Rtr If ES Meter eirPacketsReceived (excessPackets)

Description	This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr If ES Meter eirOctetsReceived (excessOctets)

Description	This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr If ES Meter packetsRemarked

Description	This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr If ES Meter octetsRemarked

Description This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If ES Meter packetsDiscarded

Description This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If ES Meter octetsDiscarded

Description This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values Long Integer

COLLECTED STATS Router ControlPlaneProtection

Description The statistics record generated by the Router ControlPlaneProtection component.

ATTRIBUTE Rtr Cpp isolatedDa

Description This attribute indicates the ip address of the isolated locally destined DA.

Values IP address

ATTRIBUTE Rtr Cpp isolatedLp

Description This attribute indicates the LP number on which the locally destined address is being isolated.

Values Decimal (0..15)

ATTRIBUTE Rtr Cpp isolatedCounts

Description	This attribute indicates the number of counts that the isolated DA encountered during the last 15 minutes.
Values	Decimal (0..65535)

ATTRIBUTE Rtr Cpp averageFlowRate

Description	This attribute indicates the average flow rate of the isolated DA during the isolation period.
Values	Decimal (0..65535)

COLLECTED STATS LogicalProcessor

Description	The statistics record generated by the LogicalProcessor component.

ATTRIBUTE Lp cardNumber (ca)

Description	This attribute is the card number associated to this statistical information.
Values	Decimal (0..15)

ATTRIBUTE Lp cardStatus

Description	This attribute indicates whether the card is running as ***active*** or ***standby***.
Values	standby active

ATTRIBUTE Lp cpuUtilAvg

Description	This attribute indicates an average processor utilization level over a the specified collection interval. This average is calculated based on one minute CPU utilization averages.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp cpuUtilAvgMin

Description	This attribute indicates the minimum processor utilization level over a specified collection interval. This is calculated based on one minute CPU utilization averages.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp cpuUtilAvgMax

Description	This attribute indicates the maximum processor utilization level over a specified collection interval. This is based on one minute CPU utilization averages.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp memoryCapacity

Description	This attribute indicates the processor's memory capacity for each type of memory.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp memoryUsageAvg

Description	This attribute indicates the processor's average memory utilization for each type of memory in the specified collection interval. This is calculated using 15 second samples.
Vector of	Decimal (0..2147483647)

Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp memoryUsageAvgMin

Description	This attribute indicates the processor's minimum memory utilization for each type of memory in the specified collection interval. This is calculated using 15 second samples.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp memoryUsageAvgMax

Description	This attribute indicates the processor's maximum memory utilization for each type of memory in the specified collection interval. This is calculated using 15 second samples.
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam

ATTRIBUTE Lp sharedMsgBlockCapacity

Description	This attribute indicates the processor's shared message block memory capacity.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp sharedMsgBlockUsageAvg

Description	This attribute indicates the processor's average shared message block memory utilization over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp sharedMsgBlockUsageAvgMin

Description	This attribute indicates the processor's minimum shared message block memory utilization over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp sharedMsgBlockUsageAvgMax

Description	This attribute indicates the processor's maximum shared message block memory utilization over a specified collection interval. This is calculated using 15 second samples.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockCapacity

Description	This attribute indicates the processor's local message block memory capacity. These message blocks are used for local messaging on the card.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockUsageAvg

Description	This attribute indicates the processor's average memory utilization of message blocks used for local messaging on the card, calculated over a specified collection interval. This is calculated using 15 second samples.

Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockUsageMin

Description	This attribute indicates the processor's minimum memory utilization of message blocks used for local messaging on the card, calculated over a specified collection interval.
Values	Decimal (0..2147483647)
Units	kbyte

ATTRIBUTE Lp localMsgBlockUsageMax

Description	This attribute indicates the processor's maximum memory utilization of message blocks used for local messaging on the card, calculated over a specified collection interval.
Values	Decimal (0..2147483647)
Units	kbyte

COLLECTED STATS LogicalProcessor PCUServicesProcessor ProcessingModule ProcessingBlock

Description	The statistics record generated by the LogicalProcessor PCUServicesProcessor ProcessingModule ProcessingBlock component.

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilAvg (avg)

Description	This attribute indicates the average PBlock CPU load during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilMin (min)

Description	This attribute indicates the minimum PBlock CPU load during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Lp Pcusp PModule PBlock cpuPBlockUtilMax (max)

Description	This attribute indicates the maximum PBlock CPU load during the statistics collection interval.
Values	Decimal (0..100)
Units	%

COLLECTED STATS Collector

Description	The statistics record generated by the Collector component.

ATTRIBUTE Col oldDateTime

Description	This attribute shows the old date/time immediately prior to the time change.
Values	Time (DHMS)

ATTRIBUTE Col newDateTime

Description	This attribute shows the new date/time immediately after the time change.
Values	Time (DHMS)

COLLECTED STATS VoiceNetworkingCallServer

Description	The statistics record generated by the VoiceNetworkingCallServer component.

ATTRIBUTE Vncs totalTranslations

Description	This spooled statistic counts the number of translation requests received by *Vncs* in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Vncs completeTranslations

Description	This spooled statistic counts the number of completed translations handled under each *DiallingPlan* component in the last statistics collection interval. The complete translations are the one that resulted in the return by VNCS server of the reply message with the routing information and *VoiceProfile* parameters associated with the directory number prefix supplied in the translation request message.
Vector of	Decimal (0..65535)
Index	Decimal (0..2)

ATTRIBUTE Vncs incompleteTranslations

Description	This spooled statistic counts the number of incomplete translations handled under each *DiallingPlan* component in the last statistics collection interval. The incomplete translations are the one that require more digits in the directory number prefix to uniquely identify routing attributes.
Vector of	Decimal (0..65535)
Index	Decimal (0..2)

ATTRIBUTE Vncs failedTranslations

Description	This spooled statistic counts the number of failed translations handled under this *DiallingPlan* component in the last statistics collection interval. The failed translations are the one for which the directory number prefix could not be found in the database.
Vector of	Decimal (0..65535)
Index	Decimal (0..2)

ATTRIBUTE Vncs usageCount

Description	This spooled statistic counts the number of times each *VoiceProfile* useage count is accessed to set up a connection in the last statistics collection interval.
Vector of	Decimal (0..65535)
Index	Decimal (1..16)

COLLECTED STATS Trunk

Description	The statistics record generated by the Trunk component.

ATTRIBUTE Trk remoteComponentName (remote)

Description	This attribute is the component name of the remote end which it has supplied through the *Trunk* staging protocol.
Values	String (1..26, ASCII)

ATTRIBUTE Trk measuredSpeedToIfMax

Description	This is the maximum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for the whole interval or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedToIfMin

Description	This is the minimum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for any part of the interval or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedToIfCurrent

Description	This is the current measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredRoundTripDelayMax

Description	This is the maximum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* staging protocols. A value of zero is provided when the link is disabled for the whole interval or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayMin

Description	This is the minimum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* staging protocols. A value of zero is provided when the link is disabled for any part of the interval or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayCurrent

Description	This is the measured Round Trip Delay (ms) discovered with the remote through the *Trunk* staging protocols. A value of zero is provided when the link is disabled or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk porsNormPktFromIf (normPkt)

Description	This attribute counts the number of normal priority packets received on the PORS *Trunk* normal priority queue in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk porsNormDiscUnforwardFromIf (normDisc)

Description	This attribute counts the number of normal priority packets discarded from the PORS *Trunk* normal priority queue in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk porsNormOctetFromIf (normOctet)

Description	This attribute counts the number of normal priority bytes received on the PORS *Trunk* normal priority queue in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk porsIntPktFromIf (intPkt)

Description	This attribute counts the number of interrupting priority packets received on the PORS *Trunk* interrupting priority queue in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk porsIntDiscUnforwardFromIf (intDisc)

Description	This attribute counts the number of interrupting priority packets discarded from the PORS *Trunk* interrupting priority queue in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk porsIntOctetFromIf (intOctets)

Description	This attribute counts the number of interrupting priority bytes received on the PORS *Trunk* interrupting priority queue in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk remoteComponentName (remote)

Description	This attribute is the component name of the remote end which it has supplied through the *Trunk* or *DpnGateway* staging protocol.
Values	String (1..26, ASCII)

ATTRIBUTE Trk measuredSpeedToIfMax

Description	This is the maximum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for the whole interval or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedToIfMin

Description	This is the minimum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for any part of the interval or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedToIfCurrent

Description	This is the current measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredRoundTripDelayMax

Description	This is the maximum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for the whole interval or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayMin

Description	This is the minimum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for any part of the interval or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayCurrent

Description	This is the measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk fwdPktFromIf (fwdPkt)

Description	This attribute counts the number of forwarding packets received on the *Trunk* or *DpnGateway* in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk fwdDiscUnforwardFromIf (fwdDisc)

Description	This attribute counts the number of forwarding packets discarded by the *Trunk* or *DpnGateway* in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk fwdOctetFromIf (fwdOctet)

Description	This attribute counts the number of forwarding bytes received on the *Trunk* or *DpnGateway* in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk dprsPktFromIfByPrio (dprsPktBp)

Description	This attribute counts the number of DPRS packets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.	
Array of	Long Integer	
Row	ep ep1 ep2]	[ep0
Column	dp dp1 dp2 dp3]	[dp0

ATTRIBUTE Trk dprsDiscPktFromIfByPrio (dprsDiscBp)

Description	This attribute counts the number of DPRS packets received and discarded by the Trunk in the last statistics collection interval. It

is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of	Long Integer	
Row	ep ep1 ep2]	[ep0
Column	dp dp1 dp2 dp3]	[dp0

ATTRIBUTE Trk dprsOctetFromIfByPrio (dprsOctBp)

Description	This attribute counts the number of DPRS octets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of	Long Integer	
Row	ep ep1 ep2]	[ep0
Column	dp dp1 dp2 dp3]	[dp0

ATTRIBUTE Trk porsPktFromIfByPrio (porsPktBp)

Description	This attribute counts the number of PORS packets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard

priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of Long Integer

Row ep [ep0
ep1
ep2]

Column dp [dp0
dp1
dp2
dp3]

ATTRIBUTE Trk porsDiscPktFromIfByPrio (porsDiscBp)

Description This attribute counts the number of PORS packets received and discarded by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of Long Integer

Row ep [ep0
ep1
ep2]

Column dp [dp0
dp1
dp2
dp3]

ATTRIBUTE Trk porsOctetFromIfByPrio (porsOctBp)

Description This attribute counts the number of PORS octets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard

priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of	Long Integer	
Row	ep ep1 ep2]	[ep0
Column	dp dp1 dp2 dp3]	[dp0

COLLECTED STATS Trunk UnAcked Framer

Description — The statistics record generated by the Trunk UnAcked Framer component.

ATTRIBUTE Trk UnAcked Framer rxBytes

Description — This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Trk UnAcked Framer rxFrames

Description — This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values — Long Integer

ATTRIBUTE Trk UnAcked Framer txBytes

Description — This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values — Long Integer

ATTRIBUTE Trk UnAcked Framer txFrames

Description — This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This

value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Trk UnAcked Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS Trunk AtmAccess

Description The statistics record generated by the Trunk AtmAccess component.

ATTRIBUTE Trk Atm interfaceName (interface)

Description This attribute indicates the component name of the local ATM Layer 2 AAL5 interface that the *AtmAccess* component uses.

Values String (1..45, ASCII)

ATTRIBUTE Trk Atm txCell

Description This attribute counts the number of cells that have been transmitted to the interface on the *Vcc* in the last collection interval.

Values Long Integer

Units cells

ATTRIBUTE Trk Atm txCellClp

Description This attribute counts the number of cells that have been transmitted to the interface on the *Vcc* with the CLP=1 in the last collection interval.

Values Long Integer

Units cells

ATTRIBUTE Trk Atm txDiscard

Description	This attribute counts the number of cells or frames received from the bus on the *Vcc* that have been discarded (due to congestion or when the *Vcc* interface is disabled) in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk Atm txDiscardClp

Description	This attribute counts the number of cells or frames received from the bus on the *Vcc* with the CLP=1 that have been discarded (due to congestion or when the *Vcc* interface is disabled) in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk Atm rxCell

Description	This attribute counts the number of cells that have been received from the interface on the *Vcc* in the last collection interval.
Values	Long Integer
Units	cells

ATTRIBUTE Trk Atm rxCellClp

Description	This attribute counts the number of cells that have been received from the interface on the *Vcc* with the CLP=1 in the last collection interval.
Values	Long Integer
Units	cells

ATTRIBUTE Trk Atm rxDiscard

Description	This attribute counts the number of cells or frames received from the interface on the *Vcc* that have been discarded (due to congestion, non-conformance with UPC or AAL reassembly problems) in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk Atm rxDiscardClp

Description	This attribute counts the number of cells or frames received from the interface on the *Vcc* with the CLP=1 that have been discarded (due to congestion, non-conformance with UPC or AAL reassembly problems) in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk Atm txCellRateMax

Description	This attribute indicates the maximum transmit cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txCellRateMin

Description	This attribute indicates the minimum transmit cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txCellRateAvg

Description	This attribute indicates the average transmit cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txClpCellRateMax

Description	This attribute indicates the maximum transmit cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txClpCellRateMin

Description	This attribute indicates the minimum transmit cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txClpCellRateAvg

Description	This attribute indicates the average transmit cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxCellRateMax

Description	This attribute indicates the maximum receive cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxCellRateMin

Description	This attribute indicates the minimum receive cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxCellRateAvg

Description	This attribute indicates the average receive cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxClpCellRateMax

Description	This attribute indicates the maximum receive cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxClpCellRateMin

Description	This attribute indicates the minimum receive cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxClpCellRateAvg

Description	This attribute indicates the average receive cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxTotalVccUtil

Description	This attribute indicates the average total receive *Vcc* utilization computed based on comparing the total number of cells received on the *Vcc* with the estimated available bandwidth in the last collection interval.
Values	Decimal (0..200)
Units	%

ATTRIBUTE Trk Atm txTotalVccUtil

Description	This attribute indicates the average total transmitted *Vcc* utilization computed based on comparing the total number of cells transmitted on the *Vcc* with the estimated available bandwidth in the last collection interval.
Values	Decimal (0..200)

Units %

COLLECTED STATS DpnGateway

Description The statistics record generated by the DpnGateway component.

ATTRIBUTE DpnGate remoteComponentName (remote)

Description This attribute is the component name of the remote end which it has supplied through the *Trunk* or *DpnGateway* staging protocol.

Values String (1..26, ASCII)

ATTRIBUTE DpnGate measuredSpeedToIfMax

Description This is the maximum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for the whole interval or the measured speed is unknown.

Values Decimal (0..4294967295)

ATTRIBUTE DpnGate measuredSpeedToIfMin

Description This is the minimum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for any part of the interval or the measured speed is unknown.

Values Decimal (0..4294967295)

ATTRIBUTE DpnGate measuredSpeedToIfCurrent

Description This is the current measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled or the measured speed is unknown.

Values Decimal (0..4294967295)

ATTRIBUTE DpnGate measuredRoundTripDelayMax

Description This is the maximum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for the whole interval or the delay is unknown.

Values Decimal (0..1500)

ATTRIBUTE DpnGate measuredRoundTripDelayMin

Description: This is the minimum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for any part of the interval or the delay is unknown.

Values: Decimal (0..1500)

ATTRIBUTE DpnGate measuredRoundTripDelayCurrent

Description: This is the measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled or the delay is unknown.

Values: Decimal (0..1500)

ATTRIBUTE DpnGate fwdPktFromIf (fwdPkt)

Description: This attribute counts the number of forwarding packets received on the *Trunk* or *DpnGateway* in the last statistics collection interval.

Values: Long Integer

ATTRIBUTE DpnGate fwdDiscUnforwardFromIf (fwdDisc)

Description: This attribute counts the number of forwarding packets discarded by the *Trunk* or *DpnGateway* in the last statistics collection interval.

Values: Long Integer

ATTRIBUTE DpnGate fwdOctetFromIf (fwdOctet)

Description: This attribute counts the number of forwarding bytes received on the *Trunk* or *DpnGateway* in the last statistics collection interval.

Values: Long Integer

COLLECTED STATS DpnGateway Utp Framer

Description: The statistics record generated by the DpnGateway Utp Framer component.

ATTRIBUTE DpnGate Utp Framer rxBytes

Description: This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values: Long Integer

ATTRIBUTE DpnGate Utp Framer rxFrames

Description: This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values: Long Integer

ATTRIBUTE DpnGate Utp Framer txBytes

Description: This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values: Long Integer

ATTRIBUTE DpnGate Utp Framer txFrames

Description: This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values: Long Integer

ATTRIBUTE DpnGate Utp Framer rxTotalLinkUtil

Description: This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values: Decimal (0..100)

COLLECTED STATS FrameRelayNni Framer

Description: The statistics record generated by the FrameRelayNni Framer component.

ATTRIBUTE FrNni Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrNni Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrNni Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrNni Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrNni Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS FrameRelayUni Framer

Description The statistics record generated by the FrameRelayUni Framer component.

ATTRIBUTE FrUni Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE FrUni Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE FrUni Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE FrUni Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE FrUni Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COLLECTED STATS FrameRelayAtmInterface Framer

Description	The statistics record generated by the FrameRelayAtmInterface Framer component.

ATTRIBUTE FrAtm Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrAtm Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE FrAtm Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrAtm Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE FrAtm Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS VoiceService Framer

Description The statistics record generated by the VoiceService Framer component.

ATTRIBUTE Vs Framer rxBytes

Description: This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values: Long Integer

ATTRIBUTE Vs Framer rxFrames

Description: This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values: Long Integer

ATTRIBUTE Vs Framer txBytes

Description: This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values: Long Integer

ATTRIBUTE Vs Framer txFrames

Description: This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values: Long Integer

ATTRIBUTE Vs Framer rxTotalLinkUtil

Description: This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values: Decimal (0..100)

COLLECTED STATS BitTransparentDataService Framer

Description: The statistics record generated by the BitTransparentDataService Framer component.

ATTRIBUTE Btds Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE Btds Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE Btds Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Btds Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Btds Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS HdlcTransparentDataService Framer

Description The statistics record generated by the HdlcTransparentDataService Framer component.

ATTRIBUTE Htds Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Htds Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Htds Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Htds Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Htds Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COLLECTED STATS X25Dte Lapb Framer

Description	The statistics record generated by the X25Dte Lapb Framer component.

ATTRIBUTE X25Dte Lapb Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE X25Dte Lapb Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE X25Dte Lapb Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE X25Dte Lapb Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE X25Dte Lapb Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COLLECTED STATS VirtualRouter ProtocolPort IpPort IngressServices

MeterStatistics

Description — The statistics record generated by the VirtualRouter ProtocolPort IpPort IngressServices MeterStatistics component.

ATTRIBUTE Vr Pp IpPort IS Meter committedInformationRate (cir)

Description — This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.
The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort IS Meter excessInformationRate (eir)

Description — This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be/t)*.

Values — Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort IS Meter committedBurstSize (bc)

Description — This attribute indicates the committed burst size (bc) in bits for the *Meter*.
The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values — Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort IS Meter excessBurstSize (be)

Description — This attribute indicates the excess burst size (be) in bits for the *Meter*.

The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort IS Meter measurmentInterval (t)

Description This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*.
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values Decimal (0..4294967295)

ATTRIBUTE Vr Pp IpPort IS Meter packetsReceived

Description This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter octetsReceived

Description This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter eirPacketsReceived (excessPackets)

Description This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter eirOctetsReceived (excessOctets)

Description This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter packetsRemarked

Description This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter octetsRemarked

Description This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter packetsDiscarded

Description This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter octetsDiscarded

Description This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values Long Integer

COLLECTED STATS VirtualRouter ProtocolPort IpPort EgressServices MeterStatistics

Description The statistics record generated by the VirtualRouter ProtocolPort IpPort EgressServices MeterStatistics component.

ATTRIBUTE Vr Pp IpPort ES Meter committedInformationRate (cir)

Description This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal

conditions.
The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort ES Meter excessInformationRate (eir)

Description This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).

Values Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort ES Meter committedBurstSize (bc)

Description This attribute indicates the committed burst size (bc) in bits for the *Meter*.
The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort ES Meter excessBurstSize (be)

Description This attribute indicates the excess burst size (be) in bits for the *Meter*.
The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort ES Meter measurmentInterval (t)

Description This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*.
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero

(t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values Decimal (0..4294967295)

ATTRIBUTE Vr Pp IpPort ES Meter packetsReceived

Description This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter octetsReceived

Description This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter eirPacketsReceived (excessPackets)

Description This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter eirOctetsReceived (excessOctets)

Description This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter packetsRemarked

Description This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter octetsRemarked

Description This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter packetsDiscarded

Description This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter octetsDiscarded

Description This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values Long Integer

COLLECTED STATS VirtualRouter Ip ControlPlaneProtection

Description The statistics record generated by the VirtualRouter Ip ControlPlaneProtection component.

ATTRIBUTE Vr Ip Cpp isolatedDa

Description This attribute indicates the ip address of the isolated locally destined DA.

Values IP address

ATTRIBUTE Vr Ip Cpp isolatedLp

Description This attribute indicates the LP number on which the locally destined address is being isolated.

Values Decimal (0..15)

ATTRIBUTE Vr Ip Cpp isolatedCounts

Description	This attribute indicates the number of counts that the isolated DA encountered during the last 15 minutes.
Values	Decimal (0..65535)

ATTRIBUTE Vr Ip Cpp averageFlowRate

Description	This attribute indicates the average flow rate of the isolated DA during the isolation period.
Values	Decimal (0..65535)

COLLECTED STATS VirtualRouter Ip Rtd

Description	The statistics record generated by the VirtualRouter Ip Rtd component.

ATTRIBUTE Vr Ip Rtd localNodeIdentifier

Description	This attribute identifies the node by a unique number assigned to each node. This value is provisioned in the attribute *namsId* of the component *ModuleData*.
Values	Decimal (256..49151)

ATTRIBUTE Vr Ip Rtd ipVcgInstance

Description	This attribute indicates which VCG VR generated the statistics record
Values	String (1..16, ASCII)

ATTRIBUTE Vr Ip Rtd localVcgIpAddress

Description	This attribute indicates the VCG loopback IP address of the VCG VR that generated the statistics record.
Values	IP address

ATTRIBUTE Vr Ip Rtd remoteVcgIpAddress

Description	This attribute indicates the remote VCG destination address that will have the delays measured.

Values	IP address

ATTRIBUTE Vr Ip Rtd framesSent

Description	This attribute contains the number of frames transmitted by the *Virtual Carrier Gateway* during the latest interval.
Vector of	Decimal (1..5)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd framesReceived

Description	This attribute contains the number of frames received by the *Virtual Carrier Gateway during* the collection interval.
Vector of	Decimal (1..5)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample1StartTime

Description	This attribute represents the timestamp when the first sample was sent to this remote *Virtual Carrier Gateway.*
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelays1

Description	This attribute indicates an array of round trip delays for the first sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3).
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample2StartTime

Description	This attribute represents the timestamp when the second sample of packets was sent to this remote *Virtual Carrier Gateway.*
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay2

Description	This attribute indicates an array of round trip delays for the second sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3)
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample3StartTime

Description	This attribute represents the timestamp when the third sample of packets was sent to this remote *Virtual Carrier Gateway*.
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay3

Description	This attribute indicates an array of round trip delays for the third sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3)
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample4StartTime

Description	This attribute represents the timestamp when the fourth sample of packets was sent to this remote *Virtual Carrier Gateway*.
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay4

Description	This attribute indicates an array of round trip delays for the fourth sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3).
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample5StartTime

Description	This attribute represents the timestamp when the fifth sample of packets was sent to this remote *Virtual Carrier Gateway*.
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay5

Description	This attribute indicates an array of round trip delays for the fifth sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3).
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

COLLECTED STATS PointToPointProtocol Framer

Description	The statistics record generated by the PointToPointProtocol Framer component.

ATTRIBUTE Ppp Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Ppp Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Ppp Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Ppp Framer txFrames

Description: This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values: Long Integer

ATTRIBUTE Ppp Framer rxTotalLinkUtil

Description: This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values: Decimal (0..100)

COLLECTED STATS FrMux Framer

Description: The statistics record generated by the FrMux Framer component.

ATTRIBUTE FrMux Framer rxBytes

Description: This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values: Long Integer

ATTRIBUTE FrMux Framer rxFrames

Description: This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values: Long Integer

ATTRIBUTE FrMux Framer txBytes

Description: This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values: Long Integer

ATTRIBUTE FrMux Framer txFrames

Description: This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values: Long Integer

ATTRIBUTE FrMux Framer rxTotalLinkUtil

Description: This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values: Decimal (0..100)

COLLECTED STATS AtmInterface

Description: The statistics record generated by the AtmInterface component.

ATTRIBUTE AtmIf remoteInstance

Description: This attribute indicates the remote ATM interface, as provisioned in the *remoteAtmInterfaceLabel*.

Values: String (0..60, ASCII)

ATTRIBUTE AtmIf provRate

Description: This attribute indicates the provisioned bandwidth for this ATM interface.

Values: Decimal (0..4294967295)

Units: cell/s

ATTRIBUTE AtmIf actualRate

Description: This attribute indicates the actual bandwidth for this ATM interface. When no errors occur it has a value equal to *provRate*. When the link (or IMA group) is down for the entire collection interval it has a value of zero. When the link goes down during the collection interval it has a value representing the average bandwidth during the collection interval.

Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf txUtilization

Description	This attribute indicates the average transmit traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth. On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%. If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.
Values	Decimal (0..65535)
Units	%

ATTRIBUTE AtmIf rxUtilization

Description	This attribute indicates the average receive traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth. On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since

this is possible, the value of this attribute may exceed 100%.

If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.

Values	Decimal (0..65535)
Units	%

ATTRIBUTE AtmIf txMaxCellRate

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf txMaxCellRateByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txMinCellRate

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf txMinCellRateByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txAvgCellRate

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf txAvgCellRateByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxMaxCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf rxMaxCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxMinCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf rxMinCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxAvgCellRate

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf rxAvgCellRateByServiceCat

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txMaxCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf txMaxCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txMinCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf txMinCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txAvgCellRateClp

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf txAvgCellRateClpByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxMaxCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf rxMaxCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxMinCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf rxMinCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxAvgCellRateClp

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf rxAvgCellRateClpByServiceCat

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txCellDiscards

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf txCellDiscardsByServiceCat

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxCellDiscards

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf rxCellDiscardsByServiceCat

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf txFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf rxFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf txCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf rxCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf txFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf txFrameDiscardsClpByServiceCat

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf rxFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf rxFrameDiscardsClpByServiceCat

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

COLLECTED STATS AtmInterface VirtualPathTerminator

Description	The statistics record generated by the AtmInterface VirtualPathTerminator component.

ATTRIBUTE AtmIf Vpt remoteInstance

Description	This attribute indicates the remote ATM interface, as provisioned in the *remoteAtmInterfaceLabel*.
Values	String (0..60, ASCII)

ATTRIBUTE AtmIf Vpt provRate

Description	This attribute indicates the provisioned bandwidth for this ATM interface.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt actualRate

Description	This attribute indicates the actual bandwidth for this ATM interface. When no errors occur it has a value equal to *provRate*. When the link (or IMA group) is down for the entire collection interval it has a value of zero. When the link goes down during the collection interval it has a value representing the average bandwidth during the collection interval.

Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt txUtilization

Description	This attribute indicates the average transmit traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth. On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since this is possible, the value of this attribute may exceed 100%. If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.
Values	Decimal (0..65535)
Units	%

ATTRIBUTE AtmIf Vpt rxUtilization

Description	This attribute indicates the average receive traffic rate over the most recent collection interval expressed as a percentage of the ATM link bandwidth. On *AtmIf*s linked to MPLS POS interfaces, the ATM link is the *LSP*. Many *LSP*s could share the same POS link. If the POS link is underutilized it is possible for an *LSP* to carry more traffic than it has been assigned. This occurs as bandwidth on an *LSP* is allocated based on determining whether the requested bandwidth exceeds the available bandwidth on an *LSP*, not on whether the actual bandwidth exceeds the available bandwidth. When the actual bandwidth is higher than the requested bandwith it is possible that this extra traffic will be carried over the *LSP*. Since

this is possible, the value of this attribute may exceed 100%.

If the utilization exceeds 65535% then 65535 is displayed. If the *Lsp* has a bandwidth of 0, then 0 is displayed for the utilization.

Values: Decimal (0..65535)

Units: %

ATTRIBUTE AtmIf Vpt txMaxCellRate

Description: This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval.

Values: Decimal (0..4294967295)

Units: cell/s

ATTRIBUTE AtmIf Vpt txMaxCellRateByServiceCat

Description: This attribute indicates the transmitted cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.

Vector of: Decimal (0..4294967295)

Index:
cbr
rtvbr
nrtvbr
abr
ubr

ATTRIBUTE AtmIf Vpt txMinCellRate

Description: This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval.

Values: Decimal (0..4294967295)

Units: cell/s

ATTRIBUTE AtmIf Vpt txMinCellRateByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txAvgCellRate

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt txAvgCellRateByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxMaxCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt rxMaxCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxMinCellRate

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt rxMinCellRateByServiceCat

Description	This attribute indicates the received cell rate (CLP=0+1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxAvgCellRate

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt rxAvgCellRateByServiceCat

Description	This attribute indicates the average received cell rate (CLP=0+1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txMaxCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt txMaxCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txMinCellRateClp

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt txMinCellRateClpByServiceCat

Description	This attribute indicates the transmitted cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txAvgCellRateClp

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt txAvgCellRateClpByServiceCat

Description	This attribute indicates the average transmitted cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxMaxCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt rxMaxCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the busiest minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxMinCellRateClp

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt rxMinCellRateClpByServiceCat

Description	This attribute indicates the received cell rate (CLP=1) during the least busy minute of the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxAvgCellRateClp

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE AtmIf Vpt rxAvgCellRateClpByServiceCat

Description	This attribute indicates the average received cell rate (CLP=1) during the collection interval by ATM service category.
Vector of	Decimal (0..4294967295)
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txCellDiscards

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt txCellDiscardsByServiceCat

Description	This attribute counts the cells (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxCellDiscards

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt rxCellDiscardsByServiceCat

Description	This attribute counts the cells (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt txFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxFrameDiscards

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt rxFrameDiscardsByServiceCat

Description	This attribute counts the frames (CLP=0+1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt txCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxCellDiscardsClp

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt rxCellDiscardsClpByServiceCat

Description	This attribute counts the cells (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt txFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt txFrameDiscardsClpByServiceCat

Description	This attribute counts the frames (CLP=1) which are discarded before being transmitted during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

ATTRIBUTE AtmIf Vpt rxFrameDiscardsClp

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval.
Values	Long Integer

ATTRIBUTE AtmIf Vpt rxFrameDiscardsClpByServiceCat

Description	This attribute counts the frames (CLP=1) which are discarded after being received during the collection interval by ATM service category.
Vector of	Long Integer
Index	cbr rtvbr nrtvbr abr ubr

COLLECTED STATS SignallingChannel E1Cas

Description	The statistics record generated by the SignallingChannel E1Cas component.

ATTRIBUTE SigChan E1Cas totalCallsOutgoing

Description	This spooled statistic counts the number of outgoing node call attempts made to this link in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan E1Cas totalCallsIncoming

Description	This attribute counts the number of incoming link call attempts made to this node in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan E1Cas seizeFailures

Description	This spooled statistic counts the number of outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal in the last statistics collection interval. That is no seizure acknowledgment or wink was returned from link.
Values	Decimal (0..65535)

ATTRIBUTE SigChan E1Cas releaseFailures

Description: This spooled statistic counts the number of times that the link failed to respond correctly during the disconnect sequence of a call in the last statistics collection interval.

Values: Decimal (0..65535)

ATTRIBUTE SigChan E1Cas outgoingAnsweredCalls

Description: This spooled statistic counts the number of outgoing node calls to this link that were answered by the link in the last statistics collection interval.

Values: Decimal (0..65535)

ATTRIBUTE SigChan E1Cas incomingAnsweredCalls

Description: This spooled statistic counts the number of incoming link calls that were answered by this node, connect signals transmitted by this node out to the link in the last statistics collection interval.

Values: Decimal (0..65535)

ATTRIBUTE SigChan E1Cas peakActiveChannels

Description: This spooled statistic counts the maximum number of channels that have been simultaneously active on this signalling channel during the last statistics collection interval.

Values: Decimal (0..30)

COLLECTED STATS SignallingChannel Ds1Cas

Description: The statistics record generated by the SignallingChannel Ds1Cas component.

ATTRIBUTE SigChan Ds1Cas totalCallsOutgoing

Description: This spooled statistic counts the number of outgoing node call attempts made to this link in the last statistics collection interval.

Values: Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas totalCallsIncoming

Description: This attribute counts the number of incoming link call attempts made to this node in the last statistics collection interval.

Values: Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas seizeFailures

Description: This spooled statistic counts the number of outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal in the last statistics collection interval. That is no seizure acknowledgment or wink was returned from link.

Values: Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas releaseFailures

Description: This spooled statistic counts the number of times that the link failed to respond correctly during the disconnect sequence of a call in the last statistics collection interval.

Values: Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas outgoingAnsweredCalls

Description: This spooled statistic counts the number of outgoing node calls to this link that were answered by the link in the last statistics collection interval.

Values: Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas incomingAnsweredCalls

Description: This spooled statistic counts the number of incoming link calls that were answered by this node, connect signals transmitted by this node out to the link in the last statistics collection interval.

Values: Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas peakActiveChannels

Description: This spooled statistic counts the maximum number of channels that have been simultaneously active on this signalling channel during the last statistics collection interval.

Values Decimal (0..30)

COLLECTED STATS SignallingChannel J2Cas

Description The statistics record generated by the SignallingChannel J2Cas component.

ATTRIBUTE SigChan J2 totalCallsOutgoing

Description This spooled statistic counts the number of outgoing node call attempts made to this link in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 totalCallsIncoming

Description This attribute counts the number of incoming link call attempts made to this node in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 seizeFailures

Description This spooled statistic counts the number of outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal in the last statistics collection interval. That is no seizure acknowledgment or wink was returned from link.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 releaseFailures

Description This spooled statistic counts the number of times that the link failed to respond correctly during the disconnect sequence of a call in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 outgoingAnsweredCalls

Description This spooled statistic counts the number of outgoing node calls to this link that were answered by the link in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 incomingAnsweredCalls

Description This spooled statistic counts the number of incoming link calls that were answered by this node, connect signals transmitted by this node out to the link in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 peakActiveChannels

Description This spooled statistic counts the maximum number of channels that have been simultaneously active on this signalling channel during the last statistics collection interval.

Values Decimal (0..30)

COLLECTED STATS SignallingChannel EtsiQsig

Description The statistics record generated by the SignallingChannel EtsiQsig component.

ATTRIBUTE SigChan EQsig peakActiveChannels

Description This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.

Values Decimal (0..30)

ATTRIBUTE SigChan EQsig peakActiveVoiceChannels

Description This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.

Values Decimal (0..30)

ATTRIBUTE SigChan EQsig peakActiveDataChannels

Description	This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan EQsig totalCallsToIf

Description	This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan EQsig totalCallsFromIf

Description	This collected statistic counts the number of calls from the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan EQsig nonCallAssocSessionsToIf

Description	This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan EQsig nonCallAssocSessionsFromIf

Description	This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan EQsig frmToIf

Description	This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SigChan EQsig frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan EQsig octetFromIf

Description The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan EQsig octetToIf

Description The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS SignallingChannel NisSig

Description The statistics record generated by the SignallingChannel NisSig component.

ATTRIBUTE SigChan Nis peakActiveChannels

Description This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.

Values Decimal (0..30)

ATTRIBUTE SigChan Nis peakActiveVoiceChannels

Description This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.

Values Decimal (0..30)

ATTRIBUTE SigChan Nis peakActiveDataChannels

Description	This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan Nis totalCallsToIf

Description	This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Nis totalCallsFromIf

Description	This collected statistic counts the number of calls from the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Nis nonCallAssocSessionsToIf

Description	This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Nis nonCallAssocSessionsFromIf

Description	This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Nis frmToIf

Description	This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SigChan Nis frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Nis octetFromIf

Description The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Nis octetToIf

Description The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS SignallingChannel EuroIsdn

Description The statistics record generated by the SignallingChannel EuroIsdn component.

ATTRIBUTE SigChan EIsdn peakActiveChannels

Description This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.

Values Decimal (0..30)

ATTRIBUTE SigChan EIsdn peakActiveVoiceChannels

Description This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.

Values Decimal (0..30)

ATTRIBUTE SigChan Elsdn peakActiveDataChannels

Description	This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan Elsdn totalCallsToIf

Description	This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Elsdn totalCallsFromIf

Description	This collected statistic counts the number of calls from the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Elsdn nonCallAssocSessionsToIf

Description	This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Elsdn nonCallAssocSessionsFromIf

Description	This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Elsdn frmToIf

Description	This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SigChan Elsdn frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE SigChan Elsdn octetFromIf

Description

The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE SigChan Elsdn octetToIf

Description

The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.

Values

Decimal (0..4294967295)

COLLECTED STATS SignallingChannel McdnSig

Description

The statistics record generated by the SignallingChannel McdnSig component.

ATTRIBUTE SigChan Mcdn peakActiveChannels

Description

This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.

Values

Decimal (0..30)

ATTRIBUTE SigChan Mcdn peakActiveVoiceChannels

Description

This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.

Values

Decimal (0..30)

ATTRIBUTE SigChan Mcdn peakActiveDataChannels

Description	This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan Mcdn totalCallsToIf

Description	This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Mcdn totalCallsFromIf

Description	This collected statistic counts the number of calls from the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Mcdn nonCallAssocSessionsToIf

Description	This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Mcdn nonCallAssocSessionsFromIf

Description	This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Mcdn frmToIf

Description	This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SigChan Mcdn frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Mcdn octetFromIf

Description The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Mcdn octetToIf

Description The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS VoiceRoute

Description The statistics record generated by the VoiceRoute component.

ATTRIBUTE VRoute totalCallsFromSubnet

Description This spooled statistic counts the calls that have been received from the subnet in the last statistics collection interval, including calls that fail.

Values Decimal (0..65535)

ATTRIBUTE VRoute callsClearedNoChannel

Description This spooled statistic counts the calls from the subnet that were rejected when all of the in-service channels were busy in the last statistics collection interval. When a call is rejected for this reason, the cause code sent to the originator is 34, no circuit/channel available.

Values Decimal (0..65535)

ATTRIBUTE VRoute callsClearedOutOfService

Description: This spooled statistic counts the calls from the subnet that were rejected because all of the channels were out-of-service in the last statistics collection interval. A channel is considered out-of-service if it is unavailable for any reason other than it is being engaged in handling a call. That is, an operator lock of any of the components required for the channel's operation, or problems which interfere with the connection to the PBX, will cause the channel to be considered out-of-service. When a call is rejected for this reason, the cause code sent back to the originator is 27, destination out-of-service.

Values: Decimal (0..65535)

ATTRIBUTE VRoute callsRejected

Description: This spooled statistic counts the calls from the subnet that were rejected in the last statistics collection interval because they were:
1) voice calls to a *typeOfRoute* which is set *to* ***data***,
2) data calls to a *typeOfRoute* which is set to ***voice***,
3) using a signalling protocol which is incompatible with this end.

Values: Decimal (0..65535)

COLLECTED STATS VoiceSubroute

Description: The statistics record generated by the VoiceSubroute component.

ATTRIBUTE Vsr totalCallsFromIf

Description: This spooled statistic counts the number of calls that have been received by this *VoiceSubroute* from the PBX in the last statistics collection interval.

Values: Decimal (0..65535)

ATTRIBUTE Vsr totalFailedCallsFromIf

Description: This spooled statistic counts the number of calls that have been received by this *VoiceSubroute* from the PBX which failed to be

successfully routed through the subnet in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Vsr invalidNumberingPlanCalls

Description This spooled statistic counts the calls from the interface for which the type of number and the numbering plan identification was not associated with a diallingPlan in the last statistics collection interval. The numbering plan types *diallingPlan0, diallingPlan1, diallingPlan2* are provisioned in the *VoiceRoute*.

Values Decimal (0..65535)

ATTRIBUTE Vsr addressResolutionFailedCalls

Description This spooled statistic counts the calls from the interface which had dialled numbers that had no entry in the *VoiceNetworkingCallServer* data base in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Vsr addressIncompleteCalls

Description This spooled statistic counts the calls from the interface which had dialled numbers with insufficient digits to resolve to a unique entry in the *VoiceNetworkingCallServer* data base in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Vsr pathAttributesNotMetCalls

Description This spooled statistic counts the calls from the interface for which a path to the end point could not be established based on the attribute specified in the *VoiceProfile* in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Vsr pathSetupTimeOutCalls

Description	This spooled statistic counts the calls from the interface for which a path to the end point could not be established due to a subnet path setup time-out in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Vsr callsRejectedLocally

Description	This spooled statistic counts the calls from the interface which were rejected by the originating end in the last statistics collection interval because it was: 1) a data call on a voice only *VoiceRoute*, or 2) a voice call on a data only *VoiceRoute*, or 3) a data call to an end-point whose *VoiceProfile* prevents data calls from being made.
Values	Decimal (0..65535)

ATTRIBUTE Vsr callsRejectedByFarEnd

Description	This spooled statistic counts the calls from the interface which were rejected by the far-end in the last statistics collection interval.This rejection could be due to: 1) no free channels at the end-point, or 2) a voice call going to a data only *VoiceRoute*, or 3) a data call going to a voice only *VoiceRoute*, or 4) a signalling protocol incompatibility between end-points.
Values	Decimal (0..65535)

ATTRIBUTE Vsr peakActiveChannels

Description	This spooled statistic counts the peak number of B-channels that were active in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveVoiceChannels

Description	This spooled statistic counts the peak number of B-channels that were active carrying voice in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveModemChannels

Description	This spooled statistic counts the peak number of active B-channels that a 2100Hz tone was detected in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveDataChannels

Description	This spooled statistic counts the maximum number of B-channels that were active carrying data in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveFaxRelayChannels

Description	This spooled statistic counts the maximum number of B-channels that were active carrying fax relay calls in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr totalCalls

Description	This spooled statistic counts the call attempts processed on this channel (in both directions) in the last statistics collection interval. This counter includes the number of unsuccessful as well as successful call attempts.
Vector of	Decimal (0..65535)
Index	Decimal (1..32)

ATTRIBUTE Vsr totalCallSeconds

Description	This spooled statistic counts the number of seconds that each channel is handling a call in the last statistics collection interval. This is regardless of whether the call is successful or not. In other words, this is the amount of time that the channel is not in the idle state.
Vector of	Decimal (0..65535)

Units	seconds
Index	Decimal (1..32)

ATTRIBUTE Vsr voiceRouteInstance

Description	This spooled statistic is the value of the *VoiceRoute* linked to this *VoiceSubRoute*.
Values	Decimal (1..16)

COLLECTED STATS VoiceSubroute SwitchedVoiceService Framer

Description	The statistics record generated by the VoiceSubroute SwitchedVoiceService Framer component.

ATTRIBUTE Vsr Svs Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Vsr Svs Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Vsr Svs Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Vsr Svs Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Vsr Svs Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS DataSignallingChannel TS014 Framer

Description The statistics record generated by the DataSignallingChannel TS014 Framer component.

ATTRIBUTE DataSigChan TS014 Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan TS014 Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan TS014 Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan TS014 Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan TS014 Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS DataSignallingChannel Etsi Framer

Description The statistics record generated by the DataSignallingChannel Etsi Framer component.

ATTRIBUTE DataSigChan Etsi Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan Etsi Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan Etsi Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Etsi Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Etsi Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS DataSignallingChannel JapanIns Framer

Description The statistics record generated by the DataSignallingChannel JapanIns Framer component.

ATTRIBUTE DataSigChan Ins Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan Ins Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan Ins Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Ins Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Ins Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS DataSignallingChannel NationalIsdn2 Framer

Description The statistics record generated by the DataSignallingChannel NationalIsdn2 Framer component.

ATTRIBUTE DataSigChan Ni2 Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan Ni2 Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan Ni2 Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Ni2 Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Ni2 Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS DataSignallingChannel Nis Framer

Description The statistics record generated by the DataSignallingChannel Nis Framer component.

ATTRIBUTE DataSigChan Nis Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan Nis Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE DataSigChan Nis Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Nis Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE DataSigChan Nis Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS McsManager DprsMcsEndPointGroup EndPoint

Description The statistics record generated by the McsManager DprsMcsEndPointGroup EndPoint component.

ATTRIBUTE McsMgr DprsMcsEpG Ep remoteComponentName (remoteName)

Description This attribute indicates the component name of the remote *Ep,* learned from the remote end.
For example: *"EM/NODEY2D0 McsMgr DprsMcsEpG/1 Ep/1"*.
The value will be a null string if the transport connection is down at the end of the statistics collection interval.

Values String (0..46, ASCII)

ATTRIBUTE McsMgr DprsMcsEpG Ep bandwidthHWM

Description This attribute indicates the high-water mark of the bandwidth at which the transport connection agrees to transfer data during the last statistics collection interval. The value for this attribute is equal to the provisioned bandwidth when the connection is up, and is 0 when the transport connection is down.
This attribute, when combined with *bandwidthLWM* can also be used to indicate a transport connection outage occurrence.

Values Decimal (0..155000000)

Units bit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep bandwidthLWM

Description This attribute indicates the low-water mark of the bandwidth at which the transport connection agrees to transfer data during the

last statistics collection interval. The value for this attribute is equal to the provisioned bandwidth when the connection is up, and is 0 when the transport connection is down.
This attribute, when combined with *bandwidthHWM* can also be used to indicate a transport connection outage occurrence.

Values: Decimal (0..155000000)

Units: bit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep serviceCategory (sc)

Description: This attribute indicates the ATM service category of the transport connection.

Values:
ubr
cbr
rtVbr
nrtVbr

ATTRIBUTE McsMgr DprsMcsEpG Ep pktFromMcs

Description: This attribute indicates the number of packets received on the DPRS MCS Switched Path End Point for each discard priority in the last statistics collection interval.
This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0(***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***).

Vector of: Long Integer

Index:
discardPriority0 (dp0)
discardPriority1 (dp1)
discardPriority2 (dp2)
discardPriority3 (dp3)

ATTRIBUTE McsMgr DprsMcsEpG Ep octetsFromMcs

Description: This attribute indicates the octets received on the DPRS MCS Switched Path End Point for each discard priority in the last statistics collection interval.
This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard

priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***).

Vector of: Long Integer

Index:
discardPriority0 (dp0)
discardPriority1 (dp1)
discardPriority2 (dp2)
discardPriority3 (dp3)

ATTRIBUTE McsMgr DprsMcsEpG Ep pktDiscCongestedFromMcs

Description: This attribute indicates the number of packets received on the DPRS MCS Switched Path End Point for each discard priority that have been discarded at the transport card in the last statistics collection interval due to congestion at the access card.
This attribute is a vector with four entries. Each vector entry is a counter indexed by one of four discard priorities, namely, discard priority 0 (***dp0***), discard priority 1 (***dp1***), discard priority 2 (***dp2***), or discard priority 3 (***dp3***).

Vector of: Decimal (0..4294967295)

Index:
discardPriority0 (dp0)
discardPriority1 (dp1)
discardPriority2 (dp2)
discardPriority3 (dp3)

ATTRIBUTE McsMgr DprsMcsEpG Ep pktDiscErroredFromMcs

Description: This attribute the number of errored packets received on the DPRS MCS Switched Path End Point that have been discarded in the last statistics collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS McsManager DprsMcsEndPointGroup EndPoint

CallAdmissionControl

Description — The statistics record generated by the McsManager DprsMcsEndPointGroup EndPoint CallAdmissionControl component.

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac effectiveBandwidth

Description — This value indicates the level of effective bandwidth available during the last statistics collection interval, as indicated by the *effectiveBandwidth* attribute of the *McsMgr DprsMcsEpG/m EndPoint/n Cac* component in thousands of bits per second.

Values — Decimal (0..4294967295)

Units — kbit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac effectiveBandwidthAvailableLWM

Description — This value indicates the lowest level of effective bandwidth available as indicated by the *effectiveBandwidthAvailable* attribute of the *McsMgr DprsMcsEp/m EndPoint/n Cac* component, in thousands of bits per second during the last statistics collection interval.

Values — Decimal (0..4294967295)

Units — kbit/s

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac numberOfCallsActiveHWM

Description — This value indicates the highest level of the *numberOfCallsActive* attribute of the *McsMgr DprsMcsEp/m EndPoint/n Cac* component, during the last statistics collection interval.

Values — Decimal (0..512)

ATTRIBUTE McsMgr DprsMcsEpG Ep Cac numberOfCacFailures

Description — This value indicates the number of call admission failures in the last statistics collection interval. This value equals the increase in the *numberOfCacFailures* attribute of the *McsMgr DprsMcsEp/m EndPoint/n Cac* component during the last statistics collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS MpaNetworkLink Framer

Description The statistics record generated by the MpaNetworkLink Framer component.

ATTRIBUTE MpanI Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE MpanI Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE MpanI Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE MpanI Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE MpanI Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway AmrBasicRateGroup Mtp2

Description — The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway AmrBasicRateGroup Mtp2 component.

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 insvFailures

Description — This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msusTx

Description — This attribute indicates the number of message signal units transmitted over the collection interval. This includes the MSUs retransmitted, indicated by the attribute *msuRetransmits.*

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuRetransmits (msuReTx)

Description — This attribute indicates the number of message signal units retransmitted because of negative acknowledgments over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msusRx

Description — This attribute indicates the number of message signal units received over the collection interval. This includes the MSUs with errors, indicated by the attribute *msuErrors.*

Values — Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuErrors

Description: This attribute indicates the number of message signal units discarded because of sequence number, length or CRC errors over the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuOctetsTx

Description: This attribute indicates the number of payload MSU octets transmitted over the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs AmrBrag Mtp2 msuOctetsRx

Description: This attribute indicates the number of payload MSU octets received over the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS NarrowbandServicesTrunkOverATM VoiceGateway CsdBasicRateGroup Mtp2

Description: The statistics record generated by the NarrowbandServicesTrunkOverATM VoiceGateway CsdBasicRateGroup Mtp2 component.

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 insvFailures

Description: This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.

Values: Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msusTx

Description: This attribute indicates the number of message signal units transmitted over the collection interval. This includes the MSUs retransmitted, indicated by the attribute *msuRetransmits.*

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuRetransmits (msuReTx)

Description This attribute indicates the number of message signal units retransmitted because of negative acknowledgments over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msusRx

Description This attribute indicates the number of message signal units received over the collection interval. This includes the MSUs with errors, indicated by the attribute *msuErrors.*

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuErrors

Description This attribute indicates the number of message signal units discarded because of sequence number, length or CRC errors over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuOctetsTx

Description This attribute indicates the number of payload MSU octets transmitted over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Nsta Vgs CsdBrag Mtp2 msuOctetsRx

Description This attribute indicates the number of payload MSU octets received over the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS DcmeLink VoiceService Framer

Description The statistics record generated by the DcmeLink VoiceService Framer component.

ATTRIBUTE Dcl Vs Framer rxBytes

Description: This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values: Long Integer

ATTRIBUTE Dcl Vs Framer rxFrames

Description: This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values: Long Integer

ATTRIBUTE Dcl Vs Framer txBytes

Description: This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values: Long Integer

ATTRIBUTE Dcl Vs Framer txFrames

Description: This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values: Long Integer

ATTRIBUTE Dcl Vs Framer rxTotalLinkUtil

Description: This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values: Decimal (0..100)

COLLECTED STATS PCUSupportApplication Connection PcmLink

Description: The statistics record generated by the PCUSupportApplication Connection PcmLink component.

ATTRIBUTE Pcusa Conn PcmLk pduDn (pduDn)

Description This attribute counts the BSSGP PDUs received from the SGSN by all the BVCs associated to this PCM link during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk pduUp (pduUp)

Description This attribute counts the BSSGP PDUs transmitted to the SGSN by all the BVCs associated to this PCM link during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk octetsDn (octDn)

Description This attribute counts the octets received by all the BVCs associated to this PCM link during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk octetsUp (octUp)

Description This attribute counts the octets sent by all the BVCs associated to this PCM link during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk psPaging (psPag)

Description This attribute counts the BSSGP PAGING PS PDUs received from the SGSN by this PCM link during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk csPaging (csPag)

Description This attribute counts the BSSGP PAGING CS PDUs received from the SGSN by this PCM link during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk dyAgprsLackOfTimeslots (dyAgprsLTs)

Description	This attribute counts the number of time that the PCU has not been able to satisfy the request sent by the most loaded cell on which appears a lack of resource during the statistics collection interval.
Values	Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink LapdSignaling

Description	The statistics record generated by the PCUSupportApplication Connection PcmLink LapdSignaling component.

ATTRIBUTE Pcusa Conn PcmLk LapdSig framesLostOverflowUp (fLovfUp)

Description	This attribute counts the uplink frames lost due to data overrun or receive buffer overflow during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig framesLostOverflowDn (fLovfDn)

Description	This attribute counts the downlink frames which were not sent because of buffer overflow during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig errorsCRC (errCRC)

Description	This attribute counts the frames with CRC errors which were received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig framesLostAlignment (fLAlign)

Description	This attribute counts the frames lost due to abort or lack of alignment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig iFramesUp (iFrmUp)

Description This attribute counts the I frames received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig uiFramesUp (uiFrmUp)

Description This attribute counts the unnumbered I frames received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig iFramesDn (iFrmDn)

Description This attribute counts the I frames transmitted during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig uiFramesDn (uiFrmDn)

Description This attribute counts the unnumbered I frames transmitted during the statistics collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink Cell

Description The statistics record generated by the PCUSupportApplication Connection PcmLink Cell component.

ATTRIBUTE Pcusa Conn PcmLk Cell cellBVCI

Description This attribute indicates the corresponding BSSGP Virtual Channel Identifier during the statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Cell upMultiSlotRequests (upMSlotReq)

Description This attribute counts the multislot allocation requests received by the PCU from the mobile station during the statistics collection

interval.

Index 1 counts the number of 1- timeslot allocation requests.
Index 2 counts the number of 2- timeslot allocation requests.
Index 3 counts the number of 3- timeslot allocation requests.
Index 4 counts the number of 4- or more timeslot allocation requests.

Vector of: Decimal (0..4294967295)

Index: Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell upMultiSlotAllocations (upMSlotAll)

Description: This attribute counts the multislot granted allocations received by the PCU from the mobile station during the statistics collection interval.

Index 1 counts the number of 1- timeslot granted allocations.
Index 2 counts the number of 2- timeslot granted allocations.
Index 3 counts the number of 3- timeslot granted allocations.
Index 4 counts the number of 4- or more timeslot granted allocations.

Vector of: Decimal (0..4294967295)

Index: Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell dnMultiSlotRequests (dnMSlotReq)

Description: This attribute counts the multislot allocation requests received by the mobile station from the PCU during the statistics collection interval.

Index 1 counts the number of 1- timeslot allocation requests.
Index 2 counts the number of 2- timeslot allocation requests.
Index 3 counts the number of 3- timeslot allocation requests.
Index 4 counts the number of 4- or more timeslot allocation requests.

Vector of: Decimal (0..4294967295)

Index: Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell dnMultiSlotAllocations (dnMSlotAll)

Description	This attribute counts the multislot granted allocations received by the mobile station from the PCU during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations. Index 3 counts the number of 3- timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell fullDuplexTbfEstablishment (fdTbfEst)

Description	This attribute counts how many full duplex TBFs were established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell upTbfReleases (upTbfRel)

Description	This attribute counts how many uplink TBFs were released during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell cumulativeTimeUpTbf (cumTimeUpTbf)

Description	This attribute indicates the cumulative duration of all uplink TBFs released during the statistics collection interval.
Values	Decimal (0..4294967295)
Units	seconds

ATTRIBUTE Pcusa Conn PcmLk Cell allocatedBlocksUpTbf (allBUpTbf)

Description	This attribute counts the blocks allocated for the uplink TBFs during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell nonAckUpTbfEstablishment (nAckUpTbfEst)

Description	This attribute counts the non-acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell ackUpTbfEstablishment (ackUpTbfEst)

Description	This attribute counts the acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell closeEndedUpTbfEstablishment (closeEndUpTbfEst)

Description	This attribute counts the close-ended uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfReleases (dnTbfRel)

Description	This attribute counts how many downlink TBFs were released during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell cumulativeTimeDnTbf (cumTimeDnTbf)

Description	This attribute indicates the cumulative duration of all downlink TBFs released during the statistics collection interval.
Values	Decimal (0..4294967295)
Units	seconds

ATTRIBUTE Pcusa Conn PcmLk Cell nonAckDnTbfEstablishment (nAckDnTbfEst)

Description	This attribute counts the non-acknowledged downlink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell ackDnTbfEstablishment (ackDnTbfEst)

Description	This attribute counts the acknowledged downlink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsNbModif (dyAgprsNbMod)

Description	This attribute counts the modifications of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsAvgNbTimeslots (dyAgprsAvgNbTs)

Description	This attribute indicates the average number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsMinNbTimeslots (dyAgprsMinNbTs)

Description	This attribute indicates the minimum number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsMaxNbTimeslots (dyAgprsMaxNbTs)

Description	This attribute indicates the maximum number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsAvgLoadCriterion (dyAgprsAvgLdCrit)

Description	This attribute indicates the average Agprs load criterion value during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsMaxLoadCriterion (dyAgprsMaxLdCrit)

Description	This attribute indicates the maximum Agprs load criterion value during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldSatisfactMore90pCent (dnTbfGSatM90)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldSatisfactBet5090pCent (dnTbfGSatB5090)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldSatisfactLess50pCent (dnTbfGSatL50)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldRejectedForMinTput (dnTbfGRejMinTput)

Description	This attribute counts the downlink TBFs with gold QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfSilverSatisfactMore90pCent (dnTbfSSatM90)

Description	This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfSilverSatisfactBet5090pCent (dnTbfSSatB5090)

Description This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfSilverSatisfactLess50pCent (dnTbfSSatL50)

Description This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfSilverRejectedForMinTput (dnTbfSRejMinTput)

Description This attribute counts the downlink TBFs with silver QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeSatisfactMore90pCent (dnTbfBSatM90)

Description This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeSatisfactBet5090pCent (dnTbfBSatB5090)

Description This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeSatisfactLess50pCent (dnTbfBSatL50)

Description: This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeRejectedForMinTput (dnTbfBRejMinTput)

Description: This attribute counts the downlink TBFs with bronze QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink Cell Tdma

Description: The statistics record generated by the PCUSupportApplication Connection PcmLink Cell Tdma component.

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma localBusy (locBus)

Description: This attribute counts the blocks sent with the window stalled indicator set during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma remoteBusy (remBus)

Description: This attribute counts the blocks received with the window stalled indicator set during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma configuredTimeslots (cfgTs)

Description: This attribute indicates the number of configured timeslots at the end of the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeUnavailableTimeslots (cumUnavailTs)

Description: This attribute indicates the cumulative number of unavailable timeslots at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeUpActiveTimeslots (cumUpActTs)

Description: This attribute indicates the cumulative number of active uplink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeUpTbfPerTimeslots (cumUpTbfPerTs)

Description: This attribute indicates the cumulative number of uplink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeDnActiveTimeslots (cumDnActTs)

Description: This attribute indicates the cumulative number of active downlink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeDnTbfPerTimeslots (cumDnTbfPerTs)

Description: This attribute indicates the cumulative number of downlink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma nbSamples (nbS)

Description: This attribute indicates how many samples were taken during the statistics collection interval.

This value can be used with the cumulative attribute for average calculs.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma llcPacketsUp (llcPktUp)

Description: This attribute counts the LLC packets reassembled and transmitted to the LLC relay during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma dataBlocksUp (dataBUp)

Description: This attribute counts the uplink RLC data blocks received during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma controlBlocksUp (ctrlBUp)

Description: This attribute counts the uplink RLC control blocks received during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma invalidBlocksUp (invalidBUp)

Description: This attribute counts the uplink invalid radio blocks received during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma invalidProtocolErrorBlocksUp (invalidProtErrBUp)

Description: This attribute counts the uplink invalid radio blocks received with invalid RLC protocol during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma outOfSequenceBlocksUp (outOfSeqBUp)

Description: This attribute counts the data blocks received uplink with Block Sequence Number outside the received window during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma packetAckNackUp (pktANUp)

Description: This attribute counts the PACKET-UPLINK-ACK-NACK messages received during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma totalRetransmissionRequested (totRtxReq)

Description: This attribute counts the RLC/MAC block retransmission requests during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeUpRxQual (cumUpRxQual)

Description: This attribute indicates the cumulative uplink RxQual value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeUpRxLev (cumUpRxLev)

Description: This attribute indicates the cumulative uplink RxLev value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma nbSamplesUpQuality (nbSamplesUpQuality)

Description: This attribute counts the samples for RxQual and RxLev cumulative values during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma llcPacketsDn (llcPktDn)

Description: This attribute counts the LLC packets segmented into RLC data blocks received during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma dataBlocksDn (dataBDn)

Description: This attribute counts the downlink RLC data blocks transmitted during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma controlBlocksDn (ctrlBDn)

Description: This attribute counts the downlink RLC control blocks transmitted during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma retransmittedDataBlocksDn (rtxDataBDn)

Description: This attribute counts the data blocks retransmitted downlink during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma packetAckNackDn (pktANDn)

Description	This attribute counts the PACKET-DOWNLINK-ACK-NACK messages transmitted during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeDnRxQual (cumDnRxQual)

Description	This attribute indicates the cumulative downlink RxQual value during the statistics collection interval. The average can be calculated by dividing this attribute value by the *nbSamples* value.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma nbSamplesDnQuality (nbSamplesDnQuality)

Description	This attribute counts the samples for RxQual cumulative values during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma tbfNormalReleaseUp (tbfNormRelUp)

Description	This attribute counts the uplink TBFs which terminated normally during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma tbfNormalReleaseDn (tbfNormRelDn)

Description	This attribute counts the downlink TBFs which terminated normally during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma noPacketResourceReq (noPktResReq)

Description	This attribute counts the TBFs abnormally released due to non receipt of Packet Resource Request during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComNN002Max (lOCNN002Max)

Description This attribute counts the TBFs abnormally released due to V(Q) non progression during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComT3169 (lOCT3169)

Description This attribute counts the TBFs abnormally released due to timer T3169 expiry during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComNT0001 (lOCNT0001)

Description This attribute counts the TBFs abnormally released due to NT0001 timer expiry during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComT3195 (lOCT3195)

Description This attribute counts the TBFs abnormally released due to T3195 timer expiry during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComT3191 (lOCT3191)

Description This attribute counts the TBFs abnormally released due to T3191 timer expiry during the statistics collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink Cell Ccch

Description The statistics record generated by the PCUSupportApplication Connection PcmLink Cell Ccch component.

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfImmediateAssignment (immAssUp)

Description This attribute counts IMMEDIATE-ASSIGNMENT messages generated by the PCU to the mobile station in the first phase of

the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfImmAssigRejectNoPdch (noPdch)

Description This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfImmAssigRejectNoTs (noTs)

Description This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfImmAssigRejectNoTbf (noTbf)

Description This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch channelRequest (chanReq)

Description This attribute counts CHANNEL-REQUEST messages received by the PCU from the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch packetResourceRequest (pktResReq)

Description: This attribute counts PACKET-RESOURCE-REQUEST messages received by the PCU from the mobile station in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch deleteIndicationUp (delIndUp)

Description: This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for uplink transfer is dropped during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch packetUpAssignment (pktUpAss)

Description: This attribute counts PACKET-UPLINK-ASSIGNMENT messages generated by the PCU after a PACKET-RESOURCE-REQUEST in the second phase of the two_phase access uplink TBF establishment during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfPacketAccessRejectNoPdch (pktNoPdch)

Description: This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfPacketAccessRejectNoTs (pktNoTs)

Description: This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfPacketAccessRejectNoTbf (pktUpNoTbf)

Description	This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of "Maximum TBF per TDMA is reached" in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch dnTbfImmediateAssignment (immAssDn)

Description	This attribute counts IMMEDIATE-ASSIGNMENT messages sent for a downlink TBF establishment from the PCU to the mobile station during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch pagingRequest (pagReq)

Description	This attribute counts PAGING-REQUEST messages generated by the PCU to the mobile station during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch deleteIndicationDn (delIndDn)

Description	This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for downlink transfer is dropped during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch packetDnAssignment (pktDnAss)

Description	This attribute counts PACKET-DOWNLINK-ASSIGNMENT messages generated by the PCU to the mobile station in the downlink TBF establishment phase during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch dnTbfPacketAccessRejectNoPdch (pktDnNoPdch)

Description	This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch dnTbfPacketAccessRejectNoTs (pktDnNoTs)

Description	This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch dnTbfPacketAccessRejectNoTbf (pktDnNoTbf)

Description	This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.
Values	Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink BssgpVirtualConnection

Description	The statistics record generated by the PCUSupportApplication Connection PcmLink BssgpVirtualConnection component.

ATTRIBUTE Pcusa Conn PcmLk Bvc cell

Description	This attribute indicates the cell identity number associated to this BVC.

Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc pduDn

Description	This attribute counts the PDUs received by this BVC from the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc pduUp

Description	This attribute counts the PDUs sent by this BVC to the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc octetsDn (octDn)

Description	This attribute counts the octets received by the BVC from the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc octetsUp (octUp)

Description	This attribute counts the octets sent by the BVC to the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc pduDataDn

Description	This attribute counts the UNIT-DATA PDUs received by the BVC from the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc pduDataUp

Description	This attribute counts the UNIT-DATA PDUs sent by the BVC to the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc octetsDataDn

Description	This attribute counts the octets received by the BVC from the Gb interface in DL-UNIT-DATA PDUs during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc octetsDataUp

Description	This attribute counts the octets sent by the BVC to the Gb interface in UL-UNIT-DATA PDUs during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc maxSizeDataDn

Description	This attribute indicates the largest size of LLC frame received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc maxSizeDataUp

Description	This attribute indicates the biggest size of LLC frames sent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcBlockRequests (bvcBReq)

Description	This attribute counts BVC-BLOCK PDU messages sent by the BVC during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcUnBlockRequests (bvcUBReq)

Description	This attribute counts BVC-UNBLOCK PDU messages sent by the BVC during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct1TimeOuts (t1TO)

Description This attribute counts BVC-BLOCK-ACK and BVC-UNBLOCK-ACK timer expiries during the statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcResetRequestsUp (bvcResReqUp)

Description This attribute counts BVC-RESET PDU messages sent by a BVC during the statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcResetRequestsDn (bvcResReqDn)

Description This attribute counts BVC-RESET PDU messages received by the BVC during the statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct2TimeOuts (t2TO)

Description This attribute counts BVC-RESET-ACK timer expiries during the statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcFlowControlRequests (bvcFCtrlReq)

Description This attribute counts FLOW-CONTROL-BVC PDUs sent by the BVC during the statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc msFlowControlRequests (msFCtrlReq)

Description This attribute counts FLOW-CONTROL-MS PDUs sent by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc llcDiscardedPdu (llcDiscPdu)

Description This attribute counts LLC-DISCARDED PDUs sent by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc llcDiscardedOctets (llcDiscOct)

Description This attribute counts the octets discarded with a LLC-DISCARDED-INDICATION message sent by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc nmStatusUp (nmStusUp)

Description This attribute counts NM-STATUS PDUs sent by a BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc nmStatusDn (nmStusDn)

Description This attribute counts NM-STATUS PDUs received by a BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msFlushLLRequest (msFlushLLReq)

Description This attribute counts FLUSH-LL PDUs sent from the SGSN to the PCU during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msRadioStatusInd (msRadStusInd)

Description This attribute counts INDICATION messages reporting that a radio exception condition occurred on the radio interface in the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msSuspendReq (msSusReq)

Description This attribute counts SUSPEND PDUs sent by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msRaCapabilityInd (msRaCapInd)

Description This attribute counts RA-CAPABILITY-INDICATION PDUs received by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msRaCapabilityUpdateReq (msRaCapUpdateReq)

Description This attribute counts RA-CAPABILITY-UPDATE PDUs sent by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct3TimeOuts (t3TO)

Description This attribute counts SUSPEND-ACK timer expiries during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct5TimeOuts (t5TO)

Description This attribute counts RA-CAPABILITY-UPDATE-ACK timer expiries during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msCellTransitionDn (msCellTransDn)

Description This attribute counts FLUSH-LL PDUs sent by the SGSN to the PCU when the mobile station located on a cell indicated by the BVCI has moved to another cell indicated to the new BVCI.

Values Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell

Description The statistics record generated by the PCUSupportApplication Connection PcmLink CgiCell component.

ATTRIBUTE Pcusa Conn PcmLk CgiCell cellBVCI

Description	This attribute indicates the corresponding BSSGP Virtual Channel Identifier during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk CgiCell upMultiSlotRequests (upMSlotReq)

Description	This attribute counts the multislot allocation requests received by the PCU from the mobile station during the statistics collection interval. Index 1 counts the number of 1- timeslot allocation requests. Index 2 counts the number of 2- timeslot allocation requests. Index 3 counts the number of 3- timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell upMultiSlotAllocations (upMSlotAll)

Description	This attribute counts the multislot granted allocations received by the PCU from the mobile station during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations. Index 3 counts the number of 3- timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnMultiSlotRequests (dnMSlotReq)

Description	This attribute counts the multislot allocation requests received by the mobile station from the PCU during the statistics collection interval.

Index 1 counts the number of 1- timeslot allocation requests.
Index 2 counts the number of 2- timeslot allocation requests.
Index 3 counts the number of 3- timeslot allocation requests.
Index 4 counts the number of 4- or more timeslot allocation requests.

Vector of Decimal (0..4294967295)

Index Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnMultiSlotAllocations (dnMSlotAll)

Description This attribute counts the multislot granted allocations received by the mobile station from the PCU during the statistics collection interval.

Index 1 counts the number of 1- timeslot granted allocations.
Index 2 counts the number of 2- timeslot granted allocations.
Index 3 counts the number of 3- timeslot granted allocations.
Index 4 counts the number of 4- or more timeslot granted allocations.

Vector of Decimal (0..4294967295)

Index Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell fullDuplexTbfEstablishment (fdTbfEst)

Description This attribute counts how many full duplex TBFs were established during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell upTbfReleases (upTbfRel)

Description This attribute counts how many uplink TBFs were released during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell cumulativeTimeUpTbf (cumTimeUpTbf)

Description This attribute indicates the cumulative duration of all uplink TBFs released during the statistics collection interval.

Values Decimal (0..4294967295)

Units	seconds

ATTRIBUTE Pcusa Conn PcmLk CgiCell allocatedBlocksUpTbf (allBUpTbf)

Description	This attribute counts the blocks allocated for the uplink TBFs during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell nonAckUpTbfEstablishment (nAckUpTbfEst)

Description	This attribute counts the non-acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell ackUpTbfEstablishment (ackUpTbfEst)

Description	This attribute counts the acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell closeEndedUpTbfEstablishment (closeEndUpTbfEst)

Description	This attribute counts the close-ended uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfReleases (dnTbfRel)

Description	This attribute counts how many downlink TBFs were released during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell cumulativeTimeDnTbf (cumTimeDnTbf)

Description	This attribute indicates the cumulative duration of all downlink TBFs released during the statistics collection interval.
Values	Decimal (0..4294967295)
Units	seconds

ATTRIBUTE Pcusa Conn PcmLk CgiCell nonAckDnTbfEstablishment (nAckDnTbfEst)

Description This attribute counts the non-acknowledged downlink TBFs established during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell ackDnTbfEstablishment (ackDnTbfEst)

Description This attribute counts the acknowledged downlink TBFs established during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsNbModif (dyAgprsNbMod)

Description This attribute counts the modifications of Agprs timeslots allocated in the cell during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsAvgNbTimeslots (dyAgprsAvgNbTs)

Description This attribute indicates the average number of Agprs timeslots allocated in the cell during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMinNbTimeslots (dyAgprsMinNbTs)

Description This attribute indicates the minimum number of Agprs timeslots allocated in the cell during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMaxNbTimeslots (dyAgprsMaxNbTs)

Description This attribute indicates the maximum number of Agprs timeslots allocated in the cell during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsAvgLoadCriterion (dyAgprsAvgLdCrit)

Description This attribute indicates the average Agprs load criterion value during the statistics collection interval.

Values	Decimal (0..100)
Units	%

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMaxLoadCriterion (dyAgprsMaxLdCrit)

Description	This attribute indicates the maximum Agprs load criterion value during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactMore90pCent (dnTbfGSatM90)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactBet5090pCent (dnTbfGSatB5090)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactLess50pCent (dnTbfGSatL50)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldRejectedForMinTput (dnTbfGRejMinTput)

Description	This attribute counts the downlink TBFs with gold QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactMore90pCent (dnTbfSSatM90)

Description	This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactBet5090pCent (dnTbfSSatB5090)

Description	This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactLess50pCent (dnTbfSSatL50)

Description	This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverRejectedForMinTput (dnTbfSRejMinTput)

Description	This attribute counts the downlink TBFs with silver QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeSatisfactMore90pCent (dnTbfBSatM90)

Description	This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeSatisfactBet5090pCent (dnTbfBSatB5090)

Description: This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeSatisfactLess50pCent (dnTbfBSatL50)

Description: This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeRejectedForMinTput (dnTbfBRejMinTput)

Description: This attribute counts the downlink TBFs with bronze QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell Tdma

Description: The statistics record generated by the PCUSupportApplication Connection PcmLink CgiCell Tdma component.

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma localBusy (locBus)

Description: This attribute counts the blocks sent with the window stalled indicator set during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma remoteBusy (remBus)

Description: This attribute counts the blocks received with the window stalled indicator set during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma configuredTimeslots (cfgTs)

Description: This attribute indicates the number of configured timeslots at the end of the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeUnavailableTimeslots (cumUnavailTs)

Description: This attribute indicates the cumulative number of unavailable timeslots at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeUpActiveTimeslots (cumUpActTs)

Description: This attribute indicates the cumulative number of active uplink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeUpTbfPerTimeslots (cumUpTbfPerTs)

Description: This attribute indicates the cumulative number of uplink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeDnActiveTimeslots (cumDnActTs)

Description This attribute indicates the cumulative number of active downlink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeDnTbfPerTimeslots (cumDnTbfPerTs)

Description This attribute indicates the cumulative number of downlink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma nbSamples (nbS)

Description This attribute indicates how many samples were taken during the statistics collection interval.

This value can be used with the cumulative attribute for average calculs.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma llcPacketsUp (llcPktUp)

Description This attribute counts the LLC packets reassembled and transmitted to the LLC relay during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma dataBlocksUp (dataBUp)

Description This attribute counts the uplink RLC data blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma controlBlocksUp (ctrlBUp)

Description This attribute counts the uplink RLC control blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma invalidBlocksUp (invalidBUp)

Description This attribute counts the uplink invalid radio blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma invalidProtocolErrorBlocksUp (invalidProtErrBUp)

Description This attribute counts the uplink invalid radio blocks received with invalid RLC protocol during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma outOfSequenceBlocksUp (outOfSeqBUp)

Description This attribute counts the data blocks received uplink with Block Sequence Number outside the received window during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma packetAckNackUp (pktANUp)

Description This attribute counts the PACKET-UPLINK-ACK-NACK messages received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma totalRetransmissionRequested (totRtxReq)

Description: This attribute counts the RLC/MAC block retransmission requests during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeUpRxQual (cumUpRxQual)

Description: This attribute indicates the cumulative uplink RxQual value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeUpRxLev (cumUpRxLev)

Description: This attribute indicates the cumulative uplink RxLev value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma nbSamplesUpQuality (nbSamplesUpQuality)

Description: This attribute counts the samples for RxQual and RxLev cumulative values during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma llcPacketsDn (llcPktDn)

Description: This attribute counts the LLC packets segmented into RLC data blocks received during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma dataBlocksDn (dataBDn)

Description: This attribute counts the downlink RLC data blocks transmitted during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma controlBlocksDn (ctrlBDn)

Description This attribute counts the downlink RLC control blocks transmitted during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma retransmittedDataBlocksDn (rtxDataBDn)

Description This attribute counts the data blocks retransmitted downlink during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma packetAckNackDn (pktANDn)

Description This attribute counts the PACKET-DOWNLINK-ACK-NACK messages transmitted during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeDnRxQual (cumDnRxQual)

Description This attribute indicates the cumulative downlink RxQual value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma nbSamplesDnQuality (nbSamplesDnQuality)

Description This attribute counts the samples for RxQual cumulative values during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma tbfNormalReleaseUp (tbfNormRelUp)

Description This attribute counts the uplink TBFs which terminated normally during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma tbfNormalReleaseDn (tbfNormRelDn)

Description This attribute counts the downlink TBFs which terminated normally during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma noPacketResourceReq (noPktResReq)

Description This attribute counts the TBFs abnormally released due to non receipt of Packet Resource Request during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComNN002Max (lOCNN002Max)

Description This attribute counts the TBFs abnormally released due to V(Q) non progression during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComT3169 (lOCT3169)

Description This attribute counts the TBFs abnormally released due to timer T3169 expiry during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComNT0001 (lOCNT0001)

Description This attribute counts the TBFs abnormally released due to NT0001 timer expiry during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComT3195 (lOCT3195)

Description This attribute counts the TBFs abnormally released due to T3195 timer expiry during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComT3191 (lOCT3191)

Description This attribute counts the TBFs abnormally released due to T3191 timer expiry during the statistics collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell Ccch

Description The statistics record generated by the PCUSupportApplication Connection PcmLink CgiCell Ccch component.

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmediateAssignment (immAssUp)

Description This attribute counts IMMEDIATE-ASSIGNMENT messages generated by the PCU to the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmAssigRejectNoPdch (noPdch)

Description This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmAssigRejectNoTs (noTs)

Description This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmAssigRejectNoTbf (noTbf)

Description This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the first

phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch channelRequest (chanReq)

Description This attribute counts CHANNEL-REQUEST messages received by the PCU from the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch packetResourceRequest (pktResReq)

Description This attribute counts PACKET-RESOURCE-REQUEST messages received by the PCU from the mobile station in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch deleteIndicationUp (delIndUp)

Description This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for uplink transfer is dropped during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch packetUpAssignment (pktUpAss)

Description This attribute counts PACKET-UPLINK-ASSIGNMENT messages generated by the PCU after a PACKET-RESOURCE-REQUEST in the second phase of the two_phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfPacketAccessRejectNoPdch (pktNoPdch)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase

access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfPacketAccessRejectNoTs (pktNoTs)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of "Maximum MS per TS is reached" in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfPacketAccessRejectNoTbf (pktUpNoTbf)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of "Maximum TBF per TDMA is reached" in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch dnTbfImmediateAssignment (immAssDn)

Description This attribute counts IMMEDIATE-ASSIGNMENT messages sent for a downlink TBF establishment from the PCU to the mobile station during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch pagingRequest (pagReq)

Description This attribute counts PAGING-REQUEST messages generated by the PCU to the mobile station during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch deleteIndicationDn (delIndDn)

Description This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for

downlink transfer is dropped during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch packetDnAssignment (pktDnAss)

Description This attribute counts PACKET-DOWNLINK-ASSIGNMENT messages generated by the PCU to the mobile station in the downlink TBF establishment phase during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch dnTbfPacketAccessRejectNoPdch (pktDnNoPdch)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch dnTbfPacketAccessRejectNoTs (pktDnNoTs)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch dnTbfPacketAccessRejectNoTbf (pktDnNoTbf)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberControl

Description — The statistics record generated by the GprsSubscriberControl component.

ATTRIBUTE Gsc cpuOvldAttachesDiscarded (cpuOvldAttDisc)

Description — This attribute counts the number of GPRS Mobility Management (GMM) attach request messages that are discarded due to a CPU overload condition on the GSC and USC applications.

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Gsc cpuOvldActivationsDiscarded (cpuOvldActDisc)

Description — This attribute counts the number of Session Management (SM) session activate request messages that are discarded due to CPU overload on the GSC and USC applications.

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Gsc subCountOvldAttachesDiscarded (subOvldAttDisc)

Description — This attribute counts the number of GPRS Mobility Management (GMM) attach request messages that are discarded due to subscriber count overload, which occurs when the value of the *currentlyAttached* attribute is equal to the value of the *maxAttachedSubscribers* attribute.

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Gsc cpuOvldMovingAvg (cpuOvldAvg)

Description — This attribute indicates the CPU moving average calculated from within the defined moving window, the size of which is determined by the value of *cpuOvldWindowSize* attribute.

The value of the attribute is set at the end of the collection interval.

Values Decimal (0..100)

Units %

ATTRIBUTE Gsc explicitDetachPurge

Description This attribute counts the Mobile Subscriber (MS) Purge requests initiated due to an explicit mobile detach. Mobile Subscriber Purge request are initiated upon explicit detach when the *purgeOnExplicitDetach* attribute in (U) SGSN MobileSubscriberPurge is enabled.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc operatorInitiatedPurge

Description This attribute counts the number of Mobile Subscriber (MS) Purge requests initiated by the operator.

An operator initiates the Mobile Subscriber Purge request by issuing the *clear* command on an (U) SGSN *Imsi* component.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc contextReusePurge

Description This attribute counts the number of Mobile Subscriber (MS) Purge requests initiated due to memory reuse.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc periodicAuditPurge

Description This attribute counts the number of Mobile Subscriber (MS) Purge requests initiated due to periodic. During a periodic audit, detached Mobile Subscribers whose age is greater than the value

specified by the auditPurgeMinimumInactiveAge attribute in (U) SGSN MobileSubscriberPurge are considered candidates for purge.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc msPurgeAckFailures

Description This attribute counts the Mobile Subscriber (MS) Purge Acknowledgement Failures received by the (UMTS) Serving GPRS Support Node (USGSN or SGSN) from the Home Location Register (HLR).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc msPurgeSendFailures

Description This attribute counts the Mobile Subscriber (MS) Purge requests that were either not sent from the (UMTS) Serving GPRS Support Node (USGSN or SGSN) or no response was received from the Home Location Register (HLR) due to network related faults such as SS7 IP Gateway (SIG) failure and so on.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberControl MapClient

Description The statistics record generated by the GprsSubscriberControl MapClient component.

ATTRIBUTE Gsc Mc uglMsgs

Description This attribute indicates the MAP-UPDATE GPRS LOCATION messages sent to the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc uglResponseMsgs (uglResp)

Description This attribute indicates the successful MAP-UPDATE GPRS LOCATION RESPONSE messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc isdMsgs

Description This attribute indicates the MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc isdResponseMsgs (isdResp)

Description This attribute indicates the MAP-INSERT SUBSCRIBER DATA RESPONSE messages sent to the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc dsdMsgs

Description This attribute indicates the MAP-DELETE SUBSCRIBER DATA messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc dsdResponseMsgs (dsdResp)

Description This attribute indicates the MAP-DELETE SUBSCRIBER DATA RESPONSE messages sent to the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc clMsgs

Description This attribute indicates the MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc clResponseMsgs (clResp)

Description This attribute indicates the MAP-CANCEL LOCATION RESPONSE messages sent to the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc rstMsgs

Description This attribute indicates the MAP-RESET messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc saiMsgs

Description This attribute indicates the MAP-SEND AUTHENTICATION INFO messages sent to the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc saiResponseMsgs (saiResp)

Description This attribute indicates the MAP-SEND AUTHENTICATION INFO RESPONSE messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc transLimitDiscards (trDisc)

Description This attribute indicates the number of transactions rejected by the MAP Client when the maximum number of concurrent MAP transactions supported by the MAP Client has been exceeded. The maximum number of MAP transactions is constrained by the

MAP Client internal memory available to store the transactions. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc tmrExpiries (tmrEx)

Description This attribute indicates the times the *mcTimer* (defined in component *Sgsn GprsSubscriberControl* and *Usgsn UmtsSubscriberControl*) expires before receiving a response from the Home Location Register (HLR). This can be used to determine if the provisionable attribute *mcTimer* must be changed, or a problem exists between the Serving GPRS Support Node (SGSN) or the UMTS Serving General Support Node (USGSN) and the Home Location Register (HLR). This counter counts the value in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc ofsmMsgs

Description This attribute indicates the MAP-MO-FORWARD-SHORT-MESSAGE messages received by the Inter-working Mobile Switching Center (IWMSC) from the MAP Client in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc ofsmResMsgs

Description This attribute indicates the MAP-MO-FORWARD-SHORT-MESSAGE response messages received by the MAP Client from the Inter-working Mobile Switching Center (IWMSC) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc tfsmMsgs

Description This attribute indicates the MAP-MT-FORWARD-SHORT-MESSAGE messages received by the MAP Client from the Inter-working Mobile Switching Center (IWMSC) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc tfsmResMsgs

Description: This attribute indicates the MAP-MT-FORWARD-SHORT-MESSAGE response messages received by the Inter-working Mobile Switching Center (IWMSC) from the MAP Client in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc rsmMsgs

Description: This attribute indicates the MAP-READY-FOR-SM messages received by the Home Location Register (HLR) from the MAP Client in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc rsmResMsgs

Description: This attribute indicates the MAP-READY-FOR-SM response messages received by the MAP Client from the Home Location Register (HLR) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc currentTransactions (curTr)

Description: This attribute indicates how many MAP transactions are currently being handled by the MAP Client. *currentTransactions* is expressed as a percentage utilization of the number of MAP transactions the MAP Client is capable of handling concurrently.

A SET alarm is generated by the MAP Client when the percentage utilization reaches a high threshold. A CLEAR alarm is generated by the MAP Client when the percentage utilization reaches a low threshold and an outstanding SET alarm exists.

The value reported is the value at the end of the collection interval.

Values: Decimal (0..100)

ATTRIBUTE Gsc Mc sccpServiceRequestTimeouts

Description: This attribute indicates the MAP Stack Service request timeouts in the collection interval. This could occur if the MAP Stack was not responding to Service requests from the MAP Clients, or if there was an SS7-IP Gateway (SIG) or IP network problem.

Retries of the Service request are infinite since the MAP Client can not send or receive MAP messages until it is successfully registered with the MAP Stack.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc decodeErrors

Description: This attribute indicates, over the collection interval, the number of MAP messages received from HLR and SMSC that are not decodable. The inability to decode the MAP message is caused by the MAP Client receiving a message with invalid data.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc dataMissingRespSent

Description: This attribute indicates, over the collection interval, the number of “data missing” error responses sent to the HLR or SMSC. This error may occur when optional data is missing from a MAP message received, when required data is missing from a MAP message received, or when an internal data structure is missing data.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unexpectedDataValuesRespSent (unexpDataRespSent)

Description: This attribute indicates, over the collection interval, the number of “unexpected data value” error responses sent to the HLR or SMSC. This error may occur when the parameter type is correct in a MAP message received but contains data which is not relevant for the type of MAP service being invoked.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc systemFailuresRespSent (sysFailRespSent)

Description	This attribute indicates, over the collection interval, the number of “system failure” error responses sent to the HLR or SMSC. This error may occur when a task specified by a MAP message received cannot be performed because of a problem with another entity.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unidentifiedSubscribersRespSent (unidentSubRespSent)

Description	This attribute indicates, over the collection interval, the number of “unidentified subscriber” error responses sent to the HLR or SMSC. This error may occur when the subscriber is not contained in the subscriber database resulting in the failure to establish a call.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mc facilityNotSupportedRespSent (facNotSuppRespSent)

Description	This attribute indicates, over the collection interval, the number of “facility not supported” error responses sent to the HLR or SMSC. This error may occur when the requested facility, such as SMS, is not supported.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mc smDeliveryFailuresRespSent (smDelFailRespSent)

Description	This attribute indicates, over the collection interval, the number of “short message delivery failure” error responses sent to the SMSC. This error may occur when the mobile runs out of memory to store short messages.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mc illegalSubscribersRespSent (illegalSubRespSent)

Description	This attribute indicates, over the collection interval, the number of “illegal subscriber” error responses sent to the HLR or SMSC. This error may occur when an illegal access attempt is determined during the authentication process.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc illegalEquipmentRespSent

Description This attribute indicates, over the collection interval, the number of “illegal equipment” error responses sent to the HLR or SMSC. This error may occur when the International Mobile station Equipment Identity (IMEI) is either blacklisted or not whitelisted.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc subscriberBusyForMtSmsRespSent (SubBusyMtSmsRespSent)

Description This attribute indicates, over the collection interval, the number of “subscriber busy for mobile-terminated short message service” error responses sent to the SMSC. This error may occur when mobile terminated short messages cannot be completed.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc absentSubscriberSmRespSent (absentSubSmRespSent)

Description This attribute indicates, over the collection interval, the number of “absent subscriber short message service” error responses sent to the SMSC. This error may occur when the mobile terminated short message transfer cannot be completed because the network cannot contact the subscriber. This may be caused by the mobile being turned off.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc dataMissingRespRecv

Description This attribute indicates, over the collection interval, the number of “data missing” error responses received from the HLR or SMSC. This error may occur when optional data is missing from a MAP message sent, when required data is missing from a MAP message sent, or when an internal data structure is missing data.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unexpectedDataValuesRespRecv (unexpDataRespRecv)

Description This attribute indicates, over the collection interval, the number of “unexpected data value” error responses received from the

HLR or SMSC. This error may occur when the parameter type is correct in a MAP message sent but contains data which is not relevant for the type of MAP service being invoked.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc systemFailuresRespRecv (sysFailRespRecv)

Description This attribute indicates, over the collection interval, the number of “system failure” error responses received from the HLR or SMSC. This error may occur when a task specified by a MAP message sent cannot be performed because of a problem with another entity.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unknownSubscribersRespRecv (unkSubRespRecv)

Description This attribute indicates, over the collection interval, the number of “unknown subscriber” error responses received from the HLR or SMSC. This error may occur when a message sent is processed for a subscription that does not exist.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc roamingNotAllowedRespRecv (noRoamRespRecv)

Description This attribute indicates, over the collection interval, the number of “roaming not allowed” error responses received from the HLR or SMSC. This error may occur when a location update attempt is made in an area not covered by the subscription.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc facilityNotSupportedRespRecv (facNotSuppRespRecv)

Description This attribute indicates, over the collection interval, the number of “facility not supported” error responses received from the HLR or SMSC. This error may occur when the requested facility, such as SMS, is not supported.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc smDeliveryFailuresRespRecv (smDelFailRespRecv)

Description: This attribute indicates, over the collection interval, the number of “short message delivery failure” error responses received from the SMSC. This error may occur when the Short Message Service Center returns a delivery error indication in response to a message sent by the MAP Client.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc invalidMessages

Description: This attribute indicates, over the collection interval, the number of invalid messages received by the MAP Client. This may occur if the MAP Client receives an unsolicited message, a message with an invalid header, or an invalid dialogue ID.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc isdMsgsUpdateLocation (isdMsgsUpdLoc)

Description: This attribute indicates, over the collection interval, the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) during a GPRS Update Location procedure.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc isdMsgsHlrSubUpdate (isdMsgsHlrSubUp)

Description: This attribute indicates, over the collection interval, the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) due to an updated mobile subscription.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mc isdFailures (isdFail)

Description: This attribute indicates the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) that could not be processed due to one of the following errors:

Data Missing

Unexpected Data Value
Unidentified Subscriber
Decode errors

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc clMsgsHlrDetach (clMsgsHlrDetach)

Description This attribute indicates, over the collection interval, the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) due to an HLR initiated Detach.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc clMsgsSgsnChange (clMsgsSgsnChg)

Description This attribute indicates, over the collection interval, the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) due to a Service GPRS Support Node (SGSN) change.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc clFailures (clFail)

Description This attribute indicates the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) that could not be processed due to one of the following errors:

Data Missing
Unexpected Data Value
Decode errors

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc dsdFailures (dsdFail)

Description This attribute indicates the number of MAP-DELETE SUBSCRIBER DATA messages sent to the Home Location Register (HLR) that could not be processed due to one of the

following errors:

Data Missing
Unexpected Data Value
Unidentified Subscriber
Decode errors

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc uAbortMsgSent

Description This attribute indicates, over the collection interval, the number of MAP USER ABORT messages sent by the MAP Client to the HLR or SMSC. This message may be sent as a result of a resource limitation caused by congestion or as a result of the unavailability of resources.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc pAbortMsgRecv

Description This attribute indicates, over the collection interval, the number of MAP PROVIDER ABORT messages received by the MAP Client from the HLR or SMSC. This message indicates to the MAP service-user to abort a MAP dialogue. This message may be received due to a MAP service-provider malfunction, supporting dialogue/transaction release, resource limitation, maintenance activity, version incompatibility, or an abnormal MAP dialogue.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc uAbortMsgRecv

Description This attribute indicates, over the collection interval, the number of MAP USER ABORT messages received by the MAP Client from the HLR or SMSC. This message indicates to the MAP service-provider to abort a MAP dialogue. This message may be received due to a resource limitation caused by congestion or by unavailability of resources.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mc pmsMsgs

Description

This attribute indicates the number of Mobile Subscriber Purge messages sent to the Home Location Register (HLR).

This counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Mc pmsResponseMsgs (pmsRes)

Description

This attribute indicated the number of Mobile Subscriber Purge Response messages received from the Home Location Register (HLR).

This counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unexpectedErrorCodeRespRecv (unexpErrRespRecv)

Description

This attribute counts the unexpected error responses received from the Home Location Register (HLR). An unexpected error response may be received when a Transaction Capabilities Application Part (TCAP) error code is received at the Service GPRS Support Node (SGSN) and that error code is inconsistent with the invoked Mobile Application Part (MAP) operation.

This counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Mc pslRespMsgs

Description

This attribute counts the MAP-PROVIDE SUBSCRIBER LOCATION response messages sent by the MAP Client to the Gateway Mobile Location Center (GMLC).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unauthorizedReqNetworkRespSent (unauthReqNetRespSent)

Description

This attribute counts the number of “Unauthorized Requested Network” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when a Location Request is denied due to the GMLC not being in the home country.

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Mc unauthorizedLcsClientRespSent (unauthLcsCliRespSent)

Description

This attribute counts the number of “Unauthorized LCS Client” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when a Location Request is denied due to privacy restrictions.

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Mc positionMethodFailureRespSent (posMethFailRespSent)

Description

This attribute counts the number of “Positioning Method Failure” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when the position of the mobile cannot be retrieved.

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Mc absentSubscriberRespSent (absentSubRespSent)

Description

This attribute counts the number of “Absent Subscriber” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when the subscriber is International Mobile Subscriber Identity (IMSI) detached, in a restricted area, or does not respond to paging.

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Mc pslMsgs

Description: This attribute counts the MAP-PROVIDE SUBSCRIBER LOCATION messages received by the MAP Client from the Gateway Mobile Location Center (GMLC).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberControl GtpMgmt

Description: The statistics record generated by the GprsSubscriberControl GtpMgmt component.

ATTRIBUTE Gsc GtpM echoRequestsTransmitted (echoReqTx)

Description: This attribute counts the number of Echo Request Messages sent over the collection interval.

The count is taken at the end of the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc GtpM echoResponsesTransmitted (echoRspTx)

Description: This attribute counts the number of Echo Response Messages sent on the Gn Interface over the collection interval.

The count is taken at the end of the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc GtpM pathFailures

Description: This attribute counts the path failures detected by GPRS Tunelling Protocol (GTP), based on maximum value of the attribute *n3Request* provisioned for different GTP messages under *Sgsn Gsc* over the collected interval.

The attribute *n3Request* defines the number of times the serving GPRS support node (SGSN) will attempt to send a GTP

signalling message to the GPRS support node (GSN). A path to the GSN would be declared as failed when the number of request messages on the SGSN waiting for a response from the GSN exceeds the *n3Request* value with no incoming request or response messages received from the GSN. All sessions tied (on) to that GSN would be deactivated.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc GtpM incomingRequestsRejected (inReqReject)

Description: This attribute counts the number of the incoming GPRS Tunnelling Protocol (GTP) requests that were rejected during the collection interval because the maximum number of outstanding incoming requests was exceeded. This maximum is based on the attribute *maxIncomingRequests*.

The count is taken at the end of the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberControl GprsMobilityManagement

Description: The statistics record generated by the GprsSubscriberControl GprsMobilityManagement component.

ATTRIBUTE Gsc Gmm authenticationRequests (authReqs)

Description: This attribute counts the AUTHENTICATION AND CIPHERING REQUEST messages sent to the MS requiring only authentication and messages requiring both authentication and ciphering. The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm cipheringRequests (ciphReqs)

Description: This attribute counts the AUTHENTICATION AND CIPHERING REQUEST messages sent to the Mobile Stations (MS) requiring only ciphering in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm identityRequests (idReqs)

Description: This attribute counts the IDENTITY REQUEST messages sent to the Mobile Stations (MS) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm ptmsiReallocationRequests (relReqs)

Description: This attribute counts the implicit and explicit P-TMSI REALLOCATION messages sent to the Mobile Stations (MS) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm bssgpSuspendMsgs (bssgpSus)

Description: This attribute counts the SUSPEND messages received by the Serving GPRS Support Node (SGSN) from the Base Station System (BSS). The BSS sends this message when a mobile subscriber switches from packet-switched mode to circuit-switched mode. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm bssgpResumeMsgs (bssgpRes)

Description: This attribute counts the RESUME messages received by the Serving GPRS Support Node (SGSN) from the Base Station System (BSS). The BSS sends this message when a mobile subscriber switches from circuit-switched mode to packet-switched mode. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm readyStateSubscribers (readySub)

Description: This attribute indicates the mobile subscribers that are GPRS-attached and in Ready state. This value reported is the value at the end of the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm currentlyAttached (curAtt)

Description: This attribute indicates the Mobile Stations (MS) that are currently GPRS-attached and in Ready or Standby state. This value reported is the value at the end of the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachesSuccessful (attSuc)

Description: This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were successful in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachesWithKnownTlli (knownTlliAtt)

Description: This attribute counts the ATTACH REQUEST messages received with a Temporary Logical Link Identifier (TLLI) previously assigned by this Serving GPRS Support Node (SGSN). This includes all successful and unsuccessful attempts. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachesWithUnknownTlli (unkTlliAtt)

Description: This attribute counts the ATTACH REQUEST messages received with a Temporary Logical Link Identifier (TLLI) not assigned by this Serving GPRS Support Node (SGSN). This includes all successful and unsuccessful attempts. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachesWithImsi (attWithImsi)

Description: This attribute counts the ATTACH REQUEST messages received with an International Mobile Subscriber Identity (IMSI) as an identifier. This includes all successful and unsuccessful attempts. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachesWithInfoAttempts (attWithInfo)

Description: This attribute counts the ATTACH attempts by mobile subscribers with the GPRS Mobility Management (GMM) context held in the Serving GPRS Support Node (SGSN). This includes all successful and unsuccessful attempts. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm detachesSuccessful (detSuc)

Description: This attribute counts the successful mobile or network initiated DETACHes in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm msDetachRequests (msDetReqs)

Description: This attribute counts the Mobile Station (MS) initiated DETACH REQUEST messages received by this Serving GPRS Support Node (SGSN) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm msDetachRejected (msDetRej)

Description: This attribute counts the Mobile Station (MS) initiated GPRS-DETACH REQUEST messages which have been rejected by this Serving GPRS Support Node (SGSN) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm nwkDetachRequests (nwkDetReqs)

Description: This attribute counts the network initiated DETACH REQUEST messages sent to a mobile subscriber in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm authenticationsRejected (authRej)

Description: This attribute counts the AUTHENTICATION AND CIPHERING REJECT messages sent to the Mobile Station (MS) due to authentication failures in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm normalIntraSgsnRaUpdate (norIntraSgsnRau)

Description This attribute counts the normal intra-Serving GPRS Support Node (SGSN) ROUTING AREA UPDATE REQUEST messages received from the Mobile Station (MS) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm periodicIntraSgsnRaUpdate (perIntraSgsnRau)

Description This attribute counts the periodic intra-Serving GPRS Support Node (SGSN) ROUTING AREA UPDATE REQUEST messages from the Mobile Station (MS) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm normalInterSgsnRaUpdate (interSgsnRau)

Description This attribute counts the inter-Serving GPRS Support Node (SGSN) ROUTING AREA UPDATE REQUEST messages from the Mobile Station (MS) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm intraRaCellChange (intraRaCellCh)

Description This attribute counts the intra-Serving GPRS Support Node (SGSN) intra-Routing Area cell changes performed by the Mobile Station (MS) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm initialPsPageRequests (initPgReq)

Description This attribute counts the initial PS (Packet-Switched) PAGE REQUEST messages sent to the Mobile Station (MS) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm reattemptPsPageRequests (rePgReq)

Description: This attribute counts the re-attempt PS (Packet-Switched) PAGE REQUEST messages sent to the Mobile Station (MS) after the initial page request in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm interSgsnRaUpdateAccepts (irauAccepts)

Description: This attribute counts the ROUTING AREA UPDATE ACCEPT messages sent from this SGSN, while acting as the new SGSN, to the Mobile Station (MS) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm t3Timeouts (t3To)

Description: This attribute counts the number of times the *t3TunnelTimer* (defined in *Sgsn GprsSubscriberControl*) expires in this SGSN, while acting as the old SGSN, and the CANCEL LOCATION message has been received. The counter wraps to zero when it exceeds the maximum value.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm msPresentAttempts (msPresentAtt)

Description: This attribute indicates, for the collection interval, the number of times the SGSN detects that the Mobile Station (MS) has recovered operation such as responded to a paging request via the SGSN. If the MS has alerted the SGSN and the HLR that its memory has exceeded, then the HLR will not notify the Service Center that the MS is ready for Short Message Services (SMS).

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm nwkDetachReachableTimer (nwkDetReach)

Description: This attribute counts the number of network initiated detaches due to the expiration of reachable timer. The *mobileReachableTimer* attribute is provisioned in the *Sgsn Gsc* component.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm nwkDetachCancelLocation (nwkDetCancelLoc)

Description This attribute counts the number of network initiated detaches due to the receipt of CANCEL LOCATION Messages from the Home Location Register (HLR).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm nwkDetachDuplicateAttach (nwkDetDupAtt)

Description This attribute counts the number of network initiated detaches due to mobile reattaches with a new random Packet Temporary Mobile Subscriber Identity (PTMSI) without first performing a detach.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm nwkDetachTempNetworkFailure (nwkDetNetFail)

Description This attribute counts the number of network initiated detaches due to temporary network problems.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm nwkDetachForReattach (nwkDetReatt)

Description This attribute counts the number of network initiated detaches with a detach type of "reattach required".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejIllegalMs (attRejIllMs)

Description This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected during the collection interval because of the reject cause “Illegal Ms”.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejGprsServNotAllowed (attRejGprsServ)

Description This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected during the collection interval because of the reject cause “Gprs Service not allowed”.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejGprsServNotAllowedInPlmn (attRejGprsServPlmn)

Description This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause "Gprs Service not allowed in this PLMN".

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejPlmnNotAllowed (attRejPlmn)

Description This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected during the collection interval because of the reject cause “PLMN not allowed”.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejPacketNetworkFailure (attRejNetFail)

Description This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected during the collection interval because of the reject cause “Network Failure”.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejSgsnCongestion (attRejCongest)

Description: This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected during the collection interval because of the reject cause “Congestion”.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejMsgError (attRejMsgErr)

Description: This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected during the collection interval because of one of the following reject causes:
Semantically incorrect message,
Invalid mandatory information,
Message type non-existence or not implemented,
Message type not compatible with the protocol state,
Information element non-existent or not implemented,
Conditional IE error,
Message not compatible with the protocol state,
Protocol error, unspecified.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejRoamNotAllowedInLocArea (attRejRoam)

Description: This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause "roaming not allowed in location area".

This counter is incremented when a Unit Data Transfer Service message (UDTS) is received from the SS7/IP Gateway (SIG) for a Update GPRS Location (UGL) or a Send Authentication Info (SAI), or when the global title translation failure occurs in the MapClient component.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejCombNotAllowed (attRejComb)

Description: This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject

cause "Combined Gprs and Circuit Services not allowed".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm attachRejNotPermittedInLocArea (attRejLa)

Description This attribute counts the GPRS-attaches to this Serving GPRS Support Node (SGSN) that were rejected because of the reject cause "Mobile not Permitted in this Location Area".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrPeakAttached (snrPeakAtt)

Description This attribute indicates the peak number of roaming Mobile Stations (MSs) that have become GPRS-attached and have been given homer Quality of Service by Seamless National Roaming.

If the SNR service is updated after the MS is attached, then the value of this attribute is not updated until the next periodic Routing Area Update.

The value reported is the peak value in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrAttachesSuccessful (snrAtt)

Description This attribute counts the roaming Mobile Stations (MSs) that have been GPRS-attached and had been given homer Quality of Service by Seamless National Roaming.

If the SNR service is updated after the MS is attached, then the value of this attribute is not updated until the next periodic Routing Area Update.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrGprsNotAllowedRejects (snrGprsNotAllRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS Services Not Allowed” (cause code 7).

The reject is also counted in the *attachesRejected* attribute (defined in the *Gsc/n Gmm* component).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrCombNotAllowedRejects (snrCombNotAllRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS And Non-GPRS Services Not Allowed” (cause code 8).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrNotAllowedInPlmnRejects (snrPlmnRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “PLMN Not Allowed” (cause code 11).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrNotAllowedInLaRejects (snrLaRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “Location Area Not Allowed” (cause code 12).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrNoRoamingInLaRejects (snrRoamLaRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause "Roaming Not Allowed In This Location Area" (cause code 13).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrGprsNotAllowedInPlmnRejects (snrGprsPlmnRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause "GPRS Not Allowed in this PLMN" (cause code 14).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrTryAnotherCellRejects (snrCellRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Release 99 Mobile Stations (MSs) due to the cause "No Suitable Cells In Location Area" (cause code 15).

The reject for Release 97 MSs are counted in the *snrRemappedCauseRejects* attribute (defined in the *Gsc/n Gmm* component).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrOtherCauseRejects (snrOtherRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) because of causes other than the following reject causes:

Cause code 7: GPRS Services Not Allowed
Cause code 8: GPRS Services and Non-GPRS Services Not Allowed
Cause code 11: PLMN Not Allowed

Cause code 12: Location Area Not Allowed
Cause code 13: Roaming Not Allowed In This Location Area
Cause code 14: GPRS Not Allowed In This PLMN
Cause code 15: No Suitable Cells In Location Area

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Gmm snrRemappedCauseRejects (remapRej)

Description: This attribute counts the rejects sent by Seamless National Roaming to the Release 97 Mobile Stations (MSs) due to the cause “No Suitable Cells In Location Area” (cause code 15).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberControl SessionManagement

Description: The statistics record generated by the GprsSubscriberControl SessionManagement component.

ATTRIBUTE Gsc Sm currentPdpContexts (curPdpc)

Description: This attribute indicates the number of currently active Packet Data Protocol (PDP) contexts in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm mobileInitActivations (mia)

Description: This attribute counts the successful Mobile-initiated Packet Data Protocol (PDP) context activations for this *SessionManagement (Sm)* component in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm mobileInitDeacts (mid)

Description: This attribute counts the Packet Data Protocol (PDP) context deactivations initiated by the Mobile Station (MS) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm ggsnInitDeacts (nwkD)

Description: This attribute counts the Packet Data Protocol (PDP) context deactivations initiated by the Gateway GPRS Support Node (GGSN) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm sgsnInitDeacts (sgsnD)

Description: This attribute counts the Packet Data Protocol (PDP) context deactivations initiated locally from the Serving GPRS Support Node (SGSN) (for example, an implicit session deactivation as a result of a Gateway GPRS Support Node (GGSN) restart or path failure).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm hlrInitDeacts (hlrD)

Description: This attribute counts the Packet Data Protocol (PDP) context deactivations initiated by the Home location Register (HLR), for example, Delete Subscriber Data (DSD) withdrawing subscription for an active session. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm currentQosReliability (curQosRel)

Description: This attribute indicates the currently active Packet Data Protocol (PDP) contexts for each Quality of Service (QoS) Reliability Class. This value reported is the value at the end of the collection interval.
The Reliability values have the following meaning:

RelClass	GTP	LLC	RLC	Data
1	Acked	Acked	Acked	Protected
2	UnAcked	Acked	Acked	Protected
3	UnAcked	UnAcked	Acked	Protected
4	UnAcked	UnAcked	UnAcked	Protected
5	UnAcked	UnAcked	UnAcked	UnProtected

where GTP is GPRS Tunnelling Protocol, LLC is Logical Link Control, and RLC is Radio Link Control.

Vector of Decimal (0..4294967295)

Index Decimal (0..5)

ATTRIBUTE Gsc Sm totalQosReliability (totQosRel)

Description

This attribute counts the Packet Data Protocol (PDP) contexts that were activated for each Quality of Service (QoS) Reliability Class. This counter counts the events in the collection interval.

The Reliability values have the following meaning:

RelClass	GTP	LLC	RLC	Data
1	Acked	Acked	Acked	Protected
2	UnAcked	Acked	Acked	Protected
3	UnAcked	UnAcked	Acked	Protected
4	UnAcked	UnAcked	UnAcked	Protected
5	UnAcked	UnAcked	UnAcked	UnProtected

where GTP is GPRS Tunnelling Protocol, LLC is Logical Link Control, and RLC is Radio Link Control.

Vector of Decimal (0..4294967295)

Index Decimal (0..5)

ATTRIBUTE Gsc Sm currentRoamers (curR)

Description This attribute indicates the current number of roamer sessions that are currently being serviced by the SGSN. A roamer is a mobile that is not in its H-PLMN. This attribute is incremented

whenever a PDP context is activated and is decremented whenever a PDP context is de-activated. This counter counts the events at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm nwkPdpModifyInitiated (nwkPdpMi)

Description This attribute counts the NWK PDP MODIFY CONTEXT REQUEST messages sent to the Mobile Station (MS). This counter is incremented in the SGSN acting as the new SGSN. The counter wraps to zero when it exceeds the maximum value.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm nwkPdpModifyRetriesExhausted (nwkPdpMRetE)

Description This attribute counts the number of times the *nwkPdpModifyRetires* attribute is exhausted. This counter is incremented in the SGSN acting as the new SGSN. The counter wraps to zero when it exceeds the maximum value.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm insufficientResources (insufRes)

Description This attribute counts the Mobile Station (MS) initiated activations rejected by the Serving GPRS Support Node (SGSN) due to insufficient resources. This counter is incremented either due to the SGSN having insufficient resources for the session, or the Gateway GPRS Support Node (GGSN) returning a cause code of “No resources available” in the CREATE PDP CONTEXT RESPONSE message. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm missingOrUnknownApn (mOrUn)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the requested service being rejected by the external packet data network because the Access Point Name (APN) was not included although required or if the APN was not resolved. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm unknownPdpAddrOrPdpType (unPdpAorT)

Description This attribute counts the number of times a CREATE PDP CONTEXT RESPONSE message was received from the Gateway GPRS Support Node (GGSN) with the cause “Service not supported”. This can be due to the requested service being rejected by the external packet data network because the Packet Data Protocol (PDP) address or the PDP type was not recognized. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm userAuthenticationsFailed (userAuthFail)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the requested service being rejected by the external packet data network due to a failed user authentication. The SGSN increments this counter when a cause code of “User Authentication Failed” is received from the Gateway GPRS Support Node (GGSN) in the CREATE PDP CONTEXT REQUEST message. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm activationRejectedByGgsn (actRej)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the requested service being rejected by the Gateway GPRS Support Node (GGSN) with a cause code that is not mappable to a cause code in the ACTIVATE PDP CONTEXT REJECT message. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm activationRejectedUnspecified (actRejUn)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated

activation due to unspecified reasons. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm reqServiceOptionNotSubscribed (reqOp)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the MS requesting a service for which it has no subscription. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm serviceOptionTempOutOfOrder (serOp)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to temporary outage of one or more functions required for supporting the service. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm semanticallyIncorrectMesage (inMsg)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the receipt of a message with semantically incorrect contents. The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm invalidMandatoryInfoElement (invInfo)

Description This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the receipt of a of a message with errors in a mandatory Information Element (IE). The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sm msgTypeNotCompWithProtState (notComp)

Description: This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to the receipt of a message type not compatible with the current protocol state. The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm protocolErrorUnspecified (proErr)

Description: This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) initiated activation due to a protocol error event which does not fit into any specific protocol error class values. The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm networkFailure (nwFail)

Description: This attribute counts the number of times the Serving GPRS Support Node (SGSN) sent a Packet Data Protocol (PDP) CONTEXT DEACTIVATION REQUEST message to the Mobile Station (MS) with a cause code of NETWORK FAILURE. This cause code is sent due to an error situation in the network. The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm reactivationRequested (reactReq)

Description: This attribute counts the number of times the Serving GPRS Support Node (SGSN) sent a Packet Data Protocol (PDP) CONTEXT DEACTIVATION REQUEST message to the Mobile Station (MS) with a cause code of REACTIVATE REQUEST. This
cause code is sent to MS to request session reactivation. The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm sgsnInitModifyAttempts

Description: This attribute counts the number of Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN), for example, as a result of QoS renegotiations with the Mobile Station (MS). This counter is pegged only during SGSN Initiated PDP Context Modification.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm sgsnInitFailAtMs

Description: This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the Mobile Station (MS).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm sgsnInitFailAtGgsn

Description: This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the Gateway GPRS Support Node (GGSN).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm sgsnInitFailAtSgsn

Description: This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the SGSN.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm msInitModifyAttempts

Description: This attribute counts the number of Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm msInitFailAtGgsn

Description: This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the Gateway GPRS Support Node (GGSN).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm msInitFailAtSgsn

Description: This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the SGSN.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm snrPeakActivated (snrPeakAct)

Description: This attribute indicates the peak number of roaming Mobile Stations (MSs) that have become GPRS-activated and have been given homer Quality of Service by Seamless National Roaming.

The value reported is the peak value in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Sm snrActivatesSuccessful (snrAct)

Description: This attribute counts the roaming Mobile Stations (MSs) that have been GPRS-activated and had been given homer Quality of Service by Seamless National Roaming.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberControl HlrCache

Description The statistics record generated by the GprsSubscriberControl HlrCache component.

ATTRIBUTE Gsc HlrC cacheHits

Description This attribute counts the number of times the *HlrCache* had the subscriber information locally and did not need to retrieve information from the Home Location Register (HLR). This counter counts the value in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc HlrC cacheMisses (cacheMiss)

Description This attribute counts the number of times the *HlrCache* does not have the subscriber information locally and must retrieve information from the HLR. This counter counts the value in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberControl BaseStationSystemApplPart

Description The statistics record generated by the GprsSubscriberControl BaseStationSystemApplPart component.

ATTRIBUTE Gsc Bssap registerAttempts (regAttempts)

Description This attribute indicates the number of SCIP registrations attempted with the SIG during the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Bssap registerSuccessAcks (regAcks)

Description	This attribute indicates the number of successful registration responses received from the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Bssap registerFailures (regFail)

Description	This attribute indicates the number of unsuccessful registration responses received from the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Bssap deregisterAttempts (deregAttempts)

Description	This attribute indicates the number of SCIP deregistrations attempted with the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Bssap deregisterSuccessAcks (deregAcks)

Description	This attribute indicates the number of successful deregistration responses received from the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Bssap deregisterFailures (deregFail)

Description	This attribute indicates the number of unsuccessful deregistration responses received from the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Bssap sigSccpNoticeIndications (sccpNotice)

Description	This attribute indicates the number of SCCP Notice Indications that have been received from the SIG during the collection interval. SCCP Notice Indications are received from the SIG when there are errors in the messages being sent to it.
Values	Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberControl

ShortMessageService

Description The statistics record generated by the GprsSubscriberControl ShortMessageService component.

ATTRIBUTE Gsc Sms cpResponseExhaust (cpRespExh)

Description This attribute indicates the number of times the *cpResponseTimer* expires and the *cpResponseRetries* has been reached before receiving a CP-ACK or CP-ERROR message from the Mobile Station (MS) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms rpResponseTimeouts (rpRespTouts)

Description This attribute indicates the number of times the *rpResponseTimer* expires before receiving a RP-ACK or RP-ERROR message from the Mobile Station (MS) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms iwmscResponseTimeouts (iwmscRespTouts)

Description This attribute indicates the number of times the *iwmscResponseTimer* expires before receiving a MOBILE ORIGINATED FORWARD SHORT MESSAGE message from the Service Center in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moAttempts (moAtt)

Description This attribute indicates the MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* component from the Mobile Station (MS) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtAttempts (mtAtt)

Description This attribute indicates the MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent to the *ShortMessageService*

(Sms) component from the Service Center in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mmaAttempts (mmaAtt)

Description This attribute indicates the MORE MEMORY AVAILABLE messages sent to the *ShortMessageService (Sms)* from the Mobile Station (MS) in the collection interval. The value includes the failures counted by *mmaFailures*.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mmaFailures (mmaFail)

Description This attribute indicates the MORE MEMORY AVAILABLE messages sent to the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed due to one of the following conditions:

Network Out of Order
Protocol Error
Congestion
Unidentified Subscriber
Unknown Subscriber
Invalid Transaction Identifier Value
Message Type non-existence
Invalid mandatory information
Invalid short message transfer reference value
Message not compatible with short message protocol state
Requested Facility not implemented

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailUnidentifiedSubscriber (moFailUnidSub)

Description This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed because the MS is not registered in the Public Land Mobile Network (PLMN), the MS is not subscribed in a Service Center (SC) or the MS Prepaid Mobile

Originated SMS account is depleted. The value of this attribute is included in the count of *moFailures*.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailNetworkFailures (moFailNetFailures)

Description This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed because the network is not functioning correctly, a task cannot be performed because of a problem with the network, Prepaid Service Control Point (SCP) does not respond to the *Sms*, *iwmscResponseTimer* expires or an equipment protocol error occurs. The value of this attribute is included in the count of *moFailures.*

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailFacilityNotSupp (moFailFaciNoSupp)

Description This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Service Center (SC) that failed because the network is unable to provide the requested short message services. The value of this attribute is included in the count of *moFailures*.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailCongestion (moFailCong)

Description This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed because the short message service cannot be serviced because of high traffic. The value of this attribute is included in the count of *moFailures*.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailUnknownServiceCenter (moFailUnkServC)

Description This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE

messages sent from the *ShortMessageService (Sms)* to the Mobile Station (MS) that failed because the destination requested by the MS is not currently assigned or allocated. The value of this attribute is included in the count of *moFailures*.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailInvalidSmeAddress (moFailInvSmeAdd)

Description This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* from the Mobile Station (MS) that failed because the Service Center (SC) received an invalid Short Message Entity address. The value of this attribute is included in the count of *moFailures*.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailMissingSmsSubscription (moFailMissSmsSub)

Description This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Mobile Station (MS) that failed because the Mobile Subscriber subscription information did not include Mobile Originated Short Message Services. The value of this attribute is included in the count of *moFailures*.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailOdbSubscriber (moFailOdbSub)

Description This attribute indicates, for the collection interval, the number of MOBILE ORIGINATED FORWARD SHORT MESSAGE messages sent from the ShortMessageService (Sms) to the Mobile Station (MS) that failed because the MS is forbidden from originating short message services (SMS) messages. The value of this attribute is included in the count of *moFailures*.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailUnidentifiedSubscriber (mtFailUnidSub)

Description This attribute indicates, for the collection interval, the number of MOBILE TERMINATED FORWARD SHORT MESSAGE

messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because the Mobile Station (MS) is not known within the SGSN or the MS location is not confirmed in the HLR. The value of this attribute is included in the count of *mtFailures*.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailSubscriberAbsent (mtFailSubAbs)

Description This attribute indicates, for the collection interval, the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because a Mobile Station (MS) did not respond to a Packet Paging Request or a MS is detached from the network. The value of this attribute is included in the count of *mtFailures*.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailSubscriberBusy (mtFailSubBusy)

Description This attribute indicates, for the collection interval, the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because another mobile terminated short message transfer is going on and the Mobile Terminated SMS Message Buffer Queue has reached its capacity limit, the message was buffered but it is not possible to deliver the message before the expiry of the buffering time or the Mobile Station (MS) is performing an inter SGSN routing area update. The value of this attribute is included in the count of *mtFailures*.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailSubscriberNotSmEquipped (mtFailSubNotSmEquip)

Description This attribute indicates, for the collection interval, the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because the Mobile Station does not support Short Message Service messages. The value of this attribute is included in the count of *mtFailures*.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailNetworkFailures (mtFailNetFailures)

Description This attribute indicates, for the collection interval, the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Service Center that failed because the network is not functioning correctly, a task cannot be performed because of a problem with the network or an equipment protocol error occurs. The value of this attribute is included in the count of *mtFailures.*

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailMemCapExceed (mtFailMemCapExc)

Description This attribute indicates, for the collection interval, the number of MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* to the Mobile Subscriber (MS) that failed because the MA cannot store the incoming short message due to lack of storage capacity. The value of this attribute is not included in the count of *mtFailures.*

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms moFailOthers

Description This attribute indicates the MOBILE ORIGINATED FORWARD SHORT MESSAGE messages received by the *ShortMessageService (Sms)* component from the Mobile Station (MS) that failed due to one of the following conditions:

Unknown Subscriber
Invalid Transaction Identifier Value
Message Type non-existence
Invalid mandatory information
Invalid short message transfer reference value
Message not compatible with short message protocol state
Unassigned number
Short Message transfer reject

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Sms mtFailOthers

Description

This attribute indicates the MOBILE TERMINATED FORWARD SHORT MESSAGE messages sent from the *ShortMessageService (Sms)* component to the Service Center that failed due to one of the following conditions:

Unexpected Data Value
Data Missing
Message Type non-existence
Invalid mandatory information
Invalid short message transfer reference value
Message not compatible with short message protocol state
Semantically incorrect message
System Failures

This counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberControl PrepaidShortMessageService

Description

The statistics record generated by the GprsSubscriberControl PrepaidShortMessageService component.

ATTRIBUTE Gsc PSms peakConcurrentTransactions (peakCTran)

Description

This attributes indicates the peak number of concurrent Prepaid Short Message Service (PSMS) transactions that have occurred on this *GprsSubscriberControl (Gsc)*.

Values

Decimal (0..4294967295)

ATTRIBUTE Gsc PSms activeConnections (actCon)

Description

This attribute indicates the connections that are currently active between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs). This reflects only those connections that are currently in the Network Connection Control Protocol (NCCP) data exchange state.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms totalSuccessfulConnections (totCon)

Description This attribute counts the total connections between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs) that have successfully reached the Network Connection Control Protocol (NCCP) data exchange state. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms totalFailedConnections (failCon)

Description This attribute counts the total connection attempts between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs) that have failed to reach the Network Connection Control Protocol (NCCP) data exchange state. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms totalTransactionSuccesses (succTran)

Description This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have successfully completed between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs). Specifically, this indicates the Prepaid-CTP INCREMENT DECREMENT RESPONSE messages that have been successfully received before *transactionTimer* has expired.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms totalTransactionFailures (failTran)

Description This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have failed between the *GprsSubscriberControl (Gsc)* and the external Service Control Points (SCPs). This includes failures due to failed connections, late responses, resource limitations and protocol errors.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms totNwkRelatedTransactionFailures (netTranFail)

Description This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have failed between the GprsSubscriberControl (Gsc) and this external Service Control Point (SCP) due to network related events. This includes transactions rejected due to connection failures, network congestion, and local network resource limitations. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberControl PrepaidShortMessageService ServiceControlPoint

Description The statistics record generated by the GprsSubscriberControl PrepaidShortMessageService ServiceControlPoint component.

ATTRIBUTE Gsc PSms Scp transactionSuccesses (succTran)

Description This attribute counts the total prepaid Prepaid Short Message Service (PSMS) transactions that have successfully completed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). Specifically, this indicates the number of Prepaid-CTP INCREMENT DECREMENT TRANSACTION RESPONSE messages that have been successfully received before *transactionTimer* has expired.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp transactionFailures (failTran)

Description This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have failed between the

GprsSubscriberControl (Gsc) and this external Service Control Point (SCP). This includes failures due to failed connections, late responses, resource limitations and protocol errors. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp networkRelatedTransactionFailures (netTranFail)

Description This attribute counts the total Prepaid Short Message Service (PSMS) transactions that have failed between the GprsSubscriberControl (Gsc) and this external Service Control Point (SCP) due to network related events. This includes transactions rejected due to connection failures, network congestion, and local network resource limitations. This counter wraps to zero when it exceeds the maximum value.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp prepaidCtpLocalProtocolErrors (locPErr)

Description This attribute counts the total Prepaid-CTP protocol errors that have been committed locally that the external Service Control Point (SCP) has detected and has reported back to the *GprsSubscriberControl (Gsc)*.

This count consists of the transaction portion, component portion, and parameter error categories. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp prepaidCtpRemoteGeneralErrors (remGErr)

Description This attribute counts the total Prepaid-CTP general errors that have occurred on the external Service Control Point (SCP) and that have been reported back to the *GprsSubscriberControl (Gsc)*. This count consists of the general error category as described in the Prepaid-CTP specification. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp prepaidCtpRemoteProtocolErrors (remPErr)

Description: This attribute counts the total Prepaid-CTP protocol errors that have been committed remotely by the external Service Control Point (SCP) that have been detected by the *GprsSubscriberControl (Gsc)*. This count consists of the transaction portion, component portion, and parameter error categories as described in the Prepaid-CTP specification. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLoginSuccesses (nccpLiSucc)

Description: This attribute counts the total Network Connection Control Protocol (NCCP) logins that have successfully completed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). Specifically, this indicates the NCCP LOGIN RESPONSE messages received from this SCP before the *nccpLoginResponseTimer* has expired. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLoginFailures (nccpLiFail)

Description: This attribute counts the total Network Connection Control Protocol (NCCP) logins that have failed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). This count includes failures due to rejected logins as well as late or lost responses. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLoginResponseTimeouts (nccpRTo)

Description: This attribute counts the *nccpLoginResponseTimer* expiries before receiving a response from the external Service Control Point (SCP) for the Network Connection Control Protocol (NCCP) LOGIN REQUEST message sent. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLogoutSuccesses (nccpLoSucc)

Description: This attribute counts the total Network Connection Control Protocol (NCCP) logouts that have successfully completed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). Specifically, this indicates the NCCP LOGOUT RESPONSE messages received from this SCP before the *nccpLogoutResponseTimer* has expired. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLogoutFailures (nccpLoFail)

Description: This attribute counts the total Network Connection Control Protocol (NCCP) logouts that have failed between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). Specifically, this counts the *nccpLogoutResponseTimer* expirations that have occurred. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpRemoteAborts (nccpRemAbt)

Description: This attribute counts the total Network Connection Control Protocol (NCCP) ABORT messages that have been received from this external Service Control Point (SCP). This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLocalAborts (nccpLocAbt)

Description: This attribute counts the total Network Connection Control Protocol (NCCP) NCCP ABORT messages that have been sent to this external Service Control Point (SCP). This counter also includes the NCCP ABORT messages sent due to the aborts caused by the expiration of the NCCP KeepAlive timer. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpKeepAliveTimeouts (nccpKpAlTo)

Description: This attribute counts the total Network Connection Control Protocol (NCCP) KeepAlive timer expirations that have occurred while communicating with this external Service Control Point (SCP). This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpKeepAliveAborts (nccpKpAlAbt)

Description: This attribute counts the total aborts caused by the Network Connection Control Protocol (NCCP) KeepAlive timer expiry. Specifically, this counts the number of NCCP Abort messages that have been sent to this external Service Control Point (SCP) due to aborts caused by KeepAlive timer expirations. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpRoundRobinTimeouts (nccpRrTo)

Description: This attribute counts number of times the *nccpRoundRobinTimer* expires before the SGSN could establish a connection with any of the Service Processors (SPs) of this external Service Control Point (SCP). This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpReconnectTimeouts (nccpRecTo)

Description: This attribute counts the total *nccpReconnectTimer* expirations that have occurred while communicating with this external Service Control Point (SCP). This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpLocalProtocolErrors (nccpLocPErr)

Description: This attribute counts the Network Connection Control Protocol (NCCP) protocol errors that have been committed locally that the external Service Control Point (SCP) has detected and has

reported back to the *GprsSubscriberControl (Gsc)*. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp nccpRemoteProtocolErrors (nccpRemPErr)

Description This attribute counts the total Network Connection Control Protocol (NCCP) protocol errors that have been committed remotely by the external Service Control Point (SCP) that have been detected by the *GprsSubscriberControl (Gsc)*. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp tcpConnectSuccesses (tcpConnSucc)

Description This attribute counts the total TCP connections that have been successfully established between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc PSms Scp tcpConnectFailures (tcpConnFail)

Description This attribute counts the total TCP connections that have failed to successfully establish between the *GprsSubscriberControl (Gsc)* and this external Service Control Point (SCP). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberControl ServiceSwitchingFunction

Description The statistics record generated by the GprsSubscriberControl ServiceSwitchingFunction component.

ATTRIBUTE Gsc Ssf pdpContextsRedirected (pdpRedir)

Description This attribute indicates the number of PDP (Packet Data Protocol) Contexts that have been redirected to a different APN (Access Point Name) by an SCP (Service Control Point) during

the collection interval.

If this attribute is continuously reporting a high value during each collection interval, the operator may want to examine the network configuration to determine why so many PDP contexts are being redirected. It is possible that the current network configuration is not optimal and that the SCP is redirecting PDP contexts to avoid undesirable or expensive network access paths.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf attemptedCamelDialogues (attDialogues)

Description This attribute indicates the total number of CAMEL dialogues that this *Ssf* component has attempted to establish during the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf unsuccessfulCamelDialogues (unsuccDialogues)

Description This attribute indicates the total number of unsuccessful CAMEL dialogues establishment attempts caused by errors or reject messages received from an SCP during the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf totalTssfTimeouts (totTssfTimeouts)

Description This attribute indicates the total number of Tssf timeouts during the collection interval. The timeout period is specified by the *ssfTimer* attribute of the *Sgsn Gsc* component.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf totalDefaultGprsHandlings (totDefHand)

Description This attribute indicates the number of times during the collection interval the SSF (Service Switching Function) detected an error and had to refer to the Default Gprs Handing field of the related mobile's CAMEL Subscriber Information (CSI) to determine whether to continue or fail the PDP (Packet Data Protocol) Context.

If this attribute is continuously reporting a high value during each

collection interval, the *totalProtocolErrors* and *totalNoCopFailures* attributes can be examined for information about why the Default Gprs Handling field is so often referenced.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf totalProtocolErrors (totProtoErr)

Description This attribute indicates the total number of protocol errors detected in CAP (CAMEL Application Part) messages from an SCP (Service Control Point) during the collection interval.

If this attribute is continuously reporting a high number of errors during each collection interval, there may be a mismatch in the protocol version being used by the SCP and the version being used by the SGSN.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf totalNoCopFailures (totNoCopFail)

Description This attribute indicates the total number of PDP (Packet Data Protocol) Contexts that have failed during the collection interval because an IRAU (Inter Routing Area Updates) occurred when the Change Of Position (COP) trigger was not in the TDP (Trigger Detection Point) list of the subscriber for which the PDP Context was requested.

If this attribute is continuously reporting a high number of errors during each collection interval, it may indicate that roaming should be disabled for CAMEL users or that Camel Subscriber Information (CSI) is not properly specified in the HLR for some users.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Ssf currentCamelDialogues (currDialogues)

Description This attribute indicates the number of CAMEL dialogues active at the end of the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberControl

MobileCountryCode MobileNetworkCode LocationAreaCode RoutingAreaCode CellId

Description — The statistics record generated by the GprsSubscriberControl MobileCountryCode MobileNetworkCode LocationAreaCode RoutingAreaCode CellId component.

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid msAttachAttemptsPerCell (attAtt)

Description — This attribute counts the number of attach requests received from the mobile subscribers in this cell.

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejIllegalMsPerCell (attRejIllMs)

Description — This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause "Illegal Ms".

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejGprsSvcNotAllowedPerCell (attRejGprsSvc)

Description — This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “Gprs Service not allowed”.

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejPlmnNotAllowedPerCell (attRejPlmn)

Description — This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “PLMN not allowed”.

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejPacketNetFailurePerCell (attRejNetFail)

Description: This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “Network Failure”.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejSgsnCongestionPerCell (attRejCongest)

Description: This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “Congestion”.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejMsgErrorPerCell (attRejMsgErr)

Description: This attribute counts the GPRS-attaches to this cell that were rejected during the collection interval because of one of the following reject causes:
Semantically incorrect message,
Invalid mandatory information,
Message type non-existence or not implemented,
Message type not compatible with the protocol state,
Information element non-existent or not implemented,
Conditional IE error,
Message not compatible with the protocol state,
Protocol error, unspecified.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachReachableTimerPerCell (nwkDetTmr)

Description: This attribute counts the number of network initiated detaches in this cell due to the expiration of reachable timer. The *mobileReachableTimer* attribute is provisioned in the *Sgsn Gsc* component.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachCancelLocationPerCell (nwkDetCanLoc)

Description This attribute counts the number of network initiated detaches in the specified cell due to the receipt of CANCEL LOCATION Messages from the HLR.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachDuplicateAttachPerCell (nwkDetDupAtt)

Description This attribute counts the number of network initiated detaches in this cell due to mobile reattaches with a new random Packet Temporary (PTMSI) without first performing a detach. This is an implicit detach and no detach message is sent to the mobile.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachTempNwkFailurePerCell (nwkDetTNwkFail)

Description This attribute counts the number of network initiated detaches or termination of mobility contexts in this cell due to temporary network problems.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid nwkDetachForReattachPerCell (nwkDetReatt)

Description This attribute counts the number of network initiated detaches in this cell with a detach cause of "reattach required".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejSvcNotAllowInPlmnPerCell (attRejGprsSvcPlmn)

Description	This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause "Gprs Service not allowed in this PLMN". This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid attachRejRoamNotAllowedInLocAreaPerCell (attRejRoam)

Description	This attribute counts the GPRS-attaches to this cell that were rejected because of the reject cause “roaming not allowed in location area”. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid msActivationAttemptsPerCell (msAttAct)

Description	This attribute counts the number of Activate PDP context request message received by this SGSN from Mobile Station (MS) in this cell. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid insufficientResourcesPerCell (insufRes)

Description	This attribute counts the number of PDP activations rejected by this SGSN in this cell due to reject cause “insufficient resources”. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid missingOrUnknownApnPerCell (mOrUn)

Description	This attribute counts the number of PDP activations rejected by this SGSN in this cell due to reject cause “missing or unknown

APN".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid unkPdpAddrOrPdpTypePerCell (unPdpAorT)

Description This attribute counts the number of PDP activations rejected by this SGSN in this cell due to reject cause "unknown PDP address or PDP type".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid activationsRejByGgsnPerCell (actRejGgsn)

Description This attribute counts the number of Packet Data Protocol (PDP) activations rejected by this SGSN in this cell due to reject cause "activation rejected by GGSN".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid activationRejUnspecifiedPerCell (actRejUnsp)

Description This attribute counts the number of Packet Data Protocol (PDP) activations rejected by this SGSN in this cell due to reject cause "unspecified reason".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid serviceOptionNotSupportedPerCell (servOp)

Description This attribute counts the number of Packet Data Protocol (PDP) activations rejected by this SGSN in this cell due to reject cause "service option not supported".

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid reqSvcOptionNotSubscribedPerCell (reqOpt)

Description: This attribute counts the number of Packet Data Protocol (PDP) activation rejected by this SGSN in this cell due to reject cause "requested service option not subscribed".

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid svcOptionTempOutOfOrderPerCell (serOp)

Description: This attribute counts the number of Packet Data Protocol (PDP) activation reject by this SGSN in this cell due to reject cause "service option temporarily out of order".

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid protocolErrorPerCell (protErr)

Description: This attributes counts the number of Packet Data Protocol (PDP) activation reject by this SGSN in this cell currently because of one of the following reject causes:
Semantically incorrect message,
Invalid mandatory information,
Message not compatible with the protocol state,
Protocol error, unspecified.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Mcc Mnc Lac Rac Cid currentPdpContextPerCell (curPdpCtx)

Description: This attribute counts the number of currently active Packet Data Protocol (PDP) contexts in this cell.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberControl

LocationServices

Description The statistics record generated by the GprsSubscriberControl LocationServices component.

ATTRIBUTE Gsc Lcs lcsMaxCurrentEnabledSubscribers (maxEnabledSubs)

Description This attribute indicates the current number of location services enabled subscribers.

The value reported is the peak value for the duration of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsMtRequests (mtReq)

Description This attribute counts the total mobile terminated location requests.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsMtFailures (mtFail)

Description This attribute counts the total unsuccessful mobile terminated location requests.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsPagingRequests (pagingReq)

Description This attribute counts the total paging requests sent by the *LocationServices* component.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs IcsPagingFailures (pagingFail)

Description: This attribute counts the total unsuccessful paging requests sent by the *LocationServices* component.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs IcsRequestTypeNotSupported (reqTypeNotSupp)

Description: This attribute counts the total failed location requests due to a requested location that is not supported.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs IcsDataMissing (dataMiss)

Description: This attribute counts the total failed location requests due to missing information. For example, Imsi or Msisdn is missing in the location request message.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs IcsSubscriberNotAttached (subNotAttach)

Description: This attribute counts the total failed location requests due to the subscriber not currently attached.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs IcsUnauthorizedGmlc (unauthGmlc)

Description: This attribute counts the total failed location requests due to location requests messages received from an unauthorized Gateway Mobile Location Center.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsUnauthorizedClient (unauthClient)

Description This attribute counts the total failed location requests due to location requests messages received from an unauthorized client.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsServiceBusy (servBusy)

Description This attribute counts the total failed location requests due to another location request already in progress for the same subscriber.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsNotificationNotPossible (notifyNotPossible)

Description This attribute counts the total failed location requests due to the reason that it is impossible to send a notification message to the mobile.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsGadShapeNotSupported (gadShapeNotSupp)

Description This attribute counts the total failed location requests due to the obtained location estimates using a Geographical Area Description (GAD) shape that are not supported in the Location Request message.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsInterrupted (interrupted)

Description: This attribute counts the total failed location requests due to information received from the Radio Network Controller (RNC) showing that the Location Services (LCS) entity has been interrupted. For example, LCS can be interrupted by an Inter-SGSN Routing Area Update (IRAU).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsQosNotAttained (qosNotAttained)

Description: This attribute counts the total failed location requests due to the quality of service information not matching the requested quality of service in the Provide Subscriber Location (PSL) message from the Gateway Mobile Location Center (GMLC).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsc Lcs lcsCellInfoMissing (cellInfoMissing)

Description: This attribute counts the total unsuccessful location requests due to the cell information missing in the local cell database.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberDataPath LogicalLinkControl

Description: The statistics record generated by the GprsSubscriberDataPath LogicalLinkControl component.

ATTRIBUTE Gsd Llc currentLlesForUserData (curLles)

Description: This attribute indicates the current number of Logical Link Entities (LLEs) used to handle the user data SAPs (Service

Access Points) for the *GprsSubscriberDataPath (Gsd)*. This value reported is the peak value in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsd Llc unknownTllis (unTllis)

Description This attribute counts the frames received from the Mobile Station (MS) for an unmapped Temporary Logical Link Identity (TLLI). An unmapped TLLI is one for which no Logical Link Context (LLC) mobile context exists. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsd Llc currentLlesForSms

Description This attribute indicates the current number of Logical Link Entities (LLEs) used to handle the Short Message Service (SMS) Service Access Points (SAPs) for the *GprsSubscriberDatapath (Gsd)*. This value reported is the peak value in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsd Llc framesRetransmitted (frRetx)

Description This attribute counts the number of total frames retransmitted by the LLC layer.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsd Llc crcErrorsFromMs (crcErrsRx)

Description This attribute counts the frames received from the Mobile Station (MS) that contained Cyclic Redundancy Check (CRC) errors.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberDataPath

SubNetworkDataConvergenceProtocol

Description — The statistics record generated by the GprsSubscriberDataPath SubNetworkDataConvergenceProtocol component.

ATTRIBUTE Gsd Sndcp currentNsapis (curNsapis)

Description — This attribute indicates the current number of Network-Service Access Point Identifiers (N-SAPIs) for this instance of *GprsSubscriberDataPath (Gsd)*. This value reported is the peak value in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Gsd Sndcp currentV42bisEntities (curV42bis)

Description — This attribute indicates the current number of RFC 1144 header compression entities in the last collection interval for this instance of *GprsSubscriberDataPath (Gsd)*. This value reported is the peak
value in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Gsd Sndcp currentRfc1144Entities (curRfc1144)

Description — This attribute indicates the current number of V.42bis compression entities in the last collection interval for this instance of *GprsSubscriberDataPath (Gsd)*. This value reported is the peak
value in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Gsd Sndcp snPdusToMs (snPdusTx)

Description — This attribute counts the SNDCP-Protocol Data Units (SN-PDUs) sent to the Mobile Station (MS) in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Gsd Sndcp snPdusFromMs (snPdusRx)

Description: This attribute counts the SNDCP-Protocol Data Units (SN-PDUs) received from the Mobile Station (MS), that is, the total number of LL- UNITDATA-PDU and LL-DATA-PDU received from the Logical Link Context (LLC) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsd Sndcp discardedNpdusFromMs (discNpdusRx)

Description: This attribute counts the Network-Protocol Data Units (N-PDUs) that originated from the Mobile Station (MS) which could not be re-assembled. This could result from N-PDUs lost or re-ordered. This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberDataPath GprsTunnelingProtocol

Description: The statistics record generated by the GprsSubscriberDataPath GprsTunnelingProtocol component.

ATTRIBUTE Gsd Gtp octetsToNetwork (octToNet)

Description: This attribute counts the total octets of the GPRS Tunneling Protocol (GTP) transmitted in Packet Data Unit (PDU) to Gateway GPRS Support Node (GGSN).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsd Gtp octetsFromNetwork (octFrNet)

Description: This attribute counts the total octets of the GPRS Tunneling Protocol (GTP) received in Packet Data Unit (PDU) from the Gateway GPRS Support Node (GGSN).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsd Gtp pdusToNetwork (pduToNet)

Description: This attribute counts the GPRS Tunneling Protocol (GTP) Data Units (PDU) transmitted to the Gateway GPRS Support Node (GGSN).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsd Gtp pdusFromNetwork (pduFrNet)

Description: This attribute counts the GPRS Tunneling Protocol (GTP) Data Units (PDU) received from the Gateway GPRS Support Node (GGSN).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsd Gtp discPdusFromNetwork (discPdus)

Description: This attribute counts the incoming GPRS Tunneling Protocol (GTP) Protocol Data Units (PDUs) discarded because of traffic congestion or because no Packet Data Protocol (PDP) Context has been established.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS GprsSubscriberDataPath TieredSubscription

Description: The statistics record generated by the GprsSubscriberDataPath TieredSubscription component.

ATTRIBUTE Gsd Ts pktsPerTierToMobile (pktsToM)

Description	This attribute counts the number of packets successfully sent by the SGSN or USGSN for each tier in the down link direction in the collection interval.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Gsd Ts octetsPerTierToMobile (octToM)

Description	This attribute counts the number of octets successfully sent by the SGSN or USGSN for each tier in the down link direction in the collection interval.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Gsd Ts pktsDropped (pktsDr)

Description	This attribute counts the packets dropped by the Tiered Subscription of the SGSN or USGSN for each tier in the collection interval. For example, if the peak throughput for a context is 56kbit/s and there is a burst of downlink data packets exceeding 56kbit/s, then the excess packets will be dropped, and the *pktsDropped* attribute is incremented every time a packet is dropped.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Gsd Ts activePdpCServiced (actPdpCSer)

Description	This attribute indicates the current number of PDP contexts that are active for each tier. The value is incremented on a PDP context activation for a tier and decremented when a PDP context is deactivated for the tier.

This value reported is the value at the end of the collection interval.

Vector of Decimal (0..4294967295)

Index Decimal (1..9)

ATTRIBUTE Gsd Ts peakPdpCServiced (peakPdpCSer)

Description This attribute indicates the maximum number of PDP contexts serviced for the tier during the collection interval. The value is incremented every time *currentPdpCServiced* for that tier exceeds the current value of *peakPdpCServiced* for that tier. It is reset to
currentPdpCServiced after every data collection.

Vector of Decimal (0..4294967295)

Index Decimal (1..9)

COLLECTED STATS GprsSubscriberDataPath DownlinkBuffer

Description The statistics record generated by the GprsSubscriberDataPath DownlinkBuffer component.

ATTRIBUTE Gsd DBuff totalPdusBuffered (totPduBuf)

Description This attribute counts the total number of Protocol Data Units (PDUs) that have been buffered on this GPRS Subscriber Data (GSD).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsd DBuff totalBytesBuffered (totByteBuf)

Description This attribute counts the total number of bytes that have been buffered on this GPRS Subscriber Data (GSD).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Gsd DBuff totalMobilesBufferedFc (totMobBufFc)

Description: This attribute counts the total number of mobiles that have been buffered on this GPRS Subscriber Data (GSD) due to flow control.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsd DBuff totalMobilesBufferedLlc (totMobBufLlc)

Description: This attribute counts the total number of mobiles that have been buffered on this GPRS Subscriber Data (GSD) due to suspension of the Logical Link Control (LLC) layer.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsd DBuff totalDiscardsDueToLifetimeExpiry (totDiscLifeEx)

Description: This attribute counts the total number of packets discarded because the maximum amount of time the packet can be buffered has exceeded the value specified by the *pduLifetimeInBuff* attribute.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsd DBuff totalDiscardsDueToMaxPackets (totDiscMaxPkt)

Description: This attribute counts the total number of packets discarded because the maximum number of bufferable packets specified by the *maxPacketsBuffPerMs* attribute was exceeded.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Gsd DBuff totalDiscardsDueToMaxBytes (totDiscMaxByte)

Description: This attribute counts the total number of packets discarded because the maximum number of bufferable bytes specified by

the *maxBytesBuffPerMs* attribute was exceeded.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS SgGprsTransportLayer NetworkServiceEntity

Description The statistics record generated by the SgGprsTransportLayer NetworkServiceEntity component.

ATTRIBUTE SgGtl Nse currentBvcs (curBvcs)

Description This attribute indicates the current number of BSS GPRS Virtual Connections (BVCs) on this Network Service Entity (NSE) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse octetsToPcu (octsTxPcu)

Description This attribute counts the octets sent to the Packet Control Unit (PCU) by all the Network Service Virtual Connections (NS-VCs) served by this Network Service Entity (NSE). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse octetsFromPcu (octsRxPcu)

Description This attribute counts the octets received from the Packet Control Unit's (PCU) Network Service Virtual Connections (NS-VCs) served by the peer Network Service Entity (NSE). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS SgGprsTransportLayer

NetworkServiceEntity PointToPointBvc

Description The statistics record generated by the SgGprsTransportLayer NetworkServiceEntity PointToPointBvc component.

ATTRIBUTE SgGtl Nse PtpBvc pdusFromPcu (pdusRxPcu)

Description This attribute counts the number of protocol data units (PDUs) received from the Packet Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse PtpBvc pdusToPcu (pdusTxPcu)

Description This attribute counts the number of protocol data units (PDUs) transmitted to the Packet Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse PtpBvc octetsFromPcu (octsRxPcu)

Description This attribute counts the number of octets received from the Packet
Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse PtpBvc octetsToPcu (octsTxPcu)

Description This attribute counts the number of octets transmitted to the Packet Control Unit (PCU) from the Serving GPRS Support Node (SGSN) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse PtpBvc bvcFlowCntlFromPcu (bvcFlRxPcu)

Description This attribute counts the FLOW-CONTROL-BVC Protocol Data Units (PDUs) received for this BSS GPRS Virtual Connection (BVC) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse PtpBvc msFlowCntlFromPcu (msFlRxPcu)

Description	This attribute counts the BSSGP-FLOW-CONTROL-MS Protocol Data Units (PDUs) received for this BSS GPRS Virtual Connection (BVC) in the collection interval.
Values	Decimal (0..4294967295)

COLLECTED STATS SgGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection

Description	The statistics record generated by the SgGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection component.

ATTRIBUTE SgGtl Nse Nsvc unitDatasFromPcu (unitDataRxPcu)

Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) received from the Packet Control Unit (PCU) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse Nsvc unitDatasToPcu (unitDataTxPcu)

Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) encoded to be sent to the Packet Control Unit (PCU) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse Nsvc octetsFromPcu (octsRxPcu)

Description	This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were received from the Packet Control Unit (PCU) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse Nsvc octetsToPcu (octsTxPcu)

Description: This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were sent to the Packet Control Unit (PCU) in the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS SgGprsTransportLayer NetworkServiceEntity SignalingBvc

Description: The statistics record generated by the SgGprsTransportLayer NetworkServiceEntity SignalingBvc component.

ATTRIBUTE SgGtl Nse SigBvc pdusFromPcu (pdusRxPcu)

Description: This attribute counts the number of protocol data units (PDUs) received from the Packet Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse SigBvc pdusToPcu (pdusTxPcu)

Description: This attribute counts the number of protocol data units (PDUs) transmitted to the Packet Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse SigBvc octetsFromPcu (octsRxPcu)

Description: This attribute counts the number of octets received from the Packet
Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse SigBvc octetsToPcu (octsTxPcu)

Description: This attribute counts the number of octets transmitted to the Packet Control Unit (PCU) from the Serving GPRS Support Node (SGSN) in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS PcGprsTransportLayer NetworkServiceEntity

Description The statistics record generated by the PcGprsTransportLayer NetworkServiceEntity component.

ATTRIBUTE PcGtl Nse octetsToSgsn (octsTxSgsn)

Description This attribute counts the octets sent to the Serving GPRS Support Node (SGSN) by all the Network Service Virtual Connections (NS-VCs) served by this Network Service Entity (NSE). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse octetsFromSgsn (octsRxSgsn)

Description This attribute counts the octets received from the Serving GPRS Support Node's (SGSN) Network Service Virtual Connections (NS-VCs) served by the peer Network Service Entity (NSE). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS PcGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection

Description The statistics record generated by the PcGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection component.

ATTRIBUTE PcGtl Nse Nsvc unitDatasFromSgsn (unitDataRxSgsn)

Description This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) received from the Serving GPRS Support Node (SGSN) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse Nsvc unitDatasToSgsn (unitDataTxSgsn)

Description: This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse Nsvc octetsFromSgsn (octsRxSgsn)

Description: This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were received from the Serving GPRS Support Node (SGSN) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse Nsvc octetsToSgsn (octsTxSgsn)

Description: This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were sent to the Serving GPRS Support Node (SGSN) in the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS Ppplwf Framer

Description: The statistics record generated by the PppIwf Framer component.

ATTRIBUTE Piwf Framer rxBytes

Description: This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values: Long Integer

ATTRIBUTE Piwf Framer rxFrames

Description: This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values: Long Integer

ATTRIBUTE Piwf Framer txBytes

Description: This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values: Long Integer

ATTRIBUTE Piwf Framer txFrames

Description: This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values: Long Integer

ATTRIBUTE Piwf Framer rxTotalLinkUtil

Description: This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values: Decimal (0..100)

COLLECTED STATS SgsnAccountingServer

Description: The statistics record generated by the SgsnAccountingServer component.

ATTRIBUTE Sas openScdrs

Description: This attribute indicates the open Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) in the SGSN Accounting Server (SAS) during the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas openMcdrs

Description: This attribute indicates the open Mobility Call Detail Records (M-CDRs) in the Serving GPRS Support Node (SGSN) Accounting Server (SAS) during the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas closedScdrs

Description This attribute indicates the closed Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) in the SGSN Accounting Server (SAS). Closed S-CDRs are the CDRs that are written to the disk and no longer exist in RAM.

This value reported is the value at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas closedMcdsr

Description This attribute indicates the closed Mobility Call Detail Records (M-CDRs) in the Serving GPRS Support Node (SGSN) Accounting Server (SAS). Closed S-CDRs are the CDRs that are written to the disk and no longer exist in RAM.

This value reported is the value at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas scdrsUpdated

Description This attribute counts the Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) updated in the SGSN Accounting Server (SAS). Updated means that an open CDR was modified due to some external event. A S-CDR may be updated more than once, and this attribute is incremented for each update.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas mcdrsUpdated

Description This attribute counts the Mobility Call Detail Records (M-CDRs) updated in the Serving GPRS Support Node (SGSN) Accounting

Server (SAS). Updated means that an open CDR was modified due to some external event. A M-CDR may be updated more than once, and this attribute is incremented for each update.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas smoCdrs

Description: This attribute counts the Mobile-Originated Short Message Service (SMS) Call Detail Records (CDRs) generated in the Serving GPRS Support Node (SGSN) Accounting Server (SAS). The SMS CDRs do not have states (for example, opened or closed) like other CDR types. When SAS receives a message that a SMS CDR message is sent through the network, SAS writes the SMS CDR directly to disk, which means a SMS CDR is generated.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas smtCdrs

Description: This attribute counts the Mobile Terminated Short Message Service (SMS) Call Detail Records (CDRs) generated in the Serving GPRS Support Node (SGSN) Accounting Server (SAS). The SMS CDRs do not have states (for example, opened or closed) like other CDR types.When SAS receives a message that a SMS CDR message is sent through the network, SAS writes the SMS CDR directly to disk, which means a SMS CDR is generated.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas cdrsXferCgf1

Description: This attribute counts the Call Detail Records (CDRs) successfully transferred from the Serving GPRS Support Node (SGSN) Accounting Server (SAS) to the primary Charging Gateway Functionality (CGF). This attribute is incremented each time a

CDR is transferred to the CGF.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas cdrsXferCgf1Fail

Description This attribute counts the unsuccessful Call Detail Record (CDR) transferred from the Serving GPRS Support Node (SGSN) Accounting Server (SAS) to the primary Charging Gateway Functionality (CGF).

This value is incremented whenever a CDR fails to get transferred to the primary CGF. Multiple attempts to send a CDR increment the statistic only once.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas cdrsXferCgf2

Description This attribute counts the Call Detail Records (CDRs) successfully transferred from the Serving GPRS Support Node (SGSN) Accounting Server (SAS) to the secondary Charging Gateway Functionality (CGF). This attribute is incremented each time a CDR is transferred to the CGF.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas cdrsXferCgf2Fail

Description This attribute counts the unsuccessful Call Detail Record (CDR) transfers from the Serving GPRS Support Node (SGSN) Accounting Server (SAS) to the secondary Charging Gateway Functionality (CGF).

The value is incremented whenever a CDR fails to get transferred to the secondary CGF. Multiple attempts to send a CDR increment the statistic only once.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas gtpMsgXferCgf1

Description This attribute counts the GPRS Tunnelling Protocol (GTP) messages successfully transferred to the primary Charging Gateway Functionality (CGF) during the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas gtpMsgXferCgf1Fail

Description This attribute counts the unsuccessful GPRS Tunnelling Protocol (GTP) message transfers to the primary Charging Gateway Functionality (CGF) during the collection interval.

The value is incremented whenever a GTP message is rejected or unacknowledged by the primary CGF. Multiple attempts to send a GPT message increment the statistic only once.

Values Decimal (0..4294967295)

ATTRIBUTE Sas gtpMsgXferCgf2

Description This attribute counts the GPRS Tunnelling Protocol (GTP) messages successfully transferred to the secondary Charging Gateway Functionality (CGF) during the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas gtpMsgXferCgf2Fail

Description This attribute counts the unsuccessful GPRS Tunnelling Protocol (GTP) message transfers to the secondary Charging Gateway Functionality (CGF) during the collection interval.

The value is incremented whenever a GTP message is rejected or unacknowledged by the secondary CGF. Multiple attempts to send a GPT message increment the statistic only once.

Values Decimal (0..4294967295)

ATTRIBUTE Sas dataVolumeLimitPartialScdrs (dvlPartialScdrs)

Description

This attribute counts the partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) generated in the SGSN Accounting Server (SAS) when the threshold of the *dataVolumeLimit* attribute (defined in the *Usgsn* and *Sgsn* components for UMTS and GPRS, respectively) is reached.

This counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Sas timeDurationLimitPartialScdrs (timePartialScdrs)

Description

This attribute counts the partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) generated in the SGSN Accounting Server (SAS) due to the expiry of the *scdrPartialRecordInterval* attribute.

This counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Sas maxChargingConditionPartialScdrs (maxCondPartialScdrs)

Description

This attribute counts the partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) generated in the SGSN Accounting Server (SAS) when the maximum number of charging condition changes, as specified by the *scdrMaxContainers* attribute, is reached.

This counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Sas qosChangeScdrContainers (qosScdrContainers)

Description

This attribute counts the Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Record (S-CDR) “List of Traffic Data Volumes” containers closed in the SGSN Accounting Server (SAS) due to a QoS change.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas tariffTimeChangeScdrContainers (ttcScdrContainers)

Description This attribute counts the Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Record (S-CDR) “List of Traffic Data Volumes” containers closed in the SGSN Accounting Server (SAS) due to a tariff time change.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas timeDurationLimitPartialMcdrs (timePartialMcdrs)

Description This attribute counts the partial Mobility Call Detail Records (M-CDRs) generated in the Serving GPRS Support Node (SGSN) Accounting Server (SAS) due to the expiry of the *mcdrPartialRecordInterval* attribute.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas maxChangeConditionPartialMcdrs (maxCondPartialMcdrs)

Description This attribute counts the partial Mobility Call Detail Records (M-CDRs) generated in the Serving GPRS Support Node (SGSN) Accounting Server (SAS) when the maximum number of mobility changes, as specified by the *mcdrMaxContainers* attribute, is reached.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas mobilityChangeMcdrContainers (mobilityMcdrContainers)

Description This attribute counts the Mobility Call Detail Record (M-CDR) “Change of Location” containers closed in the Serving GPRS Support Node (SGSN) Accounting Server (SAS) due to a mobility change.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas mgmtInterventionPartialScdrs (mgmtPartialScdrs)

Description This attribute counts the partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) generated in the SGSN Accounting Server (SAS) with a partial record reason of “management intervention”.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS SignallingGateway CsDomain

Description The statistics record generated by the SignallingGateway CsDomain component.

ATTRIBUTE Sg Cs rabAssignRequests

Description This attribute indicates the number of RAB ASSIGNMENT REQUEST messages that were sent to the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocRequests

Description This attribute indicates the number of RELOCATION REQUEST messages that were sent to the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs paging

Description This attribute indicates the number of PAGING messages that were sent to the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs iuReleaseCmds

Description	This attribute indicates the number of IU RELEASE COMMAND messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocCmds

Description	This attribute indicates the number of RELOCATION COMMAND messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocPrepFailures

Description	This attribute indicates the number of RELOCATION PREPARATION FAILURE messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocCancelAcks

Description	This attribute indicates the number of RELOCATION CANCEL ACKNOWLEDGE messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs commonIds

Description	This attribute indicates the number of COMMON ID messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs cnInvokeTraces

Description	This attribute indicates the number of CN INVOKE TRACE messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs securityModeCmds

Description	This attribute indicates the number of SECURITY MODE COMMAND messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs directTransfers

Description	This attribute indicates the total number of DIRECT TRANSFER messages exchanged between the RNC and the Core Network in either direction over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs resets

Description	This attribute indicates the total number of RESET messages between the RNC and the Core Network in either direction over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs resetAcks

Description	This attribute indicates the total number of RESET ACKNOWLDEGE messages between the RNC and the Core Network in either direction over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs errorIndications

Description	This attribute indicates the total number of ERROR INDICATION messages between the RNC and the Core Network in either direction over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs initialUeMessages

Description	This attribute indicates the number of INITIAL UE messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs rabAssignResponses

Description	This attribute indicates the number of RAB ASSIGNMENT RESPONSE messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs rabReleaseRequests

Description	This attribute indicates the number of RAB RELEASE REQUEST messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs iuReleaseRequests

Description	This attribute indicates the number of Iu RELEASE REQUEST messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs iuReleaseComps

Description	This attribute indicates the number of Iu RELEASE COMPLETE messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocRqds

Description	This attribute indicates the number of RELOCATION REQUIRED messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocRequestAcks

Description	This attribute indicates the number of RELOCATION REQUEST ACKNOWLEDGE messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocDetects

Description This attribute indicates the number of RELOCATION DETECT messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocComps

Description This attribute indicates the number of RELOCATION COMPLETE messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocFailures

Description This attribute indicates the number of RELOCATION FAILURE messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocCancels

Description This attribute indicates the number of RELOCATION CANCEL messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs securityModeComps

Description This attribute indicates the number of SECURITY MODE COMPLETE messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs resetCircuits

Description	This attribute indicates the number of RESET CIRCUIT messages between the Core Network and the DMS Call Server over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs unequipCircuits

Description	This attribute indicates the number of UNEQUIPPED CIRCUIT messages received from the DMS Call Server over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs blocks

Description	This attribute indicates the number of BLOCK messages that were sent to the DMS Call Server over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs unblocks

Description	This attribute indicates the number of UNBLOCK messages that were sent to the DMS Call Server over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs circuitGrpBlocks

Description	This attribute indicates the number of CIRCUIT GROUP BLOCK messages that were sent to the DMS Call Server over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs circuitGrpUnblocks

Description	This attribute indicates the number of CIRCUIT GROUP UNBLOCK messages that were sent to m the DMS Call Server over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs securityModeRjcts

Description This attribute indicates the number of SECURITY MODE REJECT messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs rabSetups

Description This attribute indicates the number of RAB SETUP messages that were received from the Virtual Media Gateway over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs rabSetupResps

Description This attribute indicates the number of RAB SETUP RESPONSE messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs releases

Description This attribute indicates the number of RELEASE messages between RANAP-CS and the Virtual Media Gateway over the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS VirtualMediaGateway

Description The statistics record generated by the VirtualMediaGateway component.

ATTRIBUTE Vmg estReqMsgs (erm)

Description This attribute counts Q.2630 ERQ (establish request) messages that were received from the RNC.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Vmg rejectedCalls (rejCalls)

Description: This attribute counts the number of calls rejected by the Media Gateways controlled by this component.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Vmg peakUsedPercentage (pkPct)

Description: This attribute indicates the peak percentage of provisioned DS0s for this component that are in a non-idle state.

The value is set to the current percentage at the beginning of the collection interval.

Values: Decimal (0..100)

COLLECTED STATS VirtualMediaGateway MediaGatewayInterface

Description: The statistics record generated by the VirtualMediaGateway MediaGatewayInterface component.

ATTRIBUTE Vmg MgIf crcxMsgs (crcxMsgs)

Description: This attribute indicates the number of CONNECTION REQUEST messages sent to the Media Gateway over the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf dlcxMsgs (dlcxMsgs)

Description: This attribute indicates the number of DELETE REQUEST messages sent to the Media Gateway over the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf rinfMsgs (rinfMsgs)

Description	This attribute indicates the number of REQUEST FOR INFORMATION messages sent to the Media Gateway over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf resetMsgs (resetMsgs)

Description	This attribute indicates the total number of RESET messages sent in either direction over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf crcxAckMsgs (crcxAckMsgs)

Description	This attribute indicates the number of CONNECTION REQUEST ACKNOWLEDGE messages received from the Media Gateway over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf dlcxAckMsgs (dlcxAckMsgs)

Description	This attribute indicates the number of DELETE REQUEST ACKNOWLEDGE messages received from the Media Gateway over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf updateCicInfo (updateCicInfo)

Description	This attribute indicates the number of UPDATE CIC INFO messages received from the Media Gateway over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf sigFailMsgs (sigFailMsgs)

Description	This attribute indicates the number of SIGNALLING FAILURE messages received from the Media Gateway over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Vmg Mglf sigOkMsgs (sigOkMsgs)

Description: This attribute indicates the number of SIGNALLING OK messages received from the Media Gateway over the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS SignallingConnControlPart

Description: The statistics record generated by the SignallingConnControlPart component.

ATTRIBUTE Sccp activeConnections

Description: This attribute indicates the number of the current open signalling connections for the *Sccp c*omponent at the end of the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sccp rejectedConnections

Description: This attribute indicates the number of rejected signalling connections for the SCCP component over the collection interval. The reasons include the subsystem being down, the number of open connections exceeding the limit specified by the attribute *maxConnections* and so on, at the end of the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sccp maxConnectionsExhausted

Description: This attribute indicates the number of times a signalling connection establishment request by the application was refused because the number of open connections reached the limit specified by the attribute *maxConnections,* over the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sccp lostConnections

Description	This attribute indicates the number of the open signalling connections lost due to unavailability of the SCCP Subsystem over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp invalidMessages

Description	This attribute indicates the number of invalid (syntax error or undecodable) messages received over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp messagesTx

Description	This attribute indicates the number of the messages sent to layer 3 over the collection interval. This includes maintenance messages.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp payloadMessagesTx

Description	This attribute indicates the number of payload messages transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp messagesRx

Description	This attribute indicates the number of the messages received from layer 3 over the collection interval. This includes maintenance messages.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp payloadMessagesRx

Description	This attribute indicates the number of payload messages received over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp localRoutingFailures

Description This attribute indicates the number of the routing failures to the local subsystem over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sccp remoteRoutingFailures

Description This attribute indicates the number of the routing failures to the remote subsystem over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sccp attemptedConnections (attCon)

Description This attribute indicates the number of signalling connections that this *Sccp c*omponent has attempted to establish during the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS MessageTransferPartLayer3

Description The statistics record generated by the MessageTransferPartLayer3 component.

ATTRIBUTE Mtp3 linkSetsUnavailable (lsUnavail)

Description This attribute indicates the number of linkset unavailable conditions over the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS MessageTransferPartLayer3 Linkset Link

Description The statistics record generated by the MessageTransferPartLayer3 Linkset Link component.

ATTRIBUTE Mtp3 Ls Link pdusRx

Description	This attribute indicates the number of Protocol Data Units (PDUs) received from layer 2 over the collection interval. This includes the PDUs with and without user payload.
Values	Decimal (0..4294967295)

ATTRIBUTE Mtp3 Ls Link payloadPdusRx

Description	This attribute indicates the number of Protocol Data Units (PDUs) with payload received from layer 2 over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Mtp3 Ls Link pdusTx

Description	This attribute indicates the number of Protocol Data Units (PDUs) sent to layer 2 over the collection interval. This includes PDUs with and without user payload.
Values	Decimal (0..4294967295)

ATTRIBUTE Mtp3 Ls Link payloadPdusTx

Description	This attribute indicates the number of Protocol Data Units (PDUs) with payload sent to layer 2 over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Mtp3 Ls Link invalidPdusRx

Description	This attribute indicates the number of number of invalid Protocol Data Units received over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Mtp3 Ls Link sltFailures

Description	This attribute indicates the number of signalling link test message failure conditions over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Mtp3 Ls Link changeovers

Description	This attribute indicates the number of link changeover conditions over the collection interval.
Values	Decimal (0..4294967295)

COLLECTED STATS SaalNni

Description	The statistics record generated by the SaalNni component.

ATTRIBUTE SaalNni insvFailures

Description	This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.
Values	Decimal (0..4294967295)

ATTRIBUTE SaalNni pdusTx

Description	This attribute indicates the number of protocol data units transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SaalNni pdusRx

Description	This attribute indicates the number of protocol data units received over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SaalNni pduOctetsTx

Description	This attribute indicates the number of payload PDU octets transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SaalNni pduOctetsRx

Description	This attribute indicates the number of payload PDU octets received over the collection interval.
Values	Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberControl

Description — The statistics record generated by the UsgsnSubscriberControl component.

ATTRIBUTE Usc cpuOvldAttachesDiscarded (cpuOvldAttDisc)

Description — This attribute counts the number of GPRS Mobility Management (GMM) attach request messages that are discarded due to a CPU overload condition on the GSC and USC applications.

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Usc cpuOvldActivationsDiscarded (cpuOvldActDisc)

Description — This attribute counts the number of Session Management (SM) session activate request messages that are discarded due to CPU overload on the GSC and USC applications.

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Usc subCountOvldAttachesDiscarded (subOvldAttDisc)

Description — This attribute counts the number of GPRS Mobility Management (GMM) attach request messages that are discarded due to subscriber count overload, which occurs when the value of the *currentlyAttached* attribute is equal to the value of the *maxAttachedSubscribers* attribute.

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Usc cpuOvldMovingAvg (cpuOvldAvg)

Description — This attribute indicates the CPU moving average calculated from within the defined moving window, the size of which is determined by the value of *cpuOvldWindowSize* attribute.

The value of the attribute is set at the end of the collection interval.

Values Decimal (0..100)

Units %

ATTRIBUTE Usc explicitDetachPurge

Description This attribute counts the Mobile Subscriber (MS) Purge requests initiated due to an explicit mobile detach. Mobile Subscriber Purge request are initiated upon explicit detach when the *purgeOnExplicitDetach* attribute in (U) SGSN MobileSubscriberPurge is enabled.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc operatorInitiatedPurge

Description This attribute counts the number of Mobile Subscriber (MS) Purge requests initiated by the operator.

An operator initiates the Mobile Subscriber Purge request by issuing the *clear* command on an (U) SGSN *Imsi* component.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc contextReusePurge

Description This attribute counts the number of Mobile Subscriber (MS) Purge requests initiated due to memory reuse.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc periodicAuditPurge

Description This attribute counts the number of Mobile Subscriber (MS) Purge requests initiated due to periodic. During a periodic audit, detached Mobile Subscribers whose age is greater than the value

specified by the auditPurgeMinimumInactiveAge attribute in (U) SGSN MobileSubscriberPurge are considered candidates for purge.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc msPurgeAckFailures

Description This attribute counts the Mobile Subscriber (MS) Purge Acknowledgement Failures received by the (UMTS) Serving GPRS Support Node (USGSN or SGSN) from the Home Location Register (HLR).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc msPurgeSendFailures

Description This attribute counts the Mobile Subscriber (MS) Purge requests that were either not sent from the (UMTS) Serving GPRS Support Node (USGSN or SGSN) or no response was received from the Home Location Register (HLR) due to network related faults such as SS7 IP Gateway (SIG) failure and so on.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberControl GtpC

Description The statistics record generated by the UsgsnSubscriberControl GtpC component.

ATTRIBUTE Usc GtpC echoRqstsTx

Description This attribute indicates the number of Echo Request Messages sent over the collection interval.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc GtpC gnEchoRespTx

Description This attribute indicates the number of Echo Response Messages sent on the Gn Interface over the collection interval.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc GtpC pathFailures

Description This attribute counts the path failures detected by GPRS Tunelling Protocol (GTP), based on maximum value of the attribute *n3Request* provisioned for different GTP messages under *Usgsn Usc* over the collected interval.

The attribute *n3Request* defines the number of times the UMTS serving GPRS support node (USGSN) will attempt to send a GTP signalling message to the GPRS support node (GSN). A path to the GSN would be declared as failed when the number of request messages on the USGSN waiting for a response from the GSN exceeds the *n3Request* value with no incoming request or response messages received from the GSN. All sessions tied (on) to that GSN would be deactivated.

Values Decimal (0..4294967295)

ATTRIBUTE Usc GtpC idenRqstMsgsTx

Description This value indicates the number of times the USGSN sent a IDENTIFICATION REQUEST message to the Mobile Station (MS) over the collection interval.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc GtpC sgsnCntxtRqstMsgsTx

Description This attribute indicates the number of times the USGSN sent a SGSN CONTEXT REQUEST Message to the Mobile Station over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc GtpC sgsnCntxtAckRqstMsgsTx

Description This value indicates the number of times the USGSN sent a SGSN CONTEXT ACKNOWLEDGE REQUEST Message to the Mobile Station.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberControl HlrCache

Description The statistics record generated by the UsgsnSubscriberControl HlrCache component.

ATTRIBUTE Usc HlrC currHlrCachePdpContexts

Description This attribute indicates the number of Packet Data Protocol (PDP) context subscription data records that are stored in the Home Location Register (HLR) Cache.

The maximum number of PDP contexts that can be stored in the HLR Cache is provisioned in the attribute *maxPdpContexts*, at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc HlrC cacheHits

Description This attribute counts the times the Home Location Register (HLR) Cache had the subscriber information locally and did not need to retrieve information from the HLR.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc HlrC cacheMisses

Description: This attribute counts the times the Home Location Register (HLR) Cache does not have the subscriber information locally and must retrieve information from the HLR.

It counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc HlrC recordsInactive

Description: This attribute indicates the number of Home Location Register (HLR) Cache Records that are currently inactive, that is, the number of records for which subscribers are detached from the UMTS Serving GPRS Support Node (USGSN).

The count is taken at the end of the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc HlrC recordsActive

Description: This attribute indicates the number of Home Location Register (HLR) Cache Records that are currently active, that is, the number of records that are active and the UPDATE GPRS LOCATION RESPONSE has been received from HLR.

The count is taken at the end of the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc HlrC recordsToBeReset

Description: This attribute indicates the Home Location Register (HLR) Cache Records currently waiting to be reset. When a RESET message is received from a HLR, all Location Confirmation flags of the HLR Cache Records, corresponding to the HLR is set to false. The GPRS Mobility Management (GMM) is notified to request UPDATE GPRS LOCATION for the HLR Cache Records corresponding to the reset HLR.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc HlrC recordsWaitingForHlrConf

Description This attribute indicates the number of Home Location Register (HLR) Cache Records that are currently active and waiting for HLR Confirmation, that is, the number of records which are yet to receive UPDATE GPRS LOCATION RESPONSE from the HLR.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberControl SessionManagement

Description The statistics record generated by the UsgsnSubscriberControl SessionManagement component.

ATTRIBUTE Usc Sm currentPdpContexts

Description This attribute indicates the number of currently active Packet Data Protocol (PDP) contexts.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm mobileInitActivations

Description This attribute indicates the number of successful Mobile-Initiated Packet Data Protocol (PDP) context activations.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm mobileInitDeacts

Description This attribute counts the successful Packet Data Protocol (PDP) context deactivations initiated by the Mobile Station (MS).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm ggsnInitDeacts

Description This attribute indicates the number of Packet Data Protocol (PDP) context deactivations initiated by the Gateway GPRS Support Node (GGSN).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm usgsnInitDeacts

Description This attribute indicates the number of Packet Data Protocol (PDP) context deactivations initiated locally from the UMTS Serving GPRS Support Node (USGSN) (for example, an implicit session deactivation as a result of a Gateway GPRS Support Node (GGSN) restart or path failure).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm hlrInitDeacts

Description This attribute indicates the number of Packet Data Protocol (PDP) context deactivations initiated by the Home Location Register (HLR), for example, Delete Subscriber Data (DSD) withdrawing subscription for an active session.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm usgsnInitModifies

Description This attribute indicates the number of Packet Data Protocol (PDP) context Modifications initiated from the UMTS Serving GPRS Support Node (USGSN), for example, as a result of QoS renegotiations with the Mobile Station (MS). This counter is pegged only during a Routing Area Update (RAU) scenario.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm currentRoamers

Description This value indicates the number of mobiles that have entered the PLMN, which is not their home PLMN, and are served by the USGSN.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm tRabAssgtTimeouts

Description This value indicates the number of times the tRabAssgtTimer expires. If the value of this attribute increases consistently, the value of the tRabAssgtTimer can be increased.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm usgsnInitModifyExhaust (usgsnME)

Description This value indicates the number of times the *usgsnInitModifies* attribute is exhausted during Inter-SGSN Routing Area Update. This counter is incremented in the new SGSN.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm attemptedActivationsPdpContexts (attActPdpC)

Description This attribute indicates the Packet Data Protocol (PDP) contexts that the Mobile Station or the SGSN Session Management Entity has attempted to activate during the collection interval. This counters includes the successful activations counted by the *mobileInitActivations* attribute. This attribute counts both attempted PDP context activations using static addresses and PDP context activations using dynamic PDP addresses.This attribute does not count Inter Routing Area Update (IRAU) activations.

This counter includes static as well as dynamic PDP addresses.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm activationFailuresPdpContexts (actFailPdpC)

Description This attribute indicates the Packet Data Protocol (PDP) contexts, initiated by the Mobile Station (MS) or the SGSN Session Management Entity, that were rejected by the Serving GPRS Support Node (SGSN). This attribute counts both the failures for PDP context activations using static addresses and failures for PDP context activations using dynamic PDP addresses. This attribute does not count Inter Routing Area Update (IRAU) activation failures.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm actFailSgsnInsufficientResources (actFailSgsnInsufRes)

Description This attribute indicates, for the collection interval, the activations initiated by the Mobile Station (MS) or the SGSN Session Management Entity, and rejected by the Serving GPRS Support Node (SGSN) due to the cause code NO RESOURCES AVAILABLE. This counter is incremented due to the SGSN having insufficient resources for the session. The value of this attribute is included in the count of *activationFailuresPdpContexts*.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm actFailMissingOrUnknownApn (actFailMissOrUnkn)

Description This attribute indicates, for the collection interval, the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) or an SGSN Session Management Entity initiated activation due to the requested service being rejected by the external packet data network. The service is rejected because the required Access Point Name (APN) was not included or the APN was not resolved. The value of this attribute is included in the count of *activationFailuresPdpContexts*.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm actFailUnknownPdpAddrOrPdpType (actFailUnknPdpAddType)

Description: This attribute indicates, for the collection interval, the number of times a CREATE PDP CONTEXT RESPONSE message was received from the Gateway GPRS Support Node (GGSN) with the cause code "Unknown PDP address or PDP type". This could be due to the requested service being rejected by the external packet data network because the Packet Data Protocol (PDP) address or the PDP type was not recognized. This event is also counted by the *activationFailuresPdpContexts* attribute.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm actFailUserAuthentications (actFailUserAuth)

Description: This attribute indicates, for the collection interval, the number of times a CREATE PDP CONTEXT REQUEST message was received from the Gateway GPRS Support Node (GGSN) with the cause code USER AUTHENTICATION FAILED. This could be due to the requested service being rejected by the external packet data network due to a failed user authentication. The value of this attribute is included in the count of *activationFailuresPdpContexts*.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm actFailRejectedByGgsn (actFailRejGgsn)

Description: This attribute indicates, for the collection interval, the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) or an SGSN Session Management Entity initiated activation, due to the requested service being rejected by the Gateway GPRS Support Node (GGSN) with a cause code that does not map to a cause code in the ACTIVATE PDP CONTEXT REJECT message. The value of this attribute is included in the count of *activationFailuresPdpContexts*.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm actFailGgsnInsufficientResources (ggsnInsufRes)

Description: This attribute indicates, for the collection interval, the activations initiated by the Mobile Station (MS) or the SGSN Session Management Entity, and rejected by the Serving GPRS Support

Node (SGSN) due to the cause code NO RESOURCES AVAILABLE. This counter is incremented due to the Gateway GPRS Support Node (GGSN) returning a cause code of NO RESOURCES AVAILABLE in the CREATE PDP CONTEXT RESPONSE message. The value of this attribute is included in the count of *activationFailuresPdpContexts*.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm attemptedActivationsDynPdpC (attActDynPdpC)

Description This attribute indicates, for the collection interval, the Packet Data Protocol (PDP) contexts that the Mobile Station or the SGSN Session Management Entity has attempted to activate and that requires the use of a dynamic PDP address. This attribute does not count Inter Routing Area Update (IRAU) activations.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm activationFailuresDynPdpC (actFailDynPdpC)

Description This attribute indicates, for the collection interval, the number of times the Serving GPRS Support Node (SGSN) rejected a PDP context activation initiated by a Mobile Station (MS) or an SGSN Session Management Entity and that requires the use of a dynamic PDP address. This attribute does not count Inter Routing Area Update (IRAU) activation failures.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm maxSubsWithActivationsPdpC (maxSubsActPdpC)

Description This attribute displays the highest recorded value for the number of subscribers with an active Packet Data Protocol (PDP) context. The value is obtained by comparing on an update of the actual number of subscribers with activated PDP contexts in the SGSN, with the currently maximal value in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm sgsnAttemptedModificationsPdpC (sgsnAttModPdpC)

Description This attribute indicates the Packet Data Protocol (PDP) contexts that the Service GPRS Support Node (SGSN) has attempted to modify during the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm attemptedNetworkDeactivationsPdpC (attNwkDeactPdpC)

Description This attribute indicates, for the collection interval, the Packet Data Protocol (PDP) context deactivations initiated by the Gateway GPRS Support Node (GGSN), the UMTS Gateway GPRS Support Node (USGSN) or the Home Location Register (HLR).

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm sgsnInitModifyAttempts

Description This attribute counts the number of Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN), for example, as a result of QoS renegotiations with the Mobile Station (MS). This counter is pegged only during SGSN Initiated PDP Context Modification.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm sgsnInitFailAtMs

Description This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the Mobile Station (MS).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm sgsnInitFailAtGgsn

Description This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the Gateway GPRS Support Node (GGSN).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm sgsnInitFailAtSgsn

Description: This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the SGSN.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm msInitModifyAttempts

Description: This attribute counts the number of Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm msInitFailAtGgsn

Description: This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the Gateway GPRS Support Node (GGSN).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm msInitFailAtSgsn

Description: This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the SGSN.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm sgsnInitFailAtRnc

Description: This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the UMTS Serving GPRS Support Node (USGSN) that failed at the Radio Network Controller (RNC).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm msInitFailAtMs

Description This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the MS.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm msInitFailAtRnc

Description This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the Radio Network Controller (RNC).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm snrPeakActivated (snrPeakAct)

Description This attribute indicates the peak number of roaming Mobile Stations (MSs) that have become GPRS-activated and have been given homer Quality of Service by Seamless National Roaming.

The value reported is the peak value in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm snrActivatesSuccessful (snrAct)

Description This attribute counts the roaming Mobile Stations (MSs) that have been GPRS-activated and had been given homer Quality of Service by Seamless National Roaming.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberControl SessionManagement Failures

Description — The statistics record generated by the UsgsnSubscriberControl SessionManagement Failures component.

ATTRIBUTE Usc Sm Failures idenRespMsgsRx

Description — This attribute indicates the number of IDENTIFICATION RESPONSE message failures received with the cause indicated by the instance of the component, over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Usc Sm Failures sgsnCntxtRespMsgsRx

Description — This attribute indicates the number of SGSN CONTEXT RESPONSE message failures received with the cause indicated by the instance of the component, over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Usc Sm Failures sgsnCntxtAckRespMsgsRx

Description — This attribute indicates the number of SGSN CONTEXT ACKNOWLEDGE RESPONSE message failures received with the cause indicated by the instance of the component, over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Usc Sm Failures createPdpCntxtRespMsgsRx

Description — This attribute indicates the number of CREATE PDP CONTEXT RESPONSE message failures received with the cause indicated by the instance of the component, over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Usc Sm Failures updatePdpCntxtRespMsgsTx

Description — This attribute indicates the number of UPDATE PDP CONTEXT RESPONSE message failures received with the cause indicated by the instance of the component, over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm Failures deletePdpCntxtRespMsgsRx

Description This attribute indicates the number of DELETE PDP CONTEXT RESPONSE message failures received with the cause indicated by the instance of the component, over the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberControl GprsMobilityManagement

Description The statistics record generated by the UsgsnSubscriberControl GprsMobilityManagement component.

ATTRIBUTE Usc Gmm pmmIdleStateSubscribers

Description This attribute indicates the number of mobile subscribers that are GPRS-attached and in the PMM-IDLE state at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm pmmConnectedStateSubscribers

Description This attribute indicates the number of mobile subscribers that are GPRS-attached and in the PMM-CONNECTED state at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm currentlyAttached

Description This attribute indicates the Mobile Stations (MS) that are currently GPRS-attached and in the PMM-IDLE or PMM-CONNECTED state.
The maximum subscribers that can be GPRS-attached is provisioned in the maxAttachedSubscribers attribute of the parent UmtsSubscriberControl (*Usc*) component.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm attachesSuccessful

Description: This attribute indicates the number of GPRS-attaches to this UMTS Serving GPRS Support Node (USGSN) that were successful over the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm attachesWithKnownPtmsi

Description: This attribute indicates the number of ATTACH REQUEST messages received with a Packet-Temporary Mobile Subscriber Identity (P-TMSI) previously assigned by this UMTS Serving GPRS Support Node (USGSN).

This includes all successful and unsuccessful attempts.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm attachesWithUnknownPtmsi

Description: This attribute indicates the number of ATTACH REQUEST messages received with a Packet-Temporary Mobile Subscriber Identity (P-TMSI) not assigned by this UMTS Serving GPRS Support Node (USGSN) over the collection interval.

This includes all successful and unsuccessful attempts.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm attachesWithImsi

Description: This attribute indicates the number of ATTACH REQUEST messages received with an International Mobile Subscriber Identity (IMSI) as an identifier, over the collection interval. This includes all successful and unsuccessful attempts.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm authenticationRequests

Description: This attribute indicates the number of times the authentication procedure was initiated by the UMTS Serving GPRS Support

Node (USGSN).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm serviceRequestsForSignalling

Description This attributes counts the successful SERVICE REQUEST messages sent by mobile stations (MS) requesting a signalling connection in order to send uplink signalling messages (such as ATTACH REQUEST, PDP CONTEXT REQUEST, and so on.), over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm serviceRequestsForData

Description This attribute counts the successful SERVICE REQUEST messages sent by mobile stations (MS) requesting a resource reservation for active PDP contexts, over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm serviceRequestsForPagingResponse

Description This attribute counts the successful SERVICE REQUEST messages sent by mobile stations (MS) indicating a paging response, over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm detachesSuccessful

Description This attribute counts the successful DETACHes that are either mobile or network initiated.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm msDetachRejected

Description This attribute counts the Mobile Station (MS) initiated GPRS-DETACH REQUEST messages which have been rejected by this UMTS Serving GPRS Support Node (USGSN).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm normalIntraUsgsnRaUpdate

Description This attribute counts the normal intra-Serving GPRS Support Node ROUTING AREA UPDATE REQUEST messages received from the Mobile Station (MS).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm periodicIntraUsgsnRaUpdate

Description This attribute counts the periodic intra-Serving GPRS Support Node ROUTING AREA UPDATE REQUEST messages from the Mobile Station (MS).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm normalInterUsgsnRaUpdate

Description This attribute counts the inter-UMTS Serving GPRS Support Node ROUTING AREA UPDATE REQUEST messages from the Mobile Station (MS).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm initialPsPageRequests

Description This attribute counts the initial PS (Packet-Switched) PAGE REQUEST messages sent to the Mobile Station (MS).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm reattemptPsPageRequests

Description: This attribute counts the re-attempt PS (Packet-Switched) PAGE REQUEST messages sent to the Mobile Station (MS) after the initial page request.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm interSgsnRaUpdateAccepts (irauAccept)

Description: This attribute counts the ROUTING AREA UPDATE ACCEPT messages sent from this SGSN, while acting in the role of new SGSN, to the Mobile Station (MS) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm interSgsnRaUpdateRejects (irauReject)

Description: This attribute indicates the ROUTING AREA UPDATE REJECT messages sent from this SGSN, while acting in the role of new SGSN, to the Mobile Station (MS). This attribute includes one of the following conditions:

IMSI Unknown In HLR
Service Not Allowed
PLMN Not Allowed
Roaming Not Allowed
Network Failure
Unspecified Protocol Error
Invalid Mandatory Information
Conditional Information Element Error

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm intraSgsnRaUpdateRejects (rauReject)

Description: This attribute counts the ROUTING AREA UPDATE REJECT message sent during an Intra-SGSN Routing Area Update to the Mobile Station (MS). This attribute includes one of the following conditions:

IMSI Unknown In HLR
Service Not Allowed
PLMN Not Allowed
Roaming Not Allowed
Network Failure
Unspecified Protocol Error
Invalid Mandatory Information
Conditional Information Element Error

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm periodicRaUpdateRejects (periodicRauReject)

Description: This attribute counts the ROUTING AREA UPDATE REJECT message sent during Periodic Routing Area Updates to the Mobile Station (MS) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm psPagingProcFailures (psPagProcFail)

Description: This attribute indicates the PS (Packet-Switched) paging procedures initiated by the UMTS Serving GPRS Support Node (USGSN) over the Iu interface that are rejected by the Mobile Station (MS).

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm securityModeRequests

Description: This attribute counts the number of times the Security Mode procedure was initiated by the UMTS Serving GPRS Support Node (USGSN).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrPeakAttached (snrPeakAtt)

Description

This attribute indicates the peak number of roaming Mobile Stations (MSs) that have become GPRS-attached and have been given homer Quality of Service by Seamless National Roaming.

If the SNR service is updated after the MS is attached, then the value of this attribute is not updated until the next periodic Routing Area Update.

The value reported is the peak value in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrAttachesSuccessful (snrAtt)

Description

This attribute counts the roaming Mobile Stations (MSs) that have been GPRS-attached and had been given homer Quality of Service by Seamless National Roaming.

If the SNR service is updated after the MS is attached, then the value of this attribute is not updated until the next periodic Routing Area Update.

This counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrGprsNotAllowedRejects (snrGprsNotAllRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS Services Not Allowed” (cause code 7).

The reject is also counted in the *attachesRejected* attribute (defined in the *Gsc/n Gmm* component).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrCombNotAllowedRejects (snrCombNotAllRej)

Description: This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS And Non-GPRS Services Not Allowed” (cause code 8).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrNotAllowedInPlmnRejects (snrPlmnRej)

Description: This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “PLMN Not Allowed” (cause code 11).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrNotAllowedInLaRejects (snrLaRej)

Description: This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “Location Area Not Allowed” (cause code 12).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrNoRoamingInLaRejects (snrRoamLaRej)

Description: This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “Roaming Not Allowed In This Location Area” (cause code 13).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrGprsNotAllowedInPlmnRejects (snrGprsPlmnRej)

Description: This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS Not Allowed in this PLMN” (cause code 14).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrTryAnotherCellRejects (snrCellRej)

Description This attribute counts the rejects sent by Seamless National Roaming to the Release 99 Mobile Stations (MSs) due to the cause “No Suitable Cells In Location Area” (cause code 15).

The reject for Release 97 MSs are counted in the *snrRemappedCauseRejects* attribute (defined in the *Gsc/n Gmm* component).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrOtherCauseRejects (snrOtherRej)

Description This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) because of causes other than the following reject causes:

Cause code 7: GPRS Services Not Allowed
Cause code 8: GPRS Services and Non-GPRS Services Not Allowed
Cause code 11: PLMN Not Allowed
Cause code 12: Location Area Not Allowed
Cause code 13: Roaming Not Allowed In This Location Area
Cause code 14: GPRS Not Allowed In This PLMN
Cause code 15: No Suitable Cells In Location Area

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrRemappedCauseRejects (remapRej)

Description This attribute counts the rejects sent by Seamless National Roaming to the Release 97 Mobile Stations (MSs) due to the cause “No Suitable Cells In Location Area” (cause code 15).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberControl MapClient

Description The statistics record generated by the UsgsnSubscriberControl MapClient component.

ATTRIBUTE Usc Mc uglMsgs

Description This attribute indicates the MAP-UPDATE GPRS LOCATION messages sent to the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc uglResponseMsgs (uglResp)

Description This attribute indicates the successful MAP-UPDATE GPRS LOCATION RESPONSE messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc isdMsgs

Description This attribute indicates the MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc isdResponseMsgs (isdResp)

Description This attribute indicates the MAP-INSERT SUBSCRIBER DATA RESPONSE messages sent to the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc dsdMsgs

Description This attribute indicates the MAP-DELETE SUBSCRIBER DATA messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc dsdResponseMsgs (dsdResp)

Description This attribute indicates the MAP-DELETE SUBSCRIBER DATA RESPONSE messages sent to the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc clMsgs

Description This attribute indicates the MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc clResponseMsgs (clResp)

Description This attribute indicates the MAP-CANCEL LOCATION RESPONSE messages sent to the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc rstMsgs

Description This attribute indicates the MAP-RESET messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc saiMsgs

Description This attribute indicates the MAP-SEND AUTHENTICATION INFO messages sent to the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc saiResponseMsgs (saiResp)

Description	This attribute indicates the MAP-SEND AUTHENTICATION INFO RESPONSE messages received from the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc transLimitDiscards (trDisc)

Description	This attribute indicates the number of transactions rejected by the MAP Client when the maximum number of concurrent MAP transactions supported by the MAP Client has been exceeded. The maximum number of MAP transactions is constrained by the MAP Client internal memory available to store the transactions. This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc tmrExpiries (tmrEx)

Description	This attribute indicates the times the *mcTimer* (defined in component *Sgsn GprsSubscriberControl* and *Usgsn UmtsSubscriberControl*) expires before receiving a response from the Home Location Register (HLR). This can be used to determine if the provisionable attribute *mcTimer* must be changed, or a problem exists between the Serving GPRS Support Node (SGSN) or the UMTS Serving General Support Node (USGSN) and the Home Location Register (HLR). This counter counts the value in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc afrMsgs

Description	This attribute indicates the AUTHENTICATION FAILURE REPORT messages sent to the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc afrResponseMsgs (afrResp)

Description: This attribute indicates the ATHENTICATION FAILURE REPORT RESPONSE messages received from the Home Location Register (HLR) in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc currentTransactions (curTr)

Description: This attribute indicates how many MAP transactions are currently being handled by the MAP Client. *currentTransactions* is expressed as a percentage utilization of the number of MAP transactions the MAP Client is capable of handling concurrently.

A SET alarm is generated by the MAP Client when the percentage utilization reaches a high threshold. A CLEAR alarm is generated by the MAP Client when the percentage utilization reaches a low threshold and an outstanding SET alarm exists.

The value reported is the value at the end of the collection interval.

Values: Decimal (0..100)

ATTRIBUTE Usc Mc sccpServiceRequestTimeouts

Description: This attribute indicates the MAP Stack Service request timeouts in the collection interval. This could occur if the MAP Stack was not responding to Service requests from the MAP Clients, or if there was an SS7-IP Gateway (SIG) or IP network problem.

Retries of the Service request are infinite since the MAP Client can not send or receive MAP messages until it is successfully registered with the MAP Stack.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc decodeErrors

Description: This attribute indicates, over the collection interval, the number of MAP messages received from HLR and SMSC that are not decodable. The inability to decode the MAP message is caused by the MAP Client receiving a message with invalid data.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc dataMissingRespSent

Description This attribute indicates, over the collection interval, the number of “data missing error” responses sent to the HLR or SMSC. This error may occur when optional data is missing from a MAP message received, when required data is missing from a MAP message received, or when an internal data structure is missing data.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc unexpectedDataValuesRespSent (unexpDataRespSent)

Description This attribute indicates, over the collection interval, the number of “unexpected data value” error responses sent to the HLR or SMSC. This error may occur when the parameter type is correct in a MAP message received but contains data which is not relevant for the type of MAP service being invoked.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc unidentifiedSubscribersRespSent (unidentSubRespSent)

Description This attribute indicates, over the collection interval, the number of “unidentified subscriber” error responses sent to the HLR or SMSC. This error may occur when the subscriber is not contained in the subscriber database resulting in the failure to establish a call.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc dataMissingRespRecv

Description This attribute indicates, over the collection interval, the number of “data missing” error responses received from the HLR or SMSC. This error may occur when optional data is missing from a MAP message sent, when required data is missing from a MAP message sent, or when an internal data structure is missing data.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc unexpectedDataValuesRespRecv (unexpDataRespRecv)

Description This attribute indicates, over the collection interval, the number of “unexpected data value” error responses received from the HLR or SMSC. This error may occur when the parameter type is correct in a MAP message sent but contains data which is not relevant for the type of MAP service being invoked.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc systemFailuresRespRecv (sysFailRespRecv)

Description This attribute indicates, over the collection interval, the number of “system failure” error responses received from the HLR or SMSC. This error may occur when a task specified by a MAP message sent cannot be performed because of a problem with another entity.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc unknownSubscribersRespRecv (unkSubRespRecv)

Description This attribute indicates, over the collection interval, the number of “unknown subscriber” error responses received from the HLR or SMSC. This error may occur when a message sent is processed for a subscription that does not exist.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc roamingNotAllowedRespRecv (noRoamRespRecv)

Description This attribute indicates, over the collection interval, the number of “roaming not allowed” error responses received from the HLR or SMSC. This error may occur when a location update attempt is made in an area not covered by the subscription.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc invalidMessages

Description This attribute indicates, over the collection interval, the number of invalid messages received by the MAP Client. This may occur if the MAP Client receives an unsolicited message, a message with an invalid header, or an invalid dialogue ID.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc isdMsgsUpdateLocation (isdMsgsUpdLoc)

Description This attribute indicates, over the collection interval, the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) during a GPRS Update Location procedure.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc isdMsgsHlrSubUpdate (isdMsgsHlrSubUp)

Description This attribute indicates, over the collection interval, the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) due to an updated mobile subscription.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc isdFailures (isdFail)

Description This attribute indicates the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) that could not be processed due to one of the following errors:

Data Missing
Unexpected Data Value
Unidentified Subscriber
Decode errors

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc clMsgsHlrDetach (clMsgsHlrDetach)

Description This attribute indicates, over the collection interval, the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) due to an HLR initiated Detach.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc clMsgsSgsnChange (clMsgsSgsnChg)

Description: This attribute indicates, over the collection interval, the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) due to a Service GPRS Support Node (SGSN) change.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc clFailures (clFail)

Description: This attribute counts the MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) that could not be processed due to one of the following errors:

Data Missing
Unexpected Data Value
Decode errors

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc dsdFailures (dsdFail)

Description: This attribute indicates the number of MAP-DELETE SUBSCRIBER DATA messages sent to the Home Location Register (HLR) that could not be processed due to one of the following errors:

Data Missing
Unexpected Data Value
Unidentified Subscriber
Decode errors

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc uAbortMsgSent

Description: This attribute indicates, over the collection interval, the number of MAP USER ABORT messages sent by the MAP Client to the HLR or SMSC. This message may be sent as a result of a

resource limitation caused by congestion or as a result of the unavailability of resources.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc pAbortMsgRecv

Description This attribute indicates, over the collection interval, the number of MAP PROVIDER ABORT messages received by the MAP Client from the HLR or SMSC. This message indicates to the MAP service-user to abort a MAP dialogue. This message may be received due to a MAP service-provider malfunction, supporting dialogue/transaction release, resource limitation, maintenance activity, version incompatibility, or an abnormal MAP dialogue.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc uAbortMsgRecv

Description This attribute indicates, over the collection interval, the number of MAP USER ABORT messages received by the MAP Client from the HLR or SMSC. This message indicates to the MAP service-provider to abort a MAP dialogue. This message may be received due to a resource limitation caused by congestion or by unavailability of resources.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc pmsMsgs

Description This attribute indicates the number of Mobile Subscriber Purge messages sent to the Home Location Register (HLR).

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc pmsResponseMsgs (pmsRes)

Description This attribute indicated the number of Mobile Subscriber Purge Response messages received from the Home Location Register (HLR).

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc unexpectedErrorCodeRespRecv (unexpErrRespRecv)

Description This attribute counts the unexpected error responses received from the Home Location Register (HLR). An unexpected error response may be received when a Transaction Capabilities Application Part (TCAP) error code is received at the Service GPRS Support Node (SGSN) and that error code is inconsistent with the invoked Mobile Application Part (MAP) operation.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc pslRespMsgs

Description This attribute counts the MAP-PROVIDE SUBSCRIBER LOCATION response messages sent by the MAP Client to the Gateway Mobile Location Center (GMLC).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc unauthorizedReqNetworkRespSent (unauthReqNetRespSent)

Description This attribute counts the number of “Unauthorized Requested Network” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when a Location Request is denied due to the GMLC not being in the home country.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc unauthorizedLcsClientRespSent (unauthLcsCliRespSent)

Description This attribute counts the number of “Unauthorized LCS Client” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when a Location Request is denied due to privacy restrictions.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc positionMethodFailureRespSent (posMethFailRespSent)

Description This attribute counts the number of “Positioning Method Failure” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when the position of the mobile cannot be retrieved.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc absentSubscriberRespSent (absentSubRespSent)

Description This attribute counts the number of “Absent Subscriber” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when the subscriber is International Mobile Subscriber Identity (IMSI) detached, in a restricted area, or does not respond to paging.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc pslMsgs

Description This attribute counts the MAP-PROVIDE SUBSCRIBER LOCATION messages received by the MAP Client from the Gateway Mobile Location Center (GMLC).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberControl Ranap

Description The statistics record generated by the UsgsnSubscriberControl Ranap component.

ATTRIBUTE Usc Ranap rabAssignmentMsgs

Description This attribute indicates the number of RAB ASSIGNMENT messages that were sent to the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ranap rabSetupRequestMsgs

Description This attribute indicates the number of RAB SETUP REQUEST messages that were sent to the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ranap rabReleaseRequestMsgs

Description This attribute indicates the number of RAB RELEASE REQUEST messages that were sent to the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ranap iuReleaseRequestRxMsgs

Description This attribute indicates the number of Iu RELEASE REQUEST messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ranap iuReleaseCommandTxMsgs

Description This attribute indicates the number of Iu RELEASE COMMAND messages that were sent to the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ranap relocRequestMsgs

Description This attribute indicates the number of RELOCATION REQUEST messages that were sent to the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ranap pagingMsgs

Description	This attribute indicates the number of PAGING messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap resetMsgs

Description	This attribute indicates the number of RESET messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap initialUeMsgs

Description	This attribute indicates the number of INITIAL UE messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap errorIndicationMsgsRx

Description	This attribute indicates the number of ERROR INDICATION messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap errorIndicationMsgsTx

Description	This attribute indicates the number of ERROR INDICATION messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap locationReportingControlMsgs

Description	This attribute indicates the number of Location Reporting Control messages that are sent to the Radio Network Controller over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap locationReportMsgs

Description This attribute indicates the number of Location Report messages that are received from the Radio Network Controller over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ranap rabAssgnRqstSetupFailureMsgs

Description This attribute indicates the number of times a RAB assignment request of type setup was rejected by the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ranap rabAssgnRqstRelFailureMsgs

Description This attribute indicates the number of times a RAB assignment message of type release was rejected by the RNC over the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberControl DifferentiatedService AllocationRetention TrafficClass

Description The statistics record generated by the UsgsnSubscriberControl DifferentiatedService AllocationRetention TrafficClass component.

ATTRIBUTE Usc Ds Ar Tc createPdpReq

Description This attribute indicates the number of CREATE PDP CONTEXT REQUEST messages sent by the (UMTS) Serving GPRS Support Node (USGSN or SGSN) for the allocation retention priority and traffic class represented by this component over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ds Ar Tc createPdpRes

Description This attribute indicates the number of CREATE PDP CONTEXT RESPONSE messages received with the cause REQUEST ACCEPTED for the allocation retention priority and traffic class represented by this component over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ds Ar Tc sgsnInitPdpUpdateReq

Description This attribute indicates the number of UPDATE PDP CONTEXT REQUEST messages sent by the (UMTS) Serving GPRS Support Node (USGSN or SGSN) for the allocation retention priority and traffic class represented by this component over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ds Ar Tc sgsnInitPdpUpdateRes

Description This attribute indicates the number of UPDATE PDP CONTEXT RESPONSE messages sent by the (UMTS) Serving GPRS Support Node (USGSN or SGSN) for the allocation retention priority and traffic class represented by this component over the collection interval..

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ds Ar Tc ggsnInitPdpUpdateReq

Description This attribute indicates the number of UPDATE PDP CONTEXT REQUEST messages received from the Gateway Serving GPRS Support Node (GGSN) for the allocation retention priority and traffic class represented by this component over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ds Ar Tc wlcGgsnInitPdpUpdateRes

Description This attribute indicates the number of UPDATE PDP CONTEXT RESPONSE messages sent with a cause REQUEST ACCEPTED by the (UMTS) Serving GPRS Support Node (USGSN or SGSN)

for the allocation retention priority and traffic class represented by this component over the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberControl GprsSupportNode

Description The statistics record generated by the UsgsnSubscriberControl GprsSupportNode component.

ATTRIBUTE Usc Gsn incomingRequestsRejected (inReqReject)

Description This attribute indicates the number of incoming request messages on the Gn interface that were rejected during the collection interval because the maximum number of outstanding incoming requests was exceeded.

Values Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberControl ServiceSwitchingFunction

Description The statistics record generated by the UsgsnSubscriberControl ServiceSwitchingFunction component.

ATTRIBUTE Usc Ssf pdpContextsRedirected (pdpRedir)

Description This attribute indicates the number of PDP (Packet Data Protocol) Contexts that have been redirected to a different APN (Access Point Name) by an SCP (Service Control Point) during the collection interval.

If this attribute is continuously reporting a high value during each collection interval, the operator may want to examine the network configuration to determine why so many PDP contexts are being redirected. It is possible that the current network configuration is not optimal and that the SCP is redirecting PDP contexts to avoid undesirable or expensive network access paths.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ssf attemptedCamelDialogues (attDialogues)

Description: This attribute indicates the total number of CAMEL dialogues that this *Ssf* component has attempted to establish during the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Ssf unsuccessfulCamelDialogues (unsuccDialogues)

Description: This attribute indicates the total number of unsuccessful CAMEL dialogues establishment attempts caused by errors or reject messages received from an SCP during the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Ssf totalTssfTimeouts (totTssfTimeouts)

Description: This attribute indicates the total number of Tssf timeouts during the collection interval. The timeout period is specified by the *ssfTimer* attribute of the *Sgsn Gsc* component.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Ssf totalDefaultGprsHandlings (totDefHand)

Description: This attribute indicates the number of times during the collection interval the SSF (Service Switching Function) detected an error and had to refer to the Default Gprs Handing field of the related mobile's CAMEL Subscriber Information (CSI) to determine whether to continue or fail the PDP (Packet Data Protocol) Context.

If this attribute is continuously reporting a high value during each collection interval, the *totalProtocolErrors* and *totalNoCopFailures* attributes can be examined for information about why the Default Gprs Handling field is so often referenced.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Ssf totalProtocolErrors (totProtoErr)

Description: This attribute indicates the total number of protocol errors detected in CAP (CAMEL Application Part) messages from an SCP (Service Control Point) during the collection interval.

If this attribute is continuously reporting a high number of errors during each collection interval, there may be a mismatch in the protocol version being used by the SCP and the version being used by the SGSN.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ssf totalNoCopFailures (totNoCopFail)

Description This attribute indicates the total number of PDP (Packet Data Protocol) Contexts that have failed during the collection interval because an IRAU (Inter Routing Area Updates) occurred when the Change Of Position (COP) trigger was not in the TDP (Trigger Detection Point) list of the subscriber for which the PDP Context was requested.

If this attribute is continuously reporting a high number of errors during each collection interval, it may indicate that roaming should be disabled for CAMEL users or that Camel Subscriber Information (CSI) is not properly specified in the HLR for some users.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ssf currentCamelDialogues (currDialogues)

Description This attribute indicates the number of CAMEL dialogues active at the end of the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberControl LocationServices

Description The statistics record generated by the UsgsnSubscriberControl LocationServices component.

ATTRIBUTE Usc Lcs lcsMaxCurrentEnabledSubscribers (maxEnabledSubs)

Description This attribute indicates the current number of location services enabled subscribers.

The value reported is the peak value for the duration of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs IcsMtRequests (mtReq)

Description This attribute counts the total mobile terminated location requests.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs IcsMtFailures (mtFail)

Description This attribute counts the total unsuccessful mobile terminated location requests.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs IcsPagingRequests (pagingReq)

Description This attribute counts the total paging requests sent by the *LocationServices* component.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs IcsPagingFailures (pagingFail)

Description This attribute counts the total unsuccessful paging requests sent by the *LocationServices* component.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs IcsRequestTypeNotSupported (reqTypeNotSupp)

Description This attribute counts the total failed location requests due to a requested location that is not supported.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsDataMissing (dataMiss)

Description This attribute counts the total failed location requests due to missing information. For example, Imsi or Msisdn is missing in the location request message.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsSubscriberNotAttached (subNotAttach)

Description This attribute counts the total failed location requests due to the subscriber not currently attached.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsUnauthorizedGmlc (unauthGmlc)

Description This attribute counts the total failed location requests due to location requests messages received from an unauthorized Gateway Mobile Location Center.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsUnauthorizedClient (unauthClient)

Description This attribute counts the total failed location requests due to location requests messages received from an unauthorized client.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs IcsServiceBusy (servBusy)

Description: This attribute counts the total failed location requests due to another location request already in progress for the same subscriber.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Lcs IcsNotificationNotPossible (notifyNotPossible)

Description: This attribute counts the total failed location requests due to the reason that it is impossible to send a notification message to the mobile.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Lcs IcsGadShapeNotSupported (gadShapeNotSupp)

Description: This attribute counts the total failed location requests due to the obtained location estimates using a Geographical Area Description (GAD) shape that are not supported in the Location Request message.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Lcs IcsInterrupted (interrupted)

Description: This attribute counts the total failed location requests due to information received from the Radio Network Controller (RNC) showing that the Location Services (LCS) entity has been interrupted. For example, LCS can be interrupted by an Inter-SGSN Routing Area Update (IRAU).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsQosNotAttained (qosNotAttained)

Description: This attribute counts the total failed location requests due to the quality of service information not matching the requested quality of service in the Provide Subscriber Location (PSL) message from the Gateway Mobile Location Center (GMLC).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsNotificationRequests (notifyRequest)

Description: This attribute counts the total notification requests to the mobile subscribers.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsNotificationFailures (notifyFail)

Description: This attribute counts the total unsuccessful notification requests to the mobile subscribers.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsReportExpiries (reportExpiries)

Description: This attribute counts the timer expiries associated with the *locationReportTimer* attribute.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsNotifyExpiries (notifyExpiries)

Description: This attribute counts the timer expiries associated with the *locationNotifyTimer* attribute.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsClientDeniedByMs (deniedByMs)

Description This attribute counts the location requests that fail due to the subscriber denying the request.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsRncPositioningFailure (rncPosFail)

Description This attribute counts the total failed location requests due to the Radio Network Controller (RNC) failing to determine the location of the subscriber.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberDatapath

Description The statistics record generated by the UsgsnSubscriberDatapath component.

ATTRIBUTE Usd currentActiveSessions (currActSess)

Description This attribute indicates the current number of active session contexts allowed for this instance of *UmtsSubscriberDataPath (Usd)* over the collection interval.

Values Decimal (0..6000000)

ATTRIBUTE Usd pdusToUtran

Description This attribute indicates the number of Protocol Data Units (PDUs) sent to the UMTS Terrestrial Radio Access Network (UTRAN) over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usd pdusFromUtran

Description: This attribute indicates the number of Protocol Data Units (PDUs) received from the UMTS Terrestrial Radio Access Network (UTRAN) over the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usd pdusToNetwork (pdusToNwk)

Description: This attribute indicates the number of GPRS Tunneling Protocol User Plane (GTP-U) Protocol Data Units (PDU) transmitted to the Gateway GPRS Support Node (GGSN) over the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usd pdusFromNetwork (pdusFromNwk)

Description: This attribute indicates the number of GPRS Tunneling Protocol User Plane (GTP-U) Protocol Data Units (PDU) received from the Gateway GPRS Support Node (GGSN) over the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usd discardedPdus (discPdus)

Description: This attribute indicates the number of discarded Protocol Data Units (PDUs) received from the GPRS Support Nodes (GSNs) or UMTS Terrestrial Radio Access Network (UTRAN). This includes packets dropped due to GPRS Tunneling Protocol (GTP-U) protocol errors, packets received with no currently linked session context, packets received without a path to send them or packets dropped due to the Tiered Subscription feature policing downlink data.

The counter counts events in the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS UsgsnSubscriberDatapath

TieredSubscription

Description	The statistics record generated by the UsgsnSubscriberDatapath TieredSubscription component.

ATTRIBUTE Usd Ts pktsPerTierToMobile (pktsToM)

Description	This attribute counts the number of packets successfully sent by the SGSN or USGSN for each tier in the down link direction in the collection interval.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Usd Ts octetsPerTierToMobile (octToM)

Description	This attribute counts the number of octets successfully sent by the SGSN or USGSN for each tier in the down link direction in the collection interval.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Usd Ts pktsDropped (pktsDr)

Description	This attribute counts the packets dropped by the Tiered Subscription of the SGSN or USGSN for each tier in the collection interval. For example, if the peak throughput for a context is 56kbit/s and there is a burst of downlink data packets exceeding 56kbit/s, then the excess packets will be dropped, and the *pktsDropped* attribute is incremented every time a packet is dropped.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Usd Ts activePdpCServiced (actPdpCSer)

Description	This attribute indicates the current number of PDP contexts that are active for each tier. The value is incremented on a

PDP context activation for a tier and decremented when a PDP context is deactivated for the tier.
This value reported is the value at the end of the collection interval.

Vector of Decimal (0..4294967295)

Index Decimal (1..9)

ATTRIBUTE Usd Ts peakPdpCServiced (peakPdpCSer)

Description This attribute indicates the maximum number of PDP contexts serviced for the tier during the collection interval. The value is incremented every time *currentPdpCServiced* for that tier exceeds the current value of *peakPdpCServiced* for that tier. It is reset to
currentPdpCServiced after every data collection.

Vector of Decimal (0..4294967295)

Index Decimal (1..9)

COLLECTED STATS UsgsnSubscriberDatapath DifferentiatedService AllocationRetention TrafficClass

Description The statistics record generated by the UsgsnSubscriberDatapath DifferentiatedService AllocationRetention TrafficClass component.

ATTRIBUTE Usd Ds Ar Tc dsUplink

Description This attribute indicates the number of octets transferred uplink for the allocation retention priority and traffic class represented by this component over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usd Ds Ar Tc dsDownlink

Description: This attribute indicates the number of octets transferred downlink for the allocation retention priority and traffic class represented by this component.

Values: Decimal (0..4294967295)

COLLECTED STATS TcapStack

Description: The statistics record generated by the TcapStack component.

ATTRIBUTE Tcap registerAttempts (regAttempts)

Description: This attribute indicates the number of SCIP registrations attempted with the SIG during the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap registerSuccessAcks (regAcks)

Description: This attribute indicates the number of successful registration responses received from the SIG during the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap registerFailures (regFail)

Description: This attribute indicates the number of unsuccessful registration responses received from the SIG during the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap deregisterAttempts (deregAttempts)

Description: This attribute indicates the number of SCIP deregistrations attempted with the SIG during the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap deregisterSuccessAcks (deregAcks)

Description: This attribute indicates the number of successful deregistration responses received from the SIG during the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap deregisterFailures (deregFail)

Description	This attribute indicates the number of unsuccessful deregistration responses received from the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap sigSccpNoticeIndications (sccpNotice)

Description	This attribute indicates the number of SCCP Notice Indications that have been received from the SIG during the collection interval. SCCP Notice Indications are received from the SIG when there are errors in the messages being sent to it.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap concurrentTransactionsLowBySs (transLowBySs)

Description	This attribute indicates the lowest number of simultaneous TCAP Transactions active during the collection interval for each subsystem. ***sgsn*** - the SGSN subsystem ***cap*** - the CAP subsystem ***mscE***- the MSC Emulation subsystem.
Vector of	Decimal (0..4000)
Index	sgsn cap mscEmulationSubsystem (mscE)

ATTRIBUTE Tcap concurrentTransactionsAvgBySs (transAvgBySs)

Description	This attribute indicates the average number of simultaneous Tcap Transactions active over the collection interval for each subsystem. The average for each subsystem is computed based on the cumulative total of the values of the *currentTransactionsBySubsystem* attribute for that subsystem at each event that causes the attribute to change, divided by the total number of such events during the collection interval.

sgsn - the SGSN subsystem
cap - the CAP subsystem
mscE- the MSC Emulation subsystem.

Vector of: Decimal (0..4000)

Index: sgsn
cap
mscEmulationSubsystem (mscE)

ATTRIBUTE Tcap concurrentTransactionsHighBySs (transHighBySs)

Description: This attribute indicates the highest number of simultaneous TCAP Transactions active during the collection interval for each subsystem.

sgsn - the SGSN subsystem
cap - the CAP subsystem
mscE- the MSC Emulation subsystem.

Vector of: Decimal (0..4000)

Index: sgsn
cap
mscEmulationSubsystem (mscE)

ATTRIBUTE Tcap concurrentInvokesLowBySs (invksLowBySs)

Description: This attribute indicates the lowest number of simultaneous Tcap Invokes active during the collection interval for each subsystem.

sgsn - the SGSN subsystem
cap - the CAP subsystem
mscE- the MSC Emulation subsystem.

Vector of: Decimal (0..6000)

Index: sgsn
cap
mscEmulationSubsystem (mscE)

ATTRIBUTE Tcap concurrentInvokesAvgBySs (invksAvgBySs)

Description: This attribute indicates the average number of simultaneous Tcap Invokes active during the collection interval.

The average is computed for each subsystem based on the cumulative total of the values of the *currentInvokesBySubsystem* attribute for that subsystem at each event that causes the attribute to change, divided by the total number of such events during the collection interval.

sgsn - the SGSN subsystem
cap - the CAP subsystem
mscE- the MSC Emulation subsystem

Vector of: Decimal (0..6000)

Index:
sgsn
cap
mscEmulationSubsystem (mscE)

ATTRIBUTE Tcap concurrentInvokesHighBySs (invksHighBySs)

Description: This attribute indicates the highest number of simultaneous Tcap Invokes active during the collection interval for each subsystem.

sgsn - the SGSN subsystem
cap - the CAP subsystem
mscE- the MSC Emulation subsystem

Vector of: Decimal (0..6000)

Index:
sgsn
cap
mscEmulationSubsystem (mscE)

ATTRIBUTE Tcap beginSent (txBegin)

Description: This attribute counts the number of TCAP Begin messages sent to all peer nodes during the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap beginReceived (rxBegin)

Description: This attribute counts the number of TCAP Begin messages received from all peer nodes during the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap continueSent (txContinue)

Description	This attribute counts the number of TCAP Continue messages sent to all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap continueReceived (rxContinue)

Description	This attribute counts the number of TCAP Continue messages received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap endSent (txEnd)

Description	This attribute counts the number of TCAP End messages sent to all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap endReceived (rxEnd)

Description	This attribute counts the number of TCAP End messages received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap uabortSent (txUabort)

Description	This attribute counts the number of TCAP User Abort messages sent to all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap uabortReceived (rxUabort)

Description	This attribute counts the number of TCAP User Abort messages received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap pabortReceived (rxPabort)

Description	This attribute counts the number of TCAP Provider Abort messages received from all peer nodes during the collection interval.

Values	Decimal (0..4294967295)

ATTRIBUTE Tcap noticeReceived (rxNotice)

Description	This attribute counts the number of TCAP Notice messages received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap invokeSent (txInvoke)

Description	This attribute counts the number of TCAP Invoke Components sent to all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap invokeReceived (rxInvoke)

Description	This attribute counts the number of TCAP Invoke Components received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap resultLastSent (txResultLast)

Description	This attribute counts the number of TCAP Result Last Components sent to all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap resultLastReceived (rxResultLast)

Description	This attribute counts the number of TCAP Result Last Components received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap returnErrorSent (txReturnError)

Description	This attribute counts the number of TCAP Return Error Components sent to all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap returnErrorReceived (rxReturnError)

Description: This attribute counts the number of TCAP Return Error Components received from all peer nodes during the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap rejectsSent (rejsent)

Description: This attribute counts the number of TCAP REJECT Components sent to all peer nodes during the collection interval. A Peer is an application on a different node using data from the same protocol layer.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap rejectsReceived (rejRcvd)

Description: This attribute counts the number of TCAP REJECT Components received from all peer nodes during the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS TcapStack MapStack

Description: The statistics record generated by the TcapStack MapStack component.

ATTRIBUTE Tcap Map uglTimeouts (uglTo)

Description: This attribute indicates the number of expiries of the timer specified by the attribute *uglSanityTimer* over the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap Map saiTimeouts (saiTo)

Description: This attribute indicates the number of expiries of the timer specified by the attribute *saiSanityTimer* over the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap Map clTimeouts (clTo)

Description	This attribute indicates the number of expiries of the timer specified by the attribute *clSanityTimer* over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap Map isdTimeouts (isdTo)

Description	This attribute indicates the number of expiries of the timer specified by the attribute *isdSanityTimer* in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap Map dsdTimeouts (dsdTo)

Description	This attribute indicates the number of expiries of the timer specified by the attribute *dsdSanityTimer* in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap Map mtfsmTimeouts (mtfsmTo)

Description	This attribute indicates the number of expiries of the timer specified by the attribute *mtfsmSanityTimer* in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap Map mofsmTimeouts (mofsmTo)

Description	This attribute indicates the number of expiries of the timer specified by the attribute *mofsmSanityTimer* in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap Map fsmTimeouts (fsmTo)

Description	This attribute indicates the number of expiries of the timer specified by the attribute *fsmSanityTimer* in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap Map rfsmTimeouts (rfsmTo)

Description: This attribute indicates the number of expiries of the timer specified by the attribute *rfsmSanityTimer* in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap Map afrTimeouts (afrTo)

Description: This attribute indicates the number of expiries of the timer specified by the attribute *afrSanityTimer* in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap Map pmsTimeouts (pmsTo)

Description: This attribute indicates the number of expiries of the *pmsSanityTimer* attribute in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Tcap Map pslTimeouts (pslTo)

Description: This attribute counts the expiries of the timer specified by the *pslSanityTimer* attribute in the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS SignallingSystem7 MessageTransferPartLayer3

Description: The statistics record generated by the SignallingSystem7 MessageTransferPartLayer3 component.

ATTRIBUTE Ss7 Mtp3 linkSetsUnavailable (lsUnavail)

Description: This attribute indicates the number of linkset unavailable conditions over the collection interval.

Values: Decimal (0..4294967295)

COLLECTED STATS SignallingSystem7

MessageTransferPartLayer3 Linkset Link

Description — The statistics record generated by the SignallingSystem7 MessageTransferPartLayer3 Linkset Link component.

ATTRIBUTE Ss7 Mtp3 Ls Lk pdusRx

Description — This attribute indicates the number of Protocol Data Units (PDUs) received from layer 2 over the collection interval.

This includes the PDUs with and without user payload.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk payloadPdusRx

Description — This attribute indicates the number of Protocol Data Units (PDUs) with payload received from layer 2 over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk pdusTx

Description — This attribute indicates the number of Protocol Data Units (PDUs) sent to layer 2 over the collection interval.

This includes PDUs with and without user payload.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk payloadPdusTx

Description — This attribute indicates the number of Protocol Data Units (PDUs) with payload sent to layer 2 over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk invalidPdusRx

Description — This attribute indicates the number of number of invalid Protocol Data Units received over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk sltFailures

Description This attribute indicates the number of signalling link test message failure conditions over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk changeovers

Description This attribute indicates the number of link changeover conditions over the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS SignallingSystem7 SignallingConnControlPart

Description The statistics record generated by the SignallingSystem7 SignallingConnControlPart component.

ATTRIBUTE Ss7 Sccp activeConnections

Description This attribute indicates the number of the current open signalling connections for the *Ss7SignallingConnControlPart* component at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp rejectedConnections

Description This attribute indicates the number of rejected signalling connections for the *Ss7SignallingConnControlPart* component over the collection interval. The reasons include the subsystem being down, the number of open connections exceeding the limit specified by the attribute *maxConnections* and so on, at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp maxConnectionsExhausted

Description This attribute indicates the number of times a signalling connection establishment request by the application was refused because the number of open connections reached the limit

specified by the attribute *maxConnections,* over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp lostConnections

Description This attribute indicates the number of the open signalling connections lost due to unavailability of the SCCP Subsystem over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp invalidMessages

Description This attribute indicates the number of invalid (syntax error or undecodable) messages received over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp messagesTx

Description This attribute indicates the number of the messages sent to layer 3 over the collection interval. This includes maintenance messages.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp payloadMessagesTx

Description This attribute indicates the number of payload messages transmitted over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp messagesRx

Description This attribute indicates the number of the messages received from layer 3 over the collection interval. This includes maintenance messages.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp payloadMessagesRx

Description This attribute indicates the number of payload messages received over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp localRoutingFailures

Description This attribute indicates the number of the routing failures to the local subsystem over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp remoteRoutingFailures

Description This attribute indicates the number of the routing failures to the remote subsystem over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp attemptedConnections (attCon)

Description This attribute indicates the number of signalling connections that this *Ss7SignallingConnControlPart* component has attempted to establish during the collection interval.

Values Decimal (0..4294967295)

COLLECTED STATS SignallingSystem7 SaalNni

Description The statistics record generated by the SignallingSystem7 SaalNni component.

ATTRIBUTE Ss7 SaalNni insvFailures

Description This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pdusTx

Description This attribute indicates the number of protocol data units transmitted over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pdusRx

Description	This attribute indicates the number of protocol data units received over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pduOctetsTx

Description	This attribute indicates the number of payload PDU octets transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pduOctetsRx

Description	This attribute indicates the number of payload PDU octets received over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT HIERARCHY (EM)

Scope	Device
Description	*Em/string* This component represents the local node. An instance of the *EM* component class (with the local node name as its instance string) is automatically created as the root of the component hierarchy; that is, all of the top level components are its subcomponents. The local node name is provisioned as the *nodeName* attribute of the *ModuleData* component. An operator need not enter the *EM* component at the start of a component name; the local node is assumed by default. However,

	to specify some other node, it must be entered. Similarly, on output, the local node name is suppressed.
Mib	no_mib
Subcomponents	"COMPONENT RncInterfaceNode (RncIn)" "COMPONENT CpdsNode (Cpds)" "COMPONENT ProvisioningSystem (Prov)" "COMPONENT Shelf" "COMPONENT Software (Sw)" "COMPONENT ModuleData (Mod)" "COMPONENT NetworkManagementInterfaceSystem (Nmis)" "COMPONENT Time (Time)" "COMPONENT Collector (Col)" "COMPONENT ActiveAlarmServices (AAServ)"
Opt. Subcomp.	"COMPONENT Router (Rtr)" "COMPONENT PortBridgeGroup (Pbg)" "COMPONENT EthernetTransportSystem (Ets)" "COMPONENT LogicalProcessor (Lp)" "COMPONENT AccessControl (Ac)" "COMPONENT NetworkSynchronization (NS)" "COMPONENT DnsAgent (DnsAg)" "COMPONENT Routing (Rtg)" "COMPONENT CallRouter (CR)" "COMPONENT VoiceNetworkingCallServer (Vncs)" "COMPONENT IpInterfaceOverFrameRelay (IpiFr)" "COMPONENT IpInterfaceOverVc (Ipivc)" "COMPONENT Trunk (Trk)" "COMPONENT DpnGateway (DpnGate)" "COMPONENT FrameRelayNni (FrNni)" "COMPONENT FrameRelayUni (FrUni)" "COMPONENT FrameRelayAtmInterface (FrAtm)" "COMPONENT VoiceService (Vs)" "COMPONENT BitTransparentDataService (Btds)" "COMPONENT HdlcTransparentDataService (Htds)" "COMPONENT X25Dte" "COMPONENT AtmRouting (ARtg)" "COMPONENT VirtualRouter (Vr)" "COMPONENT FrameRelayDte (FrDte)" "COMPONENT PointToPointProtocol (Ppp)" "COMPONENT ClusterBridge (CB)"

"COMPONENT PseudoBridge (PB)"
"COMPONENT LanApplication (La)"
"COMPONENT RemoteServerAgent (Rsa)"
"COMPONENT FrMux"
"COMPONENT AtmInterface (AtmIf)"
"COMPONENT SignallingChannel (SigChan)"
"COMPONENT VoiceRoute (VRoute)"
"COMPONENT VoiceSubroute (Vsr)"
"COMPONENT AtmMultiprotocolEncapsulation (AtmMpe)"
"COMPONENT Aal1CircuitEmulationService (Aal1Ces)"
"COMPONENT DataSignallingChannel (DataSigChan)"
"COMPONENT McsManager (McsMgr)"
"COMPONENT MpaNetworkLink (Mpanl)"
"COMPONENT LanEmulationClient (Lec)"
"COMPONENT NarrowbandServicesTrunkOverATM (Nsta)"
"COMPONENT GsmIwfCallServer (GsmCs)"
"COMPONENT GsmIwfBearerChannel (GsmBc)"
"COMPONENT Dcme"
"COMPONENT DcmeLink (Dcl)"
"COMPONENT HuntGroup (Hg)"
"COMPONENT CallRedirectionServer (Crs)"
"COMPONENT VirtualMedia (Vm)"
"COMPONENT AutomaticProtectionSwitching (Aps)"
"COMPONENT TdmaIwfCallServer (TdmaCs)"
"COMPONENT TdmaIwfBearerChannel (TdmaBc)"
"COMPONENT RoutingGateway (RGty)"
"COMPONENT PCUSupportApplication (Pcusa)"
"COMPONENT HlrSimulator (HlrSim)"
"COMPONENT GprsIpServer (Gips)"
"COMPONENT GprsSubscriberControl (Gsc)"
"COMPONENT GprsSubscriberDataPath (Gsd)"
"COMPONENT SgGprsTransportLayer (SgGtl)"
"COMPONENT PacketControlUnitSupportNode (Pcusn)"
"COMPONENT PcGprsTransportLayer (PcGtl)"
"COMPONENT ServingGprsSupportNode (Sgsn)"
"COMPONENT TdmaIwfFcBearerChannel (TdmaFcBc)"
"COMPONENT Layer2TunnelingProtocolAccessConcentrator (Lac)"
"COMPONENT MaintenanceMonitorTx (MmTx)"
"COMPONENT FrameRelayIpServer (FrIpServer)"
"COMPONENT PppIwf (Piwf)"

	"COMPONENT SgsnAccountingServer (Sas)" "COMPONENT SignallingGateway (Sg)" "COMPONENT VirtualMediaGateway (Vmg)" "COMPONENT SignallingConnControlPart (Sccp)" "COMPONENT MessageTransferPartLayer3 (Mtp3)" "COMPONENT SaalNni (SaalNni)" "COMPONENT UmtsServingGprsSupportNode (Usgsn)" "COMPONENT UsgsnSubscriberControl (Usc)" "COMPONENT UsgsnSubscriberDatapath (Usd)" "COMPONENT IuxInterface (IuxIf)" "COMPONENT LawfulInterceptAccessFunction (Liaf)" "COMPONENT DualLpEquipmentProtection (Dlep)" "COMPONENT TcapStack (Tcap)" "COMPONENT IpDlciGroup (IpDlciGrp)" "COMPONENT LocalMedia" "COMPONENT ServiceTrace (SrvTrace)" "COMPONENT SignallingSystem7 (Ss7)" "COMPONENT IuPc (IuPc)" "COMPONENT LpGroup (LpG)" "COMPONENT VcTester (Vct)" "COMPONENT LineAutomaticProtectionSwitching (Laps)"
Dyn. Subcomp.	"COMPONENT FileSystem (Fs)" "COMPONENT TransportResource (Trm)" "COMPONENT NumberingPlanIndicator (Npi)" "COMPONENT LpPair (LpP)"
Common Verbs	Help List

Appendix
Data types

Attributes have data types that specify the structure of an attribute's data (for example, decimal, hexadecimal, enumeration, vector and array). Component instances also have data types.

The appendix is organized by data type. Each data type description includes information on the nature of the data type (that is, its structure and what it represents), and gives examples.

Attribute value data types

At their highest level, data types can be divided into *single-value* data types and *multiple-value* data types, as follows:

- Single-value data types represent a single value for the attribute. This group consists of the following:
  - signed integer
  - integer sequence
  - decimal number
  - fixed point decimal
  - hexadecimal number
  - hexadecimal string
  - dashed hexadecimal string
  - IP address
  - enumeration

  - string
  - Extended string
  - BCD
  - component name
  - link
  - time

- Multiple-value data types are types that have more than one value associated with the attribute. Included in this group are:
  - set of...
  - list of...
  - vector of...
  - array of...
  - replicated

Component instance value data types

Component instance value data types represent a single value for the component. For details, refer to "Component name type" (page 840). Included in this group are:

- signed integer
- integer sequence
- decimal number
- hexadecimal number
- hexadecimal string
- dashed hexadecimal string
- IP address
- enumeration
- string

- BCD
- time

Component instances have one multiple-value data type: it is the multi-indexed component.

Syntax conventions

All command descriptions in this chapter follow these conventions:

- **bold** indicates a keyword explicitly typed by the operator
- square brackets, [], indicate optional parameters
- curled brackets, { }, indicates a choice of one of the items inside the brackets
- <*italic*> indicates a user-specified parameter
- an asterisk, *, indicates one or more of the previous items unless otherwise specified

Signed integer type

The *signed integer* type represents a 32-bit signed integer value. The supported values range from -2,147,483,648 to +2,147,483,647. On a text interface device, a signed integer type appears as follows:

attribute_name attribute_value

where:

`attribute_value = [<sign>]<digit> [ <digit> ]*` (that is, one or more digits)

where

sign = one of { **+, -** }

digit = one of { **0, 1, 2, 3, 4, 5, 6, 7, 8, 9** }

Examples

0, -0, +0, 00000

-123, 123, +123, 000123

Integer sequence type

The *integer sequence* type is used for Decnet addresses, AppleTalk addresses, and ObjectIds. On a text interface device, an integer sequence type appears as follows:

attribute_name attribute_value

where

attribute_value = <number>[<period><number>...]

where

number = ranges from { **0** to **4,294,967,295** }

period = { **.** }

Examples

1.3.5.1.2.1.10.18
(object identifier for ISO.org.dod.internet.mgmt. Mib-2.transmission.ds1)

65535.255(highest AppleTalk address)

63.1023(highest DECnet address)

Decimal number type

The *decimal number* type represents a 32-bit or 64-bit decimal value. On a text interface device, you can set a decimal number type as follows:

```
set component_name attribute_name attribute_value
```

where:
`attribute_value = <digit> [<digit>]*` (that is, one or more digits)
`digit` = one of {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}

Example

```
> set lp/3 customerIdentifier 55
```

Fixed point decimal type

The *fixed point decimal* type represents a scaled decimal number. On a text interface device, a fixed point decimal type is entered as follows:

`set component_name attribute_name attribute_value`

where:

`attribute_value = <digits> [.<digits>]`

digits = one or more of {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}

Example

1.234

Hexadecimal number type

The *hex number* type represents a 32-bit numeric value which is input and output as a hexadecimal number. On a text interface device, a hex number type is entered as follows:

`set component_name attribute_name attribute_value`

where:

`attribute_value = <hex_digit><hex_digit> [<hex_digit><hex_digit>] *` (that is, from one to four pairs of hex digits)

hex_digit = one of { **0, 1, 2, 3, 4, 5, 6, 7, 8, 9, a, b, c, d, e, f, A, B, C, D, E, F**}

Example

aC15

Hexadecimal string type

The *hex string* type represents an *integer* value which is input and output as a hexadecimal number. On a text interface device, a hex string type is entered as follows:

attribute_name attribute_value

where:

`attribute_value = [<hex_digit><hex_digit>] *` (that is, zero or more pairs of hex digits)

hex_digit = one of { **0, 1, 2, 3, 4, 5, 6, 7, 8, 9, a, b, c, d, e, f, A, B, C, D, E, F**}

Example
15aC

Dashed hexadecimal string type

The *dashed hexadecimal string* type allows for IEEE802MAC addresses to be parsed and formatted. On a text interface device, a dashed hexadecimal string type appears as follows:

attribute_name attribute_value

where:

```
attribute_value = [<quote>] <hexDigit><hexDigit>[<dash>
<hexDigit><hexDigit>...] [<quote>]
```

where:

quote = { **“** }

hexDigit = { **0 - 9, a - f, A - F** }

dash = { **-** }

Examples
3a

3a-fc

“ “ (zero hex characters for use within list, vectors, arrays, and replicated attributes)

3abc(missing dash, will be formatted with dash)

IP address type

The *IP address* type represents an IP address. On a text interface device, you can set an IP address type as follows:

```
set component_name attribute_name attribute_value
```

where:
`attribute_value = <number>.<number>.<number>.<number>`
`number = <digit>[<digit>[<digit>]]` (that is, up to three digits. The value range is 0-255.)

Example

```
> set ipivc ipaddress 47.208.133.201
```

Enumeration type

The *enumeration* type represents a finite set of constants that are referred to symbolically by their name. On a text interface device, you can set an enumeration type as follows:

```
set component_name attribute_name attribute_value
```

where:
`attribute_value = <name>` (the constant corresponding to desired value)

Example

```
> set shelf card/5 cardType DS1
```

String type

The *string* type represents an ASCII string. On a text interface device, you can set a string type as follows:

```
set component_name attribute_name attribute_value
```

where:

- for an ASCII string

  `attribute_value = <ascii_only>`
  `ascii_only = [<printable_character>]*`

  Note: If an ASCII string type contains the characters, {space,(!~/-} or), then the entire string must be enclosed by double quotes.

  `printable_character` = any printable character on the keyboard, including the space (no carriage returns, line feeds, tabs, or control characters)

  Note: For the component string instance values, characters are converted to upper case. Except for a single $, white space, empty strings, and < > / : * ” all string data type characters are valid.

- for a HEX string

  ```
  attribute_value = <hex>
  hex = [<hex_digit> <hex_digit>]* [<hex_ascii_toggle>
  <ascii_only> [<hex_ascii_toggle> <hex>]]*
  ```

  Note: If a hex string type contains the characters, {space,(!~/-} or), then the entire string must be enclosed by double quotes.

  `hex_digit` = one of {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, a, b, c, d, e, f, A, B, C, D, E, F}

  ```
  hex_ascii_toggle = \x
  ```

Example

`> set ac userid/JOE loginDirectory "/spooled/open"`

Note: If the string is used as an attribute value, it is case-sensitive (as in the above example: "/spooled/open"). If the string is used as an instance value, it is not case-sensitive (as in the above example: JOE).

Extended string type

The *extended string* type allows for the parsing and displaying of mostly ASCII characters. However, extended characters are parsed and displayed through an escape syntax. The extended string type looks like a *string* type with an escape mechanism to enter non-ASCII characters. On a text interface device, an extended string type appears as follows:

attribute_name attribute_value

where:

```
attribute_value = <quoted string> | <unquoted string>]
```

where:

quoted string = { <quote> <any char> <any char>...<quote> }

where

quote = { “ }

any char = { <ascii char> | <escaped hex> | <exception> }

ascii char = { any ASCII character other than <slash> or <quote> }

escaped hex = { <slash><hex digit><hex digit> }

exception = { <slash><slash> | <slash><quote> }

slash = { / }

hex digit = { a-f | A-F | 0-9 }

unquoted string = { <char><char><char>... }

char = { <alphanumeric> | <escaped hex> | <escaped ascii> }

alphanumeric = { a-z | A-Z | 0-9 }

escaped ascii = { <slash> <other ascii character> }

other ascii character = { any non-alphanumeric char }

Examples

Hello

“Hello, how are you?”(spaces and punctuation marks)

R\e9sum\E9(Résumé)

“ R\e9sum\e9”(Résumé)

“She said \”Hello\”.”(the “ character)

“\ \”(the \ character)

hello\ there(the space character)

““ empty

Note: In some cases, the output may contain unexpected characters. For example, “é” may not represent “\e9” on some platforms.

Binary-coded decimal type

The binary-coded decimal (BCD) type represents a BCD entity (such as DNA). On a text interface device, you can set a BCD type as follows:

```
set component_name attribute_name attribute_value
```

where:

- for wildcarded BCD:

  `attribute_value = [<digit>]*` (that is, zero or more digits)
  `digit` = one of {0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ?}

  Example

  ```
  > set callRouter NPI/x121 dna/37498?736?53
  ```

- for other BCD:

  `attribute_value = [<digit>]*` (that is, zero or more digits)
  `digit` = one of {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}

  Example

  ```
  > set fruni/34 dna dataNetworkAddress 374984736253
  ```

Component name type

The component name type represents the full name of a given component. On a text interface device, you can set a component name type as follows:

```
set component_name attribute_name attribute_value
```

where:
`attribute_value = [<component_type>[<separator> <component_instance>]]*`
`component_type` = the type of component
`separator` = /
`component_instance =` simple or multi-indexed

simple `= <decimal value>` (see "Decimal number type" (page 834))
OR `<enum_value>` (see "Enumeration type" (page 837))
OR `<hex_value>` (see "Hexadecimal string type" (page 835))
OR `<dashed_hex_string_value>` (see "Dashed hexadecimal string type" (page 836))
OR `<ip_address_value>` (see "IP address type" (page 836))
OR `<string_value>` (see "String type" (page 837))

OR <bcd_value> (see "Binary-coded decimal type" (page 840))
OR <signed_integer_value> (see "Signed integer type" (page 833))
OR <integer_sequence_value> (see "Integer sequence type" (page 834))

multi-indexed = <simple>, <simple>, ...

Example

```
> set trk/111 addressplan addressPlanName routing dpn
```

Link type

The link type represents a bidirectional pointer between two components. The value of this data type consists of a component name. This “remote” component must contain an attribute whose value is compatible with the “local” component’s attribute value.

The text interface format for the link type is identical to that of the component name type.

Example

```
> set lp/1 mainCard shelf card/1
```

Time type

The time type represents a specific absolute time. On the text interface device, you can set a time type as follows:

```
set component_name attribute_name attribute_value
```

where:

```
attribute_value = [<date> <separator>] <time> OR <date>
[<separator> <time>]
date = <year> <dash> <month> <dash> <day>
year = <digit><digit><digit><digit>
month = <digit><digit>
day = <digit><digit>
separator = one of {SPACE, T}
time = <hours> [<colon> <minutes> [<colon> <seconds>]]
hours = <digit><digit>
minutes = <digit><digit>
seconds = <digit><digit>
```

digit = one of {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}
dash = -
colon = :

Example

```
> set time networkTime 1995-09-11 13:34:02
```

Set of...type

The set of... type represents a collection of values whose elements must be from a fixed, discrete range of values. Each value in the set must only appear once. For example, if the set represents the 12 months of the year, then July, one month in the set, could only appear once.

The set of... type is available for the following single-value data types:

- decimal (see "Decimal number type" (page 834))
- enumeration (see "Enumeration type" (page 837))
- hex number (see "Hexadecimal number type" (page 835).)

All possible set type attribute values and the defaults are defined. For example, under the components *Nmis Session* the *dataStreams* attribute values are:

```
Set of alarm (ala) debug (deb) log  scn
Default No default
```

There are no default values for the above example.

On a text interface device, you can set a set of... type as follows:

```
set component_name attribute_name attribute_value
```

where:
attribute_value = <set_value> [<set_value>]*
set_value = <empty> (to empty the set) OR <delete> <value> (to delete a value) OR <value> (to add a value to the set)
empty = !
delete= ~
value = <decimal_value> OR <enumeration_value>

Note: You may be unfamiliar with the use of the tilde "~" character to remove values, therefore exercise extreme caution when using it in string types.

Example

The following example uses enum as the base data type.

```
> set nmis telnet session/1 dataStreams !
```

True sets and sets of flags

True sets only list those values that are ON. Sets of flags list every value. In tabular format, "*" indicates ON and "." indicates OFF; in nontabular format, nothing indicates ON, and "~" indicates ON. The figure, "True sets" (page 843), shows the tabular and nontabular output of true sets and the figure, "Sets of flags" (page 844), shows the tabular and nontabular output of sets of flags.

Figure 13
True sets

True set - tabular output

```
+==+-----+----------------------------------------
|Lp| Osi |Response
|  |Avail|
+==+-----+----------------------------------------
| 0|     |
| 2|     |
ok             1995-10-26 19:30:04.91
```

*** = ON**
. = OFF

True set - nontabular output

```
Lp/0
  availabilityStatus =
Lp/2
  availabilityStatus =
ok             1995-10-26 19:30:22.44
```

nothing = ON
~ = OFF

Figure 14
Sets of flags

Set of flags - tabular output

```
+=======+-------+-------------------------------
|Session| data  |Response
|       |Streams|
|       |a d l s|
|       |l e o c|
|       |a b g n|
+=======+-------+-------------------------------
|      1|* . . .|
|      2|* . . .|
|      3|* . . .|
|      4|. . . .|                                  * = ON
|      5|* . . .|                                  . = OFF
ok             1995-10-26 19:26:03.78
```

Set of flags -nontabular output

```
Nmis Telnet Session/1
   dataStreams = ala ~deb ~log ~scn
Nmis Telnet Session/2
   dataStreams = ala ~deb ~log ~scn
Nmis Telnet Session/3
   dataStreams = ala ~deb ~log ~scn
Nmis Telnet Session/4
   dataStreams = ~ala ~deb ~log ~scn
Nmis Telnet Session/5
   dataStreams = ala ~deb ~log ~scn
ok             1995-10-26 19:26:47.43
```

nothing = ON
~ = OFF

List of... type

The list of... type represents a collection of values whose elements (in general) are not restricted to any fixed range. Each value in the list must only appear once. The number of values in a list may or may not be bounded.The list of... type is available for the following single-value data types:

- decimal (see "Decimal number type" (page 834))
- hex (see "Hexadecimal string type" (page 835))

- hex number (see "Hexadecimal number type" (page 835))
- dashed hex strings (see "Dashed hexadecimal string type" (page 836))
- IP Address (see "IP address type" (page 836))
- enumeration (see "Enumeration type" (page 837))
- string (see "String type" (page 837))
- extended ASCII string (see "Extended string type" (page 838))
- integer sequence (see "Integer sequence type" (page 834))
- signed numbers (see “Signed integer type” on page 833)
- fixed point decimal (see "Fixed point decimal type" (page 834))
- BCD (see "Binary-coded decimal type" (page 840))
- component name (see "Component name type" (page 840))
- link (see "Link type" (page 841))
- time (see "Time type" (page 841))

All possible values are specified for list of..types. If the size of the list is not specified, the list of values is limitless. The default value appears below the list of values.

Under the component *ModuleData*, the attribute *nodeId* defines all possible values as any number between 1 and 4095:

```
List of Decimal (1..4095)
Default No default
```

The default value is listed under the list of possible values. There are no default values set for the above example.

Under the Components *ModuleData, VirtualCircuitSystem*, the complete list of values for the attribute *segmentSize* appears as follows:

```
List of 1 2 4 6 8 16 32 64 128 256 512 1024 2048 4096
Default 128
```

The default value is 128.

On the text interface device, you can set a list of... type as follows:

```
set component_name attribute_name attribute_value
```

where:

`attribute_value = <list_value> [<list_value>]*`

`list_value = <empty>` (to empty the list) OR `<delete> <value>` (to delete a value) OR `<value>` (to add a value to the list)

`empty = !`

`delete = ~`

`value = <any single-value data type>`

Example

```
> set sw avList base_AA0042 networking_AA0042
frameRelay_AA0042
```

Vector of... type

The vector of... type represents an indexed collection of values. The number of values in a vector is always fixed.

The vector of... type is available for the following types:

- decimal (see "Decimal number type" (page 834))
- fixed point decimal (see "Fixed point decimal type" (page 834))
- hex (see "Hexadecimal string type" (page 835))
- hex numbers (see "Hexadecimal number type" (page 835))
- dashed hex strings (see "Dashed hexadecimal string type" (page 836))
- IP address (see "IP address type" (page 836))
- enumeration (see "Enumeration type" (page 837))
- string (see "String type" (page 837))
- extended ASCII string (see "Extended string type" (page 838))
- signed number (see "Signed integer type" (page 833))
- BCD (see "Binary-coded decimal type" (page 840))

A vector of... type's index can be of the following types:

- decimal (see "Decimal number type" (page 834))
- enumeration (see "Enumeration type" (page 837))

The index values are included in the vector value information. The attribute c*onnectionPoolCapacity* belongs to the *AtmResourceControl* Component which resides under the *LogicalProcessor* component. The values are written as follows:

```
Vector of Decimal (0;512..4096)
Index Decimal (0..2)
Default ([3] 1536)
```

Vector of refers to the attribute type. Decimal refers to the type of value (decimal or enumeration). The numbers that appear in parenthesis define the possible values that each vector value may have. In the example, each vector value may be 0 or any number between 512 and 4096.

You can determine the size of the vector from the index numbers. The index numbers in the example are 0, 1 and 2. Therefore, there are 3 index values for this attribute.

The default values for the example is 1536. The 3 in square brackets denotes that the proceeding value is used the next three times. The vector default numbers for the example look like this:

Index	Attribute value
0	1536
1	1536
2	1536

Index values may be enumerated values or decimal values. The *frmSize* attribute under the *Test* component under *AtmIf* appears as follows:

```
Vector of Decimal (16..16000)
Index lowPriority
      highPriority
Default (lowPriority: 8192, highPriority: 56)
```

The attribute values can be any number between 16 and 16,000. There are 2 index values; each one has a unique default value. This vector's default values can be illustrated as follows:

Index value	Attribute value
low priority	8192
high priority	56

On a text interface device, you can set a vector of... type as follows:

set component_name attribute_name attribute_value

where:

```
attribute_value = <vector_value> [<vector_value>]*
vector_value = <index> <value>
index = <decimal_value> OR <enumeration_value>
value = <single-value data type>
```

Example

> set shelf card/5 test frmSize lowPriority 8100 highPriority 65

Array of... type

The array of... type represents a double-indexed (two-dimensional) collection of values. The number of values in an array is always fixed.

The array of... type is available for the following types:

- decimal (see "Decimal number type" (page 834))
- fixed point decimal (see "Fixed point decimal type" (page 834))
- hex (see "Hexadecimal string type" (page 835))
- hex numbers (see "Hexadecimal number type" (page 835))
- dashed hex strings (see "Dashed hexadecimal string type" (page 836))

- IP address (see "IP address type" (page 836))
- enumeration (see "Enumeration type" (page 837))
- string (see "String type" (page 837))
- extended ASCII string (see "Extended string type" (page 838))
- signed number (see "Signed integer type" (page 833))
- BCD (see "Binary-coded decimal type" (page 840))

An array of... type's index can be of the following types:

- decimal (see "Decimal number type" (page 834))
- enumeration (see "Enumeration type" (page 837))

Read the values of Nortel Networks Multiservice Switch arrays from left to right.

The values of the *windowSize* attribute of the component *WindowOptions*, under the *ModuleData* component appears as follows:

```
Array of Decimal (1..63)
Row packet Size (pkt) [16 32 64 128 256 512 1024 2048 4096
8192 32768 65535]
Column throughput class (tpt) [Decimal (0..15)]
Default ([12*16] 4)
```

In the first line, the attribute type is defined as an array with possible values between 1 and 63 inclusive.

The index name for the row is packet size. The index numbers are listed, as they appear from left to right.

The column is named throughput class. The index numbers, from top to bottom, begin at 0 and increment by one up to and including 15.

All default values in the example are 4. In square brackets the 12 refers to the number of index items across the row. The 16 refers to the number of index items in the column. The 4 refers to the default value. Each default value is displayed when the values of each cell are different.

On a text interface, you can set an array of... type as follows:

```
set component_name attribute_name attribute_value
```

where:

```
attribute_value = <array_value> [<array_value>]*
array_value = <index_name> <index> <index_name> <index>
<value>
index = <decimal_value> OR <enumeration_value>
value = <single-value data type>
```

Example

```
> set mod vcs windowSize packetSize 16 throughputClass
0 8
```

Replicated types

A replicated type is a general indexed collection of values. The number of values in the replicated type (in general) is not set.

Replicated types support the following types for index and value:

- decimal (see "Decimal number type" (page 834))
- fixed point decimal (see "Fixed point decimal type" (page 834))
- hex (see "Hexadecimal string type" (page 835))
- dashed hex strings (see "Dashed hexadecimal string type" (page 836))
- IP address (see "IP address type" (page 836))
- enumeration (see "Enumeration type" (page 837))
- string (see "String type" (page 837))
- extended ASCII string (see "Extended string type" (page 838))
- integer sequence (see "Integer sequence type" (page 834))
- signed number (see "Signed integer type" (page 833))
- BCD (see "Binary-coded decimal type" (page 840))
- component name (see "Component name type" (page 840))
- time (see "Time type" (page 841))

On a text interface device, you can set a replicated type as follows:

```
set component_name attribute_name attribute_value
```

where:

`attribute_value = <empty>` (to empty all values) OR `<remove> <index>` (to delete a value) OR `<index> <value>` (to add a value)

```
empty = !
remove = ~
index = <any single-value data type>
value = <any single-value data type>
```

Example

```
> set fruni/34 dlci/18 dc natlFax 1 64
```

Nortel Networks Multiservice Switch 7400/15000/20000

Component Reference

Release 6.1

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NORTEL NETWORKS

Nortel Networks Multiservice Switch

7400/15000/20000

Component Pbg

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Pbg

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COMPONENT PortBridgeGroup (Pbg)

Instance	Decimal (0..15999)
Groups	"GROUP Pbg CustomerIdentifierData (CidData)" "GROUP Pbg Provisioned (Prov)" "GROUP Pbg OsiState (State)"
Scope	Device
Description	*PortBridgeGroup/n* This component manages the port bridging of a SONET interface. During software migration, the *PortBridgeGroup* component ensures that the traffic in and out of a SONET line on a migrating card is bridged to the card that is providing service. **Note**: There must be two *Pbg* components provisioned to achieve a Hitless Software Migration. **Note**: The *Lp/n Sonet/m Test* component functionality is not supported when that line is provisioned as either working or

protection line of the *Pbg* component.

Mib	no_mib
Opt. Subcomp.	"COMPONENT Pbg Sts"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Pbg CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Pbg customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager

	(referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Pbg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Pbg* component.
Mib	no_mib

ATTRIBUTE Pbg workingLine (working)

Access	Read and write
Criticality	Process
Description	This attribute is a link to the *Sonet* component that provides the working line for the *Pbg* component. A value must be defined for this attribute. A pair of valid *workingLine* and *bridgeLine* pairs must exist. The following semantic checks exist for the *workingLine* and *bridgeLine* attributes: - the *workingLine* and *bridgeLine* attributes must link ports on two different LPs. - the instance numbers of *Sonet* and *SonetBridge* must match (for example, *Lp*/m *Sonet*/0 and *Lp*/n *SonetBridge*/0). - the *Sonet* component specified by the *workingLine* attribute must not have any subcomponents. - each LP component must link to exactly one card (the *Lp/n spareCard* attribute is not allowed to be set on either LP). - each LP component must link to the same type of card (the *Shelf Card/n cardType* attribute must be identical for both cards).

	- the two cards must be in adjacent slots in the shelf, with the lower-numbered slot being an even number. - each LP component must link to the same *LogicalProcessorType* component. - the connection pool attributes of the *Lp/n Eng Arc* components for the two LPs must have the same values.
Mib	no_mib
Values	Link (Hardware, lineAutomaticProtectionSwitch)
Default	No default

ATTRIBUTE Pbg bridgeLine (bridge)

Access	Read and write
Criticality	Process
Description	This attribute is a link to the *SonetBridge* component, which provides port bridging for the *Pbg* component. A value must be defined for this attribute. A pair of valid *workingLine* and *bridgeLine* pairs must exist as described in the *workingLine* attribute.
Mib	no_mib
Values	Link (Hardware, portBridgeGroupLink)
Default	No default

GROUP Pbg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Pbg adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Pbg operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Pbg usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Pbg availabilityStatus (osiAvail)

Access: Read only

Description

If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is

one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	no_mib
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Pbg proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn’t initialize autonomously) that initialization is required

before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: no_mib

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Pbg controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: no_mib

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Pbg alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: no_mib

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Pbg standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and

containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: no_mib

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Pbg unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: no_mib

Values:
false
true

Default: false

COMPONENT Pbg Sts

Instance: Decimal (0..11)

Groups:
"GROUP Pbg Sts Provisioned (Prov)"
"GROUP Pbg Sts CustomerIdentifierData (CidData)"

"GROUP Pbg Sts OsiState (State)"
"GROUP Pbg Sts IfEntryProv (IfEntry)"
"GROUP Pbg Sts OperationalStatus (OperStatus)"
"GROUP Pbg Sts Operational (Oper)"
"GROUP Pbg Sts Statistics (Stats)"
"GROUP Pbg Sts Provisioned (Prov)"

Scope: Device

Description:

Lp/n Sonet/n Sts/n
Laps/n Sts/n
Pbg/n Sts/n

This component controls a path signal that is carried within a SONET signal.

The instance number of the *Sts* component must be 0 for components on cards that do not support channelization.

On FPs supporting channelization. the Sts index indicates the sub-channel within the main optical payload.

Mib: no_mib

Opt. Subcomp.:
"COMPONENT Pbg Sts AtmCell (Cell)"
"COMPONENT Pbg Sts Vt1dot5"

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Pbg Sts Provisioned (Prov)

Properties: Provisioned

Description:

This group contains all of the provisioning data for the component.

Mib	no_mib

ATTRIBUTE Pbg Sts applicationFramerName (framer)

Access	Read and write
Description	This attribute defines which application is running on the path.
Mib	no_mib
Values	Link
Default	No default

GROUP Pbg Sts CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Pbg Sts customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of

	any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Pbg Sts OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Pbg Sts adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Pbg Sts operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Pbg Sts usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Pbg Sts availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot

operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	no_mib
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Pbg Sts proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: no_mib

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Pbg Sts controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: no_mib

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Pbg Sts alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: no_mib

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Pbg Sts standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: no_mib

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Pbg Sts unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	no_mib
Values	false true
Default	false

GROUP Pbg Sts IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Pbg Sts ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib

Values	up down testing
Default	up

ATTRIBUTE Pbg Sts ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Pbg Sts OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Pbg Sts snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing

Default up

GROUP Pbg Sts Operational (Oper)

Properties Operational

Description

This group contains the common operational data for the component.

Mib no_mib

ATTRIBUTE Pbg Sts lopAlarm (lop)

Access Read only

Description

This attribute displays whether a Loss Of Pointer (LOP) alarm state has been entered. An LOP alarm state is entered when LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. An LOP defect occurs when no valid SPE or VC pointer was received in 8 contiguous frames. If the LOP defects are intermittently occurring, the LOP defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the LOP alarm condition is cleared. The condition is cleared when no more invalid pointer has been reported for 10 seconds +/- 0.5 seconds.

The *lopAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib no_mib

Values on
off

Default No default

ATTRIBUTE Pbg Sts rxAisAlarm (ais)

Access: Read only

Description:

This attribute displays whether a Path Alarm Indication Signal (P-AIS) alarm state has been entered. A P-AIS alarm state is entered when P-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-AIS defect is the occurrence of the P-AIS signal in three contiguous valid STS or STM frames (all one's in bytes H1 and H2). If the P-AIS defects are intermittently occurring, the P-AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-AIS alarm condition is cleared. The condition is cleared after no P-AIS defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxAisAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: no_mib

Values:
on
off

Default: No default

ATTRIBUTE Pbg Sts rxRfiAlarm (rfi)

Access: Read only

Description:

This attribute displays whether the Path Remote Failure Indication (P-RFI) alarm state has been entered. A P-RFI alarm state is entered when Path Remote Defect Indicator (P-RDI) defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The P-RDI defect is the occurrence of the P-RDI signal in five contiguous valid STS or STM frames (bit

5 of the G1 byte set to 1). If the P-RDI defects are intermittently occurring, the P-RDI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10)with all measurements based on a 200 ms polling cycle.

The component goes into an operational state of *disabled* until the P-RFI alarm condition is cleared. The condition is cleared after no P-RDI defect has been detected for 10 seconds +/- 0.5 seconds.
The *rxRfiAlarm* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib — no_mib

Values — on
off

Default — No default

ATTRIBUTE Pbg Sts signalLabelMismatch (slm)

Access — Read only

Description

This attribute displays whether the Path Payload Label Mismatch (P-PLM) or Path Unequipped (P-UNEQ) failure conditions have been entered.

A P-PLM failure condition is entered when P-PLM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. A P-PLM defect occurs when detecting an unexpected path signal label. If the P-PLM defects are intermittently occurring, the P-PLM defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Payload Label Mismatch failure condition is cleared. The condition is cleared when an expected path signal label is received for 10 seconds +/- 0.5 seconds.

A P-UNEQ failure condition is entered when P-UNEQ defects

have been observed and accumulated for a period of 2.5 seconds =/-0.5 seconds. A P-UNEQ defect occurs when detecting an unequipped path signal label. If the P-UNEQ defects are intermittently occurring, the P-UNEQ defect accumulator is decremented at a rate of 1/10 of the incrementing rate, with all measurements based on a 200 ms polling cycle.
The component goes into an operational state of *disabled* until the Path Unequipped failure condition is cleared. The condition is cleared when the P-UNEQ defect is absent for 10 seconds +/- 0.5 seconds.

The *signalLabelMismatch* attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: no_mib

Values: on
off

Default: No default

ATTRIBUTE Pbg Sts txAis

Access: Read only

Description

This attribute displays whether the Path Alarm Indication Signal (P-AIS) signal is being transmitted on the path. The P-AIS signal is transmitted when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: no_mib

Values: on
off

Default: No default

ATTRIBUTE Pbg Sts txRdi

Access: Read only

Description

This attribute displays whether the Path Remote Defect Indicator (P-RDI) signal is being transmitted over the path signal. The P-RDI signal is transmitted over the outgoing line upon detection of LOP, P-AIS or the occurrence of the LCD state. This attribute is always set to ***off*** when the component has been *Lock*ed and left *offline* by the operator or when the component has been *Suspend*ed since the parent component has been *Lock*ed.

Mib: no_mib

Values: on
off

Default: No default

GROUP Pbg Sts Statistics (Stats)

Properties: Operational

Description

This group contains the statistics data for the component.

Mib: no_mib

ATTRIBUTE Pbg Sts pathErrorFreeSec (pefs)

Access: Read only

Description

This attribute counts the one second intervals that the component has been in a near-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Pbg Sts pathCodeViolations (pcv)

Access: Read only

Description

This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted.

The counter wraps to 0 when it exceeds its maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Pbg Sts pathErroredSec (pes)

Access: Read only

Description

This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Pbg Sts pathSevErroredSec (pses)

Access: Read only

Description

This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than *x* PCVs or one or more LOP or path AIS defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts pathAisLopSec (pals)

Access Read only

Description

This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts pathUnavailSec (puas)

Access Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts pathFailures (pf)

Access	Read only
Description	This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts farEndPathErrorFreeSec (fepefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a far-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts farEndPathCodeViolations (fepcv)

Access	Read only
Description	This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End

Path Unavailable Second (FEPUAS) is declared.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts farEndPathErroredSec (fepes)

Access Read only

Description

This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than *x* FEPCVs or one or more P-RDI defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts farEndPathAisLopSec (fepals)

Access	Read only
Description	This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts farEndPathUnavailSec (fepuas)

Access	Read only
Description	This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts farEndPathFailures (fepf)

Access	Read only
Description	This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

GROUP Pbg Sts Provisioned (ChProv)

Properties	Provisioned
Description	This group contains the provisioning data for *Sts* components provisioned under *Sonet* components that support channelization..
Mib	no_mib

ATTRIBUTE Pbg Sts txPathTrace

Access	Read and write
Description	This attribute specifies the high order path identifier. The string must be constructed with 7-bit characters only. The path identifier is padded by null characters if necessary to form a 64-octet path trace message transmitted in byte J1 of 64 outgoing SONET frames. At the remote end, the path trace is reassembled, and the message is compared to the *expectedRxPathTrace* attribute. If a mismatch is detected, an alarm is issued. The functionality supported by this attribute is not available.
Mib	no_mib
Values	String (0..64, ASCII)
Default	""

ATTRIBUTE Pbg Sts expectedRxPathTrace

Access	Read and write
Description	This attribute specifies the expected path trace identifier which is used to identify the high order path. This attribute must match the corresponding *txPathTrace* provisioned at the transmitting equipment end. If it does not, an alarm is issued. The functionality supported by this attribute is not available.
Mib	no_mib
Values	String (0..64, ASCII)
Default	""

ATTRIBUTE Pbg Sts concatNumber

Access	Read and write
Criticality	Process
Description	This attribute specifies the STS concatenation level for the *Sts* component on channelized cards. It must be set to a concatenation level supported by the FP upon which the *Sts* is defined, except for non-channelized cards, in which case it must be set to 0. For example, a value of 1 in this attribute would represent STS-1 concatenation, while a value of 3 would represent STS-3c, a value of 12 would represent STS-12c, and so forth. *Sts* channelization to the tributary level is supported only if this attribute is set to 1.
Mib	no_mib
Values	Decimal (0; 1; 3; 12; 48)
Default	No default

COMPONENT Pbg Sts AtmCell (Cell)

Groups	"GROUP Pbg Sts Cell Provisioned (Prov)" "GROUP Pbg Sts Cell Operational (Oper)" "GROUP Pbg Sts Cell Statistics (Stats)"
Scope	Device

Description

The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib no_mib

Common Verbs

Help
List
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GROUP Pbg Sts Cell Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisioning attributes for the *AtmCell* component.

Mib no_mib

ATTRIBUTE Pbg Sts Cell alarmActDelay (act)

Access Read and write

Description

This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value

when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib: no_mib

Values: Decimal (0..2000)

Units: msec

Default: No default

ATTRIBUTE Pbg Sts Cell scrambleCellPayload (scramble)

Access: Read and write

Description:

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib: no_mib

Values: off
on

Default: No default

ATTRIBUTE Pbg Sts Cell correctSingleBitHeaderErrors

Access: Read and write

Description:

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib: no_mib

Values: off
on

Default: off

ATTRIBUTE Pbg Sts Cell clearDelay (clear)

Access: Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: no_mib

Values: Decimal (0..60)

Units: minutes

Default: 0

ATTRIBUTE Pbg Sts Cell hecSampleInterval (hSample)

Access: Read and write

Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of

consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: no_mib

Values: Decimal (0..25)

Units: seconds

Default: 0

ATTRIBUTE Pbg Sts Cell hecErrorLimit (hLimit)

Access: Read and write

Description

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: no_mib

Values: Decimal (1..250000)

Default: No default

ATTRIBUTE Pbg Sts Cell lcdStateDelay (delay)

Access	Read and write
Description	This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.
Mib	no_mib
Values	Decimal (1..50)
Units	msec
Default	No default

ATTRIBUTE Pbg Sts Cell hecErrorIntervalLimit (hIntLimit)

Access	Read and write
Description	This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row (the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances. This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib	no_mib
Values	Decimal (1..25)
Default	1

GROUP Pbg Sts Cell Operational (Oper)

Properties	Operational
Description	This group contains the common operational attributes for the *AtmCell* component.
Mib	no_mib

ATTRIBUTE Pbg Sts Cell lcdAlarm (lcd)

Access	Read only
Description	This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute. In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected. For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect. If LCD defects are intermittently occurring, the LCD defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.

The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib no_mib

Values on
off

Default off

GROUP Pbg Sts Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib no_mib

ATTRIBUTE Pbg Sts Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Cell sevErroredSec (ses)

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects. Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Cell receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	no_mib
Values	Decimal (0..100)

Units	%
Default	0

ATTRIBUTE Pbg Sts Cell transmitCellUtilization (txutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Pbg Sts Cell correctableHeaderErrors (cErr)

Access	Read only
Description	This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Pbg Sts Vt1dot5

Instance	l [Decimal (1..7)] m [Decimal (1..4)]
Groups	"GROUP Pbg Sts Vt1dot5 CustomerIdentifierData (CidData)" "GROUP Pbg Sts Vt1dot5 OsiState (State)" "GROUP Pbg Sts Vt1dot5 IfEntryProv (IfEntry)" "GROUP Pbg Sts Vt1dot5 OperationalStatus (OperStatus)" "GROUP Pbg Sts Vt1dot5 Operational (Oper)" "GROUP Pbg Sts Vt1dot5 Statistics (Stats)"
Scope	Device
Description	*Lp/n Sonet/n Sts/k Vt1dot5/l,m* *Laps/n Sts/k Vt1dot5/l,m* This component represents the *Vt1.5* low order path signal that is carried within a SONET signal.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Pbg Sts Vt1dot5 DS1"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Pbg Sts Vt1dot5 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Pbg Sts Vt1dot5 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Pbg Sts Vt1dot5 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Pbg Sts Vt1dot5 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Pbg Sts Vt1dot5 availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: no_mib

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does

initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: no_mib

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: no_mib

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: no_mib

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the

role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: no_mib

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Pbg Sts Vt1dot5 unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: no_mib

Values:
false
true

Default: false

GROUP Pbg Sts Vt1dot5 IfEntryProv (IfEntry)

Properties: Provisioned

Description: This group contains the provisionable attributes for the ifEntry.

Mib: no_mib

ATTRIBUTE Pbg Sts Vt1dot5 ifAdminStatus (ifState)

Access: Read and write

Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Pbg Sts Vt1dot5 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Pbg Sts Vt1dot5 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable

to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib no_mib

Values
up
down
testing

Default up

GROUP Pbg Sts Vt1dot5 Operational (Oper)

Properties Operational

Description

This group contains the common operational data for the component.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 rxAisAlarm

Access Read only

Description

This attribute indicates whether a Tributary Unit Alarm Indication Signal (TU-AIS) alarm state has been entered. A TU-AIS alarm state is entered when TU-AIS defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-AIS defect occurs when three consecutive TU pointers are in the all 1's state. This alarm is cleared after no TU-AIS defect has been detected for 10 seconds +/- 0.5 seconds.

Mib no_mib

Values
on
off

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 rxRdiAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Remote Defect Indicator (LP-RDI) alarm state has been entered. An LP-RDI alarm state is entered when LP-RDI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RDI defect occurs when RDI conditions are detected in five consecutive frames. This alarm is cleared after no LP-RDI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib no_mib

Values on
off

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 rxRfiAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Remote Failure Indicator (LP-RFI) alarm state has been entered. An LP-RFI alarm state is entered when LP-RFI defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-RFI defect occurs when a RFI condition is detected. This alarm is cleared after no LP-RFI defect has been detected for 10 seconds +/- 0.5 seconds.

Mib no_mib

Values on
off

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 unequippedAlarm

Access Read only

Description

This attribute indicates whether a Low Order Path Unequipped (LP-UNEQ) alarm state has been entered. An LP-UNEQ alarm state is entered when LP-UNEQ defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-

UNEQ defect occurs when an unequipped condition is detected for five consecutive multi frames. This alarm is cleared after no LP-UNEQ defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: no_mib

Values: on
off

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 traceIdMismatchAlarm

Access: Read only

Description

This attribute indicates whether a Low Order Path Trace Identification Mismatch (LP-TIM) alarm state has been entered. An LP-TIM alarm state is entered when LP-TIM defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The LP-TIM defect occurs when a TIM condition is detected. This alarm is cleared after no LP-TIM defect has been detected for 10 seconds +/- 0.5 seconds.

Mib: no_mib

Values: on
off

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 lopAlarm

Access: Read only

Description

This attribute indicates whether a Tributary Unit Loss of Pointer (TU-LOP) alarm state has been entered. An TU-LOP alarm state is entered when TU-LOP defects have been observed and accumulated for a period of 2.5 seconds +/- 0.5 seconds. The TU-LOP defect occurs when eight consecutive invalid pointer values or eight consecutive New Data Flag (NDF) pointers are detected. This alarm is cleared after no TU-LOP defect has been detected for 10 seconds +/- 0.5 seconds.

Mib	no_mib
Values	on off
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 txAis

Access	Read only
Description	This attribute indicates whether the Low order Path Alarm Indication Signal (LP-AIS) is being transmitted on the low order path. The LP-AIS signal is transmitted when the component *adminState* is *locked* or *operationalState* is *disabled* and *availabilityStatus* is *dependency.*
Mib	no_mib
Values	on off
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 txRdi

Access	Read only
Description	This attribute indicates whether the Low Order Path Remote Defect Indication (LP-RDI) is being transmitted on the low order path. The LP-RDI signal is transmitted upon detection of TU-LOP, TU-AIS, LP-TIM or LP-UNEQ. The value is *off* when the component *adminState* is *locked* or *operationalState* is *disabled* and *availabilityStatus* is *dependency.*
Mib	no_mib
Values	on off
Default	No default

GROUP Pbg Sts Vt1dot5 Statistics (Stats)

Properties	Operational
Description	This group contains the statistics data for the component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 pathErrorFreeSec (pefs)

Access	Read only
Description	This attribute counts the one second intervals that the component has been in a near-end error free state. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 pathCodeViolations (pcv)

Access	Read only
Description	This attribute counts the detected Path Code Violations (PCVs). Each PCV corresponds to a path BIP-8 error. PCV counting is inhibited over second intervals where a Path Severely Errored Second (PSES) is counted. Counting of PCVs is also inhibited over second intervals where a Path Unavailable Second (PUAS) is counted. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 pathErroredSec (pes)

Access Read only

Description

This attribute counts the declared Path Errored Seconds (PESs). A PES is declared for second intervals containing one or more PCVs or one or more LOP or path AIS defects. Counting of PES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 pathSevErroredSec (pses)

Access Read only

Description

This attribute counts the declared Path Severely Errored Seconds (PSESs). A PSES is declared for second intervals containing more than *x* PCVs or one or more LOP or path AIS defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of PSES is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 pathAisLopSec (pals)

Access Read only

Description

This attribute counts the path AIS and LOP Seconds (PALSs). A PALS is declared for second intervals containing one or more path AIS or LOP defects. Counting of PALS is inhibited when PUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 pathUnavailSec (puas)

Access Read only

Description

This attribute counts the one second intervals during which the STS/STM path is unavailable. The path becomes unavailable at the onset of 10 consecutive PSESs. The 10 PSESs are included in the unavailable time. Once unavailable, the path becomes available at the onset of 10 contiguous seconds with no PSES. The 10 seconds with no PSES are excluded from the unavailable time. For second intervals where a Path Unavailable Second (PUAS) is declared, counting of PCV, PES, PSES and PALS is inhibited.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 pathFailures (pf)

Access Read only

Description

This attribute counts the declarations of a path failure (LOP, P-AIS or Path Signal Label Mismatch failure).

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathErrorFreeSec (fepefs)

Access Read only

Description

This attribute counts the one second intervals that the component has been in a far-end error free state.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathCodeViolations (fepcv)

Access Read only

Description

This attribute counts the Far-End Path Code Violations (FEPCVs) detected. Each FEPCV corresponds to a path FEBE. FEPCV counting is inhibited over second intervals where a Far-End Path Severely Errored Second (FEPSES) is declared. Counting of PCVs is also inhibited over second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathErroredSec (fepes)

Access Read only

Description

This attribute counts the Far-End Path Errored Seconds (FEPESs) that have been declared. A FEPES is declared for each one second interval containing one or more FEPCVs or one or more

path RDI (P-RDI) defects. Counting of FEPES is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathSevErroredSec (fepses)

Access Read only

Description

This attribute counts the Far-End Path Severely Errored Seconds (FEPSESs) that have been declared. A FEPSES is declared for second intervals containing more than *x* FEPCVs or one or more P-RDI defects. The value of *x* is 2400 for a 155 Mbit/s interface. Counting of FEPSESs is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathAisLopSec (fepals)

Access Read only

Description

This attribute counts the Far-End Path AIS and LOP Seconds (FEPALSs). A FEPALS is declared for each one second interval containing one or more P-RDI defects. Counting of FEPALS is inhibited when FEPUAS is declared over the monitored second.

The counter wraps to 0 when it exceeds its maximum value.

Mib no_mib

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathUnavailSec (fepuas)

Access	Read only
Description	This attribute counts the one second intervals for which the STS/STM far-end path is unavailable. The far-end path becomes unavailable at the onset of 10 consecutive FEPSESs. The 10 FEPSESs are included in the unavailable time. Once unavailable, the far-end path becomes available at the onset of 10 contiguous seconds with no FEPSES. The 10 seconds with no FEPSES are excluded from the unavailable time. For one-second intervals where a Far-End Path Unavailable Second (FEPUAS) is declared, counting of FEPCV, FEPES, FEPSES and FEPALS is inhibited. The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 farEndPathFailures (fepf)

Access	Read only
Description	This attribute counts the declarations of STS/STM far-end path failure (P-RFI failure). The counter wraps to 0 when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Pbg Sts Vt1dot5 DS1

Groups	"GROUP Pbg Sts Vt1dot5 DS1 Provisioned (Prov)" "GROUP Pbg Sts Vt1dot5 DS1 CustomerIdentifierData (CidData)" "GROUP Pbg Sts Vt1dot5 DS1 AdminInfo (AdminInfo)" "GROUP Pbg Sts Vt1dot5 DS1 IfEntryProv (IfEntry)" "GROUP Pbg Sts Vt1dot5 DS1 OperationalStatus (OperStatus)" "GROUP Pbg Sts Vt1dot5 DS1 OsiState (State)" "GROUP Pbg Sts Vt1dot5 DS1 Operational (Oper)" "GROUP Pbg Sts Vt1dot5 DS1 Statistics (Stats)"
Scope	Application
Description	*Lp/n DS3/n DS1/n* The *DS1* component controls and monitors a DS1 tributary of a channelized DS3 port on a Function Processor that supports channelization of a DS3.
Mib	no_mib
Subcomponents	"COMPONENT Pbg Sts Vt1dot5 DS1 Channel (Chan)"
Dyn. Subcomp.	"COMPONENT Pbg Sts Vt1dot5 DS1 Test (Test)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Pbg Sts Vt1dot5 DS1 Provisioned (Prov)

Properties	Provisioned
Description	This group contains all of the provisioning data for a *DS1* component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 lineType (lineType)

Access Read and write

Description

This attribute defines the framing of the DS1 tributary.
d4 defines a framing pattern of 12 frames per multiframe.
esf defines a framing pattern of 24 frames per multiframe.
d4Cas defines a framing pattern of 12 frames per multiframe with channel associated signalling.
esfCas defines a framing pattern of 24 frames per multiframe with channel associated signalling.
unframed defines an unknown framing pattern for clear channels.

For the ***4pDS3ChAtm*** card, only ***d4*** and ***esf*** framing patterns are permitted.

The ***4pDS3ChAal1*** card supports the ***d4*** and ***esf*** framing patterns, as well as ***unframed***.

Mib no_mib

Values
d4
esf
d4Cas
esfCas
unframed

Default esf

ATTRIBUTE Pbg Sts Vt1dot5 DS1 zeroCoding (zeroCoding)

Access Read and write

Criticality Component

Description

This attribute defines the zero encoding on the DS1 tributary.
bit7Stuffing sets bit 7 of every timeslot to a one to guarantee ones's density. This reduces the available bandwidth of the channel by 1/8.
none does no zero encoding, it does not change any value of the bits in the timeslot. The value ***none*** is compatible with any zero coding scheme which transports all 8 data bits in a timeslot (this would include both ***ami*** and ***b8zs*** values of the *DS1 zeroCoding* attribute).

Mib no_mib

Values bit7Stuffing
none

Default none

ATTRIBUTE Pbg Sts Vt1dot5 DS1 clockingSource (clockingSource)

Access Read and write

Description

This attribute specifies the source of the transmit clock for the DS1 tributary.
When the clocking source is ***local***, the crystal on the port generates the clocking for the DS1 tributary.
When the clocking source is ***line***, the port synchronizes to the clock from the DS1 tributary.
When the clocking source is ***module***, the port's clock synchronizes to the clock provided by the oscillator on the active CP.
When the clocking source is ***sameAsDs3***, the Ds1 port's clock synchronizes to the same clock source as that of its parent Ds3 port.

On a ***1pDS3C*** card, if the *NetworkSynchronization (NS)* component is present, the default value of this attribute will be ***module***; otherwise it will be ***line***.

On a ***2pDS3cAal*** card, the only valid values are ***local*** and ***module***. If the *NS* component is present, the default value of this attribute will be ***module***; otherwise it will be ***local***.

On the ***4pDS3Ch***, ***4pDS3ChAtm***, and ***4pDS3ChAal1*** cards, the only valid value is ***sameAsDs3***. This is because a DS1 must have the same clocking source as its parent DS3.

Mib no_mib

Values local
line
module
sameAsDs3

Default	No default

GROUP Pbg Sts Vt1dot5 DS1 CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Pbg Sts Vt1dot5 DS1 AdminInfo (AdminInfo)

Properties	Provisioned

Description

This group contains the attributes pertaining to the vendor of the equipment.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 vendor

Access Read and write

Description

This is the name of the vendor supplying the facility.

Mib no_mib

Values String (0..20, ASCII)

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 commentText

Access Read and write

Description

Any miscellaneous text about the facility.

Mib no_mib

Values String (0..60, ASCII)

Default No default

GROUP Pbg Sts Vt1dot5 DS1 IfEntryProv (IfEntry)

Properties Provisioned

Description This group contains the provisionable attributes for the ifEntry.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 ifAdminStatus (ifState)

Access Read and write

Description The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.

Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Pbg Sts Vt1dot5 DS1 ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Pbg Sts Vt1dot5 DS1 OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib

Values	up down testing
Default	up

GROUP Pbg Sts Vt1dot5 DS1 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Pbg Sts Vt1dot5 DS1 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Pbg Sts Vt1dot5 DS1 usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Pbg Sts Vt1dot5 DS1 availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	no_mib
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some

processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: no_mib

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: no_mib

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: no_mib

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: no_mib

Values:
hotStandby (hot)
coldStandby (cold)

providingService (serv)
notSet (nSet)

Default notSet

ATTRIBUTE Pbg Sts Vt1dot5 DS1 unknownStatus (osiUnknw)

Access Read only

Description This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib no_mib

Values false
true

Default false

GROUP Pbg Sts Vt1dot5 DS1 Operational (Oper)

Properties Operational

Description

This group contains the common operational data for a component in a digital hierarchy interface.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 rxAisAlarm (rxAisAlarm)

Access Read only

Description

This attribute indicates whether an AIS (Alarm Indication Signal) alarm state has been entered. The AIS Alarm state is entered when AIS defects have been observed and accumulated for 2.5 seconds
+/- 0.5 seconds. An AIS defect is detected after having received less than 3 zeros in a 2048 bit period. If the AIS defects are

intermittently occurring, the AIS defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** for the duration of an AIS alarm state.
The AIS alarm state is cleared when AIS defects are absent for 10 seconds +/- 0.5 seconds.

Mib: no_mib

Values: on
off

Default: off

ATTRIBUTE Pbg Sts Vt1dot5 DS1 lofAlarm (lofAlarm)

Access: Read only

Description:

This attribute indicates whether a LOF (Loss of Frame) alarm state has been entered. The LOF alarm state is entered when LOF defects (2 out of 5 framing bits in error) have been detected for 3 seconds +/- 0.5 seconds. If the LOF defects are intermittently occurring, the LOF defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle. This tributary goes into an *operationalState* of ***disabled*** until the LOF alarm state is cleared. Also, an RAI alarm is transmitted to the far end for the duration of the LOF alarm state
The condition is cleared when framing has been achieved for 10 seconds +/- 0.5 seconds.

Mib: no_mib

Values: on
off

Default: off

ATTRIBUTE Pbg Sts Vt1dot5 DS1 rxRaiAlarm (rxRaiAlarm)

Access: Read only

Description

This attribute indicates whether an RAI (Remote Alarm Indication) alarm state has been entered. An RAI alarm state is entered when the RAI defect indicator has been observed and accumulated for 3.5 seconds +/- 0.5 seconds. If the RAI defects are intermittently occurring, the RAI defect accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle.
The RAI alarm state is cleared when the RAI defect indicator has been absent for 10 seconds +/- 0.5 seconds. The RAI alarm is usually an indication that the far end facility is unable to gain synchronization.

Mib: no_mib

Values: on
off

Default: off

ATTRIBUTE Pbg Sts Vt1dot5 DS1 txAisAlarm (txAisAlarm)

Access: Read only

Description

This attribute indicates whether an AIS (Alarm Indication Signal) alarm is being transmitted on the line. An AIS alarm is transmitted when the tributary is in a locked state.

Mib: no_mib

Values: on
off

Default: off

ATTRIBUTE Pbg Sts Vt1dot5 DS1 txRaiAlarm (txRaiAlarm)

Access: Read only

Description

This attribute indicates whether a RAI signal is being sent on the outgoing line. The RAI signal is transmitted when the tributary detects a LOF alarm condition.

Mib	no_mib
Values	on off
Default	off

GROUP Pbg Sts Vt1dot5 DS1 Statistics (Stats)

Properties	Operational
Description	This group contains the common statistical data for a component in a digital hierarchy interface.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 runningTime (runningTime)

Access	Read only
Description	This attribute counts the number of seconds since the tributary was activated.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 errorFreeSec (efs)

Access	Read only
Description	This attribute counts the number of seconds that the tributary has been in an error free state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 erroredSec (es)

Access	Read only

Description

This attribute counts the number of errored seconds the tributary has counted since it was activated. An errored second is declared when a second with one or more Code Violation Error events, or one or more Out Of Frame events occurs. A code violation error may be a CRC error or a BPV error. An Out Of Frame event occurs when 2 out of 5 framing bits are in error.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 sevErroredSec (ses)

Access Read only

Description

This attribute counts the number of severely errored seconds the tributary has counted since it was activated. A severely errored second occurs when a second with 320 or more Code Violation Error events or one or more Out Of Frame events occurs.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 sevErroredFrmSec (sefs)

Access Read only

Description

This attribute counts the number of severely errored framing seconds the tributary has counted since it was activated A severely errored framing second occurs when a second with one or more Out Of Frame events occurs.

Mib no_mib

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 unavailSec

Access	Read only
Description	This attribute counts the total number of seconds that the tributary has been in an unavailable signal state. An unavailable signal state occurs at the onset of 10 consecutive Severely Errored Seconds. The state is cleared at the onset of 10 seconds with no Severely Errored Seconds.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 crcErrors (crcErrors)

Access	Read only
Description	This attribute counts the total number of CRC-6 errors. These will only be counted when the *lineType* is ***esf***.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 frmErrors (frmErrors)

Access	Read only
Description	This attribute counts the total number of frame errors. A frame error is an error in the framing bits.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 slipErrors (slipErrors)

Access	Read only

Description	The total number of times that the line experienced a controlled frame slip.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Pbg Sts Vt1dot5 DS1 Channel (Chan)

Instance	Decimal (0..23)
Groups	"GROUP Pbg Sts Vt1dot5 DS1 Chan Provisioned (Prov)" "GROUP Pbg Sts Vt1dot5 DS1 Chan CustomerIdentifierData (CidData)" "GROUP Pbg Sts Vt1dot5 DS1 Chan IfEntryProv (IfEntry)" "GROUP Pbg Sts Vt1dot5 DS1 Chan OperationalStatus (OperStatus)" "GROUP Pbg Sts Vt1dot5 DS1 Chan OsiState (State)" "GROUP Pbg Sts Vt1dot5 DS1 Chan Operational (Oper)" "GROUP Pbg Sts Vt1dot5 DS1 Chan AdminInfo (AdminInfo)"
Scope	Application
Description	*Channel* The *Channel* component is configured to control a group of timeslots that form a fractional group on a DS1 or E1 port. Cell-based cards allow only one channel per port, and this is automatically provisioned with all available timeslots. Similarly,

the ***1pDS3C*** card type only allows one channel per port, and this is automatically provisioned with all available timeslots.

Mib: no_mib

Opt. Subcomp.: "COMPONENT Pbg Sts Vt1dot5 DS1 Chan AtmCell (Cell)"
"COMPONENT Pbg Sts Vt1dot5 DS1 Chan TrunkConditioning (Tc)"

Dyn. Subcomp.: "COMPONENT Pbg Sts Vt1dot5 DS1 Chan Test (Test)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Pbg Sts Vt1dot5 DS1 Chan Provisioned (Prov)

Properties: Provisioned

Description:

This group contains all of the provisional data for a *Channel* component.

Mib: no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan timeslots (ts)

Access: Read and write

Criticality: Component

Description:

This attribute contains the list of timeslots that are used by the *Channel* component. Valid numbers are 1-24 for a *Channel* used by a *DS1* component, and 1-31 for a *Channel* used by an *E1* component.

For the ***4pDS3Ch*** card, a timeslot value of ***none*** cannot be combined with other valid timeslot values. When ***none*** is

selected, no timeslots are assigned and any service linked to the *Channel* does not function.

Mib	no_mib
Set of	none 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan timeslotDataRate (dataRate)

Access	Read and write
Criticality	Component
Description	This attribute selects the data rate of the timeslots in a channel of a DS1 component. For E1, the data rate of the timeslots will always be 64kbit/s regardless of this attribute. When ***doNotOverride*** is selected for a channel on a DS1, the data rate of the channel's timeslots are dependant on the *zeroCoding* selection of the DS1 component. If the *zeroCoding* is ***B8ZS*** (where supported on the FP) or ***none***, the timeslot's data rate will be 64kbit/s. If the *zeroCoding* option is ***bit7Stuffing,*** the data rate of a timeslot will be 56kbit/s. When ***56k*** is selected for a channel on a DS1, the least significant bit of each timeslot of this *Channel* will always be set to 1 and not used for data. The data rate for the timeslots of this channel is therefore restricted to 56kbit/s. On the ***4pDS3Ch*** cards, the *zeroCoding* attribute is restricted to the value *none*, and so when the *timeslotDataRate* is set to ***doNotOverride***, the timeslot's data rate will be 64kbit/s. Timeslot data rate of ***56k*** is also available on this card. On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***doNotOverride***. One application of this attribute is to allow a DS1 line to support mixing channels that originate from lines that use different *zeroCoding* schemes.
Mib	no_mib
Values	56k doNotOverride
Default	doNotOverride

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan applicationFramerName

Access	Read and write

Description	This attribute defines the link to the software stack. It defines which application is running on top of this hardware component.
Mib	no_mib
Values	Link (Service, interfaceName)
Default	No default

GROUP Pbg Sts Vt1dot5 DS1 Chan CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)

Default	0

GROUP Pbg Sts Vt1dot5 DS1 Chan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Pbg Sts Vt1dot5 DS1 Chan OperationalStatus (OperStatus)

Properties	Operational

Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Pbg Sts Vt1dot5 DS1 Chan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or

Lock command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: no_mib

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test

procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration

activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: no_mib

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be

enabled or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: no_mib

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is

administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: no_mib

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms

may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: no_mib

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	no_mib
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	no_mib
Values	false true
Default	false

GROUP Pbg Sts Vt1dot5 DS1 Chan Operational (Oper)

Properties	Operational
Description	This group contains all of the operational data for a *Channel* component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan actualChannelSpeed

Access	Read only
Description	This attribute displays the measured link speed of the *Channel* component.

Mib	no_mib
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

GROUP Pbg Sts Vt1dot5 DS1 Chan AdminInfo (AdminInfo)

Properties	Provisioned
Description	This group contains the attributes pertaining to the vendor of the equipment.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan vendor

Access	Read and write
Description	This is the name of the vendor supplying the facility.
Mib	no_mib
Values	String (0..20, ASCII)
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan commentText

Access	Read and write
Description	Any miscellaneous text about the facility.
Mib	no_mib
Values	String (0..60, ASCII)
Default	No default

COMPONENT Pbg Sts Vt1dot5 DS1 Chan Test (Test)

Groups	"GROUP Pbg Sts Vt1dot5 DS1 Chan Test OsiState (State)" "GROUP Pbg Sts Vt1dot5 DS1 Chan Test Setup (Setup)" "GROUP Pbg Sts Vt1dot5 DS1 Chan Test Results (Results)"

Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V*35, *X21*, *DS1*, *E1*, *DS3*, *E3* etc.) or a logical port.
Mib	no_mib
Common Verbs	Help List Display

VERB START Pbg Sts Vt1dot5 DS1 Chan Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Pbg Sts Vt1dot5 DS1 Chan Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Pbg Sts Vt1dot5 DS1 Chan Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Pbg Sts Vt1dot5 DS1 Chan Test Setup (Setup)

Properties	Operational
Description	This group contains all of the operational data for a *Test* component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test purpose (purpose)

Access	Read and write
Description	This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib	no_mib
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test type (type)

Access	Read and write
Description	This attribute is the type of test to be run. The available test types include the following: ***card*** test sets up an internal loop on the board and runs a bit error rate test. ***manual*** test assumes the line is looped back externally and a bit error rate test is performed. ***localLoop*** test loops back the local modem and performs a bit error rate test. ***remoteLoop*** test loops back the remote modem (or CSU) and performs a bit error rate test. ***externalLoop*** test loops back the line to the far end. ***payloadLoop*** test only loops back the payload data received from the incoming line. ***remoteLoopThisTrib*** loops this particular tributary back at the far end, using services provided by the parent. ***v54RemoteLoop*** initiates a V.54 Remote Loopback test. ***pn127RemoteLoop*** initiates a PN127 Remote Loopback test. ***lineBIP8Error*** tests line BIP 8 error generation and detection (B2 byte inverted). ***sectionBIP8Error*** tests section BIP 8 error generation and detection (B1 byte inverted). ***pathBIP8Error*** tests path BIP 8 error generation and detection (B3 byte inverted). ***pathBIP2Error*** tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted). Note that not all test types are not supported by all function processors.
Mib	no_mib
Values	card manual

localLoop
remoteLoop
externalLoop
payloadLoop
remoteLoopThisTrib
v54RemoteLoop
pn127RemoteLoop
lineBIP8Error
sectionBIP8Error
pathBIP8Error
pathBIP2Error

Default card

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test frmSize (size)

Access Read and write

Description

This attribute defines the size of the test data frames in number of bytes.
This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.

Mib no_mib

Values Decimal (4..4096)

Units bytes

Default 1024

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test frmPatternType (fpt)

Access Read and write

Description

This attribute defines the type of data pattern generation to use. The following lists the available pattern types:
ccitt32kBitPattern is a pseudo-random sequence of 32 kbit.
ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib	no_mib
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test customizedPattern (cp)

Access	Read and write
Description	This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.
Mib	no_mib
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test dataStartDelay (dsd)

Access	Read and write
Description	This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop. This attribute is ignored when the test *type* is set to ***externalLoop***.
Mib	no_mib
Values	Decimal (0..1814400)
Units	seconds
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test displayInterval (di)

Access	Read and write
Description	This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.
Mib	no_mib
Values	Decimal (0..30240)
Units	minutes
Default	5

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test duration

Access	Read and write
Description	This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.
Mib	no_mib
Values	Decimal (0.00..30240.00)
Units	minutes
Default	1.00

GROUP Pbg Sts Vt1dot5 DS1 Chan Test Results (Results)

Properties	Operational
Description	This group contains all the statistics related attributes of the *Test* component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test causeOfTermination

Access	Read only
Description	This attribute indicates either the status of the test or the cause of the test's termination: a value of ***neverStarted*** indicates that the test has not yet been started. a value of ***testRunning*** indicates that the test has been started. a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running. a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*. a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback. a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback. a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback. a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered. Note: The *causeOfTermination* attribute values of ***loopCodeSyncFailed***, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will

never terminate the test under the conditions described by these values.

Mib: no_mib

Values:
testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default: neverStarted

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test bitsTx

Access: Read only

Description:
This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib: no_mib

Values: Long Integer

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test bytesTx

Access: Read only

Description:
This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib: no_mib

Values: Long Integer

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test frmRx

Access	Read only

Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is

identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib: no_mib

Values: String (5, ASCII)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test elapsedTime

Access: Read only

Description:

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib: no_mib

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 0.00

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Test timeRemaining

Access: Read only

Description:

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib: no_mib

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 0.00

COMPONENT Pbg Sts Vt1dot5 DS1 Chan AtmCell (Cell)

Groups
"GROUP Pbg Sts Vt1dot5 DS1 Chan Cell Provisioned (Prov)"
"GROUP Pbg Sts Vt1dot5 DS1 Chan Cell Operational (Oper)"
"GROUP Pbg Sts Vt1dot5 DS1 Chan Cell Statistics (Stats)"

Scope
Device

Description
The *AtmCell* component contains provisioning and operational attributes. The provisioning attributes are used to set the Loss of Cell Delineation (LCD) alarm activation delay and to turn cell payload scrambling on or off. The operational attributes are used to report about the quality of the ATM cells received by the interface and the cell capacity utilization. The *AtmCell* component appears under all port components running on ATM cards.

Mib
no_mib

Common Verbs
Help
List
Display
Add
DELete

GROUP Pbg Sts Vt1dot5 DS1 Chan Cell Provisioned (Prov)

Properties
Provisioned

Description
This group contains the provisioning attributes for the *AtmCell* component.

Mib
no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell alarmActDelay (act)

Access
Read and write

Description
This attribute specifies the time during which a Loss of Cell Delineation (LCD) defect should be observed before declaring an LCD alarm (alarm 70115501). When the *Cell* component is

provisioned under the *Sonet* or *Sdh* component, this attribute defaults to 500 milliseconds. When it is provisioned under the *Laps* component, the default is 2000 milliseconds. This is necessary to ensure that the services bound to the *Sts* or *Vc4* component are not disrupted during short lived LCD defects caused by a line switchover. Setting this attribute to a lower value when the *Laps* component is provisioned may result in a temporary service outage when a line switchover occurs.

Mib: no_mib

Values: Decimal (0..2000)

Units: msec

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell scrambleCellPayload (scramble)

Access: Read and write

Description:

Cell scrambling, as defined by ITU-T Recommendation I.432., can provide a solution to the problem of transmission equipment which is sensitive to certain bit patterns in the ATM cell payload. This attribute controls whether or not the cell payload is scrambled.
It defaults to ***off*** for *DS1* interfaces, and ***on*** for all other interfaces.
Note that this setting must be the same at both ends of the link.

Mib: no_mib

Values:
off
on

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell correctSingleBitHeaderErrors

Access: Read and write

Description:

This attribute specifies whether the port corrects single bit errors detected in the headers of received cells. If single bit errors are

corrected, the affected cells are passed up to the ATM layer according to normal operation. If single bit errors are not corrected, these errored cells are discarded by the physical layer. Note that cells containing multiple bit errors in their headers are always discarded.

Single bit HEC error correction must remain ***off*** for the following card types: 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 2pJ6MAtm, 3pDS3Atm, and 3pE3Atm.

Mib: no_mib

Values: off
on

Default: off

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell clearDelay (clear)

Access: Read and write

Description

This attribute specifies the minimum elapsed time between the clearing of the Loss of Cell Delineation (LCD) defect and the port returning to service. The LCD defect should be absent for the entire period of elapsed time. This attribute value is specified in minutes. If the value of the *clearDelay* attribute is initially 0 (default), the time is actually about 10 seconds.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: no_mib

Values: Decimal (0..60)

Units: minutes

Default: 0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell hecSampleInterval (hSample)

Access: Read and write

Description

This attribute specifies the sampling interval (in seconds) for errors associated with the *uncorrectableHeaderErrors* attribute. When the sum of errors counted by the *uncorrectableHeaderErrors* attribute over the interval time is greater than or equal to the provisioned *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. If the attribute *hecSampleInterval* is set to the default, 0, then the attribute *uncorrectableHeaderErrors* cannot be used to bring down the port.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: no_mib

Values: Decimal (0..25)

Units: seconds

Default: 0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell hecErrorLimit (hLimit)

Access: Read and write

Description

This attribute specifies the error threshold for a HEC error sampling interval beyond which a port is brought down. When the value of the *uncorrectableHeaderErrors* attribute accumulated over the provisioned value of the *hecSampleInterval* attribute is greater than or equal to the provisioned value of the *hecErrorLimit* attribute, the sample interval is considered errored. If the number of consecutive errored intervals reaches the limit established in the *hecErrorIntervalLimit* attribute, an LCD alarm is declared and the port is disabled. (Please note that a *hecErrorInterval* attribute value of 0 (default) disables the mechanism of using the value of the *uncorrectableHeaderErrors* attribute to disable a port.)
This attribute is supported only on 3pDS1Atm, 8pDS1Atm,

3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib no_mib

Values Decimal (1..250000)

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell lcdStateDelay (delay)

Access Read and write

Description

This attribute specifies the time during which an Out of Cell Delineation (OCD) defect should be observed before moving to the Loss of Cell Delineation (LCD) defect state. The time is specified in milliseconds. The valid values are 1 to 50 milliseconds if the *AtmCell c*omponent is located under the *Ds1* or *E1* component, and 1 to 5 milliseconds if under a *Ds3* or *E3* component.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib no_mib

Values Decimal (1..50)

Units msec

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell hecErrorIntervalLimit (hIntLimit)

Access Read and write

Description

This attribute counts the instances of the *hecSamplingInterval* attribute for all HEC errors (specified by the *uncorrectableHeaderError* attribute) before an LCD alarm is generated. The alarm is only generated if the value of the *uncorrectableHeaderErrors* attribute in a given interval is greater than the value of the *hecErrorLimit* attribute. For example, if there are 20 HEC errors in 5 seconds, for three times in a row

(the number of times in a row is represented by this attribute), an alarm is raised. If there are 24 HEC errors in the 5 seconds, and 14 in the next 5 seconds no alarm is generated because the number of HEC errors should also be more than 20 in the next instances.
This attribute is supported only on 3pDS1Atm, 8pDS1Atm, 3pE1Atm, 8pE1Atm, 3pDS3Atm, 3pE3Atm, 3pDS3Atm2, 3pE3Atm2, 12pDS3Atm, and 12pE3Atm.

Mib: no_mib

Values: Decimal (1..25)

Default: 1

GROUP Pbg Sts Vt1dot5 DS1 Chan Cell Operational (Oper)

Properties: Operational

Description:

This group contains the common operational attributes for the *AtmCell* component.

Mib: no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell lcdAlarm (lcd)

Access: Read only

Description:

This attribute displays whether the Loss of Cell Delineation (LCD) failure alarm state has been entered. This state is entered when LCD defects have been observed and accumulated for a period of time specified through the *alarmActDelay* attribute.
In ATM cell direct mapping mode, an LCD defect occurs when Out of Cell Delineation (OCD) anomaly persists for *x* milliseconds, and disappears when the Out of Cell Delineation (OCD) is absent for *x* msec. An OCD anomaly occurs when 7 consecutive incorrect HECs have been detected. An OCD anomaly terminates when 6 consecutive correct HECs have been detected.
For an *AtmCell* component located under a *DS3* or *E3* component with *mapping* = ***PLCP***, the LCD defect is directly derived from the PLCP LOF defect.
If LCD defects are intermittently occurring, the LCD defect

accumulator is decremented at a rate of 1/10 of the incrementing rate (alarm integration ratio of 1/10), with all measurements based on a 200 ms polling cycle
The component under which is located the *AtmCell* component goes into an operational state of ***disabled*** until the LCD alarm condition is cleared. The condition is cleared after the LCD defect has not been reported for a period of 10 seconds +/- 0.5 seconds.
The *lcdAlarm* attribute is always set to off when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been suspended since its parent has been locked.

Mib no_mib

Values on
off

Default off

GROUP Pbg Sts Vt1dot5 DS1 Chan Cell Statistics (Stats)

Properties Operational

Description

This group contains the statistics attribute for the *AtmCell* component. Each attribute type is a non-negative integer which monotonically increases until it reaches a maximum value, at which point it wraps around and starts increasing again from zero.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell uncorrectableHeaderErrors (ucErr)

Access Read only

Description

This attribute indicates the number of uncorrectable ATM cell header errors that have been detected. Counting of *uncorrectableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell sevErroredSec (ses)

Access	Read only
Description	This attribute indicates the total number of ATM Cell Severely Errored Seconds (SESs) that have been counted. In direct mapping mode, an ATM Cell SES is declared for second intervals containing one or more Out of Cell Delineation (OCD) defects. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected. If the *AtmCell* component is located under a *Ds3* or *E3* component where the *mapping* attribute is set to ***plcp***, an ATM Cell SES is declared for second intervals containing one or more PLCP LOF defects. Counting of *uncorrectableHeaderErrors* (*ucErr*) and *correctableHeaderErrors* (*cErr*) is inhibited when the OCD defect is present.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell receiveCellUtilization (rxutil)

Access	Read only
Description	This attribute is the ratio of the number of valid, assigned cells received on the link to the nominal link capacity. The utilization is calculated over a period of one minute. This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline.* This can also happen

when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib no_mib

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell transmitCellUtilization (txutil)

Access Read only

Description

This attribute is the ratio of the number of valid, assigned cells transmitted on the link to the nominal link capacity. The utilization is calculated over a period of one minute.
This attribute is always set to ***0*** when the parent of the *AtmCell* component has been *locked* and left *offline*. This can also happen when the *Path* or *Channel* component has been *suspended* since its parent has been *locked*.

Mib no_mib

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Cell correctableHeaderErrors (cErr)

Access Read only

Description

This attribute indicates the number of correctable ATM cell header errors that have been detected and corrected. Counting of *correctableHeaderErrors* is inhibited when an Out of Cell Delineation (OCD) defect is present. An OCD defect occurs when seven consecutive incorrect HECs have been detected. An OCD defect terminates when six consecutive correct HECs have been detected

Mib no_mib

Values	Decimal (0..4294967295)
Default	0

COMPONENT Pbg Sts Vt1dot5 DS1 Chan TrunkConditioning (Tc)

Groups	"GROUP Pbg Sts Vt1dot5 DS1 Chan Tc Provisioned (Prov)" "GROUP Pbg Sts Vt1dot5 DS1 Chan Tc Operational (Op)"
Scope	Device
Description	*Lp/n Ds1/n Chan/n Tc* *Lp/n E1/n Chan/n Tc* *Lp/n Ds3/n Ds1/n Chan/n Tc* *Lp/n Sdh/n Vc4/n Vc12/k,l,m E1 Chan/n Tc* *Lp/n Sonet/n Sts/n Vt1dot5/l,m Ds1 Chan/n Tc* *Laps/n* Vc4/n Vc12/k,l,m E1 Chan/n T*c* *Laps/n* Sts/n Vt1dot5/l,m Ds1 Chan/n T*c* The *Tc* component is used to provision and monitor trunk conditioning options. A separate instance of this component is required for each *Chan* on a Port which is offering a structured constant bit rate service. Under certain failure alarm conditions, trunk conditioning *replacementData* is substituted into the *timeslots* as defined by the *Chan* component. Trunk conditioning signaling is also substituted into the appropriate Channel Associated Signaling (CAS) bits when a *lineType* that uses CAS has been defined. When used with AAL1 Circuit Emulation Service, trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS) lossOfFrame (LOF) remoteAlarmIndication (RAI) alarmIndicationSignal (AIS) bufferUnderflow (BU) and in addition for E1: lossOfMultiframe (LOMF) receiveMultiframeRemoteAlarmIndication (RMRAI) When used with AAL1 Circuit Emulation Service, trunk

conditioning is transmitted towards the PDH network under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

This component needs to be provisioned on 2pDs3cAal and 32pE1Aal FPs.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Pbg Sts Vt1dot5 DS1 Chan Tc Provisioned (Prov)

Properties: Provisioned

Description: This group contains all specific provisioning data for a *Tc* component.

Mib: no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc replacementData (data)

Access: Read and write

Description: This attribute specifies the trunk conditioning data byte to be substituted into the *timeslots* defined by the *Chan* component under fault conditions.

The attribute *replacementData* can be set to any two digit hexadecimal number. The following are recommended values:
DS1 MUX Out Of Service Code = 0x1A
E1 MUX Out Of Service Code = 0xFF

On the ***4pDS3ChAal1*** card, the only allowed value for this attribute is ***0xFF***.

On the ***4pOC3ChSmIr*** and ***2pOC3ChSmIrVsp3*** cards, the

default value for this attribute is ***0x1A*** for DS1 and ***0xFF*** for E1. On all other cards the default value is ***0xFF***.

Mib: no_mib

Values: Hex (H.0..H.ff)

Units: Hex

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc signalOneDuration (duration)

Access: Read and write

Description: This attribute specifies the time duration in seconds for which *signalOne* is substituted into the appropriate signaling bits, when a *lineType* that uses CAS has been defined. When *signalOneDuration* has expired *signalTwo* is substituted into the appropriate signaling bits.

If *signalOneDuration* is set to zero then only *signalTwo* is substituted into the appropriate signaling bits during error conditions.

The *signalOneDuration* attribute can be set to any integer value from 0 to 60 seconds.

Mib: no_mib

Values: Decimal (0..60)

Units: seconds

Default: 0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc noServiceResponse (resp)

Access: Read and write

Description: This attribute specifies the Channel's egress response when it has no service provisioned, or the service provisioned is unavailable due to a near end failure. The following responses are available:

autoConfigure - automatically configure the channels response.
tc - transmit trunk conditioning on all timeslots provisioned in the

egress direction.
ais - transmit AIS in the egress direction.
noResponse - no response is sent in the egress direction.

A value of ***autoConfigure*** will result in TC being transmitted for all card types.

Mib: no_mib

Values:
autoConfigure
tc
ais
noResponse

Default: autoConfigure

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc signalOne (sigOne)

Access: Read and write

Description: This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted for the duration provisioned in *signalOneDuration* when a *lineType* that uses CAS has been defined.

For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.

Mib: no_mib

Vector of: Decimal (0..1)

Index:
D
C
B
A

Default: (1, 1, 1, 1)

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc signalTwo (sigTwo)

Access: Read and write

Description	This attribute specifies the value to be substituted into the ABCD signaling bits for the *timeslots* defined by the *Chan* component under fault conditions. The value will be substituted after the duration provisioned in *signalOneDuration* has expired and when a *lineType* that uses CAS has been defined. For a *lineType* of ***d4Cas*** (Super Frame), signaling bits C and D are required to equal bits A and B respectively.
Mib	no_mib
Vector of	Decimal (0..1)
Index	D C B A
Default	(1, 1, 1, 1)

GROUP Pbg Sts Vt1dot5 DS1 Chan Tc Operational (Op)

Properties	Operational
Description	This group contains all specific operational data for a *Tc* component.
Mib	no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc ingressConditioning (inCon)

Access	Read only
Description	This attribute indicates the status of locally generated trunk conditioning towards the ATM network. When trunk conditioning is being locally generated towards the ATM network, *ingressConditioning* is set to ***on.*** When trunk conditioning is not being locally generated towards the ATM network, *ingressConditioning* is set to ***off***. Trunk conditioning is transmitted towards the ATM network under the following conditions: lossOfSignal (LOS)

lossOfFrame (LOF)
remoteAlarmIndication (RAI)
alarmIndicationSignal (AIS)
bufferUnderflow (BU)
and in addition for E1:
lossOfMultiframe (LOMF)
receiveMultiframeRemoteAlarmIndication (RMRAI)

Mib: no_mib

Values: off
on

Default: off

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Chan Tc egressConditioning (egCon)

Access: Read only

Description: This attribute indicates the status of locally generated trunk conditioning towards the PDH line.

When trunk conditioning is being locally generated towards the PDH line, *egressConditioning* is set to ***on.***

When trunk conditioning is not being locally generated towards the PDH line, *egressConditioning* is set to ***off***.

Trunk conditioning is transmitted towards the PDH line under the following conditions:
bufferUnderflow (BU)
AAL1 protocol errors.

Mib: no_mib

Values: off
on

Default: off

COMPONENT Pbg Sts Vt1dot5 DS1 Test (Test)

Groups	"GROUP Pbg Sts Vt1dot5 DS1 Test OsiState (State)" "GROUP Pbg Sts Vt1dot5 DS1 Test Setup (Setup)" "GROUP Pbg Sts Vt1dot5 DS1 Test Results (Results)"
Scope	Application
Description	The *Test* component is configured to control a hardware facility test on a physical (*V3*5, *X21, DS1, E1, DS3, E3* etc.) or a logical port.
Mib	no_mib
Common Verbs	Help List Display

VERB START Pbg Sts Vt1dot5 DS1 Test

Impact	Service
Description	This command invokes a test on the hardware component. Note that some test types requires the parent component (the hardware component) to be locked (using the *Lock* command) before a test can be started.

VERB STOP Pbg Sts Vt1dot5 DS1 Test

Impact	Service
Description	This command stops a test running on the hardware component.

GROUP Pbg Sts Vt1dot5 DS1 Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib no_mib

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values:
idle
active (activ)
busy

Default: idle

GROUP Pbg Sts Vt1dot5 DS1 Test Setup (Setup)

Properties: Operational

Description:
This group contains all of the operational data for a *Test* component.

Mib: no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test purpose (purpose)

Access: Read and write

Description

This attribute records the purpose of the test so that the test results can be associated and properly analyzed.

Mib no_mib

Values String (0..40, ASCII)

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test type (type)

Access Read and write

Description

This attribute is the type of test to be run. The available test types include the following:
card test sets up an internal loop on the board and runs a bit error rate test.
manual test assumes the line is looped back externally and a bit error rate test is performed.
localLoop test loops back the local modem and performs a bit error rate test.
remoteLoop test loops back the remote modem (or CSU) and performs a bit error rate test.
externalLoop test loops back the line to the far end.
payloadLoop test only loops back the payload data received from the incoming line.
remoteLoopThisTrib loops this particular tributary back at the far end, using services provided by the parent.
v54RemoteLoop initiates a V.54 Remote Loopback test.
pn127RemoteLoop initiates a PN127 Remote Loopback test.
lineBIP8Error tests line BIP 8 error generation and detection (B2 byte inverted).
sectionBIP8Error tests section BIP 8 error generation and detection (B1 byte inverted).
pathBIP8Error tests path BIP 8 error generation and detection (B3 byte inverted).
pathBIP2Error tests path BIP 2 error generation and detection (bit 1-2 of V5 byte inverted).
Note that not all test types are not supported by all function processors.

Mib	no_mib
Values	card manual localLoop remoteLoop externalLoop payloadLoop remoteLoopThisTrib v54RemoteLoop pn127RemoteLoop lineBIP8Error sectionBIP8Error pathBIP8Error pathBIP2Error
Default	card

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test frmSize (size)

Access	Read and write
Description	This attribute defines the size of the test data frames in number of bytes. This attribute is not applicable for ATM-based cards and is also ignored for MSA32 cards because the test does not generate any frame for this card type.
Mib	no_mib
Values	Decimal (4..4096)
Units	bytes
Default	1024

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test frmPatternType (fpt)

Access	Read and write
Description	This attribute defines the type of data pattern generation to use. The following lists the available pattern types: ***ccitt32kBitPattern*** is a pseudo-random sequence of 32 kbit.

ccitt8MBitPattern is a pseudo-random sequence of 8Mbit.
customizedPattern is the pattern defined in the ***customizedPattern*** attribute.

Mib: no_mib

Values: ccitt32kBitPattern
ccitt8MBitPattern
customizedPattern

Default: ccitt32kBitPattern

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test customizedPattern (cp)

Access: Read and write

Description:

This attribute allows a customized 32 bit pattern to be defined for use in the test data frames. This attribute is used when the attribute *frmPatternType* is set to ***CustomizedPattern***. Note that a 55 hex pattern is an alternating 1 and 0 pattern.

Mib: no_mib

Values: Hex (H.0..H.ffffffff)

Units: Hex

Default: H.55555555

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test dataStartDelay (dsd)

Access: Read and write

Description:

This attribute specifies the time delay (in seconds) between when the test expects the loop to have been set up, to when the test data actually starts to be transmitted. This attribute is to accommodate some non-standard equipment that requires extra time for setting up a requested loop.
This attribute is ignored when the test *type* is set to ***externalLoop***.

Mib: no_mib

Values: Decimal (0..1814400)

Units: seconds

Default 0

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test displayInterval (di)

Access Read and write

Description

This attribute defines the interval (in minutes) between which interim test results are to be displayed. Results are displayed at the operator console at which the test was started. When the test *type* is set to ***externalLoop***, this attribute is ignored. There will be no display of results if *displayInterval* is set to 0. This attribute can be changed anytime.

Mib no_mib

Values Decimal (0..30240)

Units minutes

Default 5

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test duration

Access Read and write

Description

This attribute is the duration for which the test data will be transmitted. In the case of an ***externalLoop***, this is the time that the loop is in effect. Note that *dataStartDelay* does not apply to the ***externalLoop*** test type.

Mib no_mib

Values Decimal (0.00..30240.00)

Units minutes

Default 1.00

GROUP Pbg Sts Vt1dot5 DS1 Test Results (Results)

Properties Operational

Description

This group contains all the statistics related attributes of the *Test* component.

Mib no_mib

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test causeOfTermination

Access Read only

Description This attribute indicates either the status of the test or the cause of the test's termination:

a value of ***neverStarted*** indicates that the test has not yet been started.

a value of ***testRunning*** indicates that the test has been started.

a value of ***stoppedByOperator*** indicates that the operator issued a stop command on a test that was running.

a value of ***testTimeExpired*** indicates that the test ran for the time specified by the test's *duration*.

a value of ***loopCodeSyncFailed*** indicates that the local end failed to synchronize to the loopCode pattern. The local end transmits the loopCode pattern to cause the remote end to apply a loopback, after which the local end should receive the loopCode pattern. The exact pattern used to request loopCode depends on the test *type*. This failure indicates a high rate of transmission errors, or that the remote end has failed to apply the loopback.

a value of ***patternSyncFailed*** indicates that the local end failed to synchronize to the *frmPatternType* test pattern, that should have been looped back at the remote end. This failure indicates a high rate of transmission errors or the absence of a loopback.

a value of ***patternSyncLost*** indicates that the local end gained and then lost synchronization to the returned *frmPatternType* test pattern. This failure indicates a sudden increase in transmission errors, frame slippage, or the removal of an existing loopback.

a value of ***unknown*** is set when a reason to terminate other than those listed here is encountered.

Note: The *causeOfTermination* attribute values of

loopCodeSyncFailed, ***patternSyncFailed*** and ***patternSyncLost*** are supported only on MSA cards. *Test* components located on other cards or under an *Ima* component on an MSA card will never terminate the test under the conditions described by these values.

Mib no_mib

Values testTimeExpired
stoppedByOperator
unknown
neverStarted
testRunning
hardwareReconfigured
loopCodeSyncFailed
patternSyncFailed
patternSyncLost

Default neverStarted

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test bitsTx

Access Read only

Description

This attribute counts the bits sent during the test period. As long as the line speed of the hardware interface is less than 70 Mbit/s, this counter is not expected to reach the maximum value.

Mib no_mib

Values Long Integer

Default No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test bytesTx

Access Read only

Description

This attribute counts the bytes sent during the test period. This counter is not expected to reach its maximum value.

Mib no_mib

Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test frmTx

Access	Read only
Description	This attribute counts the frames sent during the test period. This counter is not expected to reach its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test bitsRx

Access	Read only
Description	This attribute counts the bits received during the test period. The counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test bytesRx

Access	Read only
Description	This attribute counts the bytes received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test frmRx

Access	Read only
Description	This attribute counts the frames received during the test period. The counter wraps to zero when it exceeds its maximum value. This attribute is not applicable and is ignored for MSA32 cards because the test does not generate any frame.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test erroredFrmRx

Access	Read only
Description	This attribute is not displayed for ATM and MSA32 cards. For ATM cards, the physical layer drops all errored frames at the controller interface. For MSA32 cards, the test does not generate any frame. For all other card types, this attribute counts the errored frames received during the test period. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test bitErrorRate

Access	Read only
Description	This attribute is not displayed for ATM cards because the physical layer drops all errored frames at the controller interface. For MSA32 cards, this attribute indicates the link bit error rate, regardless of the *frameSize*, which is not supported For all other card types, this attribute is the calculated bit error

rate on the link. Test data are generated and sent in frames of a preset size (*frameSize*). The *Test* component will try to estimate the number of bit errors in any errored frame which is identifiable. The statistics will be updated accordingly. A lost frame (may be due to an error on the flag sequence) will be discarded for the bit error rate calculation. The result is presented in the form of xEsyy, where x is the mantissa, syy is the exponent, for example 0E+00, 2E-09.
Note that the *bitErrorRate* is an estimate only. For more reliable test results, the test should be done over a long period. Multiple tests would also improve the confidence level of the test results.

Mib: no_mib

Values: String (5, ASCII)

Default: No default

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test elapsedTime

Access: Read only

Description

This attribute indicates the time elapsed since the test started for an ***externalLoop*** test. For a data test, it indicates time since test data was first transmitted.

Mib: no_mib

Values: Decimal (0.00..30240.00)

Units: minutes

Default: 0.00

ATTRIBUTE Pbg Sts Vt1dot5 DS1 Test timeRemaining

Access: Read only

Description

This attribute indicates the length of time remaining before the test stops according to the *duration* attribute.

Mib: no_mib

Values: Decimal (0.00..30240.00)

Units	minutes
Default	0.00

Nortel Networks Multiservice Switch 7400/15000/20000

Component Pbg

Release 6.1

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7400/15000/20000

Component PB

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

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COMPONENT PseudoBridge (PB)

Groups	"GROUP PB IfEntryProv (IfEntry)" "GROUP PB MediaProv (Mp)" "GROUP PB Operational (Oper)" "GROUP PB OsiState (State)" "GROUP PB OperationalStatus (OperStatus)"
Scope	Application
Description	*PseudoBridge* The PseudoBridge component represents one PseudoBridge application.
Mib	Bridge
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP PB IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Bridge

ATTRIBUTE PB ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

ATTRIBUTE PB ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

GROUP PB MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the media base component.
Mib	Bridge

ATTRIBUTE PB linkToProtocolPort (pp)

Access	Read and write
Criticality	Component

Description	This attribute specifies the *ProtocolPort* to which this interface is linked to. The protocol port is the logical interface to the network. The protocol port component describes the logical characteristics of this interface.
Mib	Bridge
Values	Link (Service, linkToMedia)
Default	No default

GROUP PB Operational (Oper)

Properties	Operational
Description	This group includes the operational attibutes which are specific to the PseudoBridge component.
Mib	Bridge

ATTRIBUTE PB macAddress (addr)

Access	Read only
Description	The medium access controller (MAC) address is an address that is only recognized by one station on the attached bus. This address is automatically assigned by the system.
Mib	Bridge
Values	String (6, Hex)
Default	No default

GROUP PB OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE PB adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE PB operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Bridge

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE PB usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Bridge

Values: idle
active (activ)
busy

Default: idle

GROUP PB OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: Bridge

ATTRIBUTE PB snmpOperStatus

Access: Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

Nortel Networks Multiservice Switch 7400/15000/20000

Component PB

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component PcGtl

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component PcGtl

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COMPONENT PcGprsTransportLayer (PcGtl)

Instance	Decimal (1..15)
Groups	"GROUP PcGtl Provisioned (Prov)"
Scope	Application
Description	*PcGprsTransportLayer/n* This component represents the Transport Layer functionality of the Gb interface of the Packet Control Unit Support Node (PCUSN).
Mib	WirelessNssBssPcu
Opt. Subcomp.	"COMPONENT PcGtl NetworkServiceEntity (Nse)"
Common Verbs	Help List Display Add DELete

GROUP PcGtl Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attribute to specify the Logical Processor of *PcGprsTransportLayer (PcGtl)*.
Mib	WirelessNssBssPcu

ATTRIBUTE PcGtl linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor that the *PcGprsTransportLayer (PcGtl)* and its subcomponents are provisioned on.
Mib	WirelessNssBssPcu
Values	Link (Hardware, linkToApplications)
Default	No default

COMPONENT PcGtl NetworkServiceEntity (Nse)

Instance	Decimal (0..65535)
Groups	"GROUP PcGtl Nse Provisioned (Prov)" "GROUP PcGtl Nse Statistics (Stats)"

"COLLECTED STATS PcGprsTransportLayer NetworkServiceEntity"

Scope	Application
Description	*PcGtl/n NetworkServiceEntity/<nsei>* This component represents a Network Service Entity (NSE). Each NSE is associated with a single Packet Control Unit (PCU) and is identified by means of a Network Service Entity Identifier (NSEI).

	The same NSE can be provisioned in multiple *PcGtl* instances to enable load sharing.
Mib	WirelessNssBssPcu
Opt. Subcomp.	"COMPONENT PcGtl Nse NetworkServiceVirtualConnection (Nsvc)"
Common Verbs	Help List Display Add DELete

GROUP PcGtl Nse Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attribute to link the Network Service Entity (NSE) in the *PcGprsTransportLayer (PcGtl)* with the corresponding NSE provisioned in the *PacketControlUnitSupportNode (Pcusn).*
Mib	WirelessNssBssPcu

ATTRIBUTE PcGtl Nse linkToMasterNse (lTonse)

Access	Read: All Write: All
Description	This attribute specifies the corresponding *Pcusn Nse* component which provides common parameters to all instances of this Network Service Entity (NSE).
Mib	WirelessNssBssPcu
Values	Link (Service, linkToSlaveNse)
Default	No default

GROUP PcGtl Nse Statistics (Stats)

Properties	Operational

Description	This group contains the operational information of the Network Service Entity (NSE).
Mib	WirelessNssBssPcu

ATTRIBUTE PcGtl Nse octetsToSgsn (octsTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the octets sent to the Serving GPRS Support Node (SGSN) by all the Network Service Virtual Connections (NS-VCs) served by that Network Service Entity (NSE). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse octetsFromSgsn (octsRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the octets received from the Serving GPRS Support Node's (SGSN) Network Service Virtual Connections (NS-VCs) served by the peer Network Service Entity (NSE). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS PcGprsTransportLayer NetworkServiceEntity

Description	The statistics record generated by the PcGprsTransportLayer NetworkServiceEntity component.

ATTRIBUTE PcGtl Nse octetsToSgsn (octsTxSgsn)

Description This attribute counts the octets sent to the Serving GPRS Support Node (SGSN) by all the Network Service Virtual Connections (NS-VCs) served by this Network Service Entity (NSE). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse octetsFromSgsn (octsRxSgsn)

Description This attribute counts the octets received from the Serving GPRS Support Node's (SGSN) Network Service Virtual Connections (NS-VCs) served by the peer Network Service Entity (NSE). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COMPONENT PcGtl Nse NetworkServiceVirtualConnection (Nsvc)

Instance Decimal (0..65535)

Groups "GROUP PcGtl Nse Nsvc Provisioned (Prov)"
"GROUP PcGtl Nse Nsvc Operational (Oper)"
"GROUP PcGtl Nse Nsvc Statistics (Stats)"

"COLLECTED STATS PcGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection"

Scope Application

Description *PcGtl/n Nse/<nsei> Nsvc/<nsvci>*

This component represents the Network Service Virtual Connection (NS-VC) functionality of the Network Service (NS) protocol layer. Each instance provides a virtual connection between the NS peer entities. An NS-VC is unique across all instances of this Network Service Entity Identifier (NSEI).

An NS-VC is associated with a single Frame Relay Data

	Link Connection Identifier (DLCI). The Frame Relay port and the NS-VC must be located on the same Logical Processor.
Mib	WirelessNssBssPcu
Dyn. Subcomp.	"COMPONENT PcGtl Nse Nsvc AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete

GROUP PcGtl Nse Nsvc Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes to associate a Network Service Virtual Connection (NS-VC) with a Frame Relay Data Link Connection Identifier (DLCI). The FR interface is provided by the *FrAtm* component which must be provisioned on the same Logical Processor as this NS-VC.
Mib	WirelessNssBssPcu

ATTRIBUTE PcGtl Nse Nsvc localFrAddress (frAddr)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the local Frame Relay address (native E.164, native x.121) to be used for this connection. This is the address defined at the peer *FrAtm/n Address* component. The peer *FrAtm* component must be provisioned on the same Logical Processor as this Network Service Virtual Connection (NS-VC).
Mib	WirelessNssBssPcu
Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc localFrDlci (frDlci)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the local Frame Relay connection identifier. This identifier is a Frame Relay Data Link Connection Identifier (DLCI) logical channel number. There must be a matching DLCI value at the peer *FrAtm* component. The combination of FrAtm and DLCI value must be unique across all instances of NS-VC for this NSEI.
Mib	WirelessNssBssPcu
Values	Decimal (16..1007)
Default	No default

GROUP PcGtl Nse Nsvc Operational (Oper)

Properties	Operational
Description	This group contains Network Service Virtual Connection (NS-VC) operational information.
Mib	WirelessNssBssPcu

ATTRIBUTE PcGtl Nse Nsvc state (st)

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the Network Service Virtual Connection (NS-VC). ***idle -*** This is the initial state of the NS-VC upon activation. ***unBlocked -*** Indicates that this NS-VC is unblocked and is now available for traffic. ***localInitiatedBlocked -*** This state indicates that the NS-VC is blocked by a locally initiated Block Request. NS-UNITDATA Protocol Data Units (PDUs) received in this state are discarded. ***netInitiatedBlocked -*** This state indicates that this NS-VC has been blocked by the remote node. NS-UNITDATA PDUs received in this state are discarded. ***dead -*** This state indicates that the NS-VC is unavailable. This

can be because the Frame Relay (FR) link is dead or if an operator locks the Data Link Connection Identifier (DLCI).

Mib: WirelessNssBssPcu

Values:
idle
unBlocked
localInitiatedBlocked
netInitiatedBlocked
dead

Default: No default

GROUP PcGtl Nse Nsvc Statistics (Stats)

Properties: Operational

Description: This group contains the Network Service Virtual Connection (NS-VC) statistical information.

Mib: WirelessNssBssPcu

ATTRIBUTE PcGtl Nse Nsvc blocksFromSgsn (blksRxSgsn)

Access: Read: All
Write: Illegal

Description: This attribute counts the NS-BLOCK requests received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.

Mib: WirelessNssBssPcu

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE PcGtl Nse Nsvc blocksToSgsn (blksTxSgsn)

Access: Read: All
Write: Illegal

Description: This attribute counts the NS-BLOCK Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc blockAcksFromSgsn (blkAcksRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-BLOCK ACKs received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc blockAcksToSgsn (blkAcksTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-BLOCK ACK Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc unblocksFromSgsn (unblksRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNBLOCK requests received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc unblocksToSgsn (unblksTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNBLOCK Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc unblockAcksFromSgsn (unblkAcksRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNBLOCK ACKs received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc unblockAcksToSgsn (unblkAcksTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNBLOCK ACK Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc unitDatasFromSgsn (unitDataRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc unitDatasToSgsn (unitDataTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc alivesFromSgsn (aliveRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-ALIVE requests received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE PcGtl Nse Nsvc alivesToSgsn (aliveTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-ALIVE Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc aliveAcksFromSgsn (aliveAcksRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-ALIVE ACKs received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc aliveAcksToSgsn (aliveAcksTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-ALIVE ACK Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc resetsFromSgsn (rstsRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-RESET requests received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc resetsToSgsn (rstsTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-RESET Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc resetAcksFromSgsn (rstAcksRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-RESET ACKs received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc resetAcksToSgsn (rstAcksTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-RESET ACK Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc statusFromSgsn (statusRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-STATUS PDUs received from the Serving GPRS Support Node (SGSN). The SGSN sends an NS-STATUS PDU when it receives an invalid packet or a packet that has undergone corruption over the Gb interface in the SGSN-PCU direction. The counter to zero wraps when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc statusToSgsn (statusTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-STATUS PDUs sent to the Serving GPRS Support Node (SGSN). The Packet Control Unit (PCU) sends an NS-STATUS PDU when it receives an invalid packet or a packet that has undergone corruption over the Gb interface in the PCU-SGSN direction. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc statusIndications (statusInds)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-STATUS Indications formatted by the Network Service (NS) for this Network Service Virtual Connection (NS-VC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc fecnBitSet (fecnBit)

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from the network that contain the Forward Explicit Congestion Notification (FECN) bit set to 1. Setting of the FECN bit to 1 indicates that frames received from the network can experience congestion.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc becnBitSet (becnBit)

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from the network that contain the Backward Explicit Congestion Notification (BECN) bit set to 1. Setting of the BECN bit to 1 indicates that frames transmitted to the network may experience congestion.

Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc octetsFromSgsn (octsRxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE PcGtl Nse Nsvc octetsToSgsn (octsTxSgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were received from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessNssBssPcu
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS PcGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection

Description	The statistics record generated by the PcGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection component.

ATTRIBUTE PcGtl Nse Nsvc unitDatasFromSgsn (unitDataRxSgsn)

Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) received from the Serving GPRS Support Node (SGSN) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse Nsvc unitDatasToSgsn (unitDataTxSgsn)

Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) encoded to be sent to the Serving GPRS Support Node (SGSN) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse Nsvc octetsFromSgsn (octsRxSgsn)

Description	This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were received from the Serving GPRS Support Node (SGSN) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE PcGtl Nse Nsvc octetsToSgsn (octsTxSgsn)

Description	This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were sent to the Serving GPRS Support Node (SGSN) in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT PcGtl Nse Nsvc AtmConnection (AtmCon)

Groups	"GROUP PcGtl Nse Nsvc AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	WirelessNssBssPcu
Common Verbs	Help List Display

GROUP PcGtl Nse Nsvc AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	WirelessNssBssPcu

ATTRIBUTE PcGtl Nse Nsvc AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	WirelessNssBssPcu
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component PcGtl

Release 6.1

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7400/15000/20000

Component Pcusa

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Component Pcusa

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COMPONENT PCUSupportApplication (Pcusa)

Instance	Decimal (0..15999)
Groups	"GROUP Pcusa Provisioned (Prov)" "GROUP Pcusa OsiState (State)"
Scope	Device
Description	*PCUSupportApplication/n* This component represents all Packet Control Unit (PCU) for a single Packet Control Unit Services Processor (PCUSP) LP. As such, there is one *Pcusa* per PCUSP FP. Each *Pcusa* can have up to 12 *Connection* subcomponents.
Mib	Pcusa
Opt. Subcomp.	"COMPONENT Pcusa Connection (Conn)"
Common Verbs	Help List Display Add DELete

GROUP Pcusa Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Pcusa* component.
Mib	Pcusa

ATTRIBUTE Pcusa linkToServer (l2s)

Access	Read and write
Criticality	Process
Description	This attribute specifies a hardware link to a *Pcusp* component on a Packet Control Unit Services Processor FP and defines the LP on which the service will run.
Mib	Pcusa
Values	Link (Hardware, linkToApplication)
Default	No default

GROUP Pcusa OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Pcusa

ATTRIBUTE Pcusa adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Pcusa

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Pcusa operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Pcusa

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Pcusa usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Pcusa
Values	idle active (activ) busy
Default	idle

COMPONENT Pcusa Connection (Conn)

Instance	Decimal (0..256)
Groups	"GROUP Pcusa Conn CustomerIdentifierData (CidData)" "GROUP Pcusa Conn Provisioned (Prov)" "GROUP Pcusa Conn OsiState (State)"
Scope	Device
Description	*Pcusa/n Connection/n* This component represents a PCUSA connection which corresponds to a group of channels representing all the PCM links on one Base Station Controller (BSC). This component is linked to an *NSE* component, which provides transport to the Frame Relay network. The *Conn* instance value is the BSC identifier. Each *Conn* must have between 1 and 12 *PcmLink* subcomponents.
Mib	Pcusa
Opt. Subcomp.	"COMPONENT Pcusa Conn PcmLink (PcmLk)"
Common Verbs	Help List Display Add DELete

VERB RESET Pcusa Conn

Impact	Service
Description	*Reset conn/n* The *Reset* verb is used to reset CAS operational counters under a *Connection*.

GROUP Pcusa Conn CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Pcusa

ATTRIBUTE Pcusa Conn customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Pcusa
Values	Decimal (0; 1..8191)
Default	0

GROUP Pcusa Conn Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *Connection*.
Mib	Pcusa

ATTRIBUTE Pcusa Conn linkToNse (l2nse)

Access	Read and write
Criticality	Process
Description	This attribute specifies a link to an *NSE* component, which provides transport to the Frame Relay network.
Mib	Pcusa
Values	Link (Service, linkToPcuConn)
Default	No default

GROUP Pcusa Conn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Pcusa

ATTRIBUTE Pcusa Conn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component.

When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Pcusa

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Pcusa Conn operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Pcusa

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Pcusa Conn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Pcusa
Values	idle active (activ) busy
Default	idle

COMPONENT Pcusa Conn PcmLink (PcmLk)

Instance	Decimal (0..167)
Groups	"GROUP Pcusa Conn PcmLk Provisioned (Prov)" "GROUP Pcusa Conn PcmLk OsiState (State)" "GROUP Pcusa Conn PcmLk Operational (Oper)" "GROUP Pcusa Conn PcmLk RelayStatistics (RelStats)" "GROUP Pcusa Conn PcmLk PcmLkPcu (PcuOper)"

"COLLECTED STATS PCUSupportApplication Connection PcmLink"

Scope	Device

Description	*Pcusa/n Conn/n PcmLink/n* This component represents one PCM link and must be linked to a DS1 or E1 channel.
Mib	Pcusa
Subcomponents	"COMPONENT Pcusa Conn PcmLk LapdSignaling (LapdSig)"
Dyn. Subcomp.	"COMPONENT Pcusa Conn PcmLk Cell (Cell)" "COMPONENT Pcusa Conn PcmLk BssgpVirtualConnection (Bvc)" "COMPONENT Pcusa Conn PcmLk CgiCell (CgiCell)"
Common Verbs	Help List Display Add DELete

GROUP Pcusa Conn PcmLk Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the PCM link.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk interfaceName (ifName)

Access	Read and write
Criticality	Process
Description	This attribute specifies a service link to a *Chan* component located on the TDM card.
Mib	Pcusa
Values	Link (Service, applicationFramerName)
Default	No default

GROUP Pcusa Conn PcmLk OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Pcusa
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Pcusa Conn PcmLk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Pcusa
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Pcusa Conn PcmLk usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Pcusa
Values	idle active (activ) busy
Default	idle

GROUP Pcusa Conn PcmLk Operational (Oper)

Properties	Operational

Description	This group contains status information about the PCM link coming from PCUSA.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk processingBlockNumber (pBNum)

Access	Read only
Description	This attribute indicates the processing block which has been assigned to support this PCM link.
Mib	Pcusa
Values	The name of the component
Default	No default

ATTRIBUTE Pcusa Conn PcmLk failureCause (failCause)

Access	Read only
Description	This attribute indicates the cause for the PCM link's failure. The failure cause messages are: ***serviceChanNotReady*** - the TDM LP is down, or waiting for the *Chan* to establish communication. ***operatorLock*** - this failure message occurs when a dependent component is locked by the operator. ***internalError*** - an internal error, which cannot be determined has occurred. ***outOfResource*** - an SPM could not be allocated to handle the requested capacity. ***processingResourceNotReady*** - the allocated SPM is under reset or provisioning. ***none*** - no failure.
Mib	Pcusa
Values	none serviceChanNotReady operatorLock internalError outOfResource processingResourceNotReady

Default	No default

ATTRIBUTE Pcusa Conn PcmLk pcuRole (role)

Access	Read only
Description	This attribute indicates the role of the PCM link on the Gb interface. ***master*** - the PCM link manages the BVCI 0. ***slave*** - the PCM link does not manage the BVCI 0.
Mib	Pcusa
Values	master slave
Default	No default

GROUP Pcusa Conn PcmLk RelayStatistics (RelStats)

Properties	Operational
Description	This group contains statistical data that pertains to information on the Frame Relay side.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk pduDn (pduDn)

Access	Read only
Description	This attribute counts the BSSGP PDUs received from the SGSN by all the BVCs associated to this PCM link. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk pduUp (pduUp)

Access	Read only

Description	This attribute counts the BSSGP PDUs transmitted to the SGSN by all the BVCs associated to this PCM link. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk octetsDn (octDn)

Access	Read only
Description	This attribute counts the octets received by all the BVCs associated to this PCM link. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk octetsUp (octUp)

Access	Read only
Description	This attribute counts the octets sent by all the BVCs associated to this PCM link. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk bvcsBlocked (bvcB)

Access	Read only
Description	This attribute indicates the BVCs that are currently in blocked state.

Mib	Pcusa
Values	Decimal (0..120)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk bvcsUnBlocked (bvcUB)

Access	Read only
Description	This attribute indicates the BVCs that are currently in unblocked state.
Mib	Pcusa
Values	Decimal (0..120)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk totalBvcs (totbvc)

Access	Read only
Description	This attribute indicates the BVCs that currently exist within an NSE.
Mib	Pcusa
Values	Decimal (0..120)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk psPaging (psPag)

Access	Read only
Description	This attribute counts the BSSGP PAGING PS PDUs received from the SGSN by this PCM link. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk csPaging (csPag)

Access	Read only
Description	This attribute counts the BSSGP PAGING CS PDUs received from the SGSN by this PCM link. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk dyAgprsLackOfTimeslots (dyAgprsLTs)

Access	Read only
Description	This attribute counts the number of times that the PCU has not been able to satisfy the request sent by the most loaded cell that appears to have a lack of resource. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk PcmLkPcu (PcuOper)

Properties	Operational
Description	This group contains status information about the PCM link coming from the PCU element.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk agprsVersion (agprsVer)

Access	Read only
Description	This attribute indicates the AGPRS interface version requested by the BSC. When the version number is incorrect, an alarm is to be raised.
Mib	Pcusa

Values	Decimal (0..255)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk pcuProvisioningState (pcuProvState)

Access	Read only
Description	This attribute indicates if the PCU element has received the provisioning information. ***notReceived*** - one of the provisioning messages has not been received. ***received*** - all the provisioning messages have been received.
Mib	Pcusa
Values	notReceived received
Default	No default

ATTRIBUTE Pcusa Conn PcmLk pcuConfiguration (pcuConfig)

Access	Read only
Description	This attribute indicates if the PCU element has received the configuration message from the BSC. ***pcuConfigMsgReceived*** - the pcuConfig message has been received. ***pcuConfigMsgNotReceived*** - the pcuConfig message has not been received.
Mib	Pcusa
Values	notReceived received
Default	No default

ATTRIBUTE Pcusa Conn PcmLk pcuGbState (pcuGbState)

Access	Read only
Description	This attribute indicates the transmission capability on the Gb interface for the related NSE. ***down*** - the transmission capability is null (that is, none of the

	related NSVCs are unblocked). ***up*** - the transmission capability is not null (that is, at least one of the related NSVCs is unblocked). ***notReceived*** - the transmission capability on the Gb interface has not been received by the PcuElement application.
Mib	Pcusa
Values	down up notReceived
Default	No default

ATTRIBUTE Pcusa Conn PcmLk pcuSigBvcState (pcuSigBvcState)

Access	Read only
Description	This attribute indicates the state of the signalization BVC on the Gb interface. ***down*** - the BSSGP BVCI 0 procedure has not been successfully performed. ***up*** - the BSSGP BVCI 0 procedure has been successfully performed. ***notReceived*** - the BSSGP BVCI 0 procedure status has not yet been received.
Mib	Pcusa
Values	down up notReceived
Default	No default

COLLECTED STATS PCUSupportApplication Connection PcmLink

Description	The statistics record generated by the PCUSupportApplication Connection PcmLink component.

ATTRIBUTE Pcusa Conn PcmLk pduDn (pduDn)

Description This attribute counts the BSSGP PDUs received from the SGSN by all the BVCs associated to this PCM link during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk pduUp (pduUp)

Description This attribute counts the BSSGP PDUs transmitted to the SGSN by all the BVCs associated to this PCM link during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk octetsDn (octDn)

Description This attribute counts the octets received by all the BVCs associated to this PCM link during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk octetsUp (octUp)

Description This attribute counts the octets sent by all the BVCs associated to this PCM link during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk psPaging (psPag)

Description This attribute counts the BSSGP PAGING PS PDUs received from the SGSN by this PCM link during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk csPaging (csPag)

Description This attribute counts the BSSGP PAGING CS PDUs received from the SGSN by this PCM link during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk dyAgprsLackOfTimeslots (dyAgprsLTs)

Description	This attribute counts the number of time that the PCU has not been able to satisfy the request sent by the most loaded cell on which appears a lack of resource during the statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk LapdSignaling (LapdSig)

Instance	Decimal (0..31)
Groups	"GROUP Pcusa Conn PcmLk LapdSig Operational (Oper)" "GROUP Pcusa Conn PcmLk LapdSig Lev1ErrStatistics (L1ErrStats)" "GROUP Pcusa Conn PcmLk LapdSig Lev2UpStatistics (L2ULStats)" "GROUP Pcusa Conn PcmLk LapdSig Lev2DownStatistics (L2DLStats)"

"COLLECTED STATS PCUSupportApplication Connection PcmLink LapdSignaling"

Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n LapdSignaling* This component represents the LAPD signaling protocol on a PCM link.
Mib	Pcusa
Common Verbs	Help List Display Add DELete

GROUP Pcusa Conn PcmLk LapdSig Operational (Oper)

Properties	Operational
Description	This group contains status information about the communication link.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk LapdSig sigStatus (sigStus)

Access	Read only
Description	This attribute indicates the status of the 3 LAPD SAPIs (GSL, RSL, OML) on the AGPRS interface. ***down*** - One of the three LAPD SAPIs is down. ***up*** - The three LAPD SAPIs are up.
Mib	Pcusa
Values	down up
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig omlStatus (omlStus)

Access	Read only
Description	This attribute indicates the status of the OML LAPD SAPI on the AGPRS interface. ***down*** - OML LAPD SAPI is down. ***up*** - OML LAPD SAPI is up.
Mib	Pcusa
Values	down up
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig gslStatus (gslStus)

Access	Read only
Description	This attribute indicates the status of the GSL LAPD SAPI on the AGPRS interface. ***down*** - GSL LAPD SAPI is down. ***up*** - GSL LAPD SAPI is up.
Mib	Pcusa
Values	down up
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig rslStatus (rslStus)

Access	Read only
Description	This attribute indicates the status of the RSL LAPD SAPI on the AGPRS interface. ***down*** - RSL LAPD SAPI is down. ***up*** - RSL LAPD SAPI is up.
Mib	Pcusa
Values	down up
Default	No default

GROUP Pcusa Conn PcmLk LapdSig Lev1ErrStatistics (L1ErrStats)

Properties	Operational
Description	This group contains level 1 error counts collected on LAPD signaling layer frames.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk LapdSig framesLostOverflowUp (fLovfUp)

Access	Read only
Description	This attribute counts the uplink frames lost due to data overrun or receive buffer overflow. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig framesLostOverflowDn (fLovfDn)

Access	Read only
Description	This attribute counts the downlink frames which were not sent because of buffer overflow.

	The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig errorsCRC (errCRC)

Access	Read only
Description	This attribute counts the frames with CRC errors which were received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig framesLostAlignment (fLAlign)

Access	Read only
Description	This attribute counts the frames lost due to abort or lack of alignment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk LapdSig Lev2UpStatistics (L2ULStats)

Properties	Operational
Description	This group contains statistical data collected on uplink frame types.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk LapdSig iFramesUp (iFrmUp)

Access	Read only
Description	This attribute counts the I frames received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig uiFramesUp (uiFrmUp)

Access	Read only
Description	This attribute counts the unnumbered I frames received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk LapdSig Lev2DownStatistics (L2DLStats)

Properties	Operational
Description	This group contains statistical data collected on downlink transmitted frame format.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk LapdSig iFramesDn (iFrmDn)

Access	Read only
Description	This attribute counts the I frames transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Pcusa Conn PcmLk LapdSig uiFramesDn (uiFrmDn)

Access	Read only
Description	This attribute counts the unnumbered I frames transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink LapdSignaling
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink LapdSignaling component.

ATTRIBUTE Pcusa Conn PcmLk LapdSig framesLostOverflowUp (fLovfUp)

Description	This attribute counts the uplink frames lost due to data overrun or receive buffer overflow during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig framesLostOverflowDn (fLovfDn)

Description	This attribute counts the downlink frames which were not sent because of buffer overflow during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig errorsCRC (errCRC)

Description	This attribute counts the frames with CRC errors which were received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig framesLostAlignment (fLAlign)

Description	This attribute counts the frames lost due to abort or lack of alignment during the statistics collection interval.

Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig iFramesUp (iFrmUp)

Description	This attribute counts the I frames received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig uiFramesUp (uiFrmUp)

Description	This attribute counts the unnumbered I frames received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig iFramesDn (iFrmDn)

Description	This attribute counts the I frames transmitted during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk LapdSig uiFramesDn (uiFrmDn)

Description	This attribute counts the unnumbered I frames transmitted during the statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk Cell (Cell)

Instance	Decimal (0..4294967295)
Groups	"GROUP Pcusa Conn PcmLk Cell Operational (Oper)" "GROUP Pcusa Conn PcmLk Cell CellIdentifierOperational (CellIdOper)" "GROUP Pcusa Conn PcmLk Cell PdchAllocStatistics (AllocStats)" "GROUP Pcusa Conn PcmLk Cell PdchFullDpxStatistics (FDpxStats)" "GROUP Pcusa Conn PcmLk Cell PdchUplkStatistics (ULStats)" "GROUP Pcusa Conn PcmLk Cell PdchDownlkStatistics (DLStats)" "GROUP Pcusa Conn PcmLk Cell DynAgprsStatistics

(DynAgprsStats)"
"GROUP Pcusa Conn PcmLk Cell QoSStatistics (QoSStats)"

"COLLECTED STATS PCUSupportApplication Connection PcmLink Cell"

Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n* This dynamic component represents a GSM cell. There can be several *Cell*s per PCM. The *Cell*s are uniquely identified in the GSM system by a cellID value.
Mib	Pcusa
Dyn. Subcomp.	"COMPONENT Pcusa Conn PcmLk Cell Tdma (Tdma)" "COMPONENT Pcusa Conn PcmLk Cell Ccch (Ccch)" "COMPONENT Pcusa Conn PcmLk Cell MobileStation (Ms)"
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk Cell Operational (Oper)

Properties	Operational
Description	This group contains information about the cell.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell cellBVCI

Access	Read only
Description	This attribute indicates the corresponding BSSGP Virtual Channel Identifier corresponding to the cell.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell cellState (state)

Access	Read only

Description	This attribute indicates the state of a GSM cell as specified by the BSC. ***unConfigured*** - The cell is not configured. ***configured*** - The message cell_config has been received from the BSC and acknowledged. ***availableOos*** - The message cell_available has been received from the BSC and acknowledged. ***inService*** - The message cell_gprs_open has been sent to the BTS, and the BTS has acknowledged the message. ***destroying*** - The cell object instance is being destroyed in the PCU element, and is waiting for completion of the BSSGP BVC blocking procedure.
Mib	Pcusa
Values	unConfigured configured availableOos inService destroying
Default	No default

GROUP Pcusa Conn PcmLk Cell CellIdentifierOperational (CellIdOper)

Properties	Operational
Description	This group contains attributes used for cell‘s identification as defined in the GSM 08.18 Technical Specification.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell msCountryCode (mCC)

Access	Read only
Description	This attribute indicates the mobile country code.
Mib	Pcusa
Values	Decimal (0..999)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell msNetworkCode (mNC)

Access	Read only
Description	This attribute indicates the mobile network code.
Mib	Pcusa
Values	Decimal (0..999)
Default	No default

GROUP Pcusa Conn PcmLk Cell PdchAllocStatistics (AllocStats)

Properties	Operational
Description	This group contains statistical data.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell upMultiSlotRequests (upMSlotReq)

Access	Read only
Description	This attribute counts the multislot allocation requests received by the PCU from the mobile station. Index 1 counts the number of 1-timeslot allocation requests. Index 2 counts the number of 2-timeslot allocation requests. Index 3 counts the number of 3-timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell upMultiSlotAllocations (upMSlotAll)

Access	Read only

Description	This attribute counts the multislot granted allocations received by the PCU from the mobile station. Index 1 counts the number of 1-timeslot granted allocations. Index 2 counts the number of 2-timeslot granted allocations. Index 3 counts the number of 3-timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnMultiSlotRequests (dnMSlotReq)

Access	Read only
Description	This attribute counts the multislot allocation requests received by the mobile station from the PCU. Index 1 counts the number of 1-timeslot allocation requests. Index 2 counts the number of 2-timeslots allocation requests. Index 3 counts the number of 3-timeslots allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnMultiSlotAllocations (dnMSlotAll)

Access	Read only
Description	This attribute counts the multislot granted allocations received by the mobile station from the PCU. Index 1 counts the number of 1-timeslot granted allocations. Index 2 counts the number of 2-timeslot granted allocations. Index 3 counts the number of 3-timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

GROUP Pcusa Conn PcmLk Cell PdchFullDpxStatistics (FDpxStats)

Properties	Operational
Description	This group contains statistical data collected on Packet Data Channel (PDCH) full duplex parameters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell fullDuplexTbfEstablishment (fdTbfEst)

Access	Read only
Description	This attribute counts how many full duplex TBFs were established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell currentFullDuplexTbfEstablishment (currFdTbfEst)

Access	Read only
Description	This attribute indicates the number of full duplex TBFs currently established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell pcuEdgeDowngradedTbf (EDgrdTbf)

Access	Read only
Description	The attribute counts the EGPRS TBFs downgraded in GPRS.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell pcuEdgeTbfEstReq (ETbfEstReq)

Access	Read only
Description	The attribute counts the EGPRS TBF establishment requests.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell PdchUplkStatistics (ULStats)

Properties	Operational
Description	This group contains statistical data collected on PDCH uplink parameters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell upTbfEstablishment (upTbfEst)

Access	Read only

Description	This attribute counts how many uplink TBFs were established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell currentUpTbfEstablishment (currUpTbfEst)

Access	Read only
Description	This attribute indicates the number of uplink TBFs currently established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell allocatedBlocksUpTbf (allBUpTbf)

Access	Read only
Description	This attribute counts the blocks allocated for the uplink TBFs. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell currentAllocatedBlocksUpTbf (currAllBUpTbf)

Access	Read only
Description	This attribute indicates the blocks currently allocated for the uplink TBFs.
Mib	Pcusa
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell nonAckUpTbfEstablishment (nAckUpTbfEst)

Access	Read only
Description	This attribute counts the non-acknowledged uplink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell currentNonAckUpTbfEstablishment (currNAckUpTbfEst)

Access	Read only
Description	This attribute indicates the current non-acknowledged uplink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell ackUpTbfEstablishment (ackUpTbfEst)

Access	Read only
Description	This attribute counts the acknowledged uplink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell currentAckUpTbfEstablishment (currAckUpTbfEst)

Access	Read only

Description	This attribute indicates the current acknowledged uplink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell upTbfReleases (upTbfRel)

Access	Read only
Description	This attribute counts how many uplink TBFs were released.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell closeEndedUpTbfEstablishment (closeEndUpTbfEst)

Access	Read only
Description	This attribute counts the close-ended uplink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell pcuEdgeUpCumUsefulDataPerCell (EUpCumUseDt)

Access	Read only
Description	This attribute indicates the cumulated size, in octets, of all the RLC EDGE data blocks received for the first time on a pipe in verbose state.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell pcuEdgeUpUsefulDataDurationPerCell (EUpUseDtDur)

Access	Read only
Description	This attribute indicates the cumulated time, in multiple of 20ms, where the pipes for UL EGPRS TBF are in verbose state.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell PdchDownlkStatistics (DLStats)

Properties	Operational
Description	This group contains statistical data collected on PDCH downlink parameters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfEstablishment (dnTbfEst)

Access	Read only
Description	This attribute counts how many downlink TBFs were established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell currentDnTbfEstablishment (currDnTbfEst)

Access	Read only
Description	This attribute indicates the current downlink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell currentAllocatedBlocksDnTbf (currAllBDnTbf)

Access	Read only
Description	This attribute indicates the blocks currently allocated for the downlink TBFs.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell nonAckDnTbfEstablishment (nAckDnTbfEst)

Access	Read only
Description	This attribute counts the non-acknowledged downlink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell currentNonAckDnTbfEstablishment (currNAckDnTbfEst)

Access	Read only
Description	This attribute indicates the current non-acknowledged downlink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell ackDnTbfEstablishment (ackDnTbfEst)

Access	Read only
Description	This attribute counts the acknowledged downlink TBFs established.

	The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell currentAckDnTbfEstablishment (currAckDnTbfEst)

Access	Read only
Description	This attribute indicates the current acknowledged downlink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfReleases (dnTbfRel)

Access	Read only
Description	This attribute counts how many downlink TBFs were released.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell pcuEdgeDnCumUsefulDataPerCell (EDnCumUseDt)

Access	Read only
Description	This attribute indicates the cumulated size, in octets, of all the RLC EDGE data blocks sent for the first time on a pipe in verbose state.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell pcuEdgeDnUsefulDataDurationPerCell

(EDnUseDtDur)

Access	Read only
Description	This attribute indicates the cumulated time, in multiple of 20ms, where the pipes for DL EGPRS TBF are in verbose state.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell DynAgprsStatistics (DynAgprsStats)

Properties	Operational
Description	This group contains statistical data collected on dynamic AGPRS parameters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsNbModif (dyAgprsNbMod)

Access	Read only
Description	This attribute indicates the number of changes to allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsAvgNbTimeslots (dyAgprsAvgNbTs)

Access	Read only
Description	This attribute indicates the average number of allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsMinNbTimeslots (dyAgprsMinNbTs)

Access	Read only
Description	This attribute indicates the minimum number of allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsMaxNbTimeslots (dyAgprsMaxNbTs)

Access	Read only
Description	This attribute indicates the maximum number of allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsAvgLoadCriterion (dyAgprsAvgLdCrit)

Access	Read only
Description	This attribute indicates the average AGPRS load criterion value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsMaxLoadCriterion (dyAgprsMaxLdCrit)

Access	Read only
Description	This attribute indicates the maximum AGPRS load criterion value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell pcuEdgeDynAgprsJokerCumNbTimeslot (EDyAJkCumTs)

Access	Read only
Description	This attribute indicates the cumulative number of Agprs Joker timeslots allocated to the cell by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell pcuEdgeDynAgprsJokerMinNbTimeslot (EDyAJkMinTs)

Access	Read only
Description	This attribute indicates the minimum number of Agprs Joker timeslots allocated to the cell by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell pcuEdgeDynAgprsJokerMaxNbTimeslot (EDyAJkMaxTs)

Access	Read only
Description	This attribute indicates the maximum number of Agprs Joker timeslots allocated to the cell by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell pcuEdgeAgprsJokerNbofBlocks (EAJkNbBlks)

Access	Read only
Description	This attribute indicates the total number of TRAU EDGE data blocks sent on the Agprs Joker channels in the DL direction.

Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell pcuEdgeAgprsMainNbofBlocks (EAMnNbBlks)

Access	Read only
Description	This attribute indicates the total number of TRAU EDGE data blocks sent on the Agprs Main channels in the DL direction.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell QoSStatistics (QoSStats)

Properties	Operational
Description	This group contains statistical data collected on downlink TBFs on which a QoS parameter is attributed.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldSatisfactMore90pCent (dnTbfGSatM90)

Access	Read only
Description	This attribute counts the downlink TBFs with golden QoS that have a satisfaction rate greater or equal to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldSatisfactBet5090pCent (dnTbfGSatB5090)

Access	Read only

Description	This attribute counts the downlink TBFs with golden QoS that have a satisfaction rate between 50 to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldSatisfactLess50pCent (dnTbfGSatL50)

Access	Read only
Description	This attribute counts the downlink TBFs with golden QoS that have a satisfaction rate lower than 50 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldRejectedForMinTput (dnTbfGRejMinTput)

Access	Read only
Description	This attribute counts the downlink TBFs with golden QoS rejected at the establishment due to non-allocation of corresponding minimum throughput. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfSilverSatisfactMore90pCent (dnTbfSSatM90)

Access	Read only

Description	This attribute counts the downlink TBFs with silver QoS that have a satisfaction rate greater or equal to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfSilverSatisfactBet5090pCent (dnTbfSSatB5090)

Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS that have a satisfaction rate between 50 to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfSilverSatisfactLess50pCent (dnTbfSSatL50)

Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS that have a satisfaction rate lower than 50 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfSilverRejectedForMinTput (dnTbfSRejMinTput)

Access	Read only

Description	This attribute counts the downlink TBFs with silver QoS rejected at the establishment due to non-allocation of corresponding minimum throughput. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeSatisfactMore90pCent (dnTbfBSatM90)

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS that have a satisfaction rate greater or equal to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeSatisfactBet5090pCent (dnTbfBSatB5090)

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS that have a satisfaction rate between 50 to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeSatisfactLess50pCent (dnTbfBSatL50)

Access	Read only

Description	This attribute counts the downlink TBFs with bronze QoS that have a satisfaction rate lower than 50 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeRejectedForMinTput (dnTbfBRejMinTput)

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS rejected at the establishment due to non-allocation of corresponding minimum throughput. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink Cell
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink Cell component.

ATTRIBUTE Pcusa Conn PcmLk Cell cellBVCI

Description	This attribute indicates the corresponding BSSGP Virtual Channel Identifier during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Cell upMultiSlotRequests (upMSlotReq)

Description	This attribute counts the multislot allocation requests received by the PCU from the mobile station during the statistics collection interval.

	Index 1 counts the number of 1- timeslot allocation requests. Index 2 counts the number of 2- timeslot allocation requests. Index 3 counts the number of 3- timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell upMultiSlotAllocations (upMSlotAll)

Description	This attribute counts the multislot granted allocations received by the PCU from the mobile station during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations. Index 3 counts the number of 3- timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell dnMultiSlotRequests (dnMSlotReq)

Description	This attribute counts the multislot allocation requests received by the mobile station from the PCU during the statistics collection interval. Index 1 counts the number of 1- timeslot allocation requests. Index 2 counts the number of 2- timeslot allocation requests. Index 3 counts the number of 3- timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell dnMultiSlotAllocations (dnMSlotAll)

Description	This attribute counts the multislot granted allocations received by the mobile station from the PCU during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations. Index 3 counts the number of 3- timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk Cell fullDuplexTbfEstablishment (fdTbfEst)

Description	This attribute counts how many full duplex TBFs were established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell upTbfReleases (upTbfRel)

Description	This attribute counts how many uplink TBFs were released during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell cumulativeTimeUpTbf (cumTimeUpTbf)

Description	This attribute indicates the cumulative duration of all uplink TBFs released during the statistics collection interval.
Values	Decimal (0..4294967295)
Units	seconds

ATTRIBUTE Pcusa Conn PcmLk Cell allocatedBlocksUpTbf (allBUpTbf)

Description	This attribute counts the blocks allocated for the uplink TBFs during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell nonAckUpTbfEstablishment (nAckUpTbfEst)

Description	This attribute counts the non-acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell ackUpTbfEstablishment (ackUpTbfEst)

Description	This attribute counts the acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell closeEndedUpTbfEstablishment (closeEndUpTbfEst)

Description	This attribute counts the close-ended uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfReleases (dnTbfRel)

Description	This attribute counts how many downlink TBFs were released during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell cumulativeTimeDnTbf (cumTimeDnTbf)

Description	This attribute indicates the cumulative duration of all downlink TBFs released during the statistics collection interval.
Values	Decimal (0..4294967295)
Units	seconds

ATTRIBUTE Pcusa Conn PcmLk Cell nonAckDnTbfEstablishment (nAckDnTbfEst)

Description	This attribute counts the non-acknowledged downlink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell ackDnTbfEstablishment (ackDnTbfEst)

Description	This attribute counts the acknowledged downlink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsNbModif (dyAgprsNbMod)

Description	This attribute counts the modifications of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsAvgNbTimeslots (dyAgprsAvgNbTs)

Description	This attribute indicates the average number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsMinNbTimeslots (dyAgprsMinNbTs)

Description	This attribute indicates the minimum number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsMaxNbTimeslots (dyAgprsMaxNbTs)

Description	This attribute indicates the maximum number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsAvgLoadCriterion (dyAgprsAvgLdCrit)

Description	This attribute indicates the average Agprs load criterion value during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Pcusa Conn PcmLk Cell dyAgprsMaxLoadCriterion (dyAgprsMaxLdCrit)

Description	This attribute indicates the maximum Agprs load criterion value during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldSatisfactMore90pCent (dnTbfGSatM90)

Description This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldSatisfactBet5090pCent (dnTbfGSatB5090)

Description This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldSatisfactLess50pCent (dnTbfGSatL50)

Description This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfGoldRejectedForMinTput (dnTbfGRejMinTput)

Description This attribute counts the downlink TBFs with gold QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfSilverSatisfactMore90pCent (dnTbfSSatM90)

Description This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfSilverSatisfactBet5090pCent (dnTbfSSatB5090)

Description This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfSilverSatisfactLess50pCent (dnTbfSSatL50)

Description This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfSilverRejectedForMinTput (dnTbfSRejMinTput)

Description This attribute counts the downlink TBFs with silver QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeSatisfactMore90pCent (dnTbfBSatM90)

Description This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeSatisfactBet5090pCent (dnTbfBSatB5090)

Description This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeSatisfactLess50pCent (dnTbfBSatL50)

Description This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell dnTbfBronzeRejectedForMinTput (dnTbfBRejMinTput)

Description This attribute counts the downlink TBFs with bronze QOS rejected at the establishment due to non allocation of

	corresponding minimum throughput during the statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk Cell Tdma (Tdma)

Instance	Decimal (0..15)
Groups	"GROUP Pcusa Conn PcmLk Cell Tdma Operational (Oper)" "GROUP Pcusa Conn PcmLk Cell Tdma Statistics (Stats)" "GROUP Pcusa Conn PcmLk Cell Tdma UplkStatistics (ULStats)" "GROUP Pcusa Conn PcmLk Cell Tdma DownlkStatistics (DLStats)" "GROUP Pcusa Conn PcmLk Cell Tdma PdchAllocationStatistics (PdchAllocStats)" "GROUP Pcusa Conn PcmLk Cell Tdma ReleaseStatistics (RelStats)"

"COLLECTED STATS PCUSupportApplication Connection PcmLink Cell Tdma"

Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n Tdma/n* This component represents a TDMA. There can be several TDMA per *Cell*.
Mib	Pcusa
Dyn. Subcomp.	"COMPONENT Pcusa Conn PcmLk Cell Tdma Timeslot (Ts)" "COMPONENT Pcusa Conn PcmLk Cell Tdma JokerTimeslot (JokerTs)"
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk Cell Tdma Operational (Oper)

Properties	Operational
Description	This group contains attributes describing the time division multiple access.

Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma tdmaState (state)

Access	Read only
Description	This attribute indicates the state of a TDMA relative to the BSC.
Mib	Pcusa
Values	unconfigured configured available
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma pcuTdmaEdgeCapacity (edgeCap)

Access	Read only
Description	This attribute indicates the EDGE capacity of a TDMA.
Mib	Pcusa
Values	noEdge upToMCS4DlFullEdgeUl fullEdge upToMCS4DlUl
Default	No default

GROUP Pcusa Conn PcmLk Cell Tdma Statistics (Stats)

Properties	Operational
Description	This group contains statistical data.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma localBusy (locBus)

Access	Read only
Description	This attribute counts the blocks sent with the window stalled indicator set. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma remoteBusy (remBus)

Access	Read only
Description	This attribute counts the blocks received with the window stalled indicator set. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell Tdma UplkStatistics (ULStats)

Properties	Operational
Description	This group contains statistical data collected by counters in uplink transmission mode.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma llcPacketsUp (llcPktUp)

Access	Read only
Description	This attribute counts the LLC packets reassembled and transmitted to the LLC relay. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma dataBlocksUp (dataBUp)

Access	Read only

Description	This attribute counts the uplink RLC data blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma controlBlocksUp (ctrlBUp)

Access	Read only
Description	This attribute counts the uplink RLC control blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma invalidBlocksUp (invalidBUp)

Access	Read only
Description	This attribute counts the uplink invalid radio blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma invalidProtocolErrorBlocksUp (invalidProtErrBUp)

Access	Read only
Description	This attribute counts the uplink invalid radio blocks received with invalid RLC protocol. The counter wraps to zero when it exceeds its maximum value.

Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma outOfSequenceBlocksUp (outOfSeqBUp)

Access	Read only
Description	This attribute counts the data blocks received uplink with Block Sequence Number outside the received window. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma packetAckNackUp (pktANUp)

Access	Read only
Description	This attribute counts the PACKET-UPLINK-ACK-NACK messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma totalRetransmissionRequested (totRtxReq)

Access	Read only
Description	This attribute counts the RLC/MAC block retransmission requests. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma pcuEdgeDataBlocksUp (EDtBlkUp)

Access	Read only
Description	This attribute counts the cumulative number of EGPRS RLC data blocks received by the PCU on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma pcuEdgeUpCumMeanBep (EUpCumMnBep)

Access	Read only
Description	This attribute counts the cumulated value of the assumed BEP received by the PCU in each EGPRS RLC data block on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma pcuEdgeUpNbsMeanBep (EUpNbMnBep)

Access	Read only
Description	This attribute counts the MEAN_BEP values received by the PCU in each EGPRS RLC data block on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell Tdma DownlkStatistics (DLStats)

Properties	Operational
Description	This group contains statistical data collected by counters in downlink transmission mode.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma llcPacketsDn (llcPktDn)

Access	Read only
Description	This attribute counts the LLC packets segmented into RLC data blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma dataBlocksDn (dataBDn)

Access	Read only
Description	This attribute counts the downlink RLC data blocks transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma controlBlocksDn (ctrlBDn)

Access	Read only
Description	This attribute counts the downlink RLC control blocks transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma retransmittedDataBlocksDn (rtxDataBDn)

Access	Read only
Description	This attribute counts the data blocks retransmitted downlink. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma packetAckNackDn (pktANDn)

Access	Read only
Description	This attribute counts the PACKET-DOWNLINK-ACK-NACK messages transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma pcuEdgeDataBlocksDn (EDtBlkDn)

Access	Read only
Description	This attribute counts the cumulative number of EGPRS RLC data blocks sent by the PCU on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma pcuEdgeDnCum8PskMeanBep (EDnCum8PMnB)

Access	Read only
Description	This attribute counts the cumulative value of the 8PSK_BEP derived from the 8PSK_MEAN_BEP received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (8PSK_MEAN_BEP). The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma pcuEdgeDnNbs8PskMeanBep (EDnNb8PMnB)

Access	Read only
Description	This attribute counts the 8PSK_MEAN_BEP values received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (8PSK_MEAN_BEP). The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma pcuEdgeDnCumGmskMeanBep (EDnCumGMnB)

Access	Read only
Description	This attribute counts the cumulative value of the GMSK_BEP derived from the GMSK_MEAN_BEP received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (GMSK_MEAN_BEP). The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma pcuEdgeDnNbsGmskMeanBep (EDnNbGMnB)

Access	Read only
Description	This attribute counts the GMSK_MEAN_BEP values received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (GMSK_MEAN_BEP). The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell Tdma PdchAllocationStatistics (PdchAllocStats)

Properties	Operational
Description	This group contains statistical data.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma configuredTimeslots (cfgTs)

Access	Read only
Description	This attribute indicates the number of configured timeslots.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma unavailableTimeslots (unavailTs)

Access	Read only
Description	This attribute indicates the unavailable timeslots as signalled by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma upActiveTimeslots (upActTs)

Access	Read only
Description	This attribute indicates the current number of active uplink timeslots bearing at least one TBF.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma dnActiveTimeslots (dnActTs)

Access	Read only
Description	This attribute indicates the current number of active downlink timeslots bearing at least one TBF.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell Tdma ReleaseStatistics (RelStats)

Properties	Operational
Description	This group contains statistical data collected by release counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma tbfNormalReleaseUp (tbfNormRelUp)

Access	Read only
Description	This attribute counts the uplink TBFs that terminated normally. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma tbfNormalReleaseDn (tbfNormRelDn)

Access	Read only
Description	This attribute counts the downlink TBFs that terminated normally. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma noPacketResourceReq (noPktResReq)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to non-receipt of Packet Resource Request. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComNN002Max (lOCNN002Max)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to V(Q) non-progression. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComT3169 (lOCT3169)

Access	Read only

Description	This attribute counts the TBFs abnormally released due to T3169 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComNT0001 (lOCNT0001)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to NT0001 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComT3195 (lOCT3195)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to T3195 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComT3191 (lOCT3191)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to T3191 timer expiry.

	The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink Cell Tdma
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink Cell Tdma component.

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma localBusy (locBus)

Description	This attribute counts the blocks sent with the window stalled indicator set during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma remoteBusy (remBus)

Description	This attribute counts the blocks received with the window stalled indicator set during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma configuredTimeslots (cfgTs)

Description	This attribute indicates the number of configured timeslots at the end of the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeUnavailableTimeslots (cumUnavailTs)

Description	This attribute indicates the cumulative number of unavailable timeslots at the sample time during the statistics collection interval. The average can be calculated by dividing this attribute value by the *nbSamples* value.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeUpActiveTimeslots (cumUpActTs)

Description This attribute indicates the cumulative number of active uplink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeUpTbfPerTimeslots (cumUpTbfPerTs)

Description This attribute indicates the cumulative number of uplink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeDnActiveTimeslots (cumDnActTs)

Description This attribute indicates the cumulative number of active downlink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeDnTbfPerTimeslots (cumDnTbfPerTs)

Description This attribute indicates the cumulative number of downlink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma nbSamples (nbS)

Description This attribute indicates how many samples were taken during the statistics collection interval.

This value can be used with the cumulative attribute for average calculs.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma llcPacketsUp (llcPktUp)

Description This attribute counts the LLC packets reassembled and transmitted to the LLC relay during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma dataBlocksUp (dataBUp)

Description This attribute counts the uplink RLC data blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma controlBlocksUp (ctrlBUp)

Description This attribute counts the uplink RLC control blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma invalidBlocksUp (invalidBUp)

Description This attribute counts the uplink invalid radio blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma invalidProtocolErrorBlocksUp (invalidProtErrBUp)

Description This attribute counts the uplink invalid radio blocks received with invalid RLC protocol during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma outOfSequenceBlocksUp (outOfSeqBUp)

Description This attribute counts the data blocks received uplink with Block Sequence Number outside the received window during the statistics collection interval.

Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma packetAckNackUp (pktANUp)

Description	This attribute counts the PACKET-UPLINK-ACK-NACK messages received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma totalRetransmissionRequested (totRtxReq)

Description	This attribute counts the RLC/MAC block retransmission requests during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeUpRxQual (cumUpRxQual)

Description	This attribute indicates the cumulative uplink RxQual value during the statistics collection interval. The average can be calculated by dividing this attribute value by the *nbSamples* value.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeUpRxLev (cumUpRxLev)

Description	This attribute indicates the cumulative uplink RxLev value during the statistics collection interval. The average can be calculated by dividing this attribute value by the *nbSamples* value.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma nbSamplesUpQuality (nbSamplesUpQuality)

Description	This attribute counts the samples for RxQual and RxLev cumulative values during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma llcPacketsDn (llcPktDn)

Description	This attribute counts the LLC packets segmented into RLC data blocks received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma dataBlocksDn (dataBDn)

Description: This attribute counts the downlink RLC data blocks transmitted during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma controlBlocksDn (ctrlBDn)

Description: This attribute counts the downlink RLC control blocks transmitted during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma retransmittedDataBlocksDn (rtxDataBDn)

Description: This attribute counts the data blocks retransmitted downlink during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma packetAckNackDn (pktANDn)

Description: This attribute counts the PACKET-DOWNLINK-ACK-NACK messages transmitted during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma cumulativeDnRxQual (cumDnRxQual)

Description: This attribute indicates the cumulative downlink RxQual value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma nbSamplesDnQuality (nbSamplesDnQuality)

Description: This attribute counts the samples for RxQual cumulative values during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma tbfNormalReleaseUp (tbfNormRelUp)

Description: This attribute counts the uplink TBFs which terminated normally during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma tbfNormalReleaseDn (tbfNormRelDn)

Description This attribute counts the downlink TBFs which terminated normally during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma noPacketResourceReq (noPktResReq)

Description This attribute counts the TBFs abnormally released due to non receipt of Packet Resource Request during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComNN002Max (lOCNN002Max)

Description This attribute counts the TBFs abnormally released due to V(Q) non progression during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComT3169 (lOCT3169)

Description This attribute counts the TBFs abnormally released due to timer T3169 expiry during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComNT0001 (lOCNT0001)

Description This attribute counts the TBFs abnormally released due to NT0001 timer expiry during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComT3195 (lOCT3195)

Description This attribute counts the TBFs abnormally released due to T3195 timer expiry during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma lossOfComT3191 (lOCT3191)

Description This attribute counts the TBFs abnormally released due to T3191 timer expiry during the statistics collection interval.

Values	Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk Cell Tdma Timeslot (Ts)

Instance	Decimal (0..7)
Groups	"GROUP Pcusa Conn PcmLk Cell Tdma Ts Operational (Oper)"
Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n Tdma/n Ts/n* This dynamic component represents a GPRS timeslot in a TDMA. This element is used to obtain configuration information.
Mib	Pcusa
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk Cell Tdma Ts Operational (Oper)

Properties	Operational
Description	This group contains all attributes describing radio parts of the network.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma Ts tsNumber (tsNum)

Access	Read only
Description	This attribute indicates the 16 kbit/s timeslot in the DS0 channel.
Mib	Pcusa
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma Ts tsState (state)

Access	Read only
Description	This attribute indicates the state of a *Timeslot*.
Mib	Pcusa

Values	unsynchronized synchronized
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma Ts ds0Channel (ds0Ch)

Access	Read only
Description	This attribute indicates the DS0 channel number carrying this TDMA timeslot in the AGPRS PCM.
Mib	Pcusa
Values	Decimal (0..30)
Default	No default

COMPONENT Pcusa Conn PcmLk Cell Tdma JokerTimeslot (JokerTs)

Instance	Decimal (0..23)
Groups	"GROUP Pcusa Conn PcmLk Cell Tdma JokerTs Operational (Oper)"
Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n Tdma/n* Joker*Ts/n* This dynamic component represents a GPRS EDGE joker timeslot in a TDMA. This element is used to obtain configuration information.
Mib	Pcusa
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk Cell Tdma JokerTs Operational (Oper)

Properties	Operational
Description	This group contains all attributes describing radio parts of the network.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma JokerTs tsNumber (tsNum)

Access	Read only
Description	This attribute indicates the 16 kbit/s timeslot in the DS0 channel.
Mib	Pcusa
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma JokerTs tsState (state)

Access	Read only
Description	This attribute indicates the state of a *Timeslot*.
Mib	Pcusa
Values	unsynchronized synchronized
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Tdma JokerTs ds0Channel (ds0Ch)

Access	Read only
Description	This attribute indicates the DS0 channel number carrying this TDMA timeslot in the AGPRS PCM.
Mib	Pcusa
Values	Decimal (0..30)
Default	No default

COMPONENT Pcusa Conn PcmLk Cell Ccch (Ccch)

Groups	"GROUP Pcusa Conn PcmLk Cell Ccch UplkStatistics (ULStats)" "GROUP Pcusa Conn PcmLk Cell Ccch DownlkStatistics (DLStats)"

"COLLECTED STATS PCUSupportApplication Connection PcmLink Cell Ccch"

Scope	Device

Description	*Pcusa/n Conn/n PcmLink/n Cell/n Ccch* This dynamic component represents the *Cell*'s common control channel.
Mib	Pcusa
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk Cell Ccch UplkStatistics (ULStats)

Properties	Operational
Description	This group contains statistical data collected by counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfImmediateAssignment (immAssUp)

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT messages generated by the PCU to the mobile station in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfImmAssigRejectNoPdch (noPdch)

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of "No PDCH available for GPRS" in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfImmAssigRejectNoTs (noTs)

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfImmAssigRejectNoTbf (noTbf)

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch channelRequest (chanReq)

Access	Read only
Description	This attribute counts the CHANNEL-REQUEST messages received by the PCU from the mobile station in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.

Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch packetResourceRequest (pktResReq)

Access	Read only
Description	This attribute counts the PACKET-RESOURCE-REQUEST messages received by the PCU from the mobile station in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch deleteIndicationUp (delIndUp)

Access	Read only
Description	This attribute counts the DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for uplink transfer is dropped. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch packetUpAssignment (pktUpAss)

Access	Read only
Description	This attribute counts the PACKET-UPLINK-ASSIGNMENT messages generated by the PCU after a PACKET-RESOURCE-REQUEST in the second phase of the two-phase access uplink TBF establishment.

	The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfPacketAccessRejectNoPdch (pktNoPdch)

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfPacketAccessRejectNoTs (pktNoTs)

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfPacketAccessRejectNoTbf (pktUpNoTbf)

Access	Read only

Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Cell Ccch DownlkStatistics (DLStats)

Properties	Operational
Description	This group contains statistical data collected by counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch dnTbfImmediateAssignment (immAssDn)

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT messages sent for a downlink TBF establishment from the PCU to the mobile station. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch pagingRequest (pagReq)

Access	Read only
Description	This attribute counts the PAGING-REQUEST messages generated by the PCU to the mobile station. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch deleteIndicationDn (delIndDn)

Access	Read only
Description	This attribute counts the DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for downlink transfer is dropped. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch packetDnAssignment (pktDnAss)

Access	Read only
Description	This attribute counts the PACKET-DOWNLINK-ASSIGNMENT messages generated by the PCU to the mobile station in the downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch dnTbfPacketAccessRejectNoPdch (pktDnNoPdch)

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.

Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch dnTbfPacketAccessRejectNoTs (pktDnNoTs)

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch dnTbfPacketAccessRejectNoTbf (pktDnNoTbf)

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink Cell Ccch
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink Cell Ccch component.

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfImmediateAssignment (immAssUp)

Description This attribute counts IMMEDIATE-ASSIGNMENT messages generated by the PCU to the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfImmAssigRejectNoPdch (noPdch)

Description This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfImmAssigRejectNoTs (noTs)

Description This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfImmAssigRejectNoTbf (noTbf)

Description This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch channelRequest (chanReq)

Description This attribute counts CHANNEL-REQUEST messages received by the PCU from the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch packetResourceRequest (pktResReq)

Description This attribute counts PACKET-RESOURCE-REQUEST messages received by the PCU from the mobile station in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch deleteIndicationUp (delIndUp)

Description This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for uplink transfer is dropped during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch packetUpAssignment (pktUpAss)

Description This attribute counts PACKET-UPLINK-ASSIGNMENT messages generated by the PCU after a PACKET-RESOURCE-REQUEST in the second phase of the two_phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfPacketAccessRejectNoPdch (pktNoPdch)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfPacketAccessRejectNoTs (pktNoTs)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch upTbfPacketAccessRejectNoTbf (pktUpNoTbf)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch dnTbfImmediateAssignment (immAssDn)

Description This attribute counts IMMEDIATE-ASSIGNMENT messages sent for a downlink TBF establishment from the PCU to the mobile station during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch pagingRequest (pagReq)

Description This attribute counts PAGING-REQUEST messages generated by the PCU to the mobile station during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch deleteIndicationDn (delIndDn)

Description This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for downlink transfer is dropped during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch packetDnAssignment (pktDnAss)

Description This attribute counts PACKET-DOWNLINK-ASSIGNMENT messages generated by the PCU to the mobile station in the downlink TBF establishment phase during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch dnTbfPacketAccessRejectNoPdch (pktDnNoPdch)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase

access downlink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch dnTbfPacketAccessRejectNoTs (pktDnNoTs)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Cell Ccch dnTbfPacketAccessRejectNoTbf (pktDnNoTbf)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk Cell MobileStation (Ms)

Instance Decimal (0..4294967295)

Scope Device

Description *Pcusa/n Conn/n PcmLink/n Cell/n MobileStation/n*
This dynamic component represents a mobile station in a *Cell*. It is used to display information on the mobile.

Mib Pcusa

Common Verbs
Help
List
Display

COMPONENT Pcusa Conn PcmLk BssgpVirtualConnection (Bvc)

Instance Decimal (0..1536)

Groups	"GROUP Pcusa Conn PcmLk Bvc Operational (Oper)" "GROUP Pcusa Conn PcmLk Bvc Statistics (Stats)" "GROUP Pcusa Conn PcmLk Bvc BvcUnitDataStatistics (BvcUnitDataStats)" "GROUP Pcusa Conn PcmLk Bvc BvcComSigStatistics (BvcComSigStats)"

"COLLECTED STATS PCUSupportApplication Connection PcmLink BssgpVirtualConnection"

Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n BssgpVirtualConnection/n* This dynamic component represents a BSSGP Virtual Connection. There is one *Bvc* per *Cell*. It is identified by a *Bvc* identifier coming from the PCU when the *Cell* is created.
Mib	Pcusa
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk Bvc Operational (Oper)

Properties	Operational
Description	This group contains operational attributes describing *Bvc* upon receipt of a *Cell* configuration request.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcState (state)

Access	Read only
Description	This attribute indicates the BVC state. The SGSN sends the BVC blocked and unblocked status to the PCU on the Gb interface. This attribute is set to ***blocked*** when the transmission or reception is stopped and ***unblocked*** when the transmission or reception is resumed.
Mib	Pcusa

Values	blocked unblocked
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc maxBucketSize (maxBktSize)

Access	Read only
Description	This attribute indicates the maximum bucket size for the BVC. This parameter sent by the PCU is used by the BVC flow control algorithm in SGSN.
Mib	Pcusa
Values	Decimal (0..32000)
Units	kbyte
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bucketLeakRate (bktLRate)

Access	Read only
Description	This attribute indicates the maximum allowed BVC leak rate. The SGSN does not leak more traffic for a BVC to the PCU than is specified by this attribute.
Mib	Pcusa
Values	Decimal (0..6144)
Units	bit/s
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bufferSize (buffSize)

Access	Read only
Description	This attribute indicates the number of bytes currently buffered for a BVC.
Mib	Pcusa
Values	Decimal (0..32000)

Units	kbyte
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc cell

Access	Read only
Description	This attribute indicates the cell identity number associated with this BVC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcCellLocationArea (bvcCLA)

Access	Read only
Description	This attribute indicates the location area associated with the BVC and the cell. This attribute is used for paging.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcCellRoutingArea (bvcCRA)

Access	Read only
Description	This attribute indicates the routing area associated with the BVC and the cell.
Mib	Pcusa
Values	Decimal (0..256)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcNumberMs (bvcNbMs)

Access	Read only
Description	This attribute indicates the number of mobiles in the cell that are currently transferring data.

Mib	Pcusa
Values	Decimal (0..960)
Default	No default

GROUP Pcusa Conn PcmLk Bvc Statistics (Stats)

Properties	Operational
Description	This group contains statistical data collected by counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Bvc pduDn

Access	Read only
Description	This attribute counts the PDUs received by this BVC from the Gb interface. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc pduUp

Access	Read only
Description	This attribute counts the PDUs sent by this BVC to the Gb interface. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc octetsDn (octDn)

Access	Read only

Description	This attribute counts the octets received by the BVC from the Gb interface. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc octetsUp (octUp)

Access	Read only
Description	This attribute counts the octets sent by the BVC to the Gb interface. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Bvc BvcUnitDataStatistics (BvcUnitDataStats)

Properties	Operational
Description	This group contains statistical data collected by counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Bvc pduDataDn

Access	Read only
Description	This attribute counts the UNIT-DATA PDUs received by the BVC from the Gb interface. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc pduDataUp

Access	Read only
Description	This attribute counts the UNIT-DATA PDUs sent by the BVC to the Gb interface. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc octetsDataDn

Access	Read only
Description	This attribute counts the octets received by the BVC from the Gb interface in DL-UNIT-DATA PDUs. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc octetsDataUp

Access	Read only
Description	This attribute counts the octets sent by the BVC to the Gb interface in UL-UNIT-DATA PDUs. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc maxSizeDataDn

Access	Read only
Description	This attribute indicates the largest size of LLC frame received.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc maxSizeDataUp

Access	Read only
Description	This attribute indicates the largest size of LLC frame sent.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk Bvc BvcComSigStatistics (BvcComSigStats)

Properties	Operational
Description	This group contains statistical data collected by counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcBlockRequests (bvcBReq)

Access	Read only
Description	This attribute counts the number of times the BVC-BLOCK PDU message was sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcUnBlockRequests (bvcUBReq)

Access	Read only

Description	This attribute counts the number of times the BVC-UNBLOCK PDU message was sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct1TimeOuts (t1TO)

Access	Read only
Description	This attribute counts the number of times the BVC-BLOCK-ACK timer as well as BVC-UNBLOCK-ACK timer expired. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcResetRequestsUp (bvcResReqUp)

Access	Read only
Description	This attribute counts the number of times a BVC-RESET PDU message was sent by a BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcResetRequestsDn (bvcResReqDn)

Access	Read only
Description	This attribute counts the number of times a BVC-RESET PDU message was received by the BVC.

	The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct2TimeOuts (t2TO)

Access	Read only
Description	This attribute counts the number of times the BVC-RESET-ACK timer expired. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcFlowControlRequests (bvcFCtrlReq)

Access	Read only
Description	This attribute counts the FLOW-CONTROL-BVC PDUs sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc msFlowControlRequests (msFCtrlReq)

Access	Read only
Description	This attribute counts the FLOW-CONTROL-MS PDUs sent by the BVC. The counter wraps to zero when it exceeds its maximum value.

Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc llcDiscardedPdu (llcDiscPdu)

Access	Read only
Description	This attribute counts the LLC-DISCARDED PDUs sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc llcDiscardedOctets (llcDiscOct)

Access	Read only
Description	This attribute counts the octets discarded according to the LLC-DISCARDED-INDICATION message sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc nmStatusUp (nmStusUp)

Access	Read only
Description	This attribute counts the NM-STATUS PDUs sent by a BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)

Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc nmStatusDn (nmStusDn)

Access	Read only
Description	This attribute counts the NM-STATUS PDUs received by a BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc msFlushLLRequest (msFlushLLReq)

Access	Read only
Description	This attribute counts the FLUSH-LL PDUs sent from the SGSN to the PCU. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc msRadioStatusInd (msRadStusInd)

Access	Read only
Description	This attribute counts the INDICATION messages when a radio exception condition occurred on the radio interface in the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc msSuspendReq (msSusReq)

Access	Read only
Description	This attribute counts the SUSPEND PDUs sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc msRaCapabilityInd (msRaCapInd)

Access	Read only
Description	This attribute counts the RA-CAPABILITY PDUs received by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc msRaCapabilityUpdateReq (msRaCapUpdateReq)

Access	Read only
Description	This attribute counts the RA-CAPABILITY-UPDATE PDUs sent by the BVC. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct3TimeOuts (t3TO)

Access	Read only
Description	This attribute counts the number of times the SUSPEND-ACK timer expired.

	The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct5TimeOuts (t5TO)

Access	Read only
Description	This attribute counts the number of times the RA-CAPABILITY-UPDATE-ACK timer expired. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..32767)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk Bvc msCellTransitionDn (msCellTransDn)

Access	Read only
Description	This attribute counts the FLUSH-LL PDUs that are sent by SGSN to PCU when the Mobile Station located on a cell indicated by the BVCI has moved to another cell indicated to the new BVCI. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink BssgpVirtualConnection
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink BssgpVirtualConnection component.

ATTRIBUTE Pcusa Conn PcmLk Bvc cell

Description	This attribute indicates the cell identity number associated to this BVC.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc pduDn

Description	This attribute counts the PDUs received by this BVC from the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc pduUp

Description	This attribute counts the PDUs sent by this BVC to the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc octetsDn (octDn)

Description	This attribute counts the octets received by the BVC from the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc octetsUp (octUp)

Description	This attribute counts the octets sent by the BVC to the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc pduDataDn

Description	This attribute counts the UNIT-DATA PDUs received by the BVC from the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc pduDataUp

Description	This attribute counts the UNIT-DATA PDUs sent by the BVC to the Gb interface during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc octetsDataDn

Description	This attribute counts the octets received by the BVC from the Gb interface in DL-UNIT-DATA PDUs during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc octetsDataUp

Description	This attribute counts the octets sent by the BVC to the Gb interface in UL-UNIT-DATA PDUs during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc maxSizeDataDn

Description	This attribute indicates the largest size of LLC frame received during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc maxSizeDataUp

Description	This attribute indicates the biggest size of LLC frames sent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcBlockRequests (bvcBReq)

Description	This attribute counts BVC-BLOCK PDU messages sent by the BVC during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcUnBlockRequests (bvcUBReq)

Description	This attribute counts BVC-UNBLOCK PDU messages sent by the BVC during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct1TimeOuts (t1TO)

Description	This attribute counts BVC-BLOCK-ACK and BVC-UNBLOCK-ACK timer expiries during the statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcResetRequestsUp (bvcResReqUp)

Description This attribute counts BVC-RESET PDU messages sent by a BVC during the statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcResetRequestsDn (bvcResReqDn)

Description This attribute counts BVC-RESET PDU messages received by the BVC during the statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct2TimeOuts (t2TO)

Description This attribute counts BVC-RESET-ACK timer expiries during the statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvcFlowControlRequests (bvcFCtrlReq)

Description This attribute counts FLOW-CONTROL-BVC PDUs sent by the BVC during the statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk Bvc msFlowControlRequests (msFCtrlReq)

Description This attribute counts FLOW-CONTROL-MS PDUs sent by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc llcDiscardedPdu (llcDiscPdu)

Description This attribute counts LLC-DISCARDED PDUs sent by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc llcDiscardedOctets (llcDiscOct)

Description This attribute counts the octets discarded with a LLC-DISCARDED-INDICATION message sent by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc nmStatusUp (nmStusUp)

Description This attribute counts NM-STATUS PDUs sent by a BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc nmStatusDn (nmStusDn)

Description This attribute counts NM-STATUS PDUs received by a BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msFlushLLRequest (msFlushLLReq)

Description This attribute counts FLUSH-LL PDUs sent from the SGSN to the PCU during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msRadioStatusInd (msRadStusInd)

Description This attribute counts INDICATION messages reporting that a radio exception condition occurred on the radio interface in the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msSuspendReq (msSusReq)

Description This attribute counts SUSPEND PDUs sent by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msRaCapabilityInd (msRaCapInd)

Description This attribute counts RA-CAPABILITY-INDICATION PDUs received by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msRaCapabilityUpdateReq (msRaCapUpdateReq)

Description This attribute counts RA-CAPABILITY-UPDATE PDUs sent by the BVC during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct3TimeOuts (t3TO)

Description This attribute counts SUSPEND-ACK timer expiries during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc bvct5TimeOuts (t5TO)

Description This attribute counts RA-CAPABILITY-UPDATE-ACK timer expiries during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk Bvc msCellTransitionDn (msCellTransDn)

Description This attribute counts FLUSH-LL PDUs sent by the SGSN to the PCU when the mobile station located on a cell indicated by the BVCI has moved to another cell indicated to the new BVCI.

Values Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk CgiCell (CgiCell)

Instance cellLocationArea [Decimal (0..65535)]
cellId [Decimal (0..65535)]

Groups "GROUP Pcusa Conn PcmLk CgiCell Operational (Oper)"
"GROUP Pcusa Conn PcmLk CgiCell CellIdentifierOperational (CellIdOper)"
"GROUP Pcusa Conn PcmLk CgiCell PdchAllocStatistics (AllocStats)"
"GROUP Pcusa Conn PcmLk CgiCell PdchFullDpxStatistics (FDpxStats)"
"GROUP Pcusa Conn PcmLk CgiCell PdchUplkStatistics (ULStats)"
"GROUP Pcusa Conn PcmLk CgiCell PdchDownlkStatistics (DLStats)"
"GROUP Pcusa Conn PcmLk CgiCell DynAgprsStatistics (DynAgprsStats)"
"GROUP Pcusa Conn PcmLk CgiCell QoSStatistics (QoSStats)"

"COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell"

Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n* Cgi*Cell/n* This dynamic component represents a GSM cell. There can be several *CgiCell* components per PCM. Each *CgiCell* component is uniquely identified in the GSM system by its cell location area and cellID index.
Mib	Pcusa
Dyn. Subcomp.	"COMPONENT Pcusa Conn PcmLk CgiCell Tdma (Tdma)" "COMPONENT Pcusa Conn PcmLk CgiCell Ccch (Ccch)" "COMPONENT Pcusa Conn PcmLk CgiCell MobileStation (Ms)"
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk CgiCell Operational (Oper)

Properties	Operational
Description	This group contains information about the cell.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell cellBVCI

Access	Read only
Description	This attribute indicates the corresponding BSSGP Virtual Channel Identifier corresponding to the cell.
Mib	Pcusa
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell cellState (state)

Access	Read only
Description	This attribute indicates the state of a GSM cell as specified by the BSC.

unConfigured - The cell is not configured.
configured - The message cell_config has been received from the BSC and acknowledged.
availableOos - The message cell_available has been received from the BSC and acknowledged.
inService - The message cell_gprs_open has been sent to the BTS, and the BTS has acknowledged the message.
destroying - The cell object instance is being destroyed in the PCU element, and is waiting for completion of the BSSGP BVC blocking procedure.

Mib: Pcusa

Values: unConfigured
configured
availableOos
inService
destroying

Default: No default

GROUP Pcusa Conn PcmLk CgiCell CellIdentifierOperational (CellIdOper)

Properties: Operational

Description: This group contains attributes used for cell‘s identification as defined in the GSM 08.18 Technical Specification.

Mib: Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell msCountryCode (mCC)

Access: Read only

Description: This attribute indicates the mobile country code.

Mib: Pcusa

Values: Decimal (0..999)

Default: No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell msNetworkCode (mNC)

Access: Read only

Description	This attribute indicates the mobile network code.
Mib	Pcusa
Values	Decimal (0..999)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell PdchAllocStatistics (AllocStats)

Properties	Operational
Description	This group contains statistical data.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell upMultiSlotRequests (upMSlotReq)

Access	Read only
Description	This attribute counts the multislot allocation requests received by the PCU from the mobile station. Index 1 counts the number of 1-timeslot allocation requests. Index 2 counts the number of 2-timeslot allocation requests. Index 3 counts the number of 3-timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell upMultiSlotAllocations (upMSlotAll)

Access	Read only
Description	This attribute counts the multislot granted allocations received by the PCU from the mobile station.

	Index 1 counts the number of 1-timeslot granted allocations. Index 2 counts the number of 2-timeslot granted allocations. Index 3 counts the number of 3-timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnMultiSlotRequests (dnMSlotReq)

Access	Read only
Description	This attribute counts the multislot allocation requests received by the mobile station from the PCU. Index 1 counts the number of 1-timeslot allocation requests. Index 2 counts the number of 2-timeslots allocation requests. Index 3 counts the number of 3-timeslots allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnMultiSlotAllocations (dnMSlotAll)

Access	Read only

Description	This attribute counts the multislot granted allocations received by the mobile station from the PCU. Index 1 counts the number of 1-timeslot granted allocations. Index 2 counts the number of 2-timeslot granted allocations. Index 3 counts the number of 3-timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations. The counters wrap to zero when they exceed their maximum value.
Mib	Pcusa
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell PdchFullDpxStatistics (FDpxStats)

Properties	Operational
Description	This group contains statistical data collected on Packet Data Channel (PDCH) full duplex parameters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell fullDuplexTbfEstablishment (fdTbfEst)

Access	Read only
Description	This attribute counts how many full duplex TBFs were established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell currentFullDuplexTbfEstablishment (currFdTbfEst)

Access	Read only
Description	This attribute indicates the number of full duplex TBFs currently established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeDowngradedTbf (EDgrdTbf)

Access	Read only
Description	The attribute counts the EGPRS TBFs downgraded in GPRS.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeTbfEstReq (ETbfEstReq)

Access	Read only
Description	The attribute counts the EGPRS TBF establishment requests.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell PdchUplkStatistics (ULStats)

Properties	Operational
Description	This group contains statistical data collected on PDCH uplink parameters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell upTbfEstablishment (upTbfEst)

Access	Read only

Description	This attribute counts how many uplink TBFs were established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell currentUpTbfEstablishment (currUpTbfEst)

Access	Read only
Description	This attribute indicates the number of uplink TBFs currently established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell allocatedBlocksUpTbf (allBUpTbf)

Access	Read only
Description	This attribute counts the blocks allocated for the uplink TBFs. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell currentAllocatedBlocksUpTbf (currAllBUpTbf)

Access	Read only
Description	This attribute indicates the blocks currently allocated for the uplink TBFs.
Mib	Pcusa
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell nonAckUpTbfEstablishment (nAckUpTbfEst)

Access	Read only
Description	This attribute counts the non-acknowledged uplink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell currentNonAckUpTbfEstablishment (currNAckUpTbfEst)

Access	Read only
Description	This attribute indicates the current non-acknowledged uplink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell ackUpTbfEstablishment (ackUpTbfEst)

Access	Read only
Description	This attribute counts the acknowledged uplink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell currentAckUpTbfEstablishment (currAckUpTbfEst)

Access	Read only
Description	This attribute indicates the current acknowledged uplink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell upTbfReleases (upTbfRel)

Access	Read only
Description	This attribute counts how many uplink TBFs were released.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell closeEndedUpTbfEstablishment (closeEndUpTbfEst)

Access	Read only
Description	This attribute counts the close-ended uplink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeUpCumUsefulDataPerCell (EUpCumUseDt)

Access	Read only
Description	This attribute indicates the cumulated size, in octets, of all the RLC EDGE data blocks received for the first time on a pipe in verbose state.
Mib	Pcusa

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeUpUsefulDataDurationPerCell (EUpUseDtDur)

Access	Read only
Description	This attribute indicates the cumulated time, in multiple of 20ms, where the pipes for UL EGPRS TBF are in verbose state.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell PdchDownlkStatistics (DLStats)

Properties	Operational
Description	This group contains statistical data collected on PDCH downlink parameters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfEstablishment (dnTbfEst)

Access	Read only
Description	This attribute counts how many downlink TBFs were established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell currentDnTbfEstablishment (currDnTbfEst)

Access	Read only
Description	This attribute indicates the current downlink TBFs established.
Mib	Pcusa

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell currentAllocatedBlocksDnTbf (currAllBDnTbf)

Access	Read only
Description	This attribute indicates the blocks currently allocated for the downlink TBFs.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell nonAckDnTbfEstablishment (nAckDnTbfEst)

Access	Read only
Description	This attribute counts the non-acknowledged downlink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell currentNonAckDnTbfEstablishment (currNAckDnTbfEst)

Access	Read only
Description	This attribute indicates the current non-acknowledged downlink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell ackDnTbfEstablishment (ackDnTbfEst)

Access	Read only

Description	This attribute counts the acknowledged downlink TBFs established. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell currentAckDnTbfEstablishment (currAckDnTbfEst)

Access	Read only
Description	This attribute indicates the current acknowledged downlink TBFs established.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfReleases (dnTbfRel)

Access	Read only
Description	This attribute counts how many downlink TBFs were released.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeDnCumUsefulDataPerCell (EDnCumUseDt)

Access	Read only
Description	This attribute indicates the cumulated size, in octets, of all the RLC EDGE data blocks sent for the first time on a pipe in verbose state.
Mib	Pcusa

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeDnUsefulDataDurationPerCell (EDnUseDtDur)

Access	Read only
Description	This attribute indicates the cumulated time, in multiple of 20ms, where the pipes for DL EGPRS TBF are in verbose state.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell DynAgprsStatistics (DynAgprsStats)

Properties	Operational
Description	This group contains statistical data collected on dynamic AGPRS parameters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsNbModif (dyAgprsNbMod)

Access	Read only
Description	This attribute indicates the number of changes to allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsAvgNbTimeslots (dyAgprsAvgNbTs)

Access	Read only
Description	This attribute indicates the average number of allocated AGPRS timeslots in the cell.
Mib	Pcusa

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMinNbTimeslots (dyAgprsMinNbTs)

Access	Read only
Description	This attribute indicates the minimum number of allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMaxNbTimeslots (dyAgprsMaxNbTs)

Access	Read only
Description	This attribute indicates the maximum number of allocated AGPRS timeslots in the cell.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsAvgLoadCriterion (dyAgprsAvgLdCrit)

Access	Read only
Description	This attribute indicates the average AGPRS load criterion value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMaxLoadCriterion (dyAgprsMaxLdCrit)

Access	Read only
Description	This attribute indicates the maximum AGPRS load criterion value.

Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeDynAgprsJokerCumNbTimeslot (EDyAJkCumTs)

Access	Read only
Description	This attribute indicates the cumulative number of Agprs Joker timeslots allocated to the cell by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeDynAgprsJokerMinNbTimeslot (EDyAJkMinTs)

Access	Read only
Description	This attribute indicates the minimum number of Agprs Joker timeslots allocated to the cell by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeDynAgprsJokerMaxNbTimeslot (EDyAJkMaxTs)

Access	Read only
Description	This attribute indicates the maximum number of Agprs Joker timeslots allocated to the cell by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeAgprsJokerNbofBlocks (EAJkNbBlks)

Access	Read only
Description	This attribute indicates the total number of TRAU EDGE data blocks sent on the Agprs Joker channels in the DL direction.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell pcuEdgeAgprsMainNbofBlocks (EAMnNbBlks)

Access	Read only
Description	This attribute indicates the total number of TRAU EDGE data blocks sent on the Agprs Main channels in the DL direction.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell QoSStatistics (QoSStats)

Properties	Operational
Description	This group contains statistical data collected on downlink TBFs on which a QoS parameter is attributed.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactMore90pCent (dnTbfGSatM90)

Access	Read only
Description	This attribute counts the downlink TBFs with golden QoS that have a satisfaction rate greater or equal to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactBet5090pCent (dnTbfGSatB5090)

Access	Read only
Description	This attribute counts the downlink TBFs with golden QoS that have a satisfaction rate between 50 to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactLess50pCent (dnTbfGSatL50)

Access	Read only
Description	This attribute counts the downlink TBFs with golden QoS that have a satisfaction rate lower than 50 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldRejectedForMinTput (dnTbfGRejMinTput)

Access	Read only
Description	This attribute counts the downlink TBFs with golden QoS rejected at the establishment due to non-allocation of corresponding minimum throughput. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactMore90pCent (dnTbfSSatM90)

Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS that have a satisfaction rate greater or equal to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactBet5090pCent (dnTbfSSatB5090)

Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS that have a satisfaction rate between 50 to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactLess50pCent (dnTbfSSatL50)

Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS that have a satisfaction rate lower than 50 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverRejectedForMinTput (dnTbfSRejMinTput)

Access	Read only
Description	This attribute counts the downlink TBFs with silver QoS rejected at the establishment due to non-allocation of corresponding minimum throughput. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeSatisfactMore90pCent (dnTbfBSatM90)

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS that have a satisfaction rate greater or equal to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeSatisfactBet5090pCent (dnTbfBSatB5090)

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS that have a satisfaction rate between 50 to 90 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeSatisfactLess50pCent

(dnTbfBSatL50)

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS that have a satisfaction rate lower than 50 per cent. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeRejectedForMinTput (dnTbfBRejMinTput)

Access	Read only
Description	This attribute counts the downlink TBFs with bronze QoS rejected at the establishment due to non-allocation of corresponding minimum throughput. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink CgiCell component.

ATTRIBUTE Pcusa Conn PcmLk CgiCell cellBVCI

Description	This attribute indicates the corresponding BSSGP Virtual Channel Identifier during the statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Pcusa Conn PcmLk CgiCell upMultiSlotRequests (upMSlotReq)

Description	This attribute counts the multislot allocation requests received by the PCU from the mobile station during the statistics collection interval. Index 1 counts the number of 1- timeslot allocation requests. Index 2 counts the number of 2- timeslot allocation requests. Index 3 counts the number of 3- timeslot allocation requests. Index 4 counts the number of 4- or more timeslot allocation requests.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell upMultiSlotAllocations (upMSlotAll)

Description	This attribute counts the multislot granted allocations received by the PCU from the mobile station during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations. Index 3 counts the number of 3- timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnMultiSlotRequests (dnMSlotReq)

Description	This attribute counts the multislot allocation requests received by the mobile station from the PCU during the statistics collection interval. Index 1 counts the number of 1- timeslot allocation requests. Index 2 counts the number of 2- timeslot allocation requests. Index 3 counts the number of 3- timeslot allocation requests.

	Index 4 counts the number of 4- or more timeslot allocation requests.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnMultiSlotAllocations (dnMSlotAll)

Description	This attribute counts the multislot granted allocations received by the mobile station from the PCU during the statistics collection interval. Index 1 counts the number of 1- timeslot granted allocations. Index 2 counts the number of 2- timeslot granted allocations. Index 3 counts the number of 3- timeslot granted allocations. Index 4 counts the number of 4- or more timeslot granted allocations.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..4)

ATTRIBUTE Pcusa Conn PcmLk CgiCell fullDuplexTbfEstablishment (fdTbfEst)

Description	This attribute counts how many full duplex TBFs were established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell upTbfReleases (upTbfRel)

Description	This attribute counts how many uplink TBFs were released during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell cumulativeTimeUpTbf (cumTimeUpTbf)

Description	This attribute indicates the cumulative duration of all uplink TBFs released during the statistics collection interval.
Values	Decimal (0..4294967295)
Units	seconds

ATTRIBUTE Pcusa Conn PcmLk CgiCell allocatedBlocksUpTbf (allBUpTbf)

Description	This attribute counts the blocks allocated for the uplink TBFs during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell nonAckUpTbfEstablishment (nAckUpTbfEst)

Description	This attribute counts the non-acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell ackUpTbfEstablishment (ackUpTbfEst)

Description	This attribute counts the acknowledged uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell closeEndedUpTbfEstablishment (closeEndUpTbfEst)

Description	This attribute counts the close-ended uplink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfReleases (dnTbfRel)

Description	This attribute counts how many downlink TBFs were released during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell cumulativeTimeDnTbf (cumTimeDnTbf)

Description	This attribute indicates the cumulative duration of all downlink TBFs released during the statistics collection interval.
Values	Decimal (0..4294967295)
Units	seconds

ATTRIBUTE Pcusa Conn PcmLk CgiCell nonAckDnTbfEstablishment (nAckDnTbfEst)

Description	This attribute counts the non-acknowledged downlink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell ackDnTbfEstablishment (ackDnTbfEst)

Description	This attribute counts the acknowledged downlink TBFs established during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsNbModif (dyAgprsNbMod)

Description	This attribute counts the modifications of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsAvgNbTimeslots (dyAgprsAvgNbTs)

Description	This attribute indicates the average number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMinNbTimeslots (dyAgprsMinNbTs)

Description	This attribute indicates the minimum number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMaxNbTimeslots (dyAgprsMaxNbTs)

Description	This attribute indicates the maximum number of Agprs timeslots allocated in the cell during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsAvgLoadCriterion (dyAgprsAvgLdCrit)

Description	This attribute indicates the average Agprs load criterion value during the statistics collection interval.
Values	Decimal (0..100)
Units	%

ATTRIBUTE Pcusa Conn PcmLk CgiCell dyAgprsMaxLoadCriterion (dyAgprsMaxLdCrit)

Description	This attribute indicates the maximum Agprs load criterion value during the statistics collection interval.

Values	Decimal (0..100)
Units	%

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactMore90pCent (dnTbfGSatM90)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactBet5090pCent (dnTbfGSatB5090)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldSatisfactLess50pCent (dnTbfGSatL50)

Description	This attribute counts the downlink TBFs with gold QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfGoldRejectedForMinTput (dnTbfGRejMinTput)

Description	This attribute counts the downlink TBFs with gold QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactMore90pCent (dnTbfSSatM90)

Description	This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactBet5090pCent (dnTbfSSatB5090)

Description This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverSatisfactLess50pCent (dnTbfSSatL50)

Description This attribute counts the downlink TBFs with silver QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfSilverRejectedForMinTput (dnTbfSRejMinTput)

Description This attribute counts the downlink TBFs with silver QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeSatisfactMore90pCent (dnTbfBSatM90)

Description This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate greater or equal to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeSatisfactBet5090pCent (dnTbfBSatB5090)

Description This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate between 50 to 90 per cent during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeSatisfactLess50pCent (dnTbfBSatL50)

Description This attribute counts the downlink TBFs with bronze QOS that have a satisfaction rate lower than 50 per cent during the statistics collection interval.

Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell dnTbfBronzeRejectedForMinTput (dnTbfBRejMinTput)

Description	This attribute counts the downlink TBFs with bronze QOS rejected at the establishment due to non allocation of corresponding minimum throughput during the statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk CgiCell Tdma (Tdma)

Instance	Decimal (0..15)
Groups	"GROUP Pcusa Conn PcmLk CgiCell Tdma Operational (Oper)" "GROUP Pcusa Conn PcmLk CgiCell Tdma Statistics (Stats)" "GROUP Pcusa Conn PcmLk CgiCell Tdma UplkStatistics (ULStats)" "GROUP Pcusa Conn PcmLk CgiCell Tdma DownlkStatistics (DLStats)" "GROUP Pcusa Conn PcmLk CgiCell Tdma PdchAllocationStatistics (PdchAllocStats)" "GROUP Pcusa Conn PcmLk CgiCell Tdma ReleaseStatistics (RelStats)"

"COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell Tdma"

Scope	Device

Description	*Pcusa/n Conn/n PcmLink/n Cell/n Tdma/n* This component represents a TDMA. There can be several TDMA per *Cell*.
Mib	Pcusa
Dyn. Subcomp.	"COMPONENT Pcusa Conn PcmLk CgiCell Tdma Timeslot (Ts)" "COMPONENT Pcusa Conn PcmLk CgiCell Tdma JokerTimeslot (JokerTs)"
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk CgiCell Tdma Operational (Oper)

Properties	Operational
Description	This group contains attributes describing the time division multiple access.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma tdmaState (state)

Access	Read only
Description	This attribute indicates the state of a TDMA relative to the BSC.
Mib	Pcusa
Values	unconfigured configured available
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuTdmaEdgeCapacity (edgeCap)

Access	Read only
Description	This attribute indicates the EDGE capacity of a TDMA.
Mib	Pcusa

Values	noEdge upToMCS4DlFullEdgeUl fullEdge upToMCS4DlUl
Default	No default

GROUP Pcusa Conn PcmLk CgiCell Tdma Statistics (Stats)

Properties	Operational
Description	This group contains statistical data.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma localBusy (locBus)

Access	Read only
Description	This attribute counts the blocks sent with the window stalled indicator set. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma remoteBusy (remBus)

Access	Read only
Description	This attribute counts the blocks received with the window stalled indicator set. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell Tdma UplkStatistics (ULStats)

Properties	Operational

Description	This group contains statistical data collected by counters in uplink transmission mode.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma llcPacketsUp (llcPktUp)

Access	Read only
Description	This attribute counts the LLC packets reassembled and transmitted to the LLC relay. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma dataBlocksUp (dataBUp)

Access	Read only
Description	This attribute counts the uplink RLC data blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma controlBlocksUp (ctrlBUp)

Access	Read only
Description	This attribute counts the uplink RLC control blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma invalidBlocksUp (invalidBUp)

Access	Read only
Description	This attribute counts the uplink invalid radio blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma invalidProtocolErrorBlocksUp (invalidProtErrBUp)

Access	Read only
Description	This attribute counts the uplink invalid radio blocks received with invalid RLC protocol. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma outOfSequenceBlocksUp (outOfSeqBUp)

Access	Read only
Description	This attribute counts the data blocks received uplink with Block Sequence Number outside the received window. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma packetAckNackUp (pktANUp)

Access	Read only

Description	This attribute counts the PACKET-UPLINK-ACK-NACK messages received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma totalRetransmissionRequested (totRtxReq)

Access	Read only
Description	This attribute counts the RLC/MAC block retransmission requests. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuEdgeDataBlocksUp (EDtBlkUp)

Access	Read only
Description	This attribute counts the cumulative number of EGPRS RLC data blocks received by the PCU on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuEdgeUpCumMeanBep (EUpCumMnBep)

Access	Read only
Description	This attribute counts the cumulated value of the assumed BEP received by the PCU in each EGPRS RLC data block on this TDMA.

	The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuEdgeUpNbsMeanBep (EUpNbMnBep)

Access	Read only
Description	This attribute counts the MEAN_BEP values received by the PCU in each EGPRS RLC data block on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell Tdma DownlkStatistics (DLStats)

Properties	Operational
Description	This group contains statistical data collected by counters in downlink transmission mode.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma llcPacketsDn (llcPktDn)

Access	Read only
Description	This attribute counts the LLC packets segmented into RLC data blocks received. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma dataBlocksDn (dataBDn)

Access	Read only
Description	This attribute counts the downlink RLC data blocks transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma controlBlocksDn (ctrlBDn)

Access	Read only
Description	This attribute counts the downlink RLC control blocks transmitted. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma retransmittedDataBlocksDn (rtxDataBDn)

Access	Read only
Description	This attribute counts the data blocks retransmitted downlink. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma packetAckNackDn (pktANDn)

Access	Read only
Description	This attribute counts the PACKET-DOWNLINK-ACK-NACK messages transmitted.

	The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuEdgeDataBlocksDn (EDtBlkDn)

Access	Read only
Description	This attribute counts the cumulative number of EGPRS RLC data blocks sent by the PCU on this TDMA. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuEdgeDnCum8PskMeanBep (EDnCum8PMnB)

Access	Read only
Description	This attribute counts the cumulative value of the 8PSK_BEP derived from the 8PSK_MEAN_BEP received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (8PSK_MEAN_BEP). The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuEdgeDnNbs8PskMeanBep (EDnNb8PMnB)

Access	Read only
Description	This attribute counts the 8PSK_MEAN_BEP values received from a MS in this TDMA in the EGPRS BEP Link Quality

	Measurements (8PSK_MEAN_BEP). The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuEdgeDnCumGmskMeanBep (EDnCumGMnB)

Access	Read only
Description	This attribute counts the cumulative value of the GMSK_BEP derived from the GMSK_MEAN_BEP received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (GMSK_MEAN_BEP). The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma pcuEdgeDnNbsGmskMeanBep (EDnNbGMnB)

Access	Read only
Description	This attribute counts the GMSK_MEAN_BEP values received from a MS in this TDMA in the EGPRS BEP Link Quality Measurements (GMSK_MEAN_BEP). The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell Tdma PdchAllocationStatistics (PdchAllocStats)

Properties	Operational

Description	This group contains statistical data.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma configuredTimeslots (cfgTs)

Access	Read only
Description	This attribute indicates the number of configured timeslots.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma unavailableTimeslots (unavailTs)

Access	Read only
Description	This attribute indicates the unavailable timeslots as signalled by the BSC.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma upActiveTimeslots (upActTs)

Access	Read only
Description	This attribute indicates the current number of active uplink timeslots bearing at least one TBF.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma dnActiveTimeslots (dnActTs)

Access	Read only
Description	This attribute indicates the current number of active downlink timeslots bearing at least one TBF.
Mib	Pcusa

Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell Tdma ReleaseStatistics (RelStats)

Properties	Operational
Description	This group contains statistical data collected by release counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma tbfNormalReleaseUp (tbfNormRelUp)

Access	Read only
Description	This attribute counts the uplink TBFs that terminated normally. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma tbfNormalReleaseDn (tbfNormRelDn)

Access	Read only
Description	This attribute counts the downlink TBFs that terminated normally. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma noPacketResourceReq (noPktResReq)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to non-receipt of Packet Resource Request. The counter wraps to zero when it exceeds its maximum value.

Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComNN002Max (lOCNN002Max)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to V(Q) non-progression. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComT3169 (lOCT3169)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to T3169 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComNT0001 (lOCNT0001)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to NT0001 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComT3195 (lOCT3195)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to T3195 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComT3191 (lOCT3191)

Access	Read only
Description	This attribute counts the TBFs abnormally released due to T3191 timer expiry. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell Tdma
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink CgiCell Tdma component.

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma localBusy (locBus)

Description	This attribute counts the blocks sent with the window stalled indicator set during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma remoteBusy (remBus)

Description This attribute counts the blocks received with the window stalled indicator set during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma configuredTimeslots (cfgTs)

Description This attribute indicates the number of configured timeslots at the end of the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeUnavailableTimeslots (cumUnavailTs)

Description This attribute indicates the cumulative number of unavailable timeslots at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeUpActiveTimeslots (cumUpActTs)

Description This attribute indicates the cumulative number of active uplink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeUpTbfPerTimeslots (cumUpTbfPerTs)

Description This attribute indicates the cumulative number of uplink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeDnActiveTimeslots (cumDnActTs)

Description — This attribute indicates the cumulative number of active downlink timeslots bearing at least one TBF at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeDnTbfPerTimeslots (cumDnTbfPerTs)

Description — This attribute indicates the cumulative number of downlink TBFs per timeslots for all the timeslots in the TDMA at the sample time during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma nbSamples (nbS)

Description — This attribute indicates how many samples were taken during the statistics collection interval.

This value can be used with the cumulative attribute for average calculs.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma llcPacketsUp (llcPktUp)

Description — This attribute counts the LLC packets reassembled and transmitted to the LLC relay during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma dataBlocksUp (dataBUp)

Description — This attribute counts the uplink RLC data blocks received during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma controlBlocksUp (ctrlBUp)

Description: This attribute counts the uplink RLC control blocks received during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma invalidBlocksUp (invalidBUp)

Description: This attribute counts the uplink invalid radio blocks received during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma invalidProtocolErrorBlocksUp (invalidProtErrBUp)

Description: This attribute counts the uplink invalid radio blocks received with invalid RLC protocol during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma outOfSequenceBlocksUp (outOfSeqBUp)

Description: This attribute counts the data blocks received uplink with Block Sequence Number outside the received window during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma packetAckNackUp (pktANUp)

Description: This attribute counts the PACKET-UPLINK-ACK-NACK messages received during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma totalRetransmissionRequested (totRtxReq)

Description: This attribute counts the RLC/MAC block retransmission requests during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeUpRxQual (cumUpRxQual)

Description: This attribute indicates the cumulative uplink RxQual value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeUpRxLev (cumUpRxLev)

Description This attribute indicates the cumulative uplink RxLev value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma nbSamplesUpQuality (nbSamplesUpQuality)

Description This attribute counts the samples for RxQual and RxLev cumulative values during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma llcPacketsDn (llcPktDn)

Description This attribute counts the LLC packets segmented into RLC data blocks received during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma dataBlocksDn (dataBDn)

Description This attribute counts the downlink RLC data blocks transmitted during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma controlBlocksDn (ctrlBDn)

Description This attribute counts the downlink RLC control blocks transmitted during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma retransmittedDataBlocksDn (rtxDataBDn)

Description This attribute counts the data blocks retransmitted downlink during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma packetAckNackDn (pktANDn)

Description: This attribute counts the PACKET-DOWNLINK-ACK-NACK messages transmitted during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma cumulativeDnRxQual (cumDnRxQual)

Description: This attribute indicates the cumulative downlink RxQual value during the statistics collection interval.

The average can be calculated by dividing this attribute value by the *nbSamples* value.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma nbSamplesDnQuality (nbSamplesDnQuality)

Description: This attribute counts the samples for RxQual cumulative values during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma tbfNormalReleaseUp (tbfNormRelUp)

Description: This attribute counts the uplink TBFs which terminated normally during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma tbfNormalReleaseDn (tbfNormRelDn)

Description: This attribute counts the downlink TBFs which terminated normally during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma noPacketResourceReq (noPktResReq)

Description: This attribute counts the TBFs abnormally released due to non receipt of Packet Resource Request during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComNN002Max (lOCNN002Max)

Description	This attribute counts the TBFs abnormally released due to V(Q) non progression during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComT3169 (lOCT3169)

Description	This attribute counts the TBFs abnormally released due to timer T3169 expiry during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComNT0001 (lOCNT0001)

Description	This attribute counts the TBFs abnormally released due to NT0001 timer expiry during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComT3195 (lOCT3195)

Description	This attribute counts the TBFs abnormally released due to T3195 timer expiry during the statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma lossOfComT3191 (lOCT3191)

Description	This attribute counts the TBFs abnormally released due to T3191 timer expiry during the statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk CgiCell Tdma Timeslot (Ts)

Instance	Decimal (0..7)
Groups	"GROUP Pcusa Conn PcmLk CgiCell Tdma Ts Operational (Oper)"
Scope	Device

Description	*Pcusa/n Conn/n PcmLink/n Cell/n Tdma/n Ts/n* This dynamic component represents a GPRS timeslot in a TDMA. This element is used to obtain configuration information.
Mib	Pcusa
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk CgiCell Tdma Ts Operational (Oper)

Properties	Operational
Description	This group contains all attributes describing radio parts of the network.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma Ts tsNumber (tsNum)

Access	Read only
Description	This attribute indicates the 16 kbit/s timeslot in the DS0 channel.
Mib	Pcusa
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma Ts tsState (state)

Access	Read only
Description	This attribute indicates the state of a *Timeslot*.
Mib	Pcusa
Values	unsynchronized synchronized
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma Ts ds0Channel (ds0Ch)

Access	Read only

Description	This attribute indicates the DS0 channel number carrying this TDMA timeslot in the AGPRS PCM.
Mib	Pcusa
Values	Decimal (0..30)
Default	No default

COMPONENT Pcusa Conn PcmLk CgiCell Tdma JokerTimeslot (JokerTs)

Instance	Decimal (0..23)
Groups	"GROUP Pcusa Conn PcmLk CgiCell Tdma JokerTs Operational (Oper)"
Scope	Device
Description	*Pcusa/n Conn/n PcmLink/n Cell/n Tdma/n* Joker*Ts/n* This dynamic component represents a GPRS EDGE joker timeslot in a TDMA. This element is used to obtain configuration information.
Mib	Pcusa
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk CgiCell Tdma JokerTs Operational (Oper)

Properties	Operational
Description	This group contains all attributes describing radio parts of the network.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma JokerTs tsNumber (tsNum)

Access	Read only
Description	This attribute indicates the 16 kbit/s timeslot in the DS0 channel.
Mib	Pcusa
Values	Decimal (0..3)

Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma JokerTs tsState (state)

Access	Read only
Description	This attribute indicates the state of a *Timeslot*.
Mib	Pcusa
Values	unsynchronized synchronized
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Tdma JokerTs ds0Channel (ds0Ch)

Access	Read only
Description	This attribute indicates the DS0 channel number carrying this TDMA timeslot in the AGPRS PCM.
Mib	Pcusa
Values	Decimal (0..30)
Default	No default

COMPONENT Pcusa Conn PcmLk CgiCell Ccch (Ccch)

Groups	"GROUP Pcusa Conn PcmLk CgiCell Ccch UplkStatistics (ULStats)" "GROUP Pcusa Conn PcmLk CgiCell Ccch DownlkStatistics (DLStats)"

"COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell Ccch"

Scope	Device

Description	*Pcusa/n Conn/n PcmLink/n Cell/n Ccch* This dynamic component represents the *Cell*'s common control channel.
Mib	Pcusa
Common Verbs	Help List Display

GROUP Pcusa Conn PcmLk CgiCell Ccch UplkStatistics (ULStats)

Properties	Operational
Description	This group contains statistical data collected by counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmediateAssignment (immAssUp)

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT messages generated by the PCU to the mobile station in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmAssigRejectNoPdch (noPdch)

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of "No PDCH available for GPRS" in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmAssigRejectNoTs (noTs)

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmAssigRejectNoTbf (noTbf)

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch channelRequest (chanReq)

Access	Read only
Description	This attribute counts the CHANNEL-REQUEST messages received by the PCU from the mobile station in the first phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.

Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch packetResourceRequest (pktResReq)

Access	Read only
Description	This attribute counts the PACKET-RESOURCE-REQUEST messages received by the PCU from the mobile station in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch deleteIndicationUp (delIndUp)

Access	Read only
Description	This attribute counts the DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for uplink transfer is dropped. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch packetUpAssignment (pktUpAss)

Access	Read only
Description	This attribute counts the PACKET-UPLINK-ASSIGNMENT messages generated by the PCU after a PACKET-RESOURCE-REQUEST in the second phase of the two-phase access uplink TBF establishment.

The counter wraps to zero when it exceeds its maximum value.

Mib: Pcusa

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfPacketAccessRejectNoPdch (pktNoPdch)

Access: Read only

Description: This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment.

The counter wraps to zero when it exceeds its maximum value.

Mib: Pcusa

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfPacketAccessRejectNoTs (pktNoTs)

Access: Read only

Description: This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment.

The counter wraps to zero when it exceeds its maximum value.

Mib: Pcusa

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfPacketAccessRejectNoTbf (pktUpNoTbf)

Access: Read only

Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access uplink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

GROUP Pcusa Conn PcmLk CgiCell Ccch DownlkStatistics (DLStats)

Properties	Operational
Description	This group contains statistical data collected by counters.
Mib	Pcusa

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch dnTbfImmediateAssignment (immAssDn)

Access	Read only
Description	This attribute counts the IMMEDIATE-ASSIGNMENT messages sent for a downlink TBF establishment from the PCU to the mobile station. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch pagingRequest (pagReq)

Access	Read only
Description	This attribute counts the PAGING-REQUEST messages generated by the PCU to the mobile station. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch deleteIndicationDn (delIndDn)

Access	Read only
Description	This attribute counts the DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for downlink transfer is dropped. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch packetDnAssignment (pktDnAss)

Access	Read only
Description	This attribute counts the PACKET-DOWNLINK-ASSIGNMENT messages generated by the PCU to the mobile station in the downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch dnTbfPacketAccessRejectNoPdch (pktDnNoPdch)

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.

Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch dnTbfPacketAccessRejectNoTs (pktDnNoTs)

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch dnTbfPacketAccessRejectNoTbf (pktDnNoTbf)

Access	Read only
Description	This attribute counts the PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access downlink TBF establishment. The counter wraps to zero when it exceeds its maximum value.
Mib	Pcusa
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS PCUSupportApplication Connection PcmLink CgiCell Ccch
Description	The statistics record generated by the PCUSupportApplication Connection PcmLink CgiCell Ccch component.

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmediateAssignment (immAssUp)

Description — This attribute counts IMMEDIATE-ASSIGNMENT messages generated by the PCU to the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmAssigRejectNoPdch (noPdch)

Description — This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmAssigRejectNoTs (noTs)

Description — This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfImmAssigRejectNoTbf (noTbf)

Description — This attribute counts IMMEDIATE-ASSIGNMENT-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch channelRequest (chanReq)

Description — This attribute counts CHANNEL-REQUEST messages received by the PCU from the mobile station in the first phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch packetResourceRequest (pktResReq)

Description This attribute counts PACKET-RESOURCE-REQUEST messages received by the PCU from the mobile station in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch deleteIndicationUp (delIndUp)

Description This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for uplink transfer is dropped during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch packetUpAssignment (pktUpAss)

Description This attribute counts PACKET-UPLINK-ASSIGNMENT messages generated by the PCU after a PACKET-RESOURCE-REQUEST in the second phase of the two_phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfPacketAccessRejectNoPdch (pktNoPdch)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfPacketAccessRejectNoTs (pktNoTs)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch upTbfPacketAccessRejectNoTbf (pktUpNoTbf)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access uplink TBF establishment during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch dnTbfImmediateAssignment (immAssDn)

Description This attribute counts IMMEDIATE-ASSIGNMENT messages sent for a downlink TBF establishment from the PCU to the mobile station during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch pagingRequest (pagReq)

Description This attribute counts PAGING-REQUEST messages generated by the PCU to the mobile station during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch deleteIndicationDn (delIndDn)

Description This attribute counts DELETE-INDICATION messages sent by the BTSs when an IMMEDIATE-ASSIGNMENT message for downlink transfer is dropped during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch packetDnAssignment (pktDnAss)

Description This attribute counts PACKET-DOWNLINK-ASSIGNMENT messages generated by the PCU to the mobile station in the downlink TBF establishment phase during the statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch dnTbfPacketAccessRejectNoPdch (pktDnNoPdch)

Description This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “No PDCH available for GPRS” in the second phase of the two-phase

access downlink TBF establishment during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch dnTbfPacketAccessRejectNoTs (pktDnNoTs)

Description: This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum MS per TS is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Pcusa Conn PcmLk CgiCell Ccch dnTbfPacketAccessRejectNoTbf (pktDnNoTbf)

Description: This attribute counts PACKET-ACCESS-REJECT messages generated by the PCU to the mobile station with a cause of “Maximum TBF per TDMA is reached” in the second phase of the two-phase access downlink TBF establishment during the statistics collection interval.

Values: Decimal (0..4294967295)

COMPONENT Pcusa Conn PcmLk CgiCell MobileStation (Ms)

Instance: Decimal (0..4294967295)

Scope: Device

Description: *Pcusa/n Conn/n PcmLink/n Cell/n MobileStation/n*
This dynamic component represents a mobile station in a *Cell*. It is used to display information on the mobile.

Mib: Pcusa

Common Verbs:
- Help
- List
- Display

Nortel Networks Multiservice Switch 7400/15000/20000

Component Pcusa

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Pcusn

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Nortel Networks Multiservice Switch 7400/15000/20000

Component Pcusn

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COMPONENT PacketControlUnitSupportNode (Pcusn)

Scope	Application
Description	*PacketControlUnitSupportNode* This component represents the Packet Control Unit Support Node (PCUSN) functionality of GPRS and organizes all its related subcomponents.
Mib	WirelessNssBssPcu
Subcomponents	"COMPONENT Pcusn GprsTransportLayer (Gtl)"
Opt. Subcomp.	"COMPONENT Pcusn NetworkServiceEntity (Nse)"
Common Verbs	Help List Display Add DELete

COMPONENT Pcusn GprsTransportLayer (Gtl)

Groups	"GROUP Pcusn Gtl NsProv"
Scope	Application
Description	*Pcusn GprsTransportLayer* This component represents the Transport Layer functionality of

	the Gb interface of the Packet Control Unit Support Node (PCUSN).
Mib	WirelessNssBssPcu
Common Verbs	Help List Display

GROUP Pcusn Gtl NsProv

Properties	Provisioned
Description	This group contains provisionable attributes for the Network Service (NS) protocol layer of GPRS.
Mib	WirelessNssBssPcu

ATTRIBUTE Pcusn Gtl nsBlockTimer (tnsBlk)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the Network Service Virtual Connection (NS-VC) BLOCK and UNBLOCK procedures. This is the time interval between an NS-BLOCK and NS-BLOCK ACK, or between an NS-UNBLOCK and NS-UNBLOCK ACK. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU). The default value is the value provided in the GPRS specification.
Mib	WirelessNssBssPcu
Values	Decimal (1..120)
Units	seconds
Default	3

ATTRIBUTE Pcusn Gtl nsBlockRetries (nBlk)

Access	Read: All Write: All
Description	This attribute specifies the number of times the NS-BLOCK message can be retried if NS-BLOCK ACK is not received before the *nsBlockTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (0..10)
Default	3

ATTRIBUTE Pcusn Gtl nsUnBlockRetries (nUnBlk)

Access	Read: All Write: All
Description	This attribute specifies the number of times the NS-UNBLOCK message can be retried if NS-UNBLOCK ACK is not received before the *nsBlockTimer* expires. The default value is the value provided in the GPRS specification.
Mib	WirelessNssBssPcu
Values	Decimal (3..15)
Default	3

ATTRIBUTE Pcusn Gtl nsResetTimer (tnsReset)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the Network Service Virtual Connection (NS-VC) RESET procedure. This is the time interval between an NS-RESET and NS-RESET ACK. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU). The default value is the value provided in the GPRS specification.
Mib	WirelessNssBssPcu

Values	Decimal (1..120)
Units	seconds
Default	3

ATTRIBUTE Pcusn Gtl nsResetRetries (nReset)

Access	Read: All Write: All
Description	This attribute specifies the times the NS-RESET message can be retried if NS-RESET ACK is not received before the *nsResetTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (3..10)
Default	5

ATTRIBUTE Pcusn Gtl nsTestTimer (tnsTest)

Access	Read: All Write: All
Description	This attribute specifies the periodicity of the Network Service Virtual Connection (NS-VC) TEST procedure which is the initiation of the NS-ALIVE Protocol Data Unit (PDU). The range is the value provided in the GPRS specification.
Mib	WirelessNssBssPcu
Values	Decimal (1..60)
Units	seconds
Default	30

ATTRIBUTE Pcusn Gtl nsAliveTimer (tnsAlive)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the Network Service Virtual Connection (NS-VC) ALIVE procedure. This is the time interval between an NS-ALIVE and NS-ALIVE ACK.

	The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU). The default value is the value provided in the GPRS specification.
Mib	WirelessNssBssPcu
Values	Decimal (1..10)
Units	seconds
Default	3

ATTRIBUTE Pcusn Gtl nsAliveRetries (nAlive)

Access	Read: All Write: All
Description	This attribute specifies the number of times the NS-ALIVE message can be retried if NS-ALIVE ACK is not received before the *nsAliveTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (3..10)
Default	10

COMPONENT Pcusn NetworkServiceEntity (Nse)

Instance	Decimal (0..65535)
Groups	"GROUP Pcusn Nse Provisioned (Prov)"
Scope	Application
Description	*Pcusn NetworkServiceEntity/<nsei>* This component represents a Network Service Entity (NSE). Each NSE is associated with a single Packet Control Unit (PCU) and is identified by means of a Network Service Entity Identifier (NSEI). The same NSE can be provisioned in multiple PcGtl

	instances to enable load sharing.
Mib	WirelessNssBssPcu
Common Verbs	Help List Display Add DELete

GROUP Pcusn Nse Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the BSS GPRS Protocol (BSSGP) layer of GPRS.
Mib	WirelessNssBssPcu

ATTRIBUTE Pcusn Nse linkToPcuConn (lToPcu)

Access	Read: All Write: All
Description	This attribute specifies a *Pcusa Connection* component that this NSE associates with. The purpose is to associate an NSE (Gb interface) with a *Connection* which groups the PCM links to a BSC (a GPRS interface). The operator will provision this link when setting up the conections through the PCUSN for the BSC to SGSN.
Mib	WirelessNssBssPcu
Values	Link (Service, linkToNse)
Default	No default

ATTRIBUTE Pcusn Nse bvcBlockUnblockTimer (tBlkUnblk)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the blocking and unblocking procedures. The Packet Control Unit (PCU) sends a

BVC-BLOCK (UNBLOCK) Protocol Data Unit (PDU) to the Serving GPRS Support Node (SGSN) and starts the *bvcBlockUnblockTimer*. The PCU stops the timer upon reception of a BVC-BLOCK (UNBLOCK)-ACK PDU from the SGSN. If the timer expires, the PCU retries the BVC-BLOCK(UNBLOCK) procedure.

The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).

Mib	WirelessNssBssPcu
Values	Decimal (1..30)
Units	seconds
Default	15

ATTRIBUTE Pcusn Nse bvcBlockRetries (nBvcBlk)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Packet Control Unit (PCU) can send the BVC-BLOCK Protocol Data Unit (PDU) in case a BVC-BLOCK ACK is not received before the *bvcBlockUnblockTimer* expiry (defined in *Pcusn Nse* component).
Mib	WirelessNssBssPcu
Values	Decimal (0..6)
Default	3

ATTRIBUTE Pcusn Nse bvcUnblockRetries (nBvcUnblk)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Packet Control Unit (PCU) can resend the BVC-UNBLOCK Protocol

	Data Unit (PDU) in case a BVC-UNBLOCK ACK is not received before the *bvcBlockUnblockTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (0..6)
Default	3

ATTRIBUTE Pcusn Nse bvcResetReqTimer (tReset)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the BVC-RESET procedure. The Packet Control Unit (PCU) sends a BVC-RESET Protocol Data Unit (PDU) to the Serving GPRS Support Node (SGSN) and starts the *bvcResetReqTimer* for a BVC. The PCU stops the timer upon reception of a BVC-RESET-ACK PDU from the SGSN. If the timer expires, the PCU retries the BVC-RESET procedure. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessNssBssPcu
Values	Decimal (1..120)
Units	seconds
Default	60

ATTRIBUTE Pcusn Nse bvcResetReqRetries (nBvcRst)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Packet Control Unit (PCU) can resend the BVC-RESET Protocol Data Unit (PDU) in case a BVC-RESET ACK is not received before the *bvcResetReqTimer* expires.
Mib	WirelessNssBssPcu

Values	Decimal (0..6)
Default	3

ATTRIBUTE Pcusn Nse suspendTimer (tSuspend)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the SUSPEND procedure. The Packet Control Unit (PCU) sends a SUSPEND Protocol Data Unit (PDU) to the Serving GPRS Support Node (SGSN) and starts the *suspendTimer*. The PCU stops the timer upon reception of a SUSPEND-ACK (NACK) PDU from the SGSN. If the timer expires, the PCU retries the SUSPEND procedure. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessNssBssPcu
Values	Decimal (1..10)
Units	seconds
Default	5

ATTRIBUTE Pcusn Nse suspendRetries (nSuspend)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Packet Control Unit (PCU) can resend the SUSPEND Protocol Data Unit (PDU) in case a SUSPEND ACK is not received before the *suspendTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (0..6)
Default	3

ATTRIBUTE Pcusn Nse resumeTimer (tResume)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the RESUME procedure. The Packet Control Unit (PCU) sends a RESUME Protocol Data Unit (PDU) to the Serving GPRS Support Node (SGSN) and starts the *resumeTimer*. The PCU stops the timer upon reception of a RESUME-ACK (NACK) PDU from the SGSN. If the timer expires, the PCU retries the RESUME procedure. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessNssBssPcu
Values	Decimal (1..10)
Units	seconds
Default	5

ATTRIBUTE Pcusn Nse resumeRetries (nResume)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Packet Control Unit (PCU) can resend the RESUME PDU in case a RESUME ACK is not received before the *resumeTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (0..6)
Default	3

ATTRIBUTE Pcusn Nse raCapabilityUpTimer (tRaUp)

Access	Read: All Write: All

Description	This attribute specifies the timer to guard the RA-CAPABILITY-UPDATE procedure. When the Packet Control Unit (PCU) sends a RA-CAPABILITY-UPDATE Protocol Data Unit (PDU) to the Serving GPRS Support Node (SGSN) it starts the *raCapabilityUpTimer*. The PCU stops the timer upon reception of a RA-CAPABILITY-UPDATE-ACK PDU from the SGSN. If the timer expires, the PCU retries the RA-CAPABILITY-UPDATE procedure. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessNssBssPcu
Values	Decimal (1..30)
Units	seconds
Default	15

ATTRIBUTE Pcusn Nse raCapabiltyUpRetries (nRaUp)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Packet Control Unit (PCU) can resend the RA-CAPABILITY-UPDATE PDU in case a RA-CAPABILITY-UPDATE ACK is not received before the *raCapabilityUpTimer* expires.
Mib	WirelessNssBssPcu
Values	Decimal (0..6)
Default	3

ATTRIBUTE Pcusn Nse flowControlMaxRate (flCntlMaxRt)

Access	Read: All Write: All
Description	This attribute specifies the minimum interval between sending consequent Flow Control Protocol Data Unit (PDU) for a given BSS GPRS Virtual Connection (BVC) or for a Mobile Station

	(MS). Changing the value can affect the flow control function at the Packet Control Unit (PCU) level, with the Logical Link Control (LLC) frames discarded due to overflow of the MS or the BVC buckets.
Mib	WirelessNssBssPcu
Values	Decimal (100..10000)
Units	msec
Default	1000

ATTRIBUTE Pcusn Nse tsFlowCntlBucketSize (tsBmax)

Access	Read: All Write: All
Description	This attribute specifies the maximum bucket size (Bmax) for a BSS GPRS Virtual Connection (BVC) Flow Control procedure. The value is the BVC Max Bucket size for a BVC with 1 time slot. The Packet Control Unit (PCU) calculates the actual BVC Max Bucket size for the configuration, by multiplying this provisioned value by the number of time slots in the cell, dynamically given by the Base Station Control (BSC). The default value has been estimated based on the *msFlowCntlBucketSize* default value, with 8 Mobiles in downlink transfer. The unit is 100 bytes.
Mib	WirelessNssBssPcu
Values	Decimal (0..65535)
Default	720

ATTRIBUTE Pcusn Nse tsLeakRate (tsLeakRt)

Access	Read: All Write: All
Description	This attribute specifies the leak rate parameter for a BSS GPRS Virtual Connection (BVC) with 1 time slot. The Packet Control Unit (PCU) calculates the actual BVC leak rate for the configuration, by multiplying this provisioned value by the

	number of time slots in the cell, dynamically given by the Base Station Control (BSC). The default value assumes a CS1 Mobile Station (MS), with a throughput of 10000 bit/s, with assumption that the flow is statistically regular in the cell. The unit is 100 bit/s.
Mib	WirelessNssBssPcu
Values	Decimal (0..65535)
Default	100

ATTRIBUTE Pcusn Nse msFlowCntlBucketSize (msBmax)

Access	Read: All Write: All
Description	This attribute specifies the Mobile Station (MS) maximum bucket size. The default value assumes 6 Logical Link Control (LLC) frames in the bucket. The unit is 100 bytes.
Mib	WirelessNssBssPcu
Values	Decimal (0..65535)
Default	90

ATTRIBUTE Pcusn Nse linkToSlaveNse (lTonse)

Access	Read: All Write: All
Description	This attribute specifies the corresponding *PcGtl Nse* component instances provisioned on the FPs. The purpose is to provide common parameters to all instances of this NSE on the FPs and also to associate the *Pcusa Connection* component with this NSE.
Mib	WirelessNssBssPcu
List of	Link (Service, linkToMasterNse)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Pcusn

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Piwf

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Piwf

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COMPONENT PppIwf (Piwf)

Instance	Decimal (1..65535)
Groups	"GROUP Piwf CustomerIdentifierData (CidData)" "GROUP Piwf IfEntryProv (IfEntry)" "GROUP Piwf OsiState (State)" "GROUP Piwf OperationalStatus (OperStatus)"
Scope	Application
Description	*PppIwf/n* This component defines an instance of the *Ppp* interworking function. It provides a means for Ppp (RFC1661) to interwork with different forms of transport protocols (MPLS and AtmMpe).
Mib	PppIwf
Subcomponents	"COMPONENT Piwf Link (Lnk)" "COMPONENT Piwf LinkQualityMonitor (Lqm)" "COMPONENT Piwf NetworkControlProtocol (Ncp)" "COMPONENT Piwf Framer"
Opt. Subcomp.	"COMPONENT Piwf AtmAdaptionPoint (AtmAp)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Piwf CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	PppIwf

ATTRIBUTE Piwf customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	PppIwf
Values	Decimal (0; 1..8191)
Default	0

GROUP Piwf IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	PppIwf

ATTRIBUTE Piwf ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	PppIwf
Values	up down testing
Default	up

ATTRIBUTE Piwf ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	PppIwf
Values	Decimal (1..65535)
Default	No default

GROUP Piwf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	PppIwf

ATTRIBUTE Piwf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	PppIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Piwf operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: PppIwf

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Piwf usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: PppIwf

Values: idle
active (activ)
busy

Default: idle

GROUP Piwf OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: PppIwf

ATTRIBUTE Piwf snmpOperStatus

Access: Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	PppIwf
Values	up down testing
Default	up

COMPONENT Piwf Link (Lnk)

Groups	"GROUP Piwf Lnk Provisioned (Prov)" "GROUP Piwf Lnk Operational (Oper)"
Scope	Application
Description	*Ppp/n Link* This component is used to contain all the attributes related to the *Ppp* link. This is a mandatory subcomponent of *Ppp* and does not need to be added.
Mib	PppIwf
Common Verbs	Help List Display

GROUP Piwf Lnk Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Ppp* Link component.
Mib	PppIwf

ATTRIBUTE Piwf Lnk configInitialMru (cimru)

Access	Read and write

Description	This is the initial Maximum Receive Unit (Mru) that the local *Ppp* entity will advertise to the remote entity. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	PppIwf
Values	Decimal (68..18000)
Units	octets
Default	18000

ATTRIBUTE Piwf Lnk configMagicNumber (cmn)

Access	Read and write
Description	If ***enabled*** the local node will attempt to perform Magic Number negotiation with the remote node. If ***disabled*** this negotiation is not performed. In any event, the local node will comply with any magic number negotiations attempted by the remote node, per the *Ppp* specification. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	PppIwf
Values	disabled enabled
Default	enabled

ATTRIBUTE Piwf Lnk restartTimer (rtimer)

Access	Read and write
Description	This is the time, in milliseconds, that *Ppp* will wait for a response to a configure request or a terminate request before retrying.
Mib	PppIwf
Values	Decimal (1000..10000)
Units	msec
Default	3000

ATTRIBUTE Piwf Lnk continuityMonitor (cntmon)

Access	Read and write
Description	This attribute turns on/off (***enabled/disabled***) the Link Continuity Monitor. If set to ***enabled***, periodic keep alive echo packet will be sent over the *Ppp* link. If set to ***disabled***, no keep alive packets will be sent. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	PppIwf
Values	enabled disabled
Default	disabled

ATTRIBUTE Piwf Lnk negativeAckTries (naks)

Access	Read and write
Description	This attribute specifies the maximum negative acknowledgments sent to the remote *Ppp* entity during negotiation before defaulting its configuration parameters.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	10

ATTRIBUTE Piwf Lnk qualityThreshold (quality)

Access	Read and write
Description	This attribute specifies the minimum allowed line quality before the line is considered too poor to continue operation. The value for this attribute is a percentage measure of the line quality given in integers (10 to 99). The higher the value, the more stringent the line requirements.
Mib	PppIwf
Values	Decimal (10..99)
Units	%

Default	90

ATTRIBUTE Piwf Lnk qualityWindow (qwindow)

Access	Read and write
Description	This attribute specifies the number of seconds used for sampling line quality. If line quality drops below the level set with the *qualityThreshold* attribute during this window, this instance of *Ppp* will be marked down until line quality recovers.
Mib	PppIwf
Values	Decimal (10..400)
Units	seconds
Default	30

ATTRIBUTE Piwf Lnk terminateRequestTries (term)

Access	Read and write
Description	This attribute specifies the maximum terminate requests to be sent, when closing the connection, and not answered before this instance of *Ppp* enters a closing state.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	10

ATTRIBUTE Piwf Lnk configureRequestTries (try)

Access	Read and write
Description	This attribute specifies the number of configuration requests that will be sent out and not answered before this instance of *Ppp* enters a listening state. If both sides enter the listening state then the link will not come up. To eliminate this possibility, this attribute should be set to 1000000000. This will ensure that this end of the *Ppp* link will continue to try until the link is good.
Mib	PppIwf
Values	Decimal (0..4294967295)

Default	1000000000

GROUP Piwf Lnk Operational (Oper)

Properties	Operational
Description	This group contains the *Ppp* Link Operational attributes.
Mib	PppIwf

ATTRIBUTE Piwf Lnk operState (state)

Access	Read only
Description	This is the operational state of the Link Control Protocol. For more information as to the definition of each state see RFC1331 section 5.3.
Mib	PppIwf
Values	initial starting closed stopped closing stopping reqsent ackrcvd acksent opened
Default	initial

ATTRIBUTE Piwf Lnk lineCondition (lcond)

Access	Read only
Description	This attribute describes the condition of the physical line that *Ppp* is running over. ***ok***: The condition of the line is good. ***looped***: The line is looped back on itself, probably at the remote end. ***noClock***: There is a hardware problem with the line. The cable may not be plugged in correctly.

	badLineCondition: The quality of the line is below the *qualityThreshold*.
Mib	PppIwf
Values	ok looped noClock badLineCondition
Default	ok

ATTRIBUTE Piwf Lnk badAddresses (ba)

Access	Read only
Description	This attribute counts the number of packets received with an incorrect Address Field. If this count is going up quickly, it could indicate that there is a line quality problem or that the remote end is transmitting a protocol other than *Ppp*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Lnk badControls (bc)

Access	Read only
Description	This attribute counts the number of packets received on this link with an incorrect Control Field. If this count is going up quickly, it could indicate that there is a line quality problem or that the remote end is transmitting a protocol other than *Ppp*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Lnk packetTooLongs (ptl)

Access	Read only
Description	This attribute counts the number of packets received that have been discarded because their length exceeded the Maximum Receive Unit (Mru). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Lnk badFcss (bfcs)

Access	Read only
Description	This attribute counts the number of packets received that have been discarded due to having an incorrect Frame Check Sequence (Fcs). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Lnk localMru (lmru)

Access	Read only
Description	This is the current value of the Maximum Receive Unit (Mru) for the local *Ppp* Entity. This value is the Mru that the remote entity is using when sending packets to the local *Ppp* entity.
Mib	PppIwf
Values	Decimal (1..2147483648)
Units	octets
Default	1

ATTRIBUTE Piwf Lnk remoteMru (rmru)

Access	Read only
Description	This is the current value of the Maximum Receive Unit (Mru) for the remote *Ppp* entity. This value is the Mru that the local entity is using when sending packets to the remote *Ppp* entity.
Mib	PppIwf
Values	Decimal (1..2147483648)
Units	octets
Default	No default

ATTRIBUTE Piwf Lnk transmitFcsSize (tfcs)

Access	Read only
Description	This is the size of the Frame Check Sequence (Fcs) in bits that the local node will generate when sending packets to the remote node.
Mib	PppIwf
Values	Decimal (0..128)
Units	bits
Default	0

ATTRIBUTE Piwf Lnk receiveFcsSize (rfcs)

Access	Read only
Description	This is the size of the Frame Check Sequence (Fcs) in bits that the remote node will generate when sending packets to the local node.
Mib	PppIwf
Values	Decimal (0..128)
Units	bits
Default	0

COMPONENT Piwf LinkQualityMonitor (Lqm)

Groups	"GROUP Piwf Lqm Provisioned (Prov)" "GROUP Piwf Lqm Operational (Oper)"
Scope	Application
Description	*Ppp/n LinkQualityMonitor* This component is used to contain all the operational attributes for the *Ppp* Link Quality Monitor. This is a mandatory subcomponent of *Ppp* and does not need to be manually added.
Mib	PppIwf
Common Verbs	Help List Display

GROUP Piwf Lqm Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Ppp* Link Quality Monitor component.
Mib	PppIwf

ATTRIBUTE Piwf Lqm configPeriod (cfgper)

Access	Read and write
Description	This is the *Lqm* reporting period that the local *Ppp* entity will attempt to negotiate with the remote entity, in units of hundredths of a second. A value of “0” allows the remote *Ppp* entity to determine the reporting period. A value greater than 180,000 (1/2 hour) allows the period to be determined dynamically as a function of the transmit data rate. A value from 1-9 is rounded up to 10 during negotiation. A change to this attribute does not take effect until *Ppp* is restarted (lock/unlock).
Mib	PppIwf
Values	Decimal (0..2147483647)
Units	centiseconds

Default	0

ATTRIBUTE Piwf Lqm configStatus (cfgstat)

Access	Read and write
Criticality	Process
Description	If this attribute is ***enabled***, the local node will attempt to perform *Lqm* negotiation with the remote node. If it is ***disabled*** this negotiation is not performed. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	PppIwf
Values	disabled enabled
Default	disabled

GROUP Piwf Lqm Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Ppp* Link Quality Monitor component.
Mib	PppIwf

ATTRIBUTE Piwf Lqm quality (qual)

Access	Read only
Description	This is the current quality of the link as declared by the local *Ppp* entity's LinkQuality Management modules. A value of ***good*** indicates that *LinkQualityMonitor configStatus* is ***enabled*** and *Link quality* is above *LinkQuality Threshold*. A value of ***bad*** indicates that *LinkQualityMonitor configStatus* is ***enabled*** and *Link quality* is not above *Link qualityThreshold*. A value of ***notDetermined*** indicates that *LinkQualityMonitor configStatus* is ***enabled*** and the quality of the link has not been calculated yet or *LinkQualityMonitor configStatus* is ***disabled***.
Mib	PppIwf

Values	good bad notDetermined
Default	notDetermined

ATTRIBUTE Piwf Lqm inGoodOctets (ingo)

Access	Read only
Description	This attribute counts the number of good octets received. This counter wraps around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Lqm localPeriod (localp)

Access	Read only
Description	This is the *Lqm* reporting period, in hundredths of a second that is in effect for the local *Ppp* entity.
Mib	PppIwf
Values	Decimal (1..4294967295)
Units	centiseconds
Default	1

ATTRIBUTE Piwf Lqm remotePeriod (remotep)

Access	Read only
Description	This is the *Lqm* reporting period, in hundredths of a second, that is in effect for the remote *Ppp* entity.
Mib	PppIwf
Values	Decimal (1..4294967295)
Units	centiseconds
Default	1

ATTRIBUTE Piwf Lqm outLqrs (outr)

Access	Read only
Description	This attribute counts the number of link quality reports sent out. This counter wraps around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Lqm inLqrs (inr)

Access	Read only
Description	This attribute counts the number of link quality reports received. This counter wraps around to 0 when it exceeds its maximum count.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

COMPONENT Piwf NetworkControlProtocol (Ncp)

Groups	"GROUP Piwf Ncp IpOperational (IpOper)" "GROUP Piwf Ncp MplsOperational (MplsOper)"
Scope	Application
Description	*Ppp/n NetworkControlProtocol* This component is used to contain all the operational attributes for the *Ppp* Network Control Protocols (*Ncp*). This is a

	mandatory subcomponent of *Ppp* and does not need to be manually added.
Mib	PppIwf
Common Verbs	Help List Display

GROUP Piwf Ncp IpOperational (IpOper)

Properties	Operational
Description	This group contains the Ip Network Control Protocol operational attributes.
Mib	PppIwf

ATTRIBUTE Piwf Ncp ipOperState (ipostate)

Access	Read only
Description	This is the operational state of the Ip network protocol. For more information as to the definition of each state see RFC1331 section 5.3.
Mib	PppIwf
Values	initial starting closed stopped closing stopping reqsent ackrcvd acksent opened
Default	initial

GROUP Piwf Ncp MplsOperational (MplsOper)

Properties	Operational

Description	This group contains the MPLS Network Control Protocol operational attribute.
Mib	PppIwf

ATTRIBUTE Piwf Ncp mplsOperState (mplsostate)

Access	Read only
Description	This attribute indicates the operational states of the MPLS Network Control Protocol. In the initial state the lower layer (LCP in this case) is in a Down state The lower layer is also Down in the starting state where in contrast an administrative Open has been received. When the lower Layer is Up a req-sent is sent to the peer awaiting an ackrcvd. An ack-sent is reached when an ack is sent in reply to the peer ack-req request. An open state is reached when both peers have sent ack-req and received ack-rcvd. Closing is before closed state when waiting for a terminate-ack after sending a terminate-req. The same for stopping and stopped states with the difference that the The Stopping state provides a well defined opportunity to terminate the link before allowing new traffic. (for more information as to the definition of each state see RFC 1331 section 5.3).
Mib	PppIwf
Values	initial starting closed stopped closing stopping reqsent ackrcvd acksent opened
Default	initial

COMPONENT Piwf Framer

Groups	"GROUP Piwf Framer Provisioned (Prov)" "GROUP Piwf Framer OsiState (State)"

"GROUP Piwf Framer Statistics (Stats)"
"GROUP Piwf Framer LinkUtilization (Util)"

"COLLECTED STATS PppIwf Framer"

Scope: Application

Description

Ppp/n Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer* that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute that binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib: PppIwf

Common Verbs:
Help
List
Display

GROUP Piwf Framer Provisioned (Prov)

Properties: Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib	PppIwf

ATTRIBUTE Piwf Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the logical processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	PppIwf
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Piwf Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	PppIwf

ATTRIBUTE Piwf Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	PppIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Piwf Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	PppIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Piwf Framer usageState (osiUsage)

Access	Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	PppIwf
Values	idle active (activ) busy
Default	idle

GROUP Piwf Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *Framer* component.
Mib	PppIwf

ATTRIBUTE Piwf Framer aborts

Access	Read only
Description	This attribute counts the total number of aborts received.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Framer crcErrors

Access	Read only

Description

This attribute counts the total number of frames with CRC errors.

Mib PppIwf

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Piwf Framer lrcErrors

Access Read only

Description

This attribute counts the total number of frames with LRC errors.

Mib PppIwf

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Piwf Framer nonOctetErrors

Access Read only

Description

This attribute counts the total number of frames that were non octet aligned.

Mib PppIwf

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Piwf Framer overruns

Access Read only

Description

This attribute counts the total number of frames received from the link for which overruns occurred.

Mib PppIwf

Values Decimal (0..4294967295)

Default	0

ATTRIBUTE Piwf Framer underruns

Access	Read only
Description	This attribute counts the total number of frames transmitted to the link for which underruns occurred.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Framer largeFrmErrors

Access	Read only
Description	This attribute counts the total number of frames received that were too large. The frame execeeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.
Mib	PppIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Piwf Framer octetToIf

Access	Read only
Description	This attribute counts the number of octets transmitted to the link interface by *Framer.*
Mib	PppIwf
Values	Long Integer
Default	No default

ATTRIBUTE Piwf Framer octetFromIf

Access	Read only
Description	This attribute counts the number of octets received from the link interface by *Framer.*
Mib	PppIwf
Values	Long Integer
Default	No default

ATTRIBUTE Piwf Framer frmFromIf

Access	Read only
Description	This attribute counts the number of frames received from the link interface by *Framer.*
Mib	PppIwf
Values	Long Integer
Default	No default

ATTRIBUTE Piwf Framer frmToIf

Access	Read only
Description	This attribute counts the number of frames transmitted to the link interface by *Framer.* Note: For the 1pOC48SmIrPos card, the count includes frames transmitted directly to the hardware queue; for all other cards, these frames are not included..
Mib	PppIwf
Values	Long Integer
Default	No default

GROUP Piwf Framer LinkUtilization (Util)

Properties	Operational

Description

This group contains the link utilization operational data for a Framer component.

Mib PppIwf

ATTRIBUTE Piwf Framer normPrioLinkUtilToIf

Access Read only

Description

This attribute is the utilization of the normal priority data sent to the link as a percentage of the available bandwidth on the link. The utilization is the average for the last minute.

Mib PppIwf

Values Decimal (0..100)

Units %

Default 0

ATTRIBUTE Piwf Framer normPrioLinkUtilFromIf

Access Read only

Description

This attribute is the utilization of the normal priority data received from the link as a percentage of the available bandwidth on the link. The utilization is the average for the last minute.

Mib PppIwf

Values Decimal (0..100)

Units %

Default 0

COLLECTED STATS PppIwf Framer

Description The statistics record generated by the PppIwf Framer component.

ATTRIBUTE Piwf Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Piwf Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Piwf Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Piwf Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Piwf Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT Piwf AtmAdaptionPoint (AtmAp)

Groups	"GROUP Piwf AtmAp Provisioned (AtmApProv)" "GROUP Piwf AtmAp OsiState (State)" "GROUP Piwf AtmAp Operational (AapOper)"
Scope	Application

Description	*Piwf/n AtmAdaptionPoint* This component represents a SoftPVC between Point-to-Point Protocol and remote ATM Interface. Multiprotocol Encapsulation as specified in RFC1483 is used to transfer higher-layer protocol (IP) data across a virtual channel in an ATM network.
Mib	PppIwf
Subcomponents	"COMPONENT Piwf AtmAp TrafficManagement (Tm)"
Dyn. Subcomp.	"COMPONENT Piwf AtmAp AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete LOCK Unlock

VERB Restart Piwf AtmAp

Impact	Service
Description	This command is used to restart the automatic connections procedure. The operational attributes *retryTimerValue* and *retryFailures* will also be reset. This command may be used after the connection procedure has been abandoned due to reaching the maximum number of retries allowed, as specified by *retryLimit*, or before the limit has been reached. This command may also be used when a connection has been established, in which case the connection will first be released. This command will fail if the *channel* associated with the *Framer* component is disabled, or if *spvcStatus* has the value ***initialising***. If *spvcStatus* has the value ***failed***, this command may fail.

GROUP Piwf AtmAp Provisioned (AtmApProv)

Properties	Provisioned

Description

This group contains the previsional attribute for *AtmAdaptionPoint* component.

Mib PppIwf

ATTRIBUTE Piwf AtmAp maxTransmissionUnit (mtu)

Access Read and write

Criticality Process

Description

This attribute specifies the size of the largest datagram which can be sent on the SoftPVC. This includes the size of the Logical Link Control header (if applicable) as well as the protocol data unit.

Mib PppIwf

Values Decimal (256..9188)

Units octets

Default 9188

ATTRIBUTE Piwf AtmAp encapType (etype)

Access Read and write

Criticality Process

Description

This attribute specifies the RFC1483 encapsulation type to be used for the *AtmConnections* under this *PppAtmIwf*. Specifying ***llcEncap*** allows multiplexing of multiple protocols over the VCCs. The protocol of the carried PDU will be identified by an IEEE 802.2 Logical Link Control header. If Bridging or Inverse ARP is to be carried over a VCC, ***llcEncap*** must be used. Specifying ***ipVcEncap*** indicates that the VCC (e.g. *AtmConnection*) under an *AtmAdaptionPoint* component will use VC based multiplexing and will carry IP PDUs only.

Mib PppIwf

Values	llcEncap ipVcEncap
Default	ipVcEncap

ATTRIBUTE Piwf AtmAp localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute specifies the local NSAP address. If the switch prefix (the *nodePrefix* attribute of the *ModuleData* component) has been provisioned, a default value for *localAddress* based on *nodePrefix* will be provided. If *ModuleData nodePrefix* is empty and one or more alternate switch prefixes (the *alternatePorsPrefixes* attribute of the *ModuleData* component) have been provisioned, a default value for *localAddress* based on the first provisioned *alternatePorsPrefix* value will be provided. If switch prefixes are empty, *localAddress* will default to an empty string. To obtain a valid default *localAddress* in this case, either or both of the *ModuleData nodePrefix* and *ModuleData alternatePorsPrefixes* attributes must be provisioned, and this end point component must then be deleted and re-added.
Mib	PppIwf
Values	String (40, AESANsapAddress)
Default	No default

ATTRIBUTE Piwf AtmAp calledVpiVci (vc)

Access	Read and write
Criticality	Process
Description	*calledVpiVci* specifies the identity of the PVC at the remote ATM node on which the SoftPVC connection terminates.

Mib	PppIwf
Values	Integer Sequence (0..4095; 1..65535)
Default	No default

ATTRIBUTE Piwf AtmAp addressToCall (addrToCall)

Access	Read and write
Criticality	Process
Description	This attribute specifies the remote NSAP address which this *AtmAdaptionPoint* will call.
Mib	PppIwf
Values	String (40, AESANsapAddress)
Default	No default

ATTRIBUTE Piwf AtmAp firstRetryInterval (int)

Access	Read and write
Criticality	Process
Description	This attribute specifies the time to wait, in seconds, before attempting to establish the connection after the first failed attempt. The time to wait between subsequent call attempts will generally differ due to a backoff scheme.
Mib	PppIwf
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Piwf AtmAp retryLimit (limit)

Access	Read and write
Criticality	Process
Description	*retryLimit* specifies the maximum number of consecutive unsuccessful connection setup attempts that may be made before further attempts are abandoned. If this limit is reached, the *Restart* verb may be used to restart connection attempts. If *retryLimit* is ***0***, there is no limit; attempts will continue indefinitely until a successful connection is established.
Mib	PppIwf
Values	Decimal (0..65535)
Default	0

GROUP Piwf AtmAp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	PppIwf

ATTRIBUTE Piwf AtmAp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or

Lock command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	PppIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Piwf AtmAp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	PppIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Piwf AtmAp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	PppIwf
Values	idle active (activ) busy
Default	idle

GROUP Piwf AtmAp Operational (AapOper)

Properties	Operational
Description	This group contains operational attributes for *AtmAdaptionPoint* component.
Mib	PppIwf

ATTRIBUTE Piwf AtmAp spvcStatus (status)

Access	Read only
Description	*spvcStatus* indicates the status of the incoming and outgoing connections. When this attribute has the value ***initialising***, it indicates that the component is initialising when first created; a connection has not been established, and no incoming setup requests will be processed.

When this attribute has the value ***connecting***, it indicates that a connection has not yet been established, but that incoming setup requests will be sent.

When this attribute has the value ***connected***, it indicates that a connection has been established.

When this attribute has the value ***idle***, it indicates that a connection has not been established, and the component is waiting to restart.

When this attribute has the value ***retriesExhausted***, it indicates that *retryLimit* consecutive connection setup attempts have failed, and the connection procedure has been aborted.

When this attribute has the value ***failed***, it indicates that the ATM Networking resources are not available to setup the connection.

Mib: PppIwf

Values:
initialising
connecting
connected
idle
retriesExhausted
failed

Default: No default

ATTRIBUTE Piwf AtmAp retryTimeRemaining (timer)

Access: Read only

Description

retryTimerValue is the current value of the retry timer for this connection; it indicates the number of seconds before the next connection attempt will be made. *retryTimerValue* is initialized when a connection attempt fails.

When *retryTimerValue* reaches ***0***, an attempt will be made to establish the connection.

When the timer is not running, for example when the connection has been established, *retryTimerValue* will be ***0***.

Mib PppIwf

Values Decimal (0..86400)

Units seconds

Default No default

ATTRIBUTE Piwf AtmAp retryFailures (failures)

Access Read only

Description

retryFailures counts the number of consecutive failed connection attempts.

retryFailures is reset to ***0*** whenever a connection is successfully established, or the connection is restarted using the *Restart* verb. The counter wraps when the maximum value is exceeded.

Mib PppIwf

Values Decimal (0..2147483647)

Default No default

ATTRIBUTE Piwf AtmAp lastSetupFailureCause (failCause)

Access Read only

Description

lastSetupFailureCause indicates the cause of the last connection setup failure.

The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.

Mib PppIwf

Values Decimal (0..255)

Default No default

ATTRIBUTE Piwf AtmAp lastSetupFailureDiagnostic (failDiag)

Access	Read only
Description	*lastSetupFailureDiagnostic* provides a diagnostic to supplement the *lastSetupFailureCause* attribute. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	PppIwf
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Piwf AtmAp lastTearDownCause (cause)

Access	Read only
Description	*lastTearDownCause* indicates the cause of the last connection tear down. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	PppIwf
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Piwf AtmAp lastTearDownDiagnostic (diag)

Access	Read only
Description	*lastTearDownDiagnostic* provides a diagnostic to supplement the *lastTearDownCause* attribute. The values are as defined in the ATM Forum ATM User-Network Interface (UNI) Specification.
Mib	PppIwf

Values	String (0..8, ASCII)
Default	No default

COMPONENT Piwf AtmAp TrafficManagement (Tm)

Groups	"GROUP Piwf AtmAp Tm Provisioned (TmProv)"
Scope	Application
Description	*Piwf/n AtmAp trafficManagement* This component contains ATM QoS information used by the SPVC connection to request a particular QoS from ATM.
Mib	PppIwf
Common Verbs	Help List Display LOCK Unlock

GROUP Piwf AtmAp Tm Provisioned (TmProv)

Properties	Provisioned
Description	This group contains the provisional attribute for *TrafficManagement* component.
Mib	PppIwf

ATTRIBUTE Piwf AtmAp Tm atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the desired ATM service category for this connection. Refer to NTP NN10600-705 for more information on ATM Traffic Management.

Mib	PppIwf
Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) constantBitRate (cbr)
Default	unspecifiedBitRate

ATTRIBUTE Piwf AtmAp Tm peakCellRate (pcr)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the desired peak cell rate (PCR) for this connection. Refer to NTP NN10600-705 for more information on ATM Traffic Management.
Mib	PppIwf
Values	Decimal (0..2147483647)
Default	0

COMPONENT Piwf AtmAp AtmConnection (AtmCon)

Groups	"GROUP Piwf AtmAp AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	PppIwf
Common Verbs	Help List Display

GROUP Piwf AtmAp AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	PppIwf

ATTRIBUTE Piwf AtmAp AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	PppIwf
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Piwf

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Ppp

NN10600-060

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Component Ppp

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COMPONENT PointToPointProtocol (Ppp)

Instance	Decimal (1..65535)
Groups	"GROUP Ppp CustomerIdentifierData (CidData)" "GROUP Ppp IfEntryProv (IfEntry)" "GROUP Ppp MediaProv (Mp)" "GROUP Ppp OsiState (State)" "GROUP Ppp OperationalStatus (OperStatus)" "GROUP Ppp PppProv (Ppp)"
Scope	Application

Description	*PointToPointProtocol/n* This component defines an instance of the *Ppp* link level protocol. The component instance value is a unique number.
Mib	Ppp
Subcomponents	"COMPONENT Ppp Link (Lnk)" "COMPONENT Ppp LinkQualityMonitor (Lqm)" "COMPONENT Ppp NetworkControlProtocol (Ncp)" "COMPONENT Ppp Framer"
Opt. Subcomp.	"COMPONENT Ppp ConnectionAdministrator (Ca)" "COMPONENT Ppp LinkEmissionQueue (Leq)" "COMPONENT Ppp EgressWeightedFairQueuing (Ewfq)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Ppp CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Ppp

ATTRIBUTE Ppp customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

	Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	Ppp
Values	Decimal (0; 1..8191)
Default	0

GROUP Ppp IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Ppp

ATTRIBUTE Ppp ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ppp
Values	up down testing
Default	up

ATTRIBUTE Ppp ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Ppp
Values	Decimal (1..65535)
Default	No default

GROUP Ppp MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the Media Application component.
Mib	Ppp

ATTRIBUTE Ppp linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute contains a protocol port component name. The attribute associates the application with a protocol port.
Mib	Ppp
Values	Link (Service, linkToMedia)
Default	No default

GROUP Ppp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state

combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib Ppp

ATTRIBUTE Ppp adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib Ppp

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Ppp operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be

providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Ppp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ppp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ppp
Values	idle active (activ) busy
Default	idle

GROUP Ppp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ppp

ATTRIBUTE Ppp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ppp
Values	up down testing
Default	up

GROUP Ppp PppProv (Ppp)

Properties	Provisioned
Description	This group contains the provisioning data for the *Ppp* link level protocol component.
Mib	Ppp

ATTRIBUTE Ppp linkToApplication

Access	Read and write
Criticality	Component
Description	This attribute contains a *PppApplication* component name. The attribute associates the *Ppp* link level protocol component with a *PppApplication* component.
Mib	Ppp
Values	Link (Service, linkToMedia)
Default	No default

COMPONENT Ppp ConnectionAdministrator (Ca)

Groups	"GROUP Ppp Ca Provisioned (Prov)" "GROUP Ppp Ca Operational (Oper)"

Scope	Application
Description	*Ppp/n ConnectionAdministrator* This component manages the link bandwidth, and reports the information about the link usage. This component can only be provisioned if the *MplsPort* component is provisioned.
Mib	Ppp
Common Verbs	Help List Display Add DELete

GROUP Ppp Ca Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ca* component.
Mib	Ppp

ATTRIBUTE Ppp Ca percentBandwidthManaged (pBwManaged)

Access	Read and write
Description	This attribute specifies the percentage of link capacity used for transmitting the network clients' MPLS traffic and managed by the bandwidth manager. If this percent is selected to be less than 100% then an explicit amount of bandwidth is reserved for other traffic that is not managed by the bandwidth manager such as IP native traffic or IP control traffic. It should be noted that this attribute is used for bandwidth reservation for Connection Admission Control purpose and does not control the actual transmission of traffic which is controlled by the scheduler configuration. The total bandwidth for transmitting the network clients' MPLS

	traffic (*managedBandwidthTotal*) can be obtained as the multiplication of this attribute and the link transmitting capacity.
Mib	Ppp
Values	Decimal (0..100)
Units	%
Default	100

GROUP Ppp Ca Operational (Oper)

Properties	Operational
Description	This group contains operational attributes of the *Ca* component.
Mib	Ppp

ATTRIBUTE Ppp Ca managedBandwidthTotal (bwTotal)

Access	Read only
Description	This attribute indicates the total bandwidth for transmitting the network clients' traffic. Its value is equal to the multiplication of link capacity and the provisioned value of *percentBandwidthManaged*.
Mib	Ppp
Values	Decimal (0..4294967295)
Units	kbit/s
Default	No default

ATTRIBUTE Ppp Ca maxBandwidthPool (maxBwPool)

Access	Read only
Description	This attribute indicates the maximum amount of bandwidth allowed for each pool. The value of each pool is equal to the multiplication of *managedBandwidthTotal* and the provisioned value of *percentMaxBandwidthPool*.

Mib	Ppp
Vector of	Decimal (0..4294967295)
Units	kbit/s
Index	Decimal (0..3)
Default	No default

ATTRIBUTE Ppp Ca guaranteedBandwidthPool (gBwPool)

Access	Read only
Description	This attribute indicates the amount of bandwidth guaranteed for each pool. This value is equal to the multiplication of *managedBandwidthTotal* and the provisioned value of *percentGuaranteeBandwidthPool*.
Mib	Ppp
Vector of	Decimal (0..4294967295)
Units	kbit/s
Index	Decimal (0..3)
Default	No default

ATTRIBUTE Ppp Ca poolAdmittedBandwidth (poolAdmBw)

Access	Read only
Description	This attribute indicates the bandwidth reserved by the admitted T-LSPs in each bandwidth pool by each holding priority.
Mib	Ppp
Array of	Decimal (0..4294967295)

Units	kbit/s
Row	pool [Decimal (0..3)]
Column	holdingPriority [Decimal (0..7)]
Default	No default

ATTRIBUTE Ppp Ca poolAvailableBandwidth (poolAvlBw)

Access	Read only
Description	This attribute indicates the available bandwidth in each bandwidth pool by each setup priority.
Mib	Ppp
Array of	Decimal (0..4294967295)
Units	kbit/s
Row	pool [Decimal (0..3)]
Column	setupPriority [Decimal (0..7)]
Default	No default

ATTRIBUTE Ppp Ca igAvailBwDataPath (igBwDp)

Access	Read only
Description	For cards with multiple ingress datapaths, this attribute indicates the available bandwidth on each ingress card datapath. On the ***1pOC48SmSrPos*** and ***1pOC48SmIrPos*** FPs there are two ingress card datapath each limited to 1,198,080 kbit/s (OC-24). Connections with an even receive service label (*receiveLabel*) are assigned to card datapath 0, connections with an odd receive service label are assigned to card datapath 1. This attribute is not displayed for other cards.
Mib	Ppp
Vector of	Decimal (0..100)

Units	%
Index	Decimal (0..1)
Default	No default

ATTRIBUTE Ppp Ca egAvailBwDataPath (egBwDp)

Access	Read only
Description	For cards with multiple egress datapaths, this attribute indicates the available bandwidth on each egress card datapath. On the ***1pOC48SmSrPos*** and ***1pOC48SmIrPos*** FPs, there are two egress card datapaths each limited to 1,198,080 kbit/s (OC-24). Connections with an even transmit service label (*transmitLabel*) are assigned to card datapath 0, connections with an odd transmit service label are assigned to card datapath 1. This attribute is not displayed for other cards.
Mib	Ppp
Vector of	Decimal (0..100)
Units	%
Index	Decimal (0..1)
Default	No default

COMPONENT Ppp Link (Lnk)

Groups	"GROUP Ppp Lnk Provisioned (Prov)" "GROUP Ppp Lnk Operational (Oper)"
Scope	Application
Description	*Ppp/n Link* This component is used to contain all the attributes related to the

	Ppp link. This is a mandatory subcomponent of *Ppp* and does not need to be added.
Mib	Ppp
Common Verbs	Help List Display

GROUP Ppp Lnk Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Ppp* Link component.
Mib	Ppp

ATTRIBUTE Ppp Lnk configInitialMru (cimru)

Access	Read and write
Description	This is the initial Maximum Receive Unit (Mru) that the local *Ppp* entity will advertise to the remote entity. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	Ppp
Values	Decimal (68..18000)
Units	octets
Default	18000

ATTRIBUTE Ppp Lnk configMagicNumber (cmn)

Access	Read and write
Description	If ***enabled*** the local node will attempt to perform Magic Number negotiation with the remote node. If ***disabled*** this negotiation is not performed. In any event, the local node will comply with any magic number negotiations attempted by the remote node, per the *Ppp* specification. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).

Mib	Ppp
Values	disabled enabled
Default	enabled

ATTRIBUTE Ppp Lnk restartTimer (rtimer)

Access	Read and write
Description	This is the time, in milliseconds, that *Ppp* will wait for a response to a configure request or a terminate request before retrying.
Mib	Ppp
Values	Decimal (1000..10000)
Units	msec
Default	3000

ATTRIBUTE Ppp Lnk continuityMonitor (cntmon)

Access	Read and write
Description	This attribute turns on/off (***enabled/disabled***) the Link Continuity Monitor. If set to ***enabled***, periodic keep alive echo packet will be sent over the *Ppp* link. If set to ***disabled***, no keep alive packets will be sent. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	Ppp
Values	enabled disabled
Default	disabled

ATTRIBUTE Ppp Lnk negativeAckTries (naks)

Access	Read and write
Description	This attribute specifies the maximum negative acknowledgments sent to the remote *Ppp* entity during negotiation before defaulting its configuration parameters.

Mib	Ppp
Values	Decimal (0..4294967295)
Default	10

ATTRIBUTE Ppp Lnk qualityThreshold (quality)

Access	Read and write
Description	This attribute specifies the minimum allowed line quality before the line is considered too poor to continue operation. The value for this attribute is a percentage measure of the line quality given in integers (10 to 99). The higher the value, the more stringent the line requirements.
Mib	Ppp
Values	Decimal (10..99)
Units	%
Default	90

ATTRIBUTE Ppp Lnk qualityWindow (qwindow)

Access	Read and write
Description	This attribute specifies the number of seconds used for sampling line quality. If line quality drops below the level set with the *qualityThreshold* attribute during this window, this instance of *Ppp* will be marked down until line quality recovers.
Mib	Ppp
Values	Decimal (10..400)
Units	seconds
Default	30

ATTRIBUTE Ppp Lnk terminateRequestTries (term)

Access	Read and write

Description	This attribute specifies the maximum terminate requests to be sent, when closing the connection, and not answered before this instance of *Ppp* enters a closing state.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	10

ATTRIBUTE Ppp Lnk configureRequestTries (try)

Access	Read and write
Description	This attribute specifies the number of configuration requests that will be sent out and not answered before this instance of *Ppp* enters a listening state. If both sides enter the listening state then the link will not come up. To eliminate this possibility, this attribute should be set to 1000000000. This will ensure that this end of the *Ppp* link will continue to try until the link is good.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	1000000000

GROUP Ppp Lnk Operational (Oper)

Properties	Operational
Description	This group contains the *Ppp* Link Operational attributes.
Mib	Ppp

ATTRIBUTE Ppp Lnk operState (state)

Access	Read only
Description	This is the operational state of the Link Control Protocol. For more information as to the definition of each state see RFC1331 section 5.3.
Mib	Ppp
Values	initial starting

closed
stopped
closing
stopping
reqsent
ackrcvd
acksent
opened

Default initial

ATTRIBUTE Ppp Lnk lineCondition (lcond)

Access Read only

Description This attribute describes the condition of the physical line that *Ppp* is running over.
ok: The condition of the line is good.
looped: The line is looped back on itself, probably at the remote end.
noClock: There is a hardware problem with the line. The cable may not be plugged in correctly.
badLineCondition: The quality of the line is below the *qualityThreshold*.

Mib Ppp

Values ok
looped
noClock
badLineCondition

Default ok

ATTRIBUTE Ppp Lnk badAddresses (ba)

Access Read only

Description This attribute counts the number of packets received with an incorrect Address Field. If this count is going up quickly, it could indicate that there is a line quality problem or that the remote end is transmitting a protocol other than *Ppp*. This counter will wrap around to 0 when it exceeds its maximum count.

Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Lnk badControls (bc)

Access	Read only
Description	This attribute counts the number of packets received on this link with an incorrect Control Field. If this count is going up quickly, it could indicate that there is a line quality problem or that the remote end is transmitting a protocol other than *Ppp*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Lnk packetTooLongs (ptl)

Access	Read only
Description	This attribute counts the number of packets received that have been discarded because their length exceeded the Maximum Receive Unit (Mru). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Lnk badFcss (bfcs)

Access	Read only
Description	This attribute counts the number of packets received that have been discarded due to having an incorrect Frame Check Sequence (Fcs). This counter will wrap around to 0 when it exceeds its maximum count.

Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Lnk localMru (lmru)

Access	Read only
Description	This is the current value of the Maximum Receive Unit (Mru) for the local *Ppp* Entity. This value is the Mru that the remote entity is using when sending packets to the local *Ppp* entity.
Mib	Ppp
Values	Decimal (1..2147483648)
Units	octets
Default	1

ATTRIBUTE Ppp Lnk remoteMru (rmru)

Access	Read only
Description	This is the current value of the Maximum Receive Unit (Mru) for the remote *Ppp* entity. This value is the Mru that the local entity is using when sending packets to the remote *Ppp* entity.
Mib	Ppp
Values	Decimal (1..2147483648)
Units	octets
Default	No default

ATTRIBUTE Ppp Lnk transmitFcsSize (tfcs)

Access	Read only
Description	This is the size of the Frame Check Sequence (Fcs) in bits that the local node will generate when sending packets to the remote node.
Mib	Ppp

Values	Decimal (0..128)
Units	bits
Default	0

ATTRIBUTE Ppp Lnk receiveFcsSize (rfcs)

Access	Read only
Description	This is the size of the Frame Check Sequence (Fcs) in bits that the remote node will generate when sending packets to the local node.
Mib	Ppp
Values	Decimal (0..128)
Units	bits
Default	0

COMPONENT Ppp LinkQualityMonitor (Lqm)

Groups	"GROUP Ppp Lqm Provisioned (Prov)" "GROUP Ppp Lqm Operational (Oper)"
Scope	Application
Description	*Ppp/n LinkQualityMonitor* This component is used to contain all the operational attributes for the *Ppp* Link Quality Monitor. This is a mandatory subcomponent of *Ppp* and does not need to be manually added.
Mib	Ppp
Common Verbs	Help List Display

GROUP Ppp Lqm Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *Ppp* Link Quality Monitor component.

Mib	Ppp

ATTRIBUTE Ppp Lqm configPeriod (cfgper)

Access	Read and write
Description	This is the *Lqm* reporting period that the local *Ppp* entity will attempt to negotiate with the remote entity, in units of hundredths of a second. A value of “0” allows the remote *Ppp* entity to determine the reporting period. A value greater than 180,000 (1/2 hour) allows the period to be determined dynamically as a function of the transmit data rate. A value from 1-9 is rounded up to 10 during negotiation. A change to this attribute does not take effect until *Ppp* is restarted (lock/unlock).
Mib	Ppp
Values	Decimal (0..2147483647)
Units	centiseconds
Default	0

ATTRIBUTE Ppp Lqm configStatus (cfgstat)

Access	Read and write
Criticality	Process
Description	If this attribute is ***enabled***, the local node will attempt to perform *Lqm* negotiation with the remote node. If it is ***disabled*** this negotiation is not performed. A change to this attribute will not take effect until *Ppp* is restarted (lock/unlock).
Mib	Ppp
Values	disabled enabled
Default	disabled

GROUP Ppp Lqm Operational (Oper)

Properties	Operational

Description	This group contains the operational attributes for the *Ppp* Link Quality Monitor component.
Mib	Ppp

ATTRIBUTE Ppp Lqm quality (qual)

Access	Read only
Description	This is the current quality of the link as declared by the local *Ppp* entity's LinkQuality Management modules. A value of ***good*** indicates that *LinkQualityMonitor configStatus* is ***enabled*** and *Link quality* is above *LinkQuality Threshold*. A value of ***bad*** indicates that *LinkQualityMonitor configStatus* is ***enabled*** and *Link quality* is not above *Link qualityThreshold*. A value of ***notDetermined*** indicates that *LinkQualityMonitor configStatus* is ***enabled*** and the quality of the link has not been calculated yet or *LinkQualityMonitor configStatus* is ***disabled***.
Mib	Ppp
Values	good bad notDetermined
Default	notDetermined

ATTRIBUTE Ppp Lqm inGoodOctets (ingo)

Access	Read only
Description	This attribute counts the number of good octets received. This counter wraps around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Lqm localPeriod (localp)

Access	Read only
Description	This is the *Lqm* reporting period, in hundredths of a second that is in effect for the local *Ppp* entity.

Mib	Ppp
Values	Decimal (1..4294967295)
Units	centiseconds
Default	1

ATTRIBUTE Ppp Lqm remotePeriod (remotep)

Access	Read only
Description	This is the *Lqm* reporting period, in hundredths of a second, that is in effect for the remote *Ppp* entity.
Mib	Ppp
Values	Decimal (1..4294967295)
Units	centiseconds
Default	1

ATTRIBUTE Ppp Lqm outLqrs (outr)

Access	Read only
Description	This attribute counts the number of link quality reports sent out. This counter wraps around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Lqm inLqrs (inr)

Access	Read only
Description	This attribute counts the number of link quality reports received. This counter wraps around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)

Default	0

COMPONENT Ppp NetworkControlProtocol (Ncp)

Groups	"GROUP Ppp Ncp IpOperational (IpOper)" "GROUP Ppp Ncp MplsOperational (MplsOper)"
Scope	Application
Description	*Ppp/n NetworkControlProtocol* This component is used to contain all the operational attributes for the *Ppp* Network Control Protocols (*Ncp*). This is a mandatory subcomponent of *Ppp* and does not need to be manually added.
Mib	Ppp
Common Verbs	Help List Display

GROUP Ppp Ncp IpOperational (IpOper)

Properties	Operational
Description	This group contains the Ip Network Control Protocol operational attributes.
Mib	Ppp

ATTRIBUTE Ppp Ncp ipOperState (ipostate)

Access	Read only
Description	This is the operational state of the Ip network protocol. For more information as to the definition of each state see RFC1331 section 5.3.
Mib	Ppp
Values	initial starting closed stopped closing

stopping
reqsent
ackrcvd
acksent
opened

Default initial

GROUP Ppp Ncp MplsOperational (MplsOper)

Properties Operational

Description This group contains the MPLS Network Control Protocol operational attribute.

Mib Ppp

ATTRIBUTE Ppp Ncp mplsOperState (mplsostate)

Access Read only

Description This attribute indicates the operational states of the MPLS Network Control Protocol. In the initial state the lower layer (LCP in this case) is in a Down state The lower layer is also Down in the starting state where in contrast an administrative Open has been received. When the lower Layer is Up a req-sent is sent to the peer awaiting an ackrcvd. An ack-sent is reached when an ack is sent in reply to the peer ack-req request. An open state is reached when both peers have sent ack-req and received ack-rcvd. Closing is before closed state when waiting for a terminate-ack after sending a terminate-req. The same for stopping and stopped states with the difference that the The Stopping state provides a well defined opportunity to terminate the link before allowing new traffic. (for more information as to the definition of each state see RFC 1331 section 5.3).

Mib Ppp

Values initial
starting
closed
stopped
closing
stopping

reqsent
ackrcvd
acksent
opened

Default initial

COMPONENT Ppp Framer

Groups "GROUP Ppp Framer Provisioned (Prov)"
"GROUP Ppp Framer OsiState (State)"
"GROUP Ppp Framer Statistics (Stats)"
"GROUP Ppp Framer LinkUtilization (Util)"

"COLLECTED STATS PointToPointProtocol Framer"

Scope Application

Description

Ppp/n Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer* that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute that binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link

interface datapath statistics (such as frame counts and aborts).

Mib	Ppp
Common Verbs	Help List Display

GROUP Ppp Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	Ppp

ATTRIBUTE Ppp Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the logical processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	Ppp
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Ppp Framer OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ppp

ATTRIBUTE Ppp Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ppp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ppp Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Ppp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ppp Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ppp
Values	idle active (activ) busy
Default	idle

GROUP Ppp Framer Statistics (Stats)

Properties	Operational

Description

This group contains the operational statistics data for a *Framer* component.

Mib Ppp

ATTRIBUTE Ppp Framer aborts

Access Read only

Description

This attribute counts the total number of aborts received.

Mib Ppp

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Ppp Framer crcErrors

Access Read only

Description

This attribute counts the total number of frames with CRC errors.

Mib Ppp

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Ppp Framer lrcErrors

Access Read only

Description

This attribute counts the total number of frames with LRC errors.

Mib Ppp

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Ppp Framer nonOctetErrors

Access Read only

Description

This attribute counts the total number of frames that were non octet aligned.

Mib Ppp

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Ppp Framer overruns

Access Read only

Description

This attribute counts the total number of frames received from the link for which overruns occurred.

Mib Ppp

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Ppp Framer underruns

Access Read only

Description

This attribute counts the total number of frames transmitted to the link for which underruns occurred.

Mib Ppp

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Ppp Framer largeFrmErrors

Access Read only

Description

This attribute counts the total number of frames received that were too large. The frame execeeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.

Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Framer octetToIf

Access	Read only
Description	This attribute counts the number of octets transmitted to the link interface by *Framer.*
Mib	Ppp
Values	Long Integer
Default	No default

ATTRIBUTE Ppp Framer octetFromIf

Access	Read only
Description	This attribute counts the number of octets received from the link interface by *Framer.*
Mib	Ppp
Values	Long Integer
Default	No default

ATTRIBUTE Ppp Framer frmFromIf

Access	Read only
Description	This attribute counts the number of frames received from the link interface by *Framer.*
Mib	Ppp
Values	Long Integer
Default	No default

ATTRIBUTE Ppp Framer frmToIf

Access	Read only
Description	This attribute counts the number of frames transmitted to the link interface by *Framer.* Note: For the 1pOC48SmIrPos card, the count includes frames transmitted directly to the hardware queue; for all other cards, these frames are not included..
Mib	Ppp
Values	Long Integer
Default	No default

GROUP Ppp Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	Ppp

ATTRIBUTE Ppp Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal priority data sent to the link as a percentage of the available bandwidth on the link. The utilization is the average for the last minute.
Mib	Ppp
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Ppp Framer normPrioLinkUtilFromIf

Access	Read only

Description	This attribute is the utilization of the normal priority data received from the link as a percentage of the available bandwidth on the link. The utilization is the average for the last minute.
Mib	Ppp
Values	Decimal (0..100)
Units	%
Default	0

COLLECTED STATS PointToPointProtocol Framer

Description	The statistics record generated by the PointToPointProtocol Framer component.

ATTRIBUTE Ppp Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Ppp Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Ppp Framer txBytes

Description	This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Ppp Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values	Long Integer

ATTRIBUTE Ppp Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT Ppp LinkEmissionQueue (Leq)

Groups	"GROUP Ppp Leq Provisioned (Prov)" "GROUP Ppp Leq Statistics (Stats)" "GROUP Ppp Leq TotalStatistics (TStats)" "GROUP Ppp Leq CurrentStatistics (CStats)" "GROUP Ppp Leq ThresholdStatistics (ThrStats)"
Scope	Application
Description	*Ppp/n LinkEmissionQueue* This component provides a means of statistics gathering and packet discard.
Mib	Ppp
Common Verbs	Help List Display Add DELete

GROUP Ppp Leq Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *LinkEmissionQueue* component.
Mib	Ppp

ATTRIBUTE Ppp Leq maxPackets (maxP)

Access	Read and write

Description	This attribute specifies the maximum number of packets allowed in the *Leq* before being discarded. If this attribute is set to zero then the maximum number of packets is calculated from the transmit data rate. This calculated value is placed in *queuePktThreshold*.
Mib	Ppp
Values	Decimal (0..2048)
Default	0

ATTRIBUTE Ppp Leq maxMsecData (maxData)

Access	Read and write
Description	This attribute specifies the maximum number of “Milliseconds worth of data” allowed in the *Leq* before packets are discarded. The *queueByteThreshold* will be calculated from this attribute, based on the transmit data rate.
Mib	Ppp
Values	Decimal (100..60000)
Default	10000

ATTRIBUTE Ppp Leq maxPercentMulticast (mpm)

Access	Read and write
Description	This attribute specifies the maximum percentage of multicast packets allowed in the *Leq*, based on *queuePktThreshold*, before being discarded. The calculated value will be placed in *queueMulticastThreshold*.
Mib	Ppp
Values	Decimal (1..100)
Default	50

ATTRIBUTE Ppp Leq timeToLive (ttl)

Access	Read and write

Description	This attribute specifies the “Milliseconds Time To Live” of packets in the *Leq*. If the *timeToLive* of a packet expires, it will be discarded.
Mib	Ppp
Values	Decimal (100..60000)
Units	msec
Default	10000

GROUP Ppp Leq Statistics (Stats)

Properties	Operational
Description	This group contains Link Emission Queue general statistics.
Mib	Ppp

ATTRIBUTE Ppp Leq timedOutPkt (topkt)

Access	Read only
Description	This attribute counts the number of packets that have been discarded due to exceeding the *timeToLive*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq hardwareForcedPkt (hfpkt)

Access	Read only
Description	This attribute counts the number of hardware forced packets on this instance of *Ppp*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq forcedPktDiscards (fpktd)

Access	Read only
Description	This attribute counts the total number of hardware forced packets that had to be discarded due to link failure. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq queuePurgeDiscards (qpd)

Access	Read only
Description	This attribute counts the total number of packets discarded by a queue purge (i.e. a discarding of all packets on the queue). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

GROUP Ppp Leq TotalStatistics (TStats)

Properties	Operational
Description	This group contains Link Emission Queue total statistics.
Mib	Ppp

ATTRIBUTE Ppp Leq totalPktHandled (tpkthand)

Access	Read only
Description	This attribute counts the total number of packets handled by the *Leq*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq totalPktForwarded (tpktfor)

Access	Read only
Description	This attribute counts the total number of packets forwarded by the *Leq*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq totalPktQueued (tpktq)

Access	Read only
Description	This attribute counts the total number of packets that required queuing by the *Leq* due to transmit congestion. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq totalMulticastPkt (tmulp)

Access	Read only
Description	This attribute counts the total number of multicast packets handled by this instance of *Ppp*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq totalPktDiscards (tpktdis)

Access	Read only
Description	This attribute counts the total number of packets that were discarded for this instance of *Ppp*. This is the sum of *timedOutPkt*, *forcedPktDiscards*, *queuePurgeDiscards*, *pktThresholdExceeded*, *byteThresholdExceeded*, *mulThresholdExceeded*, and *memThresholdExceeded*. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

GROUP Ppp Leq CurrentStatistics (CStats)

Properties	Operational
Description	This group contains Link Emission Queue current statistics.
Mib	Ppp

ATTRIBUTE Ppp Leq currentPktQueued (cpktq)

Access	Read only
Description	This attribute counts the current number of packets queued.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq currentBytesQueued (cbytesq)

Access	Read only
Description	This attribute counts the current number of bytes queued.
Mib	Ppp
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Ppp Leq currentMulticastQueued (cmulq)

Access	Read only
Description	This attribute counts the current number of multicast packets in the queue.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

GROUP Ppp Leq ThresholdStatistics (ThrStats)

Properties	Operational
Description	This group contains Link Emission Queue threshold statistics.
Mib	Ppp

ATTRIBUTE Ppp Leq queuePktThreshold (qpthr)

Access	Read only
Description	This attribute is the maximum number of packets that can be contained in the queue before being discarded. If *maxPackets* was set to 0 then this attribute will contain the value that has been calculated based on the transmit data rate. If *maxPackets* was set to one or more than this attribute will contain that number.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq pktThresholdExceeded (pthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queuePktThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.

Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq queueByteThreshold (qbytethr)

Access	Read only
Description	This attribute is the maximum number of bytes allowed in the queue based on *maxMsecData* and the transmit data rate.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq byteThresholdExceeded (bthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queueByteThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq queueMulticastThreshold (qmolthr)

Access	Read only
Description	This attribute is the number of multicast packets allowed in the queue based on *maxPercentMulticast* and *maxPackets*.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq mulThresholdExceeded (multhrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to the *queueMulticastThreshold* being exceeded. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Ppp Leq memThresholdExceeded (memthrx)

Access	Read only
Description	This attribute counts the number of packets discarded due to exceeding the memory usage threshold for *Leq*. The memory usage threshold is determined by the *Leq* software, guaranteeing that the *Leq* does not consume all of the memory. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	Ppp
Values	Decimal (0..4294967295)
Default	0

COMPONENT Ppp EgressWeightedFairQueuing (Ewfq)

Groups	"GROUP Ppp Ewfq Provisioned (Prov)"
Scope	Application
Description	Ppp/n EgressWeightedFairQueuin*g* The egressWeightedFairQueuing component provides a mechanism to redistribute the WFQ servicing values among the

queues in a manner which satisfy the requirements for the end users. The servicing values for the queues must add up to 100.

Mib: Ppp

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Ppp Ewfq Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the EgressWeightedFairQueuing component. There are four attributes in this group and the sum of their values must add up to 100.

Mib: Ppp

ATTRIBUTE Ppp Ewfq egressServicingForQueue0 (q0)

Access: Read and write

Description: This attribute specifies the transmission frequency of queue 0 as a percentage of the total (100) port capacity.

Mib: Ppp

Values: Decimal (0..100)

Units: %

Default: 91

ATTRIBUTE Ppp Ewfq egressServicingForQueue1 (q1)

Access: Read and write

Description: This attribute specifies the transmission frequency of queue 1 as a percentage of the total (100) port capacity.

Mib: Ppp

Values	Decimal (0..100)
Units	%
Default	3

ATTRIBUTE Ppp Ewfq egressServicingForQueue2 (q2)

Access	Read and write
Description	This attribute specifies the transmission frequency of queue 2 as a percentage of the total (100) port capacity.
Mib	Ppp
Values	Decimal (0..100)
Units	%
Default	3

ATTRIBUTE Ppp Ewfq egressServicingForQueue3 (q3)

Access	Read and write
Description	This attribute specifies the transmission frequency of queue 3 as a percentage of the total (100) port capacity.
Mib	Ppp
Values	Decimal (0..100)
Units	%
Default	3

Nortel Networks Multiservice Switch 7400/15000/20000

Component Ppp

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Prov

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

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COMPONENT ProvisioningSystem (Prov)

Groups	"GROUP Prov OsiState (State)" "GROUP Prov Operational (Oper)" "GROUP Prov Provisioned (Prov)"
Scope	Application
Description	*ProvisioningSystem* This component implements the operator commands that are specific to the provisioning system. It also provides information about the state of the provisioning system.
Mib	Provisioning
Dyn. Subcomp.	"COMPONENT Prov View" "COMPONENT Prov SoftwareMigration (Migration)" "COMPONENT Prov HitlessSoftwarePatch (Patch)"
Common Verbs	Help List Display

VERB ACTivate Prov

Impact	Service
Description	*Activate [-file(<file name>)] [-force] [-noPause] Prov* This verb is used to activate (or bring into service) the provisioning data changes in the edit view or from a specified provisioning data file. After activation completes, the operator must issue a *Confirm* command in order to prevent automatic re-activation of the committed view. Note that the committed view is not necessarily the same as the view which was in effect prior to the activation. **Options:** *-file (<file name>)* specifies the name of a file containing provisioning data to be loaded, checked and activated. Note that only this form of the activate verb is allowed outside of provisioning mode. The *file name* argument has the form *name[.type[.number]]* where *name* is the name of the file; *type* must be ***full***; and *number* is the unique sequence number of the file. The *name* part of the argument must be between 1 and 31 characters in length, and may contain only alphanumeric characters and underscores. Note that file names are case-sensitive. If *number* is omitted, the most recent file beginning with *name.type* will be used; if both *type* and *number* are omitted, the most recent (complete) file beginning with *name.**full*** will be used. *-force* When a complete provisioning view is activated, the provisioning system checks to make sure that all the software necessary to activate the components contained in the view is currently running on the module. If any necessary software is missing, the *Activate* command fails and a list of missing software is displayed. The *-force* option overrides the checks for required software, and causes the file to be loaded and activated by

reloading the module with this provisioning data file.

When an unchecked provisioning view is being activated, the provisioning system runs a semantic *check* to issue errors and warnings. Some warnings are considered critical. For example, a service may have to be restarted in order to activate the specified provisioning data change, or a complete system restart may be required. If a semantic check error or critical warning occurs, the *activate* command is aborted. The *-force* option overrides the critical warnings, and activates the changes regardless. Note that semantic check errors can not be overridden.

In addition, if the journaled current view can be restored, then the *Activate Prov* command may cause the journaled current view to be purged, and a restore to be no longer possible. In this case, the *-force* option is required for the activation to proceed. Note that a restore is only possible if the attribute *restorePossible* is set to ***yes***.

-noPause
A staged software migration may enter a paused state if certain events occur. These events include software and hardware alarms on the migration shelf, provisioning data that is nacked, and the failure of an application to indicate that it is ready for the migration switchover. Once a software migration is paused, the user must issue the *Continue* command to unpause it.

The -noPause option indicates that the migration is never paused, even if a pausable event occurs.

-pause
A staged software migration is going to enter a paused state. Once a software migration is paused, the user must issue the *Continue* command to unpause it.

The -noPause and -pause Options are mutually exclusive.

VERB Check Prov

Impact	Configuration
Description	*Check [-stopOnError][-component (<name>) [-nonrecursive]] [-changed] Prov* This verb checks the provisioning data in the edit view to ensure it is semantically correct. A view cannot be activated until this check has been successfully completed. If the semantic check fails, all errors must be corrected before an activation attempt will succeed. **Options:** *-stopOnError* This option specifies that the check should be aborted immediately upon finding the first error. If this option is not specified, the system will abort after five (or more) errors have been detected. *-component(<name>)* This option specifies that the named component and all its subcomponents (recursively) are to be checked for semantic correctness. That is, the entire subtree, rooted at the named component will be checked. If this option is not specified, the entire edit view is checked. *-nonrecursive* This option specifies that only the named component (that is, none of its subcomponents) is to be checked for semantic correctness. *-changed* This option specifies that checks will only be run on added or changed components. Note that this may mean that not all required checks will run. This option is not valid when the *-component* option is used.

VERB CLEAR Prov

Impact: System_admin

Description: *Clear [-removedFeature] Prov*
This verb, when used with no options, will remove all deletable components (and their subcomponents) from the edit view. Components which cannot be deleted (and their subcomponents) are not affected.

Options:
-removedFeature
This option is typically used in conjunction with previously having removed one or more features from one or more LPTs. This option specifies that all components, both deletable and non-deletable, which will have their associated software unloaded from the switch, are to be removed from the edit view by the provisioning system.

VERB COMMIT Prov

Impact: Service

Description: *Commit [-file(<file name>)] [-force] Prov*
Commit makes the current view of the provisioning data the "committed" view. The committed view is the configuration that the module will activate following a Control Processor reset.

If the command specifies a filename, *Commit* will save the data for the current view in that file. If the current view has not been saved, the filename must be specified.

Note: in a system having two disks, the disks must be synchronized before the *commit* command will be accepted.

Options:
-file(<file name>)
specifies the name of the output file (actually the prefix for the output file name, as explained below) to be used for saving the current view data. If this option is not specified, the data for the current view must have already been saved, otherwise an error response will be generated.

The *file name* argument must be between 1 and 31 characters in length, and may contain only alphanumeric characters and underscores. File names are case-sensitive.

The actual file name used for the saved data has the form *name*.full.*number*
where *name* is the name specified in the *-file* option; and *number* is a unique sequence number for the file generated by the provisioning system.

-force
If the journaled current view can be restored, then the *Commit Prov* command will cause the journaled current view to be purged, and a restore will no longer be possible. In this case, the *-force* option is required for the *commit prov* command to proceed. Note that a restore is only possible if the attribute *restorePossible* is set to ***yes***.

VERB Confirm Prov

Impact	Service
Description	*Confirm Prov* A *Confirm* command must be issued following each *Activate* command. This ensures that management connectivity has not been lost when a new provisioning view is brought into service. If a *Confirm* is not entered within a reasonable time following an *Activate*, a system restart will occur and the committed view will be re-activated by the system. Service will be disrupted while the restart is in progress.

VERB Copy Prov

Impact	Configuration
Description	*Copy [-source(<component name>) [-current] [-nonrecursive] [-destination(<component name>)]]Prov* This verb is used to copy all or part of a view into the edit view. If no options are provided, the entire current view is copied into the edit view, replacing whatever was in the edit view previously, so that the two views are identical afterward. **Options:** *-source(<component name>)* specifies that only the named component and its subcomponents are to be copied. If any of these components already exist in the edit view, the copy fails and the edit view is unchanged. When *-source* is the only option specified, the system automatically copies the component and its subcomponents, if any, from the current view into the edit view. *-current* specifies that components are to be copied from the current view to the edit view, rather than being copied from the edit view. *-nonrecursive* This option is valid only if the *-source* option is also present. It specifies that the named *source* component (but not its subcomponents) should be copied. If, however, the copied component has “required” subcomponents, the default instances of these “required” subcomponents are always created. (This is similar to the behavior of the *Add* command.) *-destination(<component name>)* specifies the name to be given to the copy of the *source* component when it is put into the edit view. Any copied subcomponents of the *source* component will be likewise renamed in the edit view. If any renamed component already exists in the edit view, the copy fails and the edit view is unchanged.

VERB End Prov

Impact: Configuration

Description:

End Prov
This verb is used to leave provisioning mode.

The edit view is unchanged by this command. The edit view is not automatically saved on disk; it will be presented to the next provisioning operator as it was when the *End* command was executed.

VERB Load Prov

Impact: Configuration

Description:

Load [-force] -file(<file name>) Prov
This verb is used to load a specified file of provisioning data from the disk into the edit view.

Options:
-file (<file name>)
specifies the name of the file containing the provisioning data to be loaded.The *file name* argument has the form
name[.type[.number]]
where *name* is the name of the file; *type* is either ***full*** if the file contains a complete view, or ***part*** if the file contains only a particular component (and its subcomponents); and *number* is the unique sequence number of the file.

The *name* part of the argument must be between 1 and 31 characters in length, and may contain only alphanumeric characters and underscores. Note that file names are case-sensitive. If *number* is omitted, the most recent file beginning with *name.type* will be used; if both *type* and *number* are omitted, the most recent (complete) file beginning with *name.**full*** will be used.

-force
Normally, when a complete provisioning view is loaded, the provisioning system checks to make sure that all the software necessary to activate the components contained in the view is

currently running on the module. If any necessary software is missing, the *Load* command fails and a list of missing software is displayed.

The *-force* option overrides the checks for required software; that is, it causes the file to be loaded regardless of what software is currently running. When this option is used, error messages and software alarms may appear during loading of the file, and some components which are present in the file may be missing from the edit view when loading is complete.

The *-force* option also ensures the system processes the entire provisioning file rather than stopping after 5 errors.

VERB Save Prov

Impact: Configuration

Description: *Save [-current] [-file(<file name>)] [-component(<component name>)] [-ascii] [-portable] Prov*
This verb is used to save all or part of a provisioning view on the disk.

If no options are provided, the entire edit view is saved, using a default file name (see the description of the *-file* option below).

Options:
-current
specifies that the provisioning data of the current view is to be saved. If this option is not specified, the data of the edit view is saved.

-file(<file name>)
This option specifies the name of the output file (actually the prefix for the output file name, as explained below). The name must be between 1 and 31 characters in length, and may contain only alphanumeric characters and underscores.

The actual file name used for the saved data has the form
name.type.number
where *name* is the name specified in the *-file* option; *type* is

automatically set to ***full*** if the file contains a complete view, or ***part*** otherwise; and *number* will be a unique sequence number for the file, generated by the provisioning system.

If the *-file* option is not specified, the *name* used in the most recent *Save*, *Load* or *Commit* command involving a complete view is used to construct the output file name as described above.

-component(<component name>)
This option specifies a particular component to be saved; the named component must be provisionable. Only this component and its subcomponents will appear in the saved provisioning data.

When this option is used, the *-file* option must also be specified; the name of the saved file will always have the form *name.**part**.number*

-ascii
This option is used to force the system to write a file in ASCII format. This format is not required by the switch itself, but a file in this format may be used by external tools.

-portable
This option forces the system to write a complete file to disk. The ***portable*** format may at times be automatically generated when needed and the user would not normally be required to use this option. One reason to use this option is that the ***portable*** format is one complete unit (not dependent on any other view) and may be backed up, while the ***delta*** format has dependencies on the current view when saved.

If the *-ascii*, *-component* and *-portable* options are not specified, the system will save the differences between the edit and current views in the ***delta*** format.

VERB Start (St) Prov

Impact: Configuration

Description:

Start [-force] Prov
This verb is used to enter the provisioning mode. Only one operator session can be in provisioning mode at a given time. Therefore a *Start* command is normally rejected if another session is in provisioning mode.

Options:
-force
This option allows an operator with at least ***systemAdministration*** impact to enter provisioning mode even when another operator's session is already in provisioning mode.

The other operator's session is forced out of provisioning mode, after completing any commands in progress. A message alarm is generated to indicate that the other session is no longer in provisioning mode. The contents of the edit view created by the other operator are unaffected by the change of ownership of the provisioning session; therefore on entering provisioning mode the new provisioning operator may see a partially provisioned edit view created by the previous provisioning operator. Note that this view might not have been saved on disk by the previous operator.

VERB Tidy Prov

Impact: Configuration

Description:

Tidy[-all]
[-keep(<file> ...)]
[-remove(<file> ...)]
[-fromDate(<date>) -toDate(<date>)]

This verb causes the system to remove old provisioning views and/or software from the disk. Note that at least one option must be included in the command.

The following views and files are never removed by the *Tidy* command, regardless of the options specified in the command:
- the committed view

- the most recent complete view used by an *Activate*, *Load*, *Save* or *Commit* command
- the current view, if it exists as a saved view
- any view that is a base view for another kept view
- all protected views
- views that are currently opened for reading or writing
- non-provisioning files

The sequence of tidying events is as follows:
- prepare a list of candidate files for deletion (using the *-all*, *-remove* options)
- remove files from the list if they must be kept (using the *-keep*, *-fromDate*, *-toDate* option)
- remove the files on the list

This means that if the options specify a particular file (either explicitly or by wild-carding) both for removal and keeping, then the file will be kept.

Options:

-all
specifies that all views except the special views mentioned above are to be removed. This option can not be combined with the -remove, -fromDate, or -toDate options.

-keep(<view> <view> ...)
specifies that all views except the given list of views and the special views mentioned above are to be removed. Combining the -all option with this option is redundant.

-remove(<view> <view>...)
specifies that the given list of views are to be removed.

-fromDate(<date>)
specifies the start date (which has a format of yyyy-mm-dd) of the period for which views are to be removed. The period

specification is inclusive, that is, views created or modified on this date will be removed. If this option is specified, the -toDate option must also be specified in the command. Also, the time specified by *toDate* must not be earlier than *fromDate*.

-toDate(<date>)
specifies the end date (which has a format of yyyy-mm-dd) of the period for which views are to be removed. The period specification is inclusive, that is, views created or modified on this date will be removed. If this option is specified, the -fromDate option must also be specified in the command. Also, the time specified by *toDate* must not be earlier than *fromDate*.

VERB STOP Prov

Impact: Configuration

Description: *Stop Prov*
This verb causes certain potentially long-running *ProvisioningSystem* commands to be aborted. Only the *Apply, Check, Load, Save, and Activate* commands can be stopped in this manner and they can only be stopped by a user in provisioning mode.

If *provisioningActivity* has the value "***semantic checking***", "***saving***" or "***loading or applying***", the *ProvisioningSystem* attempts to abort the activity at the earliest possible time. This may not happen immediately as the command must finish the phase it is in before aborting. If provisioningActivity has the value "***activating***" and this is a software upgrade and only the sw component was changed, then ProvisioningSystem attempts to abort the command.

The *activityProgress* indicates the status of the abort until it has occurred. Note that the *Stop* command itself completes immediately (indicating success) even if the long-running command does not (the long-running command will indicate that it has been cancelled when it actually stops).

If *provisioningActivity* has any other value, or is not applicable to the activation, the user is notified that the *Stop* command is not supported for the current activity.

VERB APPly Prov

Impact	Configuration
Description	*Apply [-force] -file(<file name>) Prov* This verb is used to apply a previously stored set of changes (saved in ***delta*** format) to the edit view. **Options:** *-file (<file name>)* specifies the file, saved with a ***delta*** format, containing the changes to be applied.The *file name* argument has the form *name[*.full*[.number]]* where *name* is the name of the file; and *number* is the unique sequence number of the file. The *name* must refer to a file saved with a ***delta*** format, that is, created by the *Save Prov* command without the *-ascii* or *-portable* options. Note that file names are case-sensitive. If *number* is omitted, the most recent file beginning with *name.**full*** will be used; if only name is specified, the most recent (complete) file beginning with *name.**full*** will be used. *-force* Normally, when a complete provisioning view is applied, the provisioning system checks to make sure that all the software necessary to activate the components contained in the view is currently running on the module. If any necessary software is missing, the *Apply* command fails and a list of missing software is displayed. The *-force* option overrides the checks for required software; that is, it causes the file to be loaded regardless of what software is currently running. When this option is used, error messages and software alarms may appear during processing of the file, and some components which are present in the file may be missing from the edit view when the apply completes. The *-force* option also ensures the system processes the entire provisioning file rather than stopping after 5 errors.

VERB Continue Prov

Impact	Service
Description	Continue [-force] Prov This verb causes a software migration activation to be continued if it has been paused. Only an *Activate* command where the *provisioningActivity* has the value "***software migration paused, manual intervention required***" can be continued. If provisioningActivity has any other value, the user is notified that this command is not supported for the current activity. *-force* The *-force* option is going to continue software migration regardless of the pause cause. Pause cause can be that operator used *Activate* command with *-pause* option, or some pausable event occurred. These events include software and hardware alarms on the migration shelf, provisioning data that is nacked, and the failure of an application to indicate that it is ready for the migration switchover.

VERB REStore Prov

Impact	Service
Description	*Restore Prov* This verb causes the provisioning system to re-activate the journaled current view if a switch resets to the committed view. The attribute *restorePossible* is set to ***yes*** in the case where the *Restore Prov* command can be issued to restore the journaled current view.

GROUP Prov OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Provisioning

ATTRIBUTE Prov adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Provisioning

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Prov operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Provisioning
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Prov usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Provisioning
Values	idle active (activ) busy
Default	idle

GROUP Prov Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *ProvisioningSystem* component.
Mib	Provisioning

ATTRIBUTE Prov provisioningActivity

Access	Read only
Description	This attribute describes the type of provisioning activity that the *ProvisioningSystem* component is performing.
Mib	Provisioning
Values	initial loading none activation initial activation rolling back saving loading or applying semantic checking waiting for confirm clearing copying committing deleting confirming adding restoring
Default	No default

ATTRIBUTE Prov activityProgress

Access	Read only
Description	This attribute indicates the status relating to a long-running command handled by the *ProvisioningSystem*. It is usually expressed as a percentage of the number of elements (for example, components) processed with respect to the total set of elements that need to be processed for that activity. Note that, one cannot assume that the percentage implies how much time the task may still take. The time to complete the activity is dependent on many things which are beyond the control of the *ProvisioningSystem* itself.
Mib	Provisioning

Values	String (1..255, ASCII)
Default	No default

ATTRIBUTE Prov committedFileName

Access	Read only
Description	This attribute contains the name of the committed file. This is the file that will be used to obtain the provisioning data if the module restarts. Immediately after system power-up, this attribute contains the name of the file used during initial loading.
Mib	Provisioning
Values	String (1..40, ASCII)
Default	No default

ATTRIBUTE Prov currentViewFileName

Access	Read only
Description	This attribute contains the name of the provisioning file that contains the current view provisioning data. After system power-up, this attribute contains the name of the file used during initial loading. If the current view data has not been saved, this attribute is empty.
Mib	Provisioning
Values	String (1..40, ASCII)
Default	No default

ATTRIBUTE Prov lastUsedFileName

Access	Read only
Description	This attribute contains the last saved, loaded or committed file name. If a *Load*, *Save* or *Commit* command returns an error, this

	attribute remains unchanged. Immediately after system power-up, this attribute contains the name of the file used during initial loading.
Mib	Provisioning
Values	String (1..40, ASCII)
Default	No default

ATTRIBUTE Prov provisioningSession (session)

Access	Read only
Description	This attribute contains the component name of the operator session which is currently in provisioning mode. For example, ***NMIS Telnet Session/2*** If no session is in provisioning mode, this attribute will be empty.
Mib	Provisioning
Values	The name of the component
Default	No default

ATTRIBUTE Prov provisioningUser (user)

Access	Read only
Description	This attribute contains the *userid* of the operator who is currently provisioning the module. If no session is in provisioning mode, this attribute will be empty.
Mib	Provisioning
Values	String (1..8, ASCII)
Default	No default

ATTRIBUTE Prov checkRequired

Access	Read only
Description	This attribute indicates whether semantic checking is required before activating the edit view.

Mib	Provisioning
Values	yes no
Default	No default

ATTRIBUTE Prov confirmRequired

Access	Read only
Description	This attribute indicates whether the operator must enter a *Confirm Prov* command in order to keep a newly activated or restored current view in effect. If an activation or restore is not confirmed within 20 minutes of its completion, the module will restart using the committed provisioning data.
Mib	Provisioning
Values	yes no
Default	No default

ATTRIBUTE Prov editViewName (evName)

Access	Read only
Description	This attribute indicates the name of the provisioning view that represents the edit view provisioning data. If the edit view data has not been saved, this attribute is empty.
Mib	Provisioning
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Prov editViewAddedComponents (evAdded)

Access	Read only

Description	This attribute indicates the number of provisioning components that have been added to the edit view with respect to the current view.
Mib	Provisioning
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Prov editViewDeletedComponents (evDeleted)

Access	Read only
Description	This attribute indicates the number of provisioned components that have been deleted from the edit view with respect to the current view.
Mib	Provisioning
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Prov editViewChangedComponents (evChanged)

Access	Read only
Description	This attribute indicates the number of provisioned components whose attributes differ between the edit and current views.
Mib	Provisioning
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Prov standbyCpActivity

Access	Read only
Description	This attribute indicates the current activity being performed by the provisioning system on the standby CP. This attribute may take the following values: ***none*** - When no provisioning activity is in progress. ***loading provisioning data*** - When a committed file is being loaded.

saving commit-format provisioning data - When provisioning data is being saved with commit formats in preparation for a software migration.
delivering provisioning data on migrating cards - When the standby CP is being activated as the migration active card for a software migration.
synchronizing provisioning data- When a journal log file is being loaded on the standby CP in order to synchronize the standby CP configuration database with the active CP configuration database. This occurs after a manual activation has been confirmed when CP equipment protection is provisioned.
loading new software on CP - When the standby CP is coming up and is being loaded with software.

Mib: Provisioning

Values:
none
loading provisioning data
saving commit-format provisioning data
delivering provisioning data on migrating cards
synchronizing provisioning data
loading new software on CP

Default: No default

ATTRIBUTE Prov standbyCpActivityProgress

Access: Read only

Description: This attribute indicates the status of the provisioning activity which the *ProvisioningSystem* is performing on the standby CP.

Mib: Provisioning

Values: String (1..255, ASCII)

Default: No default

ATTRIBUTE Prov journalDisabledReason

Access: Read only

Description: This attribute indicates the reason (if any) that journal log file saving is disabled. This attribute may take the following values:
"not disabled" - If journal log file saving is operationally

enabled.
"not configured" - If journal log file saving is provisioned to be disabled.
"file system error" - If journal log file saving is operationally disabled due to a file system problem, such as disk full or file system locked.
"threshold exceeded" - If journal log file saving is operationally disabled because the maximum number of journal log files has already been reached.
"reload activation" - If journal log file saving is operationally disabled because the last activation was a reload activation.
"initial commit required" - If journaling has just been enabled by provisioning but a *Commit Prov* has not been issued.
"***restore failed***" - If journal log saving is operationally disabled because the *restore prov* command failed to restore all the journal logs.

After the error condition is corrected, a *Commit Prov* command causes journaling to become enabled once again.

Mib: Provisioning

Values:
not disabled
not configured
file system error
threshold exceeded
reload activation
initial commit required
restore failed

Default: No default

ATTRIBUTE Prov restorePossible

Access: Read only

Description: This attribute indicates whether or not it is possible to use the *Restore Prov* command to restore to the last known current view after a switch reset.
If a switch comes up and a *Restore Prov* command is possible, a warning alarm with index 7000 0038 will be raised against the *Prov* component. This alarm will be cleared when the *Restore Prov* command is issued by the operator. It will also be cleared if

the operator does not perform a *Restore Prov* command, but performs an *Activate Prov* or a *Commit Prov.*
Note that an activation or commit before a *Restore Prov* command results in the removal of all the existing journal log files, so that a *Restore Prov* command will no longer be possible. This situation is indicated to the operator by a semantic check warning.

Mib: Provisioning

Values: yes
no

Default: No default

ATTRIBUTE Prov currentJournal (currentJn)

Access: Read only

Description: This attribute indicates the number of journal logs files that have been saved since the last *Commit Prov* command.

When the value of the *currentJournal* attribute approaches the provisioned maximum allowed number of journal log files (a value represented by the *maxNumberJournalFiles* attribute), an alarm with index 7000 0036 is raised against the *Prov* component. The severity of the alarm depends on the percentage of the maximum allowed number of journal log files that have been saved since the last *Commit Prov* command:

75% - Warning
85% - Minor
95% - Major

If the user does not perform a *Commit Prov* command and allows the value of the *currentJournal* attribute to equal the *maxNumberJournalFiles* attribute, journal log file saving becomes operationally disabled. In this case, a critical alarm with index 7000 0037 is raised against the *Prov* component. The resulting impact is that CP equipment protection is disabled, and a CP switchover attempt would result in a shelf reset instead.

When the user enters a *Commit Prov* command, all previous journal logs are removed and the *currentJournal* attribute is reset

to zero. If an alarm was raised because journal log saving was disabled, it is cleared. If an alarm was raised due to the number of journal log files before the commit prov, it is cleared. If CP equipment protection and journal log saving were disabled before the *Commit Prov* command because of the number of journal log files, they become enabled after the *Commit Prov* command.

Mib	Provisioning
Values	Decimal (0..2000)
Default	No default

GROUP Prov Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *ProvisioningSystem* component.
Mib	Provisioning

ATTRIBUTE Prov maxNumberJournalFiles (maxJn)

Access	Read and write
Description	This attribute specifies the maximum number of journal files that can be saved. A value of ***none*** specifies that journaling is disabled, while any other value specifies that journaling is enabled. The *Shelf cpEquipmentProtection* attribute must be set to ***cold*** when the *maxNumberJournalFiles* attribute is set to ***none***. The value of the *maxNumberJournalFiles* attribute must be greater than the value of the *Prov currentJournal* operational attribute. If it is not, the resulting impact is that journal log file saving becomes operationally disabled. A critical alarm with index 7000 0037 is also raised against the *Prov* component. A *Commit Prov* command would need to be entered to re-enable journaling. The operator may want to set the *maxNumberJournalFiles* attribute to be less than the default value of ***2000*** in order to force a *Commit Prov* command to be entered more frequently. If a switch reset to the committed view occurs, the *Restore Prov*

	command may take less time to complete in this case, since there are fewer journal log files to load and activate.
Mib	Provisioning
Values	Decimal (100..2000) none
Default	2000

COMPONENT Prov View

Instance	String (1..40, ASCII)
Groups	"GROUP Prov View Operational (Oper)"
Scope	Application
Description	*Prov View/<string>* This component represents information about provisioning views. Most of these views have been saved and can be activated or loaded. In this case, the format for <string> is <name>.<type>.<number> where <name> is the view's name; <type> is either ***full*** or ***part***, <number> is a unique sequence number generated by the system. The ***current*** and ***edit*** views are not necessarily saved.
Mib	Provisioning
Common Verbs	Help List Display

GROUP Prov View Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *View* component.
Mib	Provisioning

ATTRIBUTE Prov View user

Access	Read only
Description	This attribute indicates the *userid* of the operator who first saved this view. It may be empty if unknown or if the view has not been saved.
Mib	Provisioning
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE Prov View checkState

Access	Read only
Description	This attribute indicates the semantic check state of the view when it was saved. The values are described in worst to best order. The ***failed*** state indicates that the view has failed a semantic check and cannot be activated. The ***unknown*** state indicates that semantic checks have not been run and the view cannot be activated. The ***partial*** state indicates that the view has passed incomplete checks, that is *Check -changed Prov* has succeeded. This is also the best state value for a partial view. Thew view cannot be activated until it has been fully checked. The ***softwareChanged*** state indicates that the view has passed complete checks, but by software other than that to be activated, that is, either the application versions have changed, or features have been added. After activation, the new software may detect semantic errors. After correcting these errors, if any, the view will need to be re-saved or re-committed as appropriate. The ***full*** state indicates that the view has passed complete checks, that is, it has been fully verified. It can be activated.
Mib	Provisioning

Values	failed (fail) unknown (unk) partial (part) softwareChanged (sw) full
Default	No default

ATTRIBUTE Prov View components (comps)

Access	Read only
Description	This attributes indicates the number of provisioned components that have been (or could be) saved.
Mib	Provisioning
Values	Decimal (0..999999)
Default	No default

ATTRIBUTE Prov View formats

Access	Read only
Description	This attribute indicates the formats of the saved information. Each serves a different purpose. The ***ascii*** format is readable by operators and can be easily parsed and generated by scripts. MDM makes use of this format. Note that the syntax is subject to change without notice. This format is generated via *Save -ascii Prov.* A view with an ascii format can be loaded and activated. The ***commit*** format is generated via *Commit Prov* and allows for fast activation, that is, a shorter service outage time. The system will never leave a view with only this format, as it cannot be loaded. The ***delta*** format contains the changes made between the current view and the edit view. It is, therefore, much smaller and faster to *Load* or *Save* than the other formats. A view containing this format can be loaded or have the changes applied to the edit view. This provides a mechanism to propagate a set of changes from

one view to another. A view containing only this format can be activated if this would not require a system reload. To generate this format, issue *Save Prov* without the *-ascii* or *-portable* options.

The ***part*** format is generated via *Save -component() Prov.* The part format can be loaded. The syntax of this format is subject to change without notice.

The ***portable*** format is a compact representation that can be quickly loaded. It can be transported from one node to another, or to an MDM. It is generated via *Save -portable Prov.* The portable format can be loaded and activated.

Mib	Provisioning
Set of	ascii commit delta part portable (port)
Default	No default

ATTRIBUTE Prov View baseView (base)

Access	Read only
Description	This attribute indicates the name of the view upon which this view's changes are based (even if the ***delta*** format does not exists). In other words, it indicates the name of the current view that existed at the time that this view was saved. This may not be the name of the current view that is running now. This attribute is empty when the view is unsaved or if the current view was saved.
Mib	Provisioning
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Prov View version

Access	Read only
Description	This attribute represents the version of base software that saved this view. It is empty if unknown.
Mib	Provisioning
Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE Prov View creationDate

Access	Read only
Description	This attribute indicates the creation date of this view.
Mib	Provisioning
Values	Time (DHMS)
Default	No default

COMPONENT Prov SoftwareMigration (Migration)

Groups	"GROUP Prov Migration OsiState (State)"
Scope	Application
Description	*Prov SoftwareMigration* This component coordinates the migration visible alarms generated by the migration shelf while a software migration activation is in progress. The *Migration* component is automatically created at the start of a software migration activation and is removed at the completion of a software migration activation, whether successful or unsuccessful. The

presence of the *Migration* component indicates that a software migration activation is being performed.

Mib: Provisioning

Common Verbs:
Help
List
Display

GROUP Prov Migration OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Provisioning

ATTRIBUTE Prov Migration adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	Provisioning
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Prov Migration operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Provisioning
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Prov Migration usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Provisioning

Values:
idle
active (activ)
busy

Default: idle

COMPONENT Prov HitlessSoftwarePatch (Patch)

Groups:
"GROUP Prov Patch OsiState (State)"
"GROUP Prov Patch Operational (Oper)"

Scope: Application

Description:
Prov HitlessSoftwarePatch
This component coordinates the Hitless Software Patching (HSP) visible alarms generated while a HSP is in progress. The *Patch* component is automatically created at the start of a HSP and is removed at the completion of a HSP, whether successful or unsuccessful. The presence of the *Patch* component indicates that a HSP activation is being performed.

Mib: Provisioning

Common Verbs:
Help
List
Display

GROUP Prov Patch OsiState (State)

Properties: Operational

Description:
This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Provisioning

ATTRIBUTE Prov Patch adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Provisioning
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Prov Patch operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Provisioning

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Prov Patch usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Provisioning

Values: idle
active (activ)
busy

Default: idle

GROUP Prov Patch Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the *Prov Patch* component.

Mib: Provisioning

ATTRIBUTE Prov Patch cardsBeingPatched

Access: Read only

Description	This attribute indicates the list of the cards currently being patched during the Hitless Software Patching (HSP) process. An empty list indicates that there is no card being currently patched.
Mib	Provisioning
List of	Decimal (0..15)
List Size	16
Default	No default

ATTRIBUTE Prov Patch cardsToPatch

Access	Read only
Description	This attribute indicates the list of the cards to be patched. As cards are successfully patched, they are removed from this list and added to *cardsPatched*.
Mib	Provisioning
List of	Decimal (0..15)
List Size	16
Default	No default

ATTRIBUTE Prov Patch cardsPatched

Access	Read only
Description	This attribute indicates the list of cards on which the software have been successfully patched as a result of the Hitless Software Patching (HSP).
Mib	Provisioning
List of	Decimal (0..15)
List Size	16
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Prov

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component RGty

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component RGty

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COMPONENT RoutingGateway (RGty)

Instance	Decimal (0..4294967295)
Groups	"GROUP RGty OsiState (State)" "GROUP RGty Prov (Prov)" "GROUP RGty Oper (Oper)" "GROUP RGty CustomerIdentifierData (CidData)"
Scope	Network
Description	*RoutingGateway/n* This component must be provisioned on nodes where calls cross boundaries between topology regions. It must also be provisioned on nodes where calls cross boundaries between cluster and non-cluster nodes. A *RGty* is responsible for bridging calls across these boundaries. A *RGty* upon the receipt of a call setup message terminates the existing segment of the call coming from the direction of its source and originates a new path segment of the call towards its destination. This means that each call handled by the *RGty* consists of two segments: one leading to the source of the call and the other leading to the destination of the call. The *RGty* may be provisioned on one or more logical processors (*Lp*s). If an *RGty* is provisioned on a single *Lp*, all calls bridged across the above mentioned boundaries through this node will have their path segments terminated and originated on this *Lp*. If a single *Lp* does not have sufficient capacity to bridge all of the calls then multiple *RGty*s may be provisioned on multiple *Lp*s and the calls will be equally shared among all the *RGty*s. For more information as to which *Lp* to choose for the *RGty*, or

for information as to how many *RGty*s should be provisioned on a node please refer to the Engineering Guidelines.

Mib	RoutingGateway
Dyn. Subcomp.	"COMPONENT RGty Call (Call)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP RGty OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	RoutingGateway

ATTRIBUTE RGty adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users

only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	RoutingGateway
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE RGty operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	RoutingGateway
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE RGty usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	RoutingGateway
Values	idle active (activ) busy
Default	idle

ATTRIBUTE RGty availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can

be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	RoutingGateway
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE RGty proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: RoutingGateway

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE RGty controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: RoutingGateway

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE RGty alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: RoutingGateway

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE RGty standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: RoutingGateway

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE RGty unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	RoutingGateway
Values	false true
Default	false

GROUP RGty Prov (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes of the *RGty*.
Mib	RoutingGateway

ATTRIBUTE RGty logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies a logical processor (*Lp*) on which the *RGty* resides. The *RGty* may reside on any *Lp* simply by pointing this attribute to the *Lp/n* component. Only one *RGty* may reside on an *Lp*.

For more information as to which *Lp* to choose for the *RGty*, or for information as to how many *RGty*s should be provisioned on a node please refer to the Engineering Guidelines.

Mib: RoutingGateway

Values: Link (Hardware, linkToApplications)

Default: No default

ATTRIBUTE RGty maxCalls (maxc)

Access: Read and write

Criticality: Process

Description: This attribute specifies the maximum number of calls that the *RGty* can handle, thus the attribute is used to limit resource (CPU and memory) usage by the *RGty*. The attribute is also used to control the spreading of calls among multiple *RGty*s. When a call needs to cross a topology region or cluster boundary, the *RGty* selected to handle the call is the one which has the smallest ratio of *currentCalls* to *maxCalls*. For example, assume there are two *RGty*s, first with *currentCalls* = 1 and *maxCalls* = 10, second with *currentCalls* = 1 and *maxCalls* = 100. New calls will go to the second *RGty* until it has *currentCalls* = 11 at which time the first *RGty* will take one call giving it the ratio of 2 *currentCalls* to 10 *maxCalls*. Then, 10 more calls will go to the second *RGty* and the next call to the first *RGty*, and so on.

Note that the spreading algorithm is approximate and does not yield exact results due to latency in the delivery and caching of the required distributed data.

It is important to note that this attribute does not guarantee enough resources are available to handle the maximum number of calls. It simply guarantees that no more than the maximum number of calls will be handled by the *RGty*.

Mib: RoutingGateway

Values: Decimal (0..1000)

Default: 100

GROUP RGty Oper (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *RGty*.
Mib	RoutingGateway

ATTRIBUTE RGty currentCalls (curc)

Access	Read only
Description	This attribute indicates the number of calls that the *RGty* is currently handling. Note that *currentCalls* may exceed *maxCalls* when *maxCalls* was decreased at the time when the *RGty* had *currentCalls* greater than the new *maxCalls*. For example, if the *RGty* has *currentCalls* = 70 and *maxCalls* = 100 when *maxCalls* is decreased to 50 then until 20 calls are cleared *currentCalls* will be greater than *maxCalls*.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty setupFromGateway (sfg)

Access	Read only
Description	This attribute counts the call setup messages that the *RGty* has received across the topology region or cluster boundary.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty setupToGateway (stg)

Access	Read only
Description	This attribute counts the call setup messages that the *RGty* has sent across the topology region or cluster boundary.
Mib	RoutingGateway

Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty connectFromGateway (cfg)

Access	Read only
Description	This attribute counts the call connect messages that the *RGty* has received across the topology region or cluster boundary.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty connectToGateway (ctg)

Access	Read only
Description	This attribute counts the call connect messages that the *RGty* has sent across the topology region or cluster boundary.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty releaseFromGateway (rfg)

Access	Read only
Description	This attribute counts the call release messages that the *RGty* has received across the topology region or cluster boundary.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty releaseToGateway (rtg)

Access	Read only

Description	This attribute counts the call release messages that the *RGty* has sent across the topology region or cluster boundary.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty rerouteFromGateway (rrfg)

Access	Read only
Description	This attribute counts the Nortel Networks proprietary reroute messages that the *RGty* has received across the topology region or cluster boundary. This reflects the number of times a call handled by the *RGty* has been moved from one boundary (inter-region or cluster) link to another. The call is moved as a result of a successful reroute due to link failure, or as a result of call balancing or optimization occurring on the local node or node across the boundary.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty rerouteToGateway (rrtg)

Access	Read only
Description	This attribute counts the Nortel Networks proprietary reroute messages that the *RGty* has sent across the topology region or cluster boundary. This reflects the number of times a call handled by the *RGty* has been moved from one path to another within the *RGty*'s topology region or cluster. The call is moved as a result of a successful reroute due to a link failure within the *RGty*'s topology region or cluster, or as a result of call balancing or optimization occurring within this region or cluster.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty failedCallAttempts (fc)

Access	Read only
Description	This attribute counts the calls handled by the *RGty* that have failed during their establishment phase (setup and connect).
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty localResourceExhaustionReleases (lr)

Access	Read only
Description	This attribute counts the call release messages that the *RGty* has generated due to a lack of resources required to process a call setup or connect message.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty lastFailedAttemptCalledAddress (fcda)

Access	Read only
Description	This attribute indicates the final destination NSAP address of the last call handled by the *RGty* which failed in its establishment phase. An empty string implies that there has been no call establishment failure so far.
Mib	RoutingGateway
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE RGty lastFailedAttemptCallingAddress (fcca)

Access	Read only

Description	This attribute indicates the initial source NSAP address of the last call handled by the *RGty* which failed in its establishment phase. An empty string implies that there has been no call establishment failure so far.
Mib	RoutingGateway
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE RGty lastFailedAttemptReleaseCause (fcrc)

Access	Read only
Description	This attribute indicates the Q.2931 release cause for the last call handled by the *RGty* which failed in its establishment phase. A value of 0 implies that there has been no call establishment failure so far. The most common release causes are as follows: 3 = No Route To Destination, (routing system cannot get there) 17 = User Busy, (called party already has a call up) 18 = No User Response, (called party not responding) 21 = Call Rejected, (called party not accepting call) 37 = Cell Rate Unavailable (network congestion upstream) 41 = Temporary Failure (upstream card failure, etc.) 45 = No VPI VCI Available (got route but no B/W or VCC upstream) 47 = Resource Unavailable (got route but no resources upstream) 88 = Incompatible destination (called party not compatible) 102 = Timer Recovery (control or data congestion upstream)
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty lastFailedAttemptReleaseDiag (fcrd)

Access	Read only
Description	This attribute indicates the Q.2931 release diagnostic for the last call handled by the *RGty* which failed in its establishment phase.

	An empty string implies that there has been no call establishment failure so far.
Mib	RoutingGateway
Values	String (0..8, ASCII)
Default	No default

ATTRIBUTE RGty lastFailedAttemptTime (fct)

Access	Read only
Description	This attribute indicates the time at which the *RGty* processed the last call that failed in its establishment phase. If no call establishment failures have occurred then it gives the time the *RGty* was created.
Mib	RoutingGateway
Values	Time (DHMS)
Default	No default

GROUP RGty CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	RoutingGateway

ATTRIBUTE RGty customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID

provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	RoutingGateway
Values	Decimal (0; 1..8191)
Default	0

COMPONENT RGty Call (Call)

Instance	Decimal (0..65534)
Groups	"GROUP RGty Call Oper (Oper)"
Scope	Network
Description	*RGty/n Call/n* This component represents a call from source to destination that is handled by the *RGty*. The *RGty* upon the receipt of a call setup message terminates the existing path segment of the call coming from the direction of its source and originates a new path segment of the call towards the destination. This means that each *RGtyCall* consists of two path segments: one leading to the source of the call and the other leading to the destination of the call.
Mib	RoutingGateway
Dyn. Subcomp.	"COMPONENT RGty Call Segment (Seg)"
Common Verbs	Help List Display

VERB CLEAR RGty Call

Impact	Service
Description	Clearing a *RoutingGatewayCall* causes the termination of the entire call handled by *RGty*. That is, path segments leading to both the source and destinaiton are terminated.

GROUP RGty Call Oper (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *RGtyCall*.
Mib	RoutingGateway

ATTRIBUTE RGty Call stateToSource (sts)

Access	Read only
Description	This attribute indicates the current state of the path segment of the *RGtyCall* leading towards the source of the call. See the *state* attribute of *RGtyCallSegment* component for more details.
Mib	RoutingGateway
Values	String (0..30, ASCII)
Default	No default

ATTRIBUTE RGty Call stateToDestination (std)

Access	Read only
Description	This attribute indicates the current state of the path segment of the *RGtyCall* leading towards the destination of the call. See the *state* attribute of *RGtyCallSegment* component for more details.
Mib	RoutingGateway
Values	String (0..30, ASCII)
Default	No default

ATTRIBUTE RGty Call calledAddress (cda)

Access	Read only

Description	This attribute indicates the final destination NSAP address of the *RGtyCall*.
Mib	RoutingGateway
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE RGty Call callingAddress (cga)

Access	Read only
Description	This attribute indicates the initial source NSAP address of the *RGtyCall*.
Mib	RoutingGateway
Values	String (0..40, ASCII)
Default	No default

COMPONENT RGty Call Segment (Seg)

Instance	toSource (s) toDestination (d)
Groups	"GROUP RGty Call Seg Oper (Oper)"
Scope	Network
Description	*RGty/n Call/n Segment/n* This component represents one of the two path segments of the call handled by the *RGty*: the one leading to the source of the call or the one leading to the destination of the call. Under each *RGtyCallSegment* is the *LogicalConnection* component for the

	routing system which is responsible for the management of that path segment.
Mib	RoutingGateway
Dyn. Subcomp.	"COMPONENT RGty Call Seg AtmConnection (AtmCon)" "COMPONENT RGty Call Seg LogicalConnection (LCo)"
Common Verbs	Help List Display

GROUP RGty Call Seg Oper (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *RGtyCallSegment*.
Mib	RoutingGateway

ATTRIBUTE RGty Call Seg state (st)

Access	Read only
Description	This attribute indicates the current state of the *RGtyCallSegment*. VALUES AND DESCRIPTIONS OF THESE STATES ARE STILL TO BE DETERMINED.
Mib	RoutingGateway
Values	String (0..15, ASCII)
Default	No default

COMPONENT RGty Call Seg AtmConnection (AtmCon)

Groups	"GROUP RGty Call Seg AtmCon Operational (Oper)"
Scope	Device

Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	RoutingGateway
Common Verbs	Help List Display

GROUP RGty Call Seg AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	RoutingGateway

ATTRIBUTE RGty Call Seg AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	RoutingGateway
Values	The name of the component
Default	No default

COMPONENT RGty Call Seg LogicalConnection (LCo)

Groups	"GROUP RGty Call Seg LCo PathData" "GROUP RGty Call Seg LCo Statistics (Stats)"
Scope	Application

Description ...*Lc*
This component contains all of the operation attributes for a Path Oriented Logical Connection.

Mib RoutingGateway

Common Verbs
Help
List
Display

VERB RERoute RGty Call Seg LCo

Impact Service

Description RERoute ..Lc
This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *REReute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified.
This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively.

When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path.

If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP RGty Call Seg LCo PathData

Properties Operational

Description This group contains all operational attributes for the path oriented LCo.

Mib	RoutingGateway

ATTRIBUTE RGty Call Seg LCo state

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.
Mib	RoutingGateway
Values	pathDown selectingRoute connecting pathUp pathDownRetrying
Default	No default

ATTRIBUTE RGty Call Seg LCo overrideRemoteName (orn)

Access	Read: All Write: All
Description	If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.
Mib	RoutingGateway
Values	String (0..40, ASCII)

Default	""

ATTRIBUTE RGty Call Seg LCo end

Access	Read only
Description	This attribute identifies whether this is the calling or called end of the path.
Mib	RoutingGateway
Values	calling called
Default	No default

ATTRIBUTE RGty Call Seg LCo costMetric (cost)

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty Call Seg LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.
Mib	RoutingGateway
Values	Decimal (0..100000)

Units	msec
Default	No default

ATTRIBUTE RGty Call Seg LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	RoutingGateway
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE RGty Call Seg LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	RoutingGateway

Values	Decimal (0..4)
Default	No default

ATTRIBUTE RGty Call Seg LCo holdingPriority (hpri)

Access	Read only
Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	RoutingGateway
Values	Decimal (0..4)
Default	No default

ATTRIBUTE RGty Call Seg LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	RoutingGateway
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE RGty Call Seg LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value

Mib	RoutingGateway
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE RGty Call Seg LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType***,** will be candidates for this connection.
Mib	RoutingGateway
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE RGty Call Seg LCo permittedTrunkTypes (pttyp)

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection

	determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.
Mib	RoutingGateway
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE RGty Call Seg LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	RoutingGateway
Values	Decimal (0..7)
Default	No default

ATTRIBUTE RGty Call Seg LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection

	determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	RoutingGateway
Values	Decimal (0..7)
Default	No default

ATTRIBUTE RGty Call Seg LCo emissionPriority (epri)

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority. EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	RoutingGateway
Values	Decimal (0..2)
Default	No default

ATTRIBUTE RGty Call Seg LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority.* One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).

Mib	RoutingGateway
Values	Decimal (1..3)
Default	No default

ATTRIBUTE RGty Call Seg LCo pathType (pType)

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	RoutingGateway
Values	normal manual forced
Default	No default

ATTRIBUTE RGty Call Seg LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately.

	A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.
Mib	RoutingGateway
Values	Decimal (0..255)
Default	No default

ATTRIBUTE RGty Call Seg LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	RoutingGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE RGty Call Seg LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This

reason is also issued when there is no physical connectivity between two end nodes.

Mib RoutingGateway

Values
none
destinationNameTooLong
destinationNotSpecified
unknownDestinationName
incorrectDestination
incorrectDestinationEndPoint
unknownSource
unknownDestination
sameNode
routeCostTooMuch
routesDelayTooLong
attributesNotMet
anError
attributeProfileProblem
manualPathIndexProblem

Default none

ATTRIBUTE RGty Call Seg LCo lastTearDownReason

Access Read only

Description This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons:
none - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up.
normalShutDown - This path has gone down due to normal call termination.
insufficientTxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction.
insufficientRxLcOrBandwidth - At present there is either no

available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction.
trunkFailure- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute.
trunkCardFailure- A trunk FP card has failed along the path.
accessCardFailure- The FP on which the peer access service was running has failed.
operatorForced- The path has terminated due to the operator locking a trunk along the path.
lostLcnClash- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get

bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib RoutingGateway

Values
none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound
farEndNotFound
wrongModuleReached
farEndBusy
callLoopedBack
unknownReason
farEndNotReady
remoteNameMismatch
serviceTypeMismatch
reconnectFromFarEnd
bumped
accessCardFailure

	optimized overrideRemoteName trunkOrFarEndDidNotSupportMode
Default	none

ATTRIBUTE RGty Call Seg LCo pathFailureAction

Access	Read only
Description	This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends
Mib	RoutingGateway
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE RGty Call Seg LCo bumpPreference (bpref)

Access	Read only
Description	This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is

	lower (numerically higher) than the connection's *setupPriority*. A connection may also always bump in order to obtain the best route.
Mib	RoutingGateway
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE RGty Call Seg LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	RoutingGateway
Values	disabled enabled
Default	No default

ATTRIBUTE RGty Call Seg LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	RoutingGateway
Values	Time (DHMS)
Default	No default

ATTRIBUTE RGty Call Seg LCo path

Access	Read only

Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.
Mib	RoutingGateway
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP RGty Call Seg LCo Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	RoutingGateway

ATTRIBUTE RGty Call Seg LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	RoutingGateway
Values	Long Integer
Default	No default

ATTRIBUTE RGty Call Seg LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	RoutingGateway
Values	Long Integer
Default	No default

ATTRIBUTE RGty Call Seg LCo pktsFromNetwork

Access	Read only
Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	RoutingGateway
Values	Long Integer
Default	No default

ATTRIBUTE RGty Call Seg LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	RoutingGateway
Values	Long Integer
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component RGty

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component RncIn

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component RncIn

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COMPONENT RncInterfaceNode (RncIn)

Groups	"GROUP RncIn Provisioned (Prov)" "GROUP RncIn OsiState (State)"
Scope	Network
Description	*RncInterfaceNode* This component represents system level information related to a passport configured either as a classic I-Node in an RNC or as a RNC Compact.
Mib	no_mib
Common Verbs	Help List Display

GROUP RncIn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning attributes of the *RncInterfaceNode* component.
Mib	no_mib

ATTRIBUTE RncIn primaryOmuIpAddress (priOmuAddr)

Access	Read: All Write: All

Description	This attribute specifies the IP address of the primary Omu in the Control Node. This IP address is used to establish a link between the I-Node and the C-Node in the RNC. This address must be the same as the C-Node primary OmuIP address configured in the CT-2000. If the value of this attribute is changed, the Master and Standby APs must be reset after the *Activate Prov* command has completed.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE RncIn secondaryOmuIpAddress (secOmuAddr)

Access	Read: All Write: All
Description	This attribute specifies the Ip Address of the secondary Omu in the Control Node. This attribute is used to establish a link between the I-Node and the C-Node in the case where the primary Omu is not active. This address must be the same as the secondary OMU IP address configured in the CT-2000. If the value of this attribute is changed, the Master and Standby APs must be reset after the *Activate Prov* command has completed.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE RncIn protocolConverterResources (pcRes)

Access	Read: All Write: All
Description	This value represents the percentage of processing resources for Protocol Converters (PC). When this value increases, more resources will be devoted to Protocol converters. When this value decreases, more resources will be devoted to Radio Access Bearer services. If you change this value, the new value takes effect as new processing resources come into service. To force the new percentage to be effective immediately, either reset the whole

	shelf or enough processing resources. The processing resources for protocol converters will be allocated based on the nearest percentage possible to the specified one.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	17

ATTRIBUTE RncIn mode (mode)

Access	Read: All Write: All
Criticality	Module
Description	This attribute specifies the mode of RNC configuration. A value of *InodeClassic* indicates a normal Classic configuration. A value of *RncCompact* indicates a complete RNC Compact configuration.
Mib	no_mib
Values	inodeClassic rncCompact
Default	inodeClassic

GROUP RncIn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE RncIn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE RncIn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

	component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE RncIn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

Nortel Networks Multiservice Switch 7400/15000/20000

Component RncIn

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Rsa

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Nortel Networks Multiservice Switch 7400/15000/20000

Component Rsa

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COMPONENT RemoteServerAgent (Rsa)

Instance	String (1..8, ASCII)
Groups	"GROUP Rsa Options" "GROUP Rsa OsiState (State)" "GROUP Rsa Operational"
Scope	Network
Description	*RemoteServerAgent/<string>* The *Rsa* component provides external applications access to Nortel Networks Multiservice Switch servers via a Frame Relay SVC connection. The *Rsa* component can be provisioned on any node in the network. Multiple *Rsa* components can be provisioned for load sharing and/or backup purposes. The component instance value is a unique string within the node.
Mib	ServerAccessRsa
Subcomponents	"COMPONENT Rsa DataNetworkAddress (Dna)"
Opt. Subcomp.	"COMPONENT Rsa VncsAccess"
Dyn. Subcomp.	"COMPONENT Rsa Connection"
Common Verbs	Help List Display Add DELete

GROUP Rsa Options

Properties	Provisioned
Description	The *Options* group defines provisionable attributes associated with the *Rsa* component.
Mib	ServerAccessRsa

ATTRIBUTE Rsa logicalProcessor (lp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the logical processor on which the RSA process will execute.
Mib	ServerAccessRsa
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP Rsa OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	ServerAccessRsa

ATTRIBUTE Rsa adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or

Lock command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	ServerAccessRsa
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rsa operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	ServerAccessRsa
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rsa usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	ServerAccessRsa
Values	idle active (activ) busy
Default	idle

GROUP Rsa Operational

Properties	Operational
Description	The *Operational* group defines operational attributes associated with the *Rsa* component.
Mib	ServerAccessRsa

ATTRIBUTE Rsa maxRsiConnections

Access	Read only
Description	This attribute specifies the maximum number of RSI connections which can be supported by this *Rsa*.
Mib	ServerAccessRsa
Values	Decimal (1000)
Default	No default

ATTRIBUTE Rsa rsiConnections

Access	Read only
Description	This attribute specifies the number of active RSI connections currently supported by the *Rsa* component.
Mib	ServerAccessRsa
Values	Decimal (0..1000)
Default	No default

COMPONENT Rsa DataNetworkAddress (Dna)

Groups	"GROUP Rsa Dna Address" "GROUP Rsa Dna OutgoingOptions" "GROUP Rsa Dna IncomingOptions"
Scope	Network
Description	*Rsa/n DataNetworkAddress* This is the description of the Remote Server Agent *Dna* component. It includes the attributes which apply to a VC between the RSI and RSA.
Mib	ServerAccessRsa
Opt. Subcomp.	"COMPONENT Rsa Dna ClosedUserGroup (Cug)"
Common Verbs	Help List Display

GROUP Rsa Dna Address

Properties	Provisioned
Description	The *Address* group contains attributes common to all *Dna's*. Every *Dna* used in the network is defined with this group of 2 attributes. The string of address digits is complemented by the type of address or Npi. These attributes are used to interpret the format of the address digits.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Dna numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *Dna* that is entered. An address may belong to the X.121 or E.164 numbering plans. X.121 is used in packet switched data networks.
Mib	ServerAccessRsa
Values	x121 e164
Default	x121

ATTRIBUTE Rsa Dna dataNetworkAddress (dna)

Access	Read and write
Description	The *Dna* attribute contains digits which form a unique identifier of the customer interface. It can be compared (approximation only) to a telephone number where each phone number identifies a unique telephone set. *Dna* digits are selected and assigned by network operators.
Mib	ServerAccessRsa
Values	BCD (1..15)
Default	No default

GROUP Rsa Dna OutgoingOptions

Properties	Provisioned
Description	The *OutgoingOptions* group defines call options of a *Dna* for calls which are made out of the interface represented by the *Dna*. These options are not used for calls arriving to the interface represented by the *Dna*.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Dna outCalls (ouc)

Access	Read only

Description	This attribute, if set to a value of ***allowed*** indicates that outgoing calls (from the DTE to the network) can be made using this particular *D*na. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Outgoing Calls Barred' feature for *Dnas* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	ServerAccessRsa
Values	disallowed allowed
Default	disallowed

GROUP Rsa Dna IncomingOptions

Properties	Provisioned
Description	*IncomingOptions* defines the set of options for incoming calls. These options are used for calls arriving to the interface represented by the *Dna*. For calls originated from the interface, *IncomingOptions* attributes are not used.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Dna incCalls (inc)

Access	Read only
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then incoming calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for DNAs in that incoming calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	ServerAccessRsa

Values	disallowed allowed
Default	allowed

ATTRIBUTE Rsa Dna incAccess (ina)

Access	Read and write
Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) from the open (non-CUG) part of the network are permitted. It also permits incoming calls from DTEs that have Outgoing Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Closed User Group with Incoming Access' feature for *Dnas* in that incoming access is granted if this attribute is set to a value of ***allowed***.
Mib	ServerAccessRsa
Values	disallowed allowed
Default	disallowed

COMPONENT Rsa Dna ClosedUserGroup (Cug)

Instance	Decimal (0..255)
Groups	"GROUP Rsa Dna Cug CugOptions"
Scope	Network
Description	*Rsa/n Dna ClosedUserGroup* *ClosedUserGroup* defines options associated with a national or international CUG identifier. Other *Dna*s in the network can have *Cug*s defined which group these *Dna*s by *Cug interlockCode*. If *Dna*s are defined with *Cugs*, calls from *Dna*s which do not have

the same *interlockCode* defined are refused. Attributes *incAccess* and *outAccess* can override this rule.

Mib ServerAccessRsa

Common Verbs

Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Rsa Dna Cug CugOptions

Properties Provisioned

Description Attributes in this group define *ClosedUserGroup* options associated with this particular *interlockCode*. *Dna's* with the same *Cug* (*interlockCode*) can make calls within this group. Various combinations which permit or prevent calls in the same *Cug* group are defined here.

Mib ServerAccessRsa

ATTRIBUTE Rsa Dna Cug type

Access Read and write

Description This attribute specifies the CUG type - the CUG is either a national CUG, or an international CUG. International closed user groups are usually established between DTEs for which there is an X.75 Gateway between; whereas national closed user groups are usually established between DTEs for which there is no X.75 Gateway between. (National CUGs cannot normally traverse an X.75 Gateway).
If this attribute is set to ***national***, then the CUG is a national CUG, in which case, the *dnic* should be left at its default value since it is not part of a national CUG. If this attribute is set to ***international***, then the CUG is an international CUG, in which case, the *dnic* should be set appropriately as part of the *Cug interlockCode*.

Mib	ServerAccessRsa
Values	national international
Default	national

ATTRIBUTE Rsa Dna Cug dnic

Access	Read and write
Description	This attribute specifies the DNIC (Data Network ID Code) of the CUG by which packet networks are identified. This attribute is not applicable if the CUG is a national CUG, as specified by the Cug *type* attribute. There are usually one or two DNICs assigned per country, for public networks. The U.S. is an exception where each BOC has a DNIC. Also, a group of private networks can have its own DNIC. The DNIC is assigned by international agreement and controlled by ITU-T.
Mib	ServerAccessRsa
Values	BCD (4)
Default	0000

ATTRIBUTE Rsa Dna Cug interlockCode (ilc)

Access	Read and write
Description	This attribute specifies the *Cug* identifier of a national or international *Cug* call. It is an arbitrary number and it also can be called Cug in some descriptions. Interfaces (DNAs) defined with this number can make calls to DNAs with the same *interlockCode*.
Mib	ServerAccessRsa
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rsa Dna Cug preferential (pre)

Access	Read only
Description	This attribute, if set to ***yes*** indicates that this *Cug* is the preferential *Cug*, in which case it will be used during the call establishment phase if the DTE has not explicitly specified a *Cug* index in the call request packet. If set to ***no***, then this *Cug* is not the preferential *Cug*. Only one of the *Cugs* associated with a particular *Dna* can be the preferential *Cug* - only one *Cug* can have this attribute set to ***yes***.
Mib	ServerAccessRsa
Values	no yes
Default	no

ATTRIBUTE Rsa Dna Cug outCalls (ouc)

Access	Read only
Description	This attribute, if set to ***allowed*** indicates that outgoing calls (from the DTE into the network) can be made using this particular *Cug*. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Cug* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Outgoing Calls Barred' feature for *Cugs* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***.
Mib	ServerAccessRsa
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Rsa Dna Cug incCalls (inc)

Access	Read only
Description	This attribute, if set to ***allowed*** indicates that incoming calls (from the network to the DTE) can be made using this particular *Cug*. If set to ***disallowed***, then incoming calls cannot be made using this *Cug* - such calls will be cleared by the local DCE.

	This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for *Cugs* in that incoming calls are barred if this attribute is set to a value of ***disallowed***.
Mib	ServerAccessRsa
Values	disallowed allowed
Default	allowed

ATTRIBUTE Rsa Dna Cug privileged (pri)

Access	Read only
Description	This attribute, if set to ***yes*** indicates that this *Cug* is a privileged *Cug*. In DPN, at least one side of a call setup within a *Cug* must have the *Cug* as a privileged *Cug*. If set to ***no***, then the *Cug* is not privileged. If both the local DTE and the remote DTE subscribe to the *Cug*, but it is not privileged, then the call will be cleared. This attribute is typically used for a host DTE which must accept calls from many other DTEs in which case the other DTEs cannot call one another, but can call the host. In this example, the host would have the privileged *Cug*, and the other DTEs would belong to the same *Cug*, but it would not be privileged.
Mib	ServerAccessRsa
Values	no yes
Default	yes

COMPONENT Rsa VncsAccess

Groups	"GROUP Rsa VncsAccess Provisioned" "GROUP Rsa VncsAccess OsiState (State)" "GROUP Rsa VncsAccess Operational"
Scope	Network

Description	*Rsa/<string> VncsAccess* The *VncsAccess* component provides access to the Nortel Networks Multiservice Switch Voice Networking Call Server.
Mib	ServerAccessRsa
Common Verbs	Help List Display Add DELete

GROUP Rsa VncsAccess Provisioned

Properties	Provisioned
Description	The *Provisioned* group defines provisioned attributes associated with the *VncsAccess* component.
Mib	ServerAccessRsa

ATTRIBUTE Rsa VncsAccess timeToLive

Access	Read and write
Description	This attribute specifies the length of time VNCS requests are allowed to remain queued for transmission before they are considered too old and are discarded. This attribute should be set in consideration with the voice application time-out interval.
Mib	ServerAccessRsa
Values	Decimal (1..5)
Units	seconds
Default	2

GROUP Rsa VncsAccess OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state

combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: ServerAccessRsa

ATTRIBUTE Rsa VncsAccess adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: ServerAccessRsa

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rsa VncsAccess operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be

providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	ServerAccessRsa
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rsa VncsAccess usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	ServerAccessRsa
Values	idle active (activ) busy
Default	idle

GROUP Rsa VncsAccess Operational

Properties	Operational
Description	The *Operational* group defines operational attributes associated with the *VncsAccess* component.
Mib	ServerAccessRsa

ATTRIBUTE Rsa VncsAccess requestsSent (sent)

Access	Read only
Description	This attribute counts the number of translation requests sent to VNCS. This counter wraps to zero when it reaches its maximum value.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rsa VncsAccess repliesReceived (received)

Access	Read only
Description	This attribute counts the number of translation replies received from VNCS. This counter wraps to zero when it reaches its maximum value.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rsa VncsAccess requestsQueued (queued)

Access	Read only
Description	This attribute indicates the number of translation requests queued for transmission to VNCS.
Mib	ServerAccessRsa
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rsa VncsAccess requestsDiscarded (discarded)

Access	Read only
Description	This attribute counts the number of translation requests discarded before being sent to VNCS. Requests are discarded if the queue

	becomes too large or the VNCS server is unavailable. This counter wraps to zero when it reaches its maximum value.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rsa Connection

Instance	Decimal (1..1000)
Groups	"GROUP Rsa Connection Operational" "GROUP Rsa Connection ServerStatistics (ServerStats)" "GROUP Rsa Connection LapfStatus (LapfStatus)" "GROUP Rsa Connection LapfStatistics (LapfStats)"
Scope	Network
Description	*Rsa/<string> Connection/n* *Rsi Connection/n* The *Connection* component contains information relating to the connection between the RSA and RSI. This component is named by the logical channel number of the connection.
Mib	ServerAccessRsa
Dyn. Subcomp.	"COMPONENT Rsa Connection Vc"
Common Verbs	Help List Display

GROUP Rsa Connection Operational

Properties	Operational
Description	The *Operational* group defines operational attributes associated with the *Connection* component.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection remoteName

Access	Read only
Description	This attribute specifies an ASCII string identifier for the remote module which is retrieved from the call request as user data.
Mib	ServerAccessRsa
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Rsa Connection callState

Access	Read only
Description	This attribute indicates the state of the connection. The normal state for the connection is ***dataTransfer***. The other states are transient states used to setup or clear the connection.
Mib	ServerAccessRsa
Values	initializing creatingVc calling acceptingCall registeringFmo establishingLapf dataTransfer clearingCall terminating terminatingVc terminated
Default	No default

GROUP Rsa Connection ServerStatistics (ServerStats)

Properties	Operational
Description	The *ServerStatistics* group provides individual server usage statistics for the connection.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection vncsRequests

Access	Read only
Description	This attribute counts the number of VNCS translation requests sent or received on this connection.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rsa Connection vncsReplies

Access	Read only
Description	This attribute counts the number of VNCS translation replies sent or received on this connection.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	0

GROUP Rsa Connection LapfStatus (LapfStatus)

Properties	Operational
Description	This group contains the LAPF status.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection lapfState

Access	Read only
Description	This attribute shows the current state of the LAPF interface. The normal states are ***informationTransfer*** and ***waitingAck***. Since the LAPF interface is not over a physical link the other states are transitional.
Mib	ServerAccessRsa
Values	disconnected linkSetup

	disconnectRequest informationTransfer waitingAck
Default	No default

ATTRIBUTE Rsa Connection lapfQueueSize

Access	Read only
Description	This attribute indicates the number of frames in the LAPF transmit queue.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

GROUP Rsa Connection LapfStatistics (LapfStats)

Properties	Operational
Description	This group contains the LAPF statistics.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection lapfStateChanges

Access	Read only
Description	This attribute counts the number of times the LAPF interface has changed state. While the LAPF interface is in ***informationTransfer*** state, this counter will increment on each expiry of *idleProbeTimer* as its state goes from ***informationTransfer*** to ***waitingAck*** and back. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rsa Connection lapfRemoteBusy

Access	Read only

Description	This attribute counts the number of times transmission of an I-frame was unsuccessful due to a perceived remote busy condition (window closed or remote busy). When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rsa Connection lapfAckTimeouts

Access	Read only
Description	This attribute counts the number of times the *ackTimer* has expired. Frequent increments of this counter indicate improper values have been chosen for *ackTimer* and *ackDelayTimer* between the local and remote ends. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rsa Connection lapfRejectFramesRx

Access	Read only
Description	This attribute counts the number of REJ frames received. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rsa Connection lapfIFramesTx

Access	Read only

Description	This attribute counts the number of I-frames transmitted. An I-frame may be counted more than once if there are retransmissions. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rsa Connection lapfIFramesTxDiscarded

Access	Read only
Description	This attribute counts the number of transmit I-frames that have been discarded. Discard reasons may be one of the following: 1.The frame length is beyond allowed limit. 2.The LAPF interface is in ***disconnected*** state. 3.The transmit queue has been purged because the queue length has reached the reset threshold. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rsa Connection lapfIFramesRx

Access	Read only
Description	This attribute counts the number of I-frames received. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rsa Connection lapfIFramesRxDiscarded

Access	Read only

Description	This attribute counts the number of received I-frames that have been discarded. The discard reasons are: 1.Incorrect frame size. 2.Frame is out of sequence. 3.Frame received while not in ***informationTransfer*** or ***waitingAck*** state. When this count reaches maximum, it wraps to zero.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rsa Connection Vc

Groups	"GROUP Rsa Connection Vc CallData (Cad)" "GROUP Rsa Connection Vc IntervalData (Intd)" "GROUP Rsa Connection Vc FrameRelayData (Frd)"
Scope	Application
Description	This component defines attributes collected by Frame Relay *Vc*.
Mib	ServerAccessRsa
Common Verbs	Help List Display

VERB Ping Rsa Connection Vc

Impact	Passive
Description	Ping *[-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)]* FrUni/<*n*> Dlci/<*n*> Vc

Ping causes a query packet to be sent to the destination module where the Frame Relay DLCI VC terminates. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the ping query packet will be the same as that of the Frame Relay data except at the source and destination module. The ping packets originate from the CP rather than the Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the Frame Relay FP.

Note that this command does not provide any information regarding the status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified.

The ping command can be issued with or without options. If no options are specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the roundTripDelay option is specified, the command reports the time taken to reach the destination and back. For the roundTripDelay option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the ping packets are generated and bounced back by the CP rather than the Frame Relay DLCI's FP.

The ping command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the

value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

GROUP Rsa Connection Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.
Mib	ServerAccessRsa
Values	pvc svc spvc frf10spvc
Default	No default

ATTRIBUTE Rsa Connection Vc state

Access	Read only

Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	ServerAccessRsa
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Rsa Connection Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	ServerAccessRsa
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Rsa Connection Vc diagnosticCode

Access	Read only

Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	ServerAccessRsa
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rsa Connection Vc previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	ServerAccessRsa
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rsa Connection Vc calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	ServerAccessRsa
Values	x121 e164
Default	No default

ATTRIBUTE Rsa Connection Vc calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	ServerAccessRsa
Values	BCD (1..15)

Default	No default

ATTRIBUTE Rsa Connection Vc calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	ServerAccessRsa
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Rsa Connection Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	ServerAccessRsa
Values	x121 e164
Default	No default

ATTRIBUTE Rsa Connection Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	ServerAccessRsa
Values	BCD (1..15)
Default	No default

ATTRIBUTE Rsa Connection Vc callingLcn

Access	Read only

Description	This attribute displays the Logical Channel Number of the calling end.
Mib	ServerAccessRsa
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Rsa Connection Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	ServerAccessRsa
Values	yes no
Default	No default

ATTRIBUTE Rsa Connection Vc fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	ServerAccessRsa
Values	yes no
Default	No default

ATTRIBUTE Rsa Connection Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	ServerAccessRsa

Values	high normal
Default	No default

ATTRIBUTE Rsa Connection Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	ServerAccessRsa
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE Rsa Connection Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	ServerAccessRsa
Values	normal high
Default	No default

ATTRIBUTE Rsa Connection Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	ServerAccessRsa
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Rsa Connection Vc maxSubnetPktSize

Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	ServerAccessRsa
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Rsa Connection Vc rcosToNetwork (rcosto)

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	ServerAccessRsa
Values	throughput delay multimedia
Default	No default

ATTRIBUTE Rsa Connection Vc rcosFromNetwork (rcosfrom)

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	ServerAccessRsa
Values	throughput delay multimedia
Default	No default

ATTRIBUTE Rsa Connection Vc emissionPriorityToNetwork (epto)

Access	Read only

Description	This attribute displays the network internal emission priority to the network.
Mib	ServerAccessRsa
Values	normal high interrupting
Default	No default

ATTRIBUTE Rsa Connection Vc emissionPriorityFromNetwork (epfrom)

Access	Read only
Description	This attribute displays the network internal emission priority from the network.
Mib	ServerAccessRsa
Values	normal high interrupting
Default	No default

ATTRIBUTE Rsa Connection Vc dataPath (dapa)

Access: Read only

Description

This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed value of this attribute can be different from the provisioned value.

If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system)

If the connection is using ***dprsMcsOnly*** data path, the string ***dprsMcsOnly*** is displayed.

If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.

Mib	ServerAccessRsa
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Rsa Connection Vc dprsMcsEndPoint (dmep)

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components. If the connection is using ***dprsOnly*** data path, this attribute is empty. If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.
Mib	ServerAccessRsa
List of	The name of the component
Default	No default

GROUP Rsa Connection Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	ServerAccessRsa

Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Rsa Connection Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	ServerAccessRsa
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Rsa Connection Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	ServerAccessRsa
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Rsa Connection Vc startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	ServerAccessRsa
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rsa Connection Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	ServerAccessRsa
Values	Decimal (0..4294967295)
Default	No default

GROUP Rsa Connection Vc FrameRelayData (Frd)

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is

	disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods. Frame Relay *Vc* uses a best effort data packet delivery protocol and a different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*. Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers
Mib	ServerAccessRsa

ATTRIBUTE Rsa Connection Vc frmCongestedToSubnet

Access	Read only
Description	This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc cannotForwardToSubnet

Access	Read only
Description	This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion. Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.
Mib	ServerAccessRsa
Values	Decimal (0..5000)

Default	No default

ATTRIBUTE Rsa Connection Vc notDataXferToSubnet

Access	Read only
Description	This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.
Mib	ServerAccessRsa
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rsa Connection Vc combErrorsFromSubnet

Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc duplicatesFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc notDataXferFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc frmLossTimeouts

Access	Read only
Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc ooSeqByteCntExceeded

Access	Read only

Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc peakOoSeqPktCount

Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal subnet packet disorder (not due to subnet packet discard). Current implementation also uses

	this statistics to set a maximum size for the out-of-sequenced queue.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc sendSequenceNumber

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	ServerAccessRsa
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE Rsa Connection Vc pktRetryTimeouts

Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc peakRetryQueueSize

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.

Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc subnetRecoveries

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.
Mib	ServerAccessRsa
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Rsa Connection Vc ooSeqPktCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	ServerAccessRsa
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rsa Connection Vc peakOoSeqByteCount

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue

	length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	ServerAccessRsa
Values	Decimal (0..50000)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Rsa

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Rtg

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Rtg

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COMPONENT Routing (Rtg)

Groups	"GROUP Rtg Provisioned (Prov)"
Scope	Network
Description	*Routing* This is the description for the *Routing* system component. This is the top level component of the routing hierarchy.
Mib	BaseRouting
Subcomponents	"COMPONENT Rtg DpnAddressPlan (Dpn)" "COMPONENT Rtg Topology (Top)"
Opt. Subcomp.	"COMPONENT Rtg PathOrientedRoutingSystem (Pors)" "COMPONENT Rtg SummaryAddress (SumAddr)"
Dyn. Subcomp.	"COMPONENT Rtg RouteSelector (Rs)"
Common Verbs	Help List Display Add

GROUP Rtg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the routing system.
Mib	BaseRouting

ATTRIBUTE Rtg tandemTraffic

Access	Read and write
Description	This attribute specifies whether tandem traffic is permitted through the node. Tandem traffic is traffic that arrives at the node on a trunk and leaves the node on another trunk. The default value of this attribute is ***allowed***, which permits tandem traffic to pass through the node. When this attribute is set to ***denied***, DPRS and PORS traffic is not permitted to tandem through the node in most circumstances. However, there are some exceptions on DPRS gateway nodes, backbone border nodes, and cluster border nodes. For DPRS, traffic is allowed to tandem through these nodes with this attribute set to ***denied*** in the following situations: 1) On a DPRS gateway node, DPRS traffic that flows out of the subnet or enters the subnet is allowed to tandem through the node, even if this attribute is set to ***denied***. Traffic that is from one node and destined to another node in the same subnet is not allowed to tandem through the gateway node when this attribute is set to ***denied***. DPRS gateway nodes include RID gateway nodes (the nodes that are connected to another RID subnet or to DPN-100 RMs) and MID gateway nodes (the nodes that are connected to DPN-100 AM clusters). 2) On a backbone border node, DPRS traffic that is destined to either leave the backbone (to a cluster) or enter the backbone (from a cluster) is allowed to tandem through the node, even if this attribute is set to ***denied***. Traffic that is from one backbone node and destined to another backbone node in the same RID subnet is not allowed to tandem through the backbone border node when this attribute is set to ***denied***. 3) On a cluster border node, DPRS traffic that is destined to either leave the cluster (to the backbone or to another cluster) or enter the cluster is allowed to tandem through the node, even if this

attribute is set to ***denied***. Intra-cluster DPRS traffic is generally not allowed to tandem through any cluster border node which has this attribute set to ***denied***. However, setting the attribute to ***denied*** on a cluster border node could cause that some nodes in the cluster become unreachable, from the source cluster node, through all paths inside the cluster. In this case, intra-cluster DPRS traffic between these nodes would be attempted to route through the default route. A cluster border node that is on the default route of a cluster node allows intra-cluster DPRS traffic to tandem through it, even if this attribute is set to ***denied***.

Changing this attribute has no effect on PORS calls that were set up before the change. These calls can be manually forced to reroute using the new setting by clearing the calls or locking the trunks on which they are routed.

Mib	BaseRouting
Values	allowed denied
Default	allowed

ATTRIBUTE Rtg clusterNode

Access	Read and write
Description	This attribute identifies whether a node is a cluster node in a network. The default value of ***no*** indicates that this node is not a cluster node. When this attribute is provisioned to ***yes***, this node becomes a cluster node. One or more cluster nodes interconnected with each other forms a cluster. Deploying clusters in a Topology Region reduces the memory, CPU and control traffic bandwidth required to maintain the topology database in the Topology Region and thus improves network scaling. This is because only minimum routing information is exchanged between a cluster and other non-cluster nodes in a topology region. Cluster nodes are typically used to support access services. A cluster must be connected to other nodes located in the backbone of the network within the same RID subnet. It cannot be

connected to nodes with different region identifiers (provisioned in the *regionId* attribute under the *ModuleData* component).

Mib: BaseRouting

Values: no
yes

Default: no

ATTRIBUTE Rtg fullTopExchgOnClusterLinks (fullTopExchg)

Access: Read and write

Description: This attribute specifies whether this node wishes to exchange full topological information across its cluster-backbone links. A cluster-backbone link is a link between a cluster node and a backbone node. A cluster node has its *rtg clusterNode* attribute set to the value of ***yes***. A backbone node is a non-cluster node.

If this attribute is set to the value of ***disabled*** on at least one node connected with cluster-backbone links, then only summarized topological information is propagated across those links. If this attribute is set to the value of ***enabled*** on two nodes connected with cluster-backbone links, then summarized and full topological information is propagated across those links.

This attribute should only be set to the value of ***enabled*** during a clusters migration. During normal operation, this attribute should be set to the value of ***disabled*** in order to avoid accidental exchange of full topological information across the cluster-backbone boundary.

Mib: BaseRouting

Values: disabled
enabled

Default: disabled

ATTRIBUTE Rtg splittingRegionIds

Access: Read and write

Description	This attribute specifies which connected neighbor nodes, in different topology regions, are allowed to exchange topological information with this node. It should be used only when splitting or merging existing topology regions. This node only exchanges topological information with a connected node under either of the following conditions: (i) this node and the neighbor node are in the same topology region. That is, this node's *regionId* attribute and the neighbor's *regionId* attribute (under *Mod* component) are provisioned with the same value, or (ii) this node and the neighbor node are in different topology regions, and this node's *splittingRegionIds* attribute is provisioned to contain the neighbor's *regionId*, and the neighbor's *splittingRegionIds* attribute is provisioned to contain this node's *regionId*. When this attribute is used during migration of topology regions, values provisioned for the attribute are normally the old and new *regionIds* of the node. Use of this attribute makes it possible to migrate existing topology regions in the following cases: (i) splitting a topology region into two without isolating a node, and (ii) merging two different topology regions into one without introducing an extra topological barrier. The attribute should be cleared when all migration activities are complete. At this point, the region boundary takes effect.
Mib	BaseRouting
List of	Decimal (0..126)
Default	No default

COMPONENT Rtg RouteSelector (Rs)

Groups	"GROUP Rtg Rs SelectedRoute" "GROUP Rtg Rs RouteSelectorControls (Controls)" "GROUP Rtg Rs PathAttributes" "GROUP Rtg Rs Statistics (Stats)"
Scope	Application
Description	*Routing RouteSelector* This component sits directly under the *Routing* component. It is dynamically created by Routing System and thus is always

present when PORS software is loaded on a node. *RouteSelector* is used by PORS services for the following purposes:
- Selecting a route to a destination through the current topology region. The route may be directly to the destination node or to a gateway node through which the destination can be reached.
- Returning a manual route stored as part of manual path profile.

RouteSelector is invoked with a route request data containing one of the following:
- Parameters which must be met by the selected route.
- Parameter profile reference where parameters which must be met by the selected route are stored.
- Manual path profile reference.

When the route request data contains a manual path profile reference then *RouteSelector* returns the manual path route associated with that reference. The manual path route is returned in the selected route description data. *RouteSelector* does not verify the manual path route.

When the route request data contains parameter profile reference then *RouteSelector* obtains route request data parameters associated with that reference and then proceeds as though the parameters were contained in the route request data.

Using the route request data parameters, *RouteSelector* uses a route selection algorithm, based on Dijkstra's Shortest-Path-First algorithm, to select the best route to the destination. That route may be directly to the destination node or to a gateway node through which the destination can be reached. The selected route must satisfy all the route request data parameters. The route selection is done against the current view of the topological database maintained by Routing Topology System of the current topology region. Once the route is selected, selected route description data is returned by *RouteSelector.*

RouteSelector can be used in two modes: automatic and manual.

In the automatic mode, a route request message containing the route request data is originated by a PORS VC and sent to *RouteSelector. RouteSelector* then selects a route or gets a manual

route and returns its description in the selected route description data in the selected route message back to the PORS VC.

In the manual mode, *RouteSelector* allows the operator to modify the parameters in the route request data (except for the manual path profile reference), and to initiate route selection using that data. When *RouteSelector* selects the route it displays its description to the operator.

Mib	PorsVc
Common Verbs	Help List Display

GROUP Rtg Rs SelectedRoute

Properties	Operational
Description	This group contains operational attributes describing the last selected or manual route returned by *RouteSelector*. These attributes form selected route description data.
Mib	PorsVc

ATTRIBUTE Rtg Rs routeCostMetric (rcm)

Access	Read only
Description	This attribute indicates the sum of cost metrics of trunks that make up the selected route returned by *RouteSelector*. If the cost metrics at both ends of a trunk differ, the larger metric is used for that trunk. If a route could not be selected for whatever reason then the *routeCostMetric* is set to a value 999999 intended to symbolize unknown cost. For manual routes the value of *routeCostMetric* is also 999999. This is because *RouteSelector* does not verify manual routes thus *routeCostMetric* is unknown.
Mib	PorsVc
Values	Decimal (0..999999)
Default	999999

ATTRIBUTE Rtg Rs routeDelayMetric (rdm)

Access	Read only
Description	This attribute indicates the sum of delay metrics of trunks that make up the selected route returned by *RouteSelector*. The delay metric of a trunk is equal to half the *measuredRoundTripDelay* operational attribute of the trunk. If the delay metrics at both ends of a trunk differ, the larger metric is used for that trunk. If a route could not be selected for whatever reason then the *routeDelayMetric* is set to a value 999999 intended to symbolize unknown delay. For manual routes the value of *routeDelayMetric* is also 999999. This is because *RouteSelector* does not verify manual routes, thus *routeDelayMetric* is unknown.
Mib	PorsVc
Values	Decimal (0..999999)
Units	msec
Default	999999

ATTRIBUTE Rtg Rs routeBumpingPriority (rbp)

Access	Read only
Description	This attribute indicates the priority at which a route has been selected, or a value of 4 for manual routes since no route selection was made. Since *RouteSelector* does not verify manual routes the value of 4 for *routeBumpingPriority* symbolizes an unknown value for manual routes. The remainder of the description is not applicable to manual routes. The bumping priority of a route specifies a priority at which a path along that route can be established. The lowest bumping priority is 4, the highest bumping priority is equal to a setup priority contained in the route request data. If a route is selected at bumping priority 4, then no paths will be bumped since there appears to be enough free bandwidth on selected trunks, and also since this bumping priority is not better than the lowest holding priority (4) of any path. If a route cannot be selected at bumping priority 4 and a setup

priority is 3 or better, then a route may be selected at bumping priority 3. This means that paths at holding priority 4 may be bumped if currently there is not enough free bandwidth on selected trunks to establish the new path with setup priority 3.

If a route cannot be selected at bumping priority 3 and a setup priority is 2 or better, then a route may be selected at bumping priority 2. In this case paths with holding priority 4 and 3 may be bumped if there is not enough free bandwidth on selected trunks to establish the new path with setup priority 2.

If a route cannot be selected at bumping priority 2 and a setup priority is 1 or better, then a route may be selected at bumping priority 1. In this case paths with holding priority 4, 3, and 2 may be bumped if there is not enough free bandwidth on selected trunks to establish the new path with setup priority 1.

If a route cannot be selected at bumping priority 1 and a setup priority is 0, then a route may be selected at bumping priority 0. In this case paths with holding priority 4, 3, 2, and 1 may be bumped if there is not enough free bandwidth on selected trunks to establish the new path with setup priority 0.

Mib	PorsVc
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Rtg Rs reasonForNoRoute (rnr)

Access	Read only
Description	This attribute indicates the reason for which a route was not selected by *RouteSelector*. If the route was selected then *reasonForNoRoute* has a value of ***none***. If the destination in the form of ASCII name was specified (see *destination*) and the name of node is too long (more than 12 characters) then *reasonForNoRoute* has a value of ***destinationNameTooLong***. Check and correct node name in the

destination attribute.

If the destination was not specified, that is *destination* is blank, then *reasonForNoRoute* has a value of ***destinationNotSpecified***. *Destination* attribute should not be blank.

If the destination in the form of ASCII name was specified (see *destination*) and the name of node cannot be found in topological database then *reasonForNoRoute* has a value of ***unknownDestinationName***. Check and correct node name in the *destination* attribute. If it is correct then this node does not appear in local topological database as this node may lie across the topology region or cluster boundary.

If the destination cannot be found in the topological database or cannot be reached through any gateway node then *reasonForNoRoute* has a value of ***unknownDestination***. Ensure the destination specified in *destination* attribute resides in the topology region, or can be reached through a Routing Gateway. That is, at least one reachable address provisioned under a *Trunk Address* component representing a gateway link can reach the destination NSAP address.

If the destination was specified using an incorrect format (see *destination*) then *reasonForNoRoute* has a value of ***incorrectDestination***. Use the correct format for *destination* attribute.

If there is no physical connectivity to the destination or gateway node, or number of hops to such node exceeds a limit of 20 hops, or a route to such node cannot satisfy all the parameters in the route request data then *reasonForNoRoute* has a value of ***attributeNotMet***. Set *operationMode* to ***manual*** and issue *d rtg rs* command and inspect *attributeNotMet* to determine which attribute could not be satisfied.

If the route to the destination could not be selected for some internal reason then *reasonForNoRoute* has a value of ***internalReason***. A Software Alarm generated in association with this situation should be reported to Nortel Networks technical support.

If the route to the destination could not be selected because of profile reference problem then *reasonForNoRoute* has a value of ***attributeProfileProblem***.

If the route to the destination could not be selected because of manual path reference problem then *reasonForNoRoute* has a value of ***manualPathIndexProblem***.

The following values of *reasonForNoRoute* are no longer generated: ***routeCostTooMuch***, ***routeDelayTooMuch***, ***incorrectDestinationEndPoint***, and ***sameNode***.

Mib: PorsVc

Values:
none
destinationNameTooLong
destinationNotSpecified
unknownDestinationName
incorrectDestination
incorrectDestinationEndPoint
unknownSource
unknownDestination
sameNode
routeCostTooMuch
routeDelayTooLong
attributesNotMet
internalReason
attributeProfileProblem
manualPathIndexProblem

Default: none

ATTRIBUTE Rtg Rs attributeNotMet (anm)

Access: Read only

Description: This attribute indicates the name of a possible route request data parameter which prevents *RouteSelector* from selecting the route. This attribute always has a value of ***allAttributesMet*** for manual routes since *RouteSelector* does not verify manual routes. This attribute has a meaningful value if *reasonForNoRoute* attribute has a value of ***attributesNotMet***. The value of *attributeNotMet* is

only computed when *RouteSelector* operates in manual mode. That is, when route selection has been initiated by the operator in which case *operationMode* has a value of ***manual***.

RouteSelector determines which of the attributes: *requiredRxBandwidth*, *requiredTxBandwidth*, *requiredTrunkModes*, *maximumAcceptableCost*, *maximumAcceptableDelay*, *maximumAcceptableGatewaCost*, *requiredTrafficType*, *permittedTrunkTypes*, *requiredSecurity*, *requiredCustomerParameter*, and *maximumTransmissionUnit* prevents successful route selection by dropping the constraints associated with that attribute and re-selecting the route. If that route can be successfully selected then the attribute for which the constraints were dropped is the attribute preventing successful route selection.

For example, *RouteSelector* drops bandwidth constraints by selecting a route with *requiredRxBandwidth* or *requiredTxBandwidth* of 0. If the route can be selected then bandwidth is preventing successful route selection.

A value of ***unknownAttributeNotMet*** indicates that *RouteSelector* cannot determine why route cannot be selected. Constraints for all attributes are dropped yet successful route cannot be computed. This usually indicates a lack physical connectivity to the destination or gateway node. Alternatively, this may indicate that destination or gateway node is more than 20 hops away where 20 hops is the maximum number of hops in the route.

Mib: PorsVc

Values:
unknownAttributeNotMet
allAttributesMet
requiredRxBandwidth
requiredTxBandwidth
requiredTrunkModes
maximumAcceptableCost
maximumAcceptableDelay
requiredTrafficType
permittedTrunkTypes

	requiredSecurity requiredCustomerParm maximumTransmissionUnit maximumAcceptableGatewayCost maximumGatewayHops
Default	allAttributesMet

ATTRIBUTE Rtg Rs routeGatewayCostMetric (rgcm)

Access	Read only
Description	This attribute indicates the cost metric associated with reaching the destination indirectly through a gateway node or gateway link that is part of the selected route If the selected route leads directly to the destination node then the *routeGatewayCostMetric* is set to a value 0. If a route could not be selected for whatever reason then the *routeGatewayCostMetric* is set to a value 999999 intended to symbolize unknown cost. For manual routes the value of *routeGatewayCostMetric* is also 999999. This is because *RouteSelector* does not verify manual routes thus *routeGatewayCostMetric* is unknown.
Mib	PorsVc
Values	Decimal (0..999999)
Default	0

ATTRIBUTE Rtg Rs routeType (rtyp)

Access	Read only
Description	This attribute indicates the type of route that was selected by *RouteSelector.* If no route was selected then *routeType* has a value of ***noRoute***. If the destination resides on the current node then *routeType* has a value of ***sameNode***. If the destination resides on a different node and can be reached directly as opposed to indirectly through a gateway node then *routeType* has a value of ***destinationNode*** or

destinationNodeLegacy with the latter only possible when legacy gateway selection algorithm was used (see *gatewaySelectionAlgorithm*).

If the destination can be reached indirectly through a gateway node with the gateway node being different from the current node then *routeType* has a value of ***gatewayNode*** or ***gatewayLink*** depending on whether or not the route consists of a single gateway link. A route consists of a single gateway link only when the route requestor (see *routeRequestor*) is a Routing Gateway (in inbound or outbound direction) and the route leads immediately across topology region or cluster boundary.

If the destination can be reached indirectly through a gateway node with the gateway node being the current node and the route requestor (see *routeRequestor*) is an application service as opposed to a Routing Gateway then *routeType* has a value of ***routingGateway***.

If selected route is a manual route then *routeType* has a value of ***manual***.

Note that the type of route, except for manual route, depends on who is the route requestor (application service, Routing Gateway serving as inbound or outbound gateway), where it resides (gateway or non-gateway node), how the destination can be reached (directly or indirectly through a gateway node), and what is the gateway selection algorithm (cost-based, random or legacy).

Mib	PorsVc
Values	noRoute sameNode destinationNode destinationNodeLegacy gatewayNode gatewayLink routingGateway manual
Default	noRoute

ATTRIBUTE Rtg Rs routeDescription (rd)

Access	Read only
Description	This attribute indicates a vector of strings describing the selected or manual route returned by *RouteSelector*. Each entry in the vector describes one hop of the route. The hops are identified using a node name and either - a TRM allocated trunk identification or exit number (TRM uses a component ‘link’, or ‘Lk’ in short form, to refer to trunks), or - a trunk name, which is local to that node. TRM allocated exit number is used for routes selected by *RouteSelector*. Trunk name is used for manual routes. For example, a hop out of node StarBase using exit number 99 is described as “EM/STARBASE Trm Lk/99” for the selected route. A hop out of node StarBase using trunk name 123 is described as “EM/STARBASE TRK/123” for the manual route. A command *display Trm Lk/99* on node StarBase can be used to find out the trunk name corresponding to exit number 99.
Mib	PorsVc
Vector of	String (0..40, ASCII)
Index	Decimal (1..20)
Default	No default

ATTRIBUTE Rtg Rs destinationOrGatewayNodes (dgn)

Access	Read only
Description	This attribute indicates a set of node IDs of destination or gateway nodes which directly or indirectly support the destination and to which *RouteSelector* attempted to find a route. Node to which the *RouteSelector* selected the route is also included in *destinationOrGatewayNodes*.
Mib	PorsVc
List of	Decimal (0..4095)
List Size	10

Default	No default

GROUP Rtg Rs RouteSelectorControls (Controls)

Properties	Operational
Description	This group contains attributes used to control *RouteSelector.*
Mib	PorsVc

ATTRIBUTE Rtg Rs operationMode (om)

Access	Read and write
Description	This attribute indicates the mode in which the *RouteSelector* is currently operating. The two possible modes are automatic and manual. In the automatic mode, a route request message containing the route request data is originated by a PORS VC and sent to the *RouteSelector. RouteSelector* then selects a route or gets a manual route and returns its description in the selected route description data in the selected route message back to the PORS VC. In the manual mode, the *RouteSelector* allows the operator to modify the parameters in the route request data (except for the manual path profile reference), and to initiate route selection using that data. When *RouteSelector* selects the route it displays its description to the operator. Note that even when *operationMode* is set to ***manual***, *RouteSelector* handles route request messages originated by services' VCs in the same way as it does when *operationMode* is set to ***automatic***.
Mib	PorsVc
Values	automatic manual
Default	automatic

ATTRIBUTE Rtg Rs lastRouteSelectionTime (lrst)

Access	Read only

Description	This attribute indicates the time when *RouteSelector* last handled a route request message.
Mib	PorsVc
Values	Time (DHMS)
Default	No default

GROUP Rtg Rs PathAttributes

Properties	Operational
Description	This group contains parameters in route request data that govern the route selection. Values of these parameters are obtained either from an operator or from the last route request message from a PORS VC that contained such parameters or a reference to such parameters (parameter profile reference) as part of the route request data. Route request messages from a PORS VC that ask for a manual route do not contain such parameters or reference to such parameters. All other route request messages either explicitly contain route request data parameters or a reference to a profile containing such parameters. This group of attributes is therefore not applicable to manual routes.
Mib	PorsVc

ATTRIBUTE Rtg Rs sourceNodeId (snid)

Access	Read and write
Description	This attribute indicates the node ID of the source node from which a route to the destination is to be found. It is typically the current node. The term ‘source’ is used in relation to the route selection process and not the node where *RouteSelector* resides, that is the current node. That is, the source node need not be the current node although the selected route will be based on the topological database of the current node.
Mib	PorsVc
Values	Decimal (1..16777215)

Default	1

ATTRIBUTE Rtg Rs setupPriority (sp)

Access	Read and write
Description	This attribute indicates the required priority for path establishment along the selected. Zero is the highest priority and four is the lowest. This attribute is closely related to *bumpingPriority* attribute.
Mib	PorsVc
Values	Decimal (0..4)
Default	2

ATTRIBUTE Rtg Rs requiredTxBandwidth (tbw)

Access	Read and write
Description	This attribute indicates the required transmit bandwidth in bits per second to send data to the destination.
Mib	PorsVc
Values	Decimal (0..4294967295)
Units	bit/s
Default	64000

ATTRIBUTE Rtg Rs requiredRxBandwidth (rbw)

Access	Read and write
Description	This attribute indicates the required receive bandwidth in bits per second to receive data from the destination.
Mib	PorsVc
Values	Decimal (0..4294967295)
Units	bit/s
Default	64000

ATTRIBUTE Rtg Rs maximumTransmissionUnit (maxtu)

Access	Read and write
Description	This attribute indicates the size of the largest packet that can be transported along the selected route. It is used by *RouteSelector* to select a route which avoids trunks whose maximum transmission unit is less than *maximumTransmissionUnit* and as a result would be unable to transport packets of this size. The default value of 0 permits all trunks to be eligible with respect to this attribute.
Mib	PorsVc
Values	Decimal (0..8192)
Default	0

ATTRIBUTE Rtg Rs requiredSecurity (rsec)

Access	Read and write
Description	This attribute indicates the required minimum level of security of the trunks along the selected route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the *Trunk PathAdministrator (Trk Pa)* component. *RouteSelector* ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	PorsVc
Values	Decimal (0..7)
Default	4

ATTRIBUTE Rtg Rs requiredTrafficType (rttyp)

Access	Read and write
Description	This attribute indicates the required type of traffic that can be transported along the selected route. There are eight possible traffic types, and only one type can be transported. The ***voice***, ***data,*** and ***video*** traffic types are already defined, and five other

traffic types can be defined by the network administrator. The *supportedTrafficType* attribute of the *Trunk PathAdministrator (Trk Pa)* component lists all the types of traffic allowed on the trunk. When selecting a route, *RouteSelector* only chooses trunks whose *supportedTrafficType* contains the *requiredTrafficType*.

Mib: PorsVc

Values:
voice
data
video
trafficType1 (tt1)
trafficType2 (tt2)
trafficType3 (tt3)
trafficType4 (tt4)
trafficType5 (tt5)

Default: voice

ATTRIBUTE Rtg Rs permittedTrunkTypes (pttyp)

Access: Read and write

Description: This attribute indicates a maximum of eight types of trunks that can be part of the selected route. The ***terrestrial*** and ***satellite*** trunk types have been defined already, leaving six remaining types that can be defined by the network administrator. The *trunkType* attribute of the *Trunk PathAdministrator (Trk Pa)* component specifies the type of the trunk. When selecting a route, *RouteSelector* only chooses trunks whose *trunkType* is one of the *permittedTrunkTypes*.

Mib: PorsVc

Set of:
terrestrial
satellite
trunkType1 (tt1)
trunkType2 (tt2)
trunkType3 (tt3)
trunkType4 (tt4)
trunkType5 (tt5)
trunkType6 (tt6)

Default: (terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Rtg Rs requiredCustomerParm (rcpar)

Access	Read and write
Description	This attribute indicates the mechanism to customize the usage of trunks. Any trunk, whose *customerParameter* attribute under the *Trunk PathAdministrator (Trk Pa)* component is larger than the *requiredCustomerParameter* is not eligible to become part of the selected route.
Mib	PorsVc
Values	Decimal (0..7)
Default	4

ATTRIBUTE Rtg Rs pathAttributeToMinimize (pamin)

Access	Read and write
Description	This attribute indicates whether a route should be selected on the basis of minimizing the route cost or the route delay. Each trunk has a cost and a delay metric associated with it. The cost of a route is the sum of the trunk cost metrics for all trunks included in the route. The delay of a route is the sum of the trunk delay metrics for all trunks included in the route. The delay metric of a trunk is equal to half the *measuredRoundTripDelay* operational attribute of the trunk.
Mib	PorsVc
Values	cost delay
Default	cost

ATTRIBUTE Rtg Rs maximumAcceptableCost (maxCost)

Access	Read and write
Description	This attribute indicates the upper bound on the cost metric of the selected route, which is the sum of the cost metrics of all trunks on the route. *RouteSelector* ensures the cost metric of the selected route does not exceed the *maximumAcceptableCost*.
Mib	PorsVc

Values	Decimal (0..65535)
Default	1280

ATTRIBUTE Rtg Rs maximumAcceptableDelay (maxDelay)

Access	Read and write
Description	This attribute indicates the upper bound on the delay metric of the selected route, which is the sum of the delay metrics of all trunks on the route. *RouteSelector* ensures the delay metric of the selected route does not exceed the *maximumAcceptableDelay.* The delay metric of a trunk is equal to half the *measuredRoundTripDelay* operational attribute of the trunk.
Mib	PorsVc
Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Rtg Rs bumpPreference (bprf)

Access	Read and write
Description	This attribute indicates whether bumping may be considered when selecting a route. By default, bumping may be considered only when it is necessary. That is, only when no other route to the destination or gateway node can be found An indication to always bump in order to find the best route may be set. In this case an absolutely best route to the destination or gateway node is found even if other paths along that route would need bumping.
Mib	PorsVc
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	bumpWhenNecessary

ATTRIBUTE Rtg Rs requiredTrunkModes (rtmod)

Access	Read and write

Description	This attribute indicates which trunk modes to consider during route selection. The operational *mode* attribute of the *Trunk PathAdministrator (Trk Pa)* component specifies the mode of the trunk. When selecting a route, *RouteSelector* can either consider trunks with any mode, or only trunks with *mode* set to ***mapping***. That is, the selected route may contain trunks with any mode, or all trunks with *mode* set to ***mapping***.
Mib	PorsVc
Values	any mapping
Default	any

ATTRIBUTE Rtg Rs maximumAcceptableGatewayCost (maxGCost)

Access	Read and write
Description	This attribute indicates the upper bound on the cost metric associated with reaching the destination along the selected route and through a gateway node. Such cost metrics are provisioned under *Trunk Address* component on a gateway node specifying costs of reaching an address through the gateway node and more accurately through the gateway link represented by the *Trunk* component.
Mib	PorsVc
Values	Decimal (0..65535)
Default	2048

ATTRIBUTE Rtg Rs routeRequestor (rreq)

Access	Read and write
Description	This attribute indicates the type of entity that makes a request for a route (route requestor). Three types of entities can make route requests: application service, Routing Gateway serving as inbound gateway at a gateway node, or Routing Gateway serving as outbound gateway at a gateway node.
Mib	PorsVc

Values	applicationService inboundRGty outboundRGty
Default	applicationService

ATTRIBUTE Rtg Rs gatewaySelectionAlg (gsalg)

Access	Read and write
Description	This attribute indicates the type of algorithm to use when a route to the destination has to be selected indirectly through a gateway node. The following types of algorithms are available: cost based, random, and legacy. For cost based algorithm, *RouteSelector* selects gateway node that advertised it can reach the destination at the smallest cost. For random algorithm, *RouteSelector* selects randomly any gateway node that advertised it can reach the destination. For legacy algorithm, *RouteSelector* selects a complete route to the destination without attempting to route through gateway nodes. This is only possible during single to multi topology region migration, or cluster migration but before such migration is complete. During such migrations routing to the destination is initially attempted through gateway nodes, but if such routing fails then legacy routing is attempted.
Mib	PorsVc
Values	costBased random legacy
Default	costBased

ATTRIBUTE Rtg Rs destination (dest)

Access	Read and write
Description	This attribute indicates either the ASCII name, node ID, or NSAP address of the destination node to which a route needs to be found. The format for *destination* is either

	1. “EM/nodeName serviceName/instance”, for ASCII name, for example “EM/MoonBase VS/3”, or 2. “NID/nodeId”, for node ID, for example “NID/1226”, or 3. “NSAP/nsapAddress”, for NSAP address, for example “NSAP/12234001”. For NSAP address formats a full ATM End System Address, node summary, or reachable address can be specified, as well as a node prefix.
Mib	PorsVc
Values	String (0..45, ASCII)
Default	No default

GROUP Rtg Rs Statistics (Stats)

Properties	Operational
Description	This group contains statistics gathered by *RouteSelector* and relating to route selections.
Mib	PorsVc

ATTRIBUTE Rtg Rs routeStatistics

Access	Read only
Description	This attribute indicates a table (or an array) of the number of route requests and the number of routes selected. There are six rows and five columns in the table. The first row contains a number of route requests in a column. Each column corresponds to a value of *setupPriority* (= 0,1,2,3,4). An element in the first row gives a number of route request per given *setupPriority.* The five subsequent rows provide numbers of routes selected at *bumpingPriority* 0,1,2,3,4. The second row provides numbers of route selections at *bumpingPriority* 0. Only route requests of *setupPriority* 0 could be given routes of the *bumpingPriority* 0. By virtue of the property of *bumpingPriority* that it cannot be better than the *setupPriority* the rows two to six form a lower triangular matrix. Route selections performed upon operator request (manual route requests) are not counted.

Mib	PorsVc
Array of	Decimal (0..4294967295)
Row	setupPriority [routesRequested routesSelectedAtBp_0 routesSelectedAtBp_1 routesSelectedAtBp_2 routesSelectedAtBp_3 routesSelectedAtBp_4]
Column	statisticsTable [Decimal (0..4)]
Default	No default

COMPONENT Rtg DpnAddressPlan (Dpn)

Groups	"GROUP Rtg Dpn Provisioned (Prov)" "GROUP Rtg Dpn Operational (Oper)" "GROUP Rtg Dpn ControlStatistics (ConStats)" "GROUP Rtg Dpn ForwardingStatistics (FwdStats)"
Scope	Network
Description	*Routing DpnAddressPlan* This component is a subcomponent of *Routing*. It resides on all nodes that carry DPN traffic and is responsible for maintaining the routing information required to route this traffic. It is required on nodes that (i) support gateways to RMs and/or AMs, (ii) nodes that source and/or sink DPN traffic (for example,

	nodes which support VC end points), and (iii) intermediary nodes that simply carry DPN traffic.
Mib	DpnRouting
Subcomponents	"COMPONENT Rtg Dpn AutomaticRouteTester (Art)" "COMPONENT Rtg Dpn PerformanceStatistics (PerfStats)"
Opt. Subcomp.	"COMPONENT Rtg Dpn RidFilterInfo (RidFilter)"
Dyn. Subcomp.	"COMPONENT Rtg Dpn ReachableRidInfo (Rid)" "COMPONENT Rtg Dpn ReachableMidInfo (Mid)" "COMPONENT Rtg Dpn ReachableCallServerInfo (Cs)" "COMPONENT Rtg Dpn LocalLinkGroups (Lg)" "COMPONENT Rtg Dpn LpStatistics (LpStats)" "COMPONENT Rtg Dpn DefaultRoute (DefRoute)"
Common Verbs	Help List Display

GROUP Rtg Dpn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *DpnAddressPlan*. Attributes in this group must be set to allow the *DpnAddressPlan* component to function properly.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn logicalNetworkNumber (lnn)

Access	Read only
Criticality	Module
Description	This attribute specifies the Logical Network Number for the *DpnAddressPlan*. Since only one instance of this component can exist, this value is always set to one. It is provided here to be consistent with other address plans and so that it can be queried.
Mib	DpnRouting
Values	Decimal (1..1)

Default	1

ATTRIBUTE Rtg Dpn routingId

Access	Read and write
Criticality	Module
Description	This attribute specifies the Routing Identifier (RID) associated with this node. The RID is used to identify a group of one or more interconnected nodes (called a RID subnet) supporting the transport of DPN traffic. Its value must be the same as that of the other nodes in this RID subnet and different from that of all RMs and other RID subnets in the network. The *routingId* must be set when a *DpnAddressPlan* component is configured on an node. Changing the value of the *routingId* causes the node to restart.
Mib	DpnRouting
Values	Decimal (1..126)
Default	No default

ATTRIBUTE Rtg Dpn moduleId

Access	Read and write
Criticality	Module
Description	This attribute specifies the Module Identifier (MID) associated with this node. The MID is used to identify a node supporting the transport of DPN traffic. Its value must be different from that of all MIDs assigned to nodes in this RID subnet (interconnected nodes sharing a RID) and AMs in clusters supported by this subnet. If routing zones are used, it must also be unique from all other MIDs in this zone.

The *moduleId* must be set when a *DpnAddressPlan* component is configured on a node.

Changing the value of the *moduleId* will cause the node to restart.

Mib DpnRouting

Values Decimal (1..1909)

Default No default

ATTRIBUTE Rtg Dpn delayMetricCutOff (delayC)

Access Read and write

Description This attribute specifies the delay metric value beyond which a destination RID should be considered unreachable. That is, if a delay metric to a RID is equal to or greater than this value then the RID is considered to be unreachable in the delay class of service.

Lowering this value has the effect of speeding up the detection of the loss of reachability to a RID. It also reduces the amount of Routing Table Update (RTU) traffic generated in this scenario. Care must be taken to ensure that the value chosen is big enough for the longest delay path in the network.

This attribute is optional; a default of 128 is used when it is not set. It is recommended that all nodes in the network be provisioned with the same cut off value.

Mib DpnRouting

Values Decimal (64..250)

Default 128

ATTRIBUTE Rtg Dpn throughputMetricCutOff (tputC)

Access Read and write

Description This attribute specifies the throughput metric value beyond which a destination RID should be considered unreachable. That is, if a throughput metric to a RID is equal to or greater than this value then the RID will be considered to be unreachable in the

throughput class of service.

Lowering this value has the effect of speeding up the detection of the loss of reachability to a RID. It also reduces the amount of Routing Table Update (RTU) traffic generated in this scenario.Care must be taken to ensure that the value chosen is big enough for the longest throughput path in the network.

This attribute is optional; a default of 245 is used when it is not set. It is recommended that all nodes in the network be provisioned with the same cut off value.

Mib	DpnRouting
Values	Decimal (128..245)
Default	245

ATTRIBUTE Rtg Dpn forwardingPolicy

Access	Read and write
Description	This attribute specifies the forwarding policy used by packet forwarding to handle DPN traffic on a node.

When this attribute is set to ***loadshare***, DPN traffic is shared among preferred links in a link group in proportion to the available bandwidth on each link; the traffic is not forwarded in an order-preserved manner and needs resequencing at the destination, but the available bandwidth in a link group is utilized efficiently.

When this attribute is set to ***loadspread***, DPN traffic is forwarded in an order-preserved manner along a randomly selected route; the traffic sticks to a particular link in a link group, and will not spill over to other links in the link group unless there is congestion on the selected link.

When this attribute is set to ***loadspreadFast***, DPN traffic is forwarded in an order-preserved manner along a randomly selected route; the traffic sticks to a particular link in a link group, and will not spill over to other links in the link group. Choosing this value may improve throughput but traffic may be discarded in

the presence of congestion.

It is recommended that all nodes in the network be provisioned with the same forwarding policy.

Note that though ***loadshare***, ***loadspread*** and ***loadspreadFast*** are all supported on the Nortel Networks Multiservice Switch 7400, ***loadspreadFast*** is the only forwarding policy that is supported on the Nortel Networks Multiservice Switch 15000 and the Nortel Networks Multiservice Switch 20000. On these switches, if the *forwardingPolicy* attribute is set to either ***loadshare*** or ***loadspread***, the underlying forwarding policy defaults to the value of ***loadspreadFast***.

A change in this attribute does not take effect on any already established Frame Relay (FR) connection. The existing FR connections should be restarted to adopt the new forwarding policy.

Mib: DpnRouting

Values:
loadspread (spread)
loadshare (share)
loadspreadFast (spFast)

Default: loadspread

ATTRIBUTE Rtg Dpn delayMetricRangeBoundary (delayR)

Access: Read and write

Description: This attribute specifies the total path delay metric below which the *variance* value specified for delay COS and a low metric range is used, and at or above which the *variance* value specified for delay COS and a high metric range is used.

This attribute defaults to 0, so that the *variance* value specified for delay COS and a high metric range is used for all delay paths. If this attribute is set to 2147483647, the *variance* value specified for delay COS and a low metric range is used for all delay paths.

Mib: DpnRouting

Values	Decimal (0..2147483647)
Default	0

ATTRIBUTE Rtg Dpn tputMetricRangeBoundary (tputR)

Access	Read and write
Description	This attribute specifies the total path throughput metric below which the *variance* value specified for throughput COS and a low metric range is used, and at or above which the *variance* value specified for throughput COS and a high metric range is used. This attribute defaults to 0, so that the *variance* value specified for throughput COS and a high metric range is used for all delay paths. If this attribute is set to 2147483647, the *variance* value specified for throughput COS and a low metric range is used for all throughput paths.
Mib	DpnRouting
Values	Decimal (0..2147483647)
Default	0

ATTRIBUTE Rtg Dpn variance

Access	Read and write
Description	This attribute specifies the variance values for high and low metric ranges, for each class of service (COS). A variance value is the maximum allowed difference in metric between the best path and the second path, as a percentage of the best path metric. High and low metric ranges are defined for each COS by the *delayMetricRangeBoundary* and *tputMetricRangeBoundary* attributes, and refer to total path metrics. When a variance value for a certain COS and metric range is set to the default value of 0, only equal metric paths can be used under that COS when the best path metric is in that range. When it is set to a value greater than 0, an alternate path which is safe (that is, non-looping) and which has a metric within this percentage of the best path metric can be used as a multipath.

	The special value of 9999 signifies an infinite variance, so that any safe alternate path may be used in addition to the single best path, regardless of its metric.
Mib	DpnRouting
Array of	Decimal (0..500; 9999)
Units	%
Row	cos [delay throughput]
Column	metricRange [low high]
Default	([2 * 2] 0)

ATTRIBUTE Rtg Dpn csrmRoute

Access	Read and write
Description	This attribute specifies the loadsharing mechanism for CSRM routing. When this attribute is set to ***share***, all call request packets that originate from or transit through the node will be forwarded to the two active CSRMs on a round-robin basis. When this attribute is set to ***closest***, all the call request packets will be forwarded to the closest CSRM. The default behavior is set to forward the calls to the closest CSRM.
Mib	DpnRouting
Values	closest (cl) shared (sh)
Default	closest

GROUP Rtg Dpn Operational (Oper)

Properties	Operational
Description	This group of attributes provides information about the functioning of the *DpnAddressPlan* component.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn callServerModuleRids

Access	Read only
Description	This attribute indicates the RIDs of the Call Server Resource Modules (CSRMs) currently in use to support Call Server functions, such as SCR and DCR, for the RID subnet. Up to two CSRMs can be in use to support such Call Server functions. Note that packets destined to Call Server functions are routed to the closest CSRM supporting the required server functionality.
Mib	DpnRouting
List of	Decimal (1..126)
Default	No default

GROUP Rtg Dpn ControlStatistics (ConStats)

Properties	Operational
Description	This group of attributes provides statistics about the behavior of the *DpnAddressPlan* component. The statistics concern the distribution of routing information, required to support the routing of DPN traffic, to all nodes in the RID subnet.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn controlPktTx

Access	Read only
Description	This attribute counts the internal control packets, originating from this node, sent to other nodes in the RID subnet. The packets contain DPN routing information required by the *DpnAddressPlan* component to support the transport of DPN traffic. The packets received from a neighbor node and forwarded to other neighbors are not counted. The counter wraps around to zero when the maximum value is reached.
Mib	DpnRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Dpn controlPktRx

Access	Read only
Description	This attribute counts the internal control packets received from other nodes in the RID subnet. The packets contain DPN routing information required by the *DpnAddressPlan* component to support the transport of DPN traffic. The counter wraps around to zero when the maximum value is reached.
Mib	DpnRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Dpn controlBytesTx

Access	Read only
Description	This attribute counts the internal control packet bytes, originating from the node, sent to other nodes in the RID subnet. The packets contain DPN routing information required by the *DpnAddressPlan* component to support the transport of DPN traffic. Packet bytes received from a neighbor node and forwarded to other neighbors are not counted. The counter wraps around to zero when the maximum value is reached.
Mib	DpnRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Dpn controlBytesRx

Access	Read only
Description	This attribute counts the internal control packet bytes received from other nodes in the RID subnet. The packets contain DPN routing information required by the *DpnAddressPlan* component to support the transport of DPN traffic. The counter wraps around to zero when the maximum value is reached.
Mib	DpnRouting

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Dpn outOfSequencePkt

Access	Read only
Description	This attribute counts the internal control packets received and rejected. These packets contained old sequence numbers. The packets contain DPN routing information required by the *DpnAddressPlan* component to support the transport of DPN traffic. The counter wraps around to zero when the maximum value is reached.
Mib	DpnRouting
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtg Dpn ForwardingStatistics (FwdStats)

Properties	Operational
Description	This group of attributes provides statistics for the traffic handled by DPN packet forwarding on this module. The statistics can be used to monitor the connectionless traffic profile on this module.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn totalPackets

Access	Read only
Description	This attribute counts the delay and throughput packets handled by DPN packet forwarding on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast.*** It is the aggregate of *totalPackets* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting

Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn throughputPackets

Access	Read only
Description	This attribute counts the throughput packets handled by DPN packet forwarding on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. It is the aggregate of *throughputPackets* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn delayPackets

Access	Read only
Description	This attribute counts the delay packets handled by DPN packet forwarding on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. It is the aggregate of *delayPackets* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn normalReliabilityPackets

Access	Read only

Description	This attribute counts the normal reliability packets handled by DPN packet forwarding on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. It is the aggregate of *normalReliabilityPackets* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn highReliabilityPackets

Access	Read only
Description	This attribute counts the high reliability packets handled by DPN packet forwarding on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. It is the aggregate of *highReliabilityPackets* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn discardNoRoute

Access	Read only
Description	This attribute counts the packets that have been discarded by packet forwarding due to failure to find a route to forward the packets on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. It is the aggregate of *discardNoRoute* attribute of all *LpStatistics* components on the

	module. Note that DPRS packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn interruptingPackets

Access	Read only
Description	This attribute counts the multimedia packets handled by DPN packet forwarding on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. It is the aggregate of *interruptingPackets* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn discardLpCongested

Access	Read only
Description	This attribute counts the packets that have been discarded by packet forwarding due to LP congestion on this module when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. A packet encounters LP congestion when there is insufficient shared memory. This attribute is the aggregate of *discardLpCongested* attribute of all *LpStatistics* components on the module. Note that DPRS packets leaving the network at this module are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting

Values	Long Integer
Default	No default

COMPONENT Rtg Dpn ReachableRidInfo (Rid)

Instance	Decimal (0..127)
Groups	"GROUP Rtg Dpn Rid Operational (Oper)"
Scope	Network
Description	*Routing Dpn ReachableRidInfo/<rid>* This component is a dynamic subcomponent of the *DpnAddressPlan*. It provides information about the paths to RIDs in the network that are reachable. There is one instance per reachable RID.
Mib	DpnRouting
Dyn. Subcomp.	"COMPONENT Rtg Dpn Rid Mid"
Common Verbs	Help List Display

VERB Ping Rtg Dpn Rid

Impact	Passive
Description	*Ping [-sensitivity(throughput/delay|multimedia)] [-reliability(high/normal)] [-priority(normal/high)] [-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)] [-allPaths] Routing Dpn Rid/<rid>* *Ping* causes a query packet to be sent to the RID destination. It can be used to either find a path to a destination or to measure the round trip delay to reach the destination. The ping command can also be used to ensure that the destination is reachable. If the destination is unreachable or the network is congested, the operator will be notified.

The ping command can be issued with or without options. If no options are specified, the command reports the path used to reach the destination. When ping is used to find a path, it displays the RID and MID of each module that the query packet passes through on its way to the destination.

The *ping* command supports the following options:

-*sensitivity:* This option specifies the sensitivity for the route to be taken by the ping packet. If ***delay*** sensitivity is specified, the packet is routed on the minimum delay path. If ***throughput*** sensitivity is specified, the packet is routed on the highest bandwidth route. If **multimedia** sensitivity is specified, the packet is routed on the minimum delay path using the highest emission priority link transmit queue available. If this option is not selected, ***throughput*** sensitivity is used.

-*reliability:* This option specifies the reliability for the route to be taken by the ping packet. If ***high*** reliability is specified, the packet is routed on an overflow path if the primary path is congested. If ***normal*** reliability is specified, the ping packet is discarded if the primary path is congested. If this option is not selected, ***high*** reliability is used.

-*priority:* This option influences the priority of the *ping* packet. If ***high*** priority is specified, the packet is less likely to be discarded in the network. If this option is not selected, ***normal*** priority is used.

-*roundTripDelay (-rtd):* If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. This option is ignored if the *allPaths* option is selected. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets

to be included in the round trip delay query packet. This option is ignored if the -rtd option is not specified.

The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response.

If this option is not selected the default value is 64 octets if **multimedia** sensitivity has been specified, and 128 octets otherwise. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. This option is ignored if the -rtd option is not specified.

The rtd acknowledge packet consists of the Nortel Netwroks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response.

If this option is not selected the default value is 64 octets if **multimedia** sensitivity has been specified, and 128 octets otherwise. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-allPaths (-all): If this option is selected, 16 query packets will be sent to the destination, and all possible paths (up to 16) to reach the destination will be reported. Since there are 16 path selection values used in the DPRS packet forwarding system, 16 query packets that each carry a different path selector will collect path information for all possible paths. All query packets which return to the source node within the timeout period are included in the response. The response indicates how many query packets were sent, how many were returned, and how many unique paths were taken.

GROUP Rtg Dpn Rid Operational (Oper)

Properties	Operational
Description	This group of attributes is maintained by the *DpnAddressPlan* component to provide information about the RIDs reachable in the network.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn Rid dpnDelayMetric

Access	Read only
Description	This attribute indicates the minimum DPN delay metric to the destination RID. The delay metric associated with a path is computed by the routing system by translating the smallest *delayMetric* calculated for the destination. A path with a lower metric value is preferable to one with a higher value as it is associated with lower delay facilities. The metric displayed is that of the best path to the destination. This metric is advertised to neighbor RMs and Nortel Networks Multiservice Switches in a different RID subnet. A metric value of 255 means the RID is unreachable in the delay class of service. A value of 0 indicates that no cost is associated with the path to the destination. This would be the case for the local node's RID. A metric value of 252 indicates that the destination RID is that of a Network Module (NM).

Mib	DpnRouting
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtg Dpn Rid dpnTputMetric

Access	Read only
Description	This attribute indicates the minimum DPN throughput metric to the destination RID. The throughput metric associated with a path is computed by the routing system by translating the smallest *tputMetric* calculated for the destination. A path with a lower metric value is preferable to one with a higher value as it is associated with higher bandwidth facilities. The metric displayed is that of the best path to the destination. This metric is advertised to neighbor RMs and Nortel Networks Multiservice Switches in a different RID subnet. A metric value of 255 means the RID is unreachable in the throughput class of service. A value of 0 indicates that no cost is associated with the path to the destination. This would be the case for the local node's RID.
Mib	DpnRouting
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtg Dpn Rid routeType

Access	Read only
Description	This attribute indicates whether the paths in use to reach the destination RID are learned or default routes. When the paths in use are learned paths, the attribute value is ***learned***. When the paths are default routes, the attribute value is ***default***. The paths in use are always learned when this node is not a cluster node. There are up to two paths to reach a destination RID for each delay and throughput class of service. The paths displayed are the best and next best paths among all available

paths to the destination.

The paths in use are default routes only when this node is a cluster node. A cluster node has no knowledge about RID subnets other than its own. All packets destined to unknown RIDs, i.e. RIDs other than its own RID, will first be sent out of the cluster in which this node is located, and further forwarded by the nodes outside of the cluster to reach the destination. Therefore, the delay and throughput paths in use to reach a RID other than the cluster node's own RID are the two best and next best delay or throughput paths to get out of the cluster, and are called the default routes.

Mib DpnRouting

Values learned
default

Default learned

ATTRIBUTE Rtg Dpn Rid delayNextHopLinkGroups

Access Read only

Description This attribute indicates the delay link group, or groups, that are being used to reach a neighbor which is the next hop in the path to the destination RID. DPN traffic will be spread across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest delay metrics to the destination.

The link group can be that of either a Nortel Networks Multiservice Switch interconnection or a gateway to an RM.

If no link groups are listed then the destination is not reachable in the delay class of service (except in the case of the local node's RID).

Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.

Mib DpnRouting

Values	The name of the component
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Rid tputNextHopLinkGroups

Access	Read only
Description	This attribute indicates the throughput link group, or groups, that are being used to reach a neighbor which is the next hop in the path to the destination RID. DPN traffic will be spread across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest throughput metrics to the destination. The link group can be that of either a Nortel Networks Multiservice Switch interconnection or a gateway to an RM. If no link groups are listed then the destination is not reachable in the throughput class of service (except in the case of the local node's RID). Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.
Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Rid delayPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total delay traffic flows to the destination which are sent over each delay path. These percentages are achieved when there is a large number of virtual circuits (VCs).

Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Rid tputPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total throughput traffic flows to the destination which are sent over each throughput path. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Rid delayMetric

Access	Read only
Description	This attribute indicates the delay metrics of up to two paths to the destination RID. The delay metric associated with a path is computed by the routing system based on the sum of the delays associated with the links in the path to the destination. A path with a lower metric value is preferable to one with a higher value as it is associated with lower delay facilities. The metrics displayed are those of the paths being used to reach the destination. Metric values of 2147483647 for both paths means the RID is unreachable in the delay class of service. A metric value of 2147483647 for the second path only means that there is only one viable delay path to the destination. A value of 0 indicates that no

	cost is associated with the path to the destination. This would be the case for the local node's RID. Metric values of 2147483646 indicate that the destination RID is that of a Network Module (NM).
Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Rid tputMetric

Access	Read only
Description	This attribute indicates the throughput metrics of up to two paths to the destination RID. The throughput metric associated with a path is computed by the routing system based on the sum of the bandwidth associated with the links in the path to the destination. A path with a lower metric value is preferable to one with a higher value as it is associated with higher bandwidth facilities. The metrics displayed are those of the paths being used to reach the destination. Metric values of 2147483647 for both paths means the RID is unreachable in the throughput class of service. A metric value of 2147483647 for the second path only means that there is only one viable throughput path to the destination. A value of 0 indicates that no cost is associated with the path to the destination. This would be the case for the local node's RID.
Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

COMPONENT Rtg Dpn Rid Mid

Instance	Decimal (0..2046)

Scope	Network
Description	*Routing Dpn Rid/<rid> Mid/<mid>* This component is a subcomponent of *ReachableRidInfo*. It supports the ping verb by providing the ability to ping a MID under a RID that is known to be reachable. The state (reachable/ unreachable) of MIDs, other than those supported by the local RID subnet (see the *ReachableMidInfo* subcomponent), is not maintained by the *DpnAddressPlan* component.
Mib	DpnRouting
Common Verbs	Help List Display

VERB Ping Rtg Dpn Rid Mid

Impact	Passive
Description	*Ping [-sensitivity(throughput/delay|multimedia)] [-reliability(high/normal)] [-priority(normal/high)] [-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)] [-allPaths] Routing Dpn Rid/<rid> Mid/<mid>* *Ping* causes a query packet to be sent to the RID MID destination. It can be used to either find a path to a destination or to measure the round trip delay to reach the destination. The ping command can also be used to ensure that the destination is reachable. If the destination is unreachable or the network is congested, the operator will be notified. The ping command can be issued with or without options. If no options are specified, the command reports the path used to reach the destination. When ping is used to find a path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. The *ping* command supports the following options:

-*sensitivity:* This option specifies the sensitivity for the route to be taken by the ping packet. If ***delay*** sensitivity is specified, the packet is routed on the minimum delay path. If ***throughput*** sensitivity is specified, the packet is routed on the highest bandwidth route. If ***multimedia*** sensitivity is specified**,** the packet is routed on the minimum delay path using the highest emission priority link transmit queue available. If this option is not selected, ***throughput*** sensitivity is used.

-*reliability:* This option specifies the reliability for the route to be taken by the ping packet. If ***high*** reliability is specified, the packet is routed on an overflow path if the primary path is congested. If ***normal*** reliability is specified, the ping packet is discarded if the primary path is congested. If this option is not selected, ***high*** reliability is used.

-*priority:* This option influences the priority of the *ping* packet. If ***high*** priority is specified, the packet is less likely to be discarded in the network. If this option is not selected, ***normal*** priority is used.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. This option is ignored if the -rtd option is not specified.

The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response.

If this option is not selected the default value is 64 octets if **multimedia** sensitivity has been specified, and 128 octets otherwise. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet.

This option is ignored if the -rtd option is not specified.

The rtd acknowledge packet consists of the Nortel networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response.

If this option is not selected the default value is 64 octets if **multimedia** sensitivity has been specified, and 128 octets otherwise. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-allPaths (-all): If this option is selected, 16 query packets will be sent to the destination, and all possible paths (up to 16) to reach the destination will be reported. Since there are 16 path selection values used in the DPRS packet forwarding system, 16 query packets that each carry a different path selector will collect path information for all possible paths. All query packets which return to the source node within the timeout period are included in the response. The response indicates how many query packets were sent, how many were returned, and how many unique paths were taken.

COMPONENT Rtg Dpn ReachableMidInfo (Mid)

Instance	Decimal (0..2046)
Groups	"GROUP Rtg Dpn Mid Operational (Oper)"
Scope	Network
Description	*Routing Dpn ReachableMidInfo/<mid>* This component is a dynamic subcomponent of the *DpnAddressPlan*. It provides information about the MIDs supported by the local RID subnet that are, or were once, reachable.

If the node is not a cluster node, an instance of this component represents the MID of any one of the nodes supported in the RID subnet. These includes nodes located inside or outside a cluster, DPN-100 AMs sub-tended off a cluster, and DPN-100 AMs connected to a node outside of a cluster.

If the node is a cluster node, an instance of this component represents the MID of any one of the nodes supported by the local cluster in the subnet. These include only Nortel Networks Multiservice Switches in the local cluster and DPN-100 AMs sub-tended off the cluster. In other words, MIDs located outside of the cluster are not shown.

Note that the node is in a cluster and is a cluster node when the *clusterNode* attribute under the *Routing* component is provisioned as ***yes***.

Mib: DpnRouting

Common Verbs:
- Help
- List
- Display

VERB Ping Rtg Dpn Mid

Impact: Passive

Description: *Ping [-sensitivity(throughput/delay/multimedia)] [-reliability(high/normal)] [-priority(normal/high)] [-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)] [-allPaths] Routing Dpn Mid/<mid>*

Ping causes a query packet to be sent to the MID destination. It can be used to either find a path to a destination or to measure the round trip delay to reach the destination.

The ping command can also be used to ensure that the destination is reachable. If the destination is unreachable or the network is congested, the operator will be notified.

The ping command can be issued with or without options. If no options are specified, the command reports the path used to reach the destination. When ping is used to find a path, it displays the RID and MID of each module that the query packet passes through on its way to the destination.

The *ping* command supports the following options:

-*sensitivity:* This option specifies the sensitivity for the route to be taken by the ping packet. If ***delay*** sensitivity is specified, the packet is routed on the minimum delay path. If ***throughput*** sensitivity is specified, the packet is routed on the highest bandwidth route. If ***multimedia*** sensitivity is specified**,** the packet is routed on the minimum delay path using the highest emission priority link transmit queue available. If this option is not selected, ***throughput*** sensitivity is used.

-*reliability:* This option specifies the reliability for the route to be taken by the ping packet. If ***high*** reliability is specified, the packet is routed on an overflow path if the primary path is congested. If ***normal*** reliability is specified, the ping packet is discarded if the primary path is congested. If this option is not selected, ***high*** reliability is used.

-*priority:* This option influences the priority of the *ping* packet. If ***high*** priority is specified, the packet is less likely to be discarded in the network. If this option is not selected, ***normal*** priority is used.

-*roundTripDelay (-rtd):* If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. This option is ignored if the *allPaths* option is selected. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. This option is

ignored if the -rtd option is not specified.

The rtd query packet consists of the Nortel Netwroks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response.

If this option is not selected the default value is 64 octets if **multimedia** sensitivity has been specified, and 128 octets otherwise. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. This option is ignored if the -rtd option is not specified.

The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response.

If this option is not selected the default value is 64 octets if **multimedia** sensitivity has been specified, and 128 octets otherwise. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-allPaths (-all): If this option is selected, 16 query packets will be sent to the destination, and all possible paths (up to 16) to reach the destination will be reported. Since there are 16 path selection values used in the DPRS packet forwarding system, 16 query packets that each carry a different path selector will collect path information for all possible paths. All query packets which return to the source node within the timeout period are included in the response. The response indicates how many query packets were sent, how many were returned, and how many unique paths were taken.

GROUP Rtg Dpn Mid Operational (Oper)

Properties	Operational
Description	This group of attributes is maintained by *DpnAddressPlan* component to provide information about the MIDs reachable, or once reachable, through the local RID subnet.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn Mid routeType

Access	Read only
Description	This attribute indicates whether the paths in use to reach the destination MID is learned or default routes. When the paths in use are learned paths, the attribute value is ***learned***. When the paths are default routes, the attribute value is ***default***. The paths in use are always learned when this node is not a cluster node. There are up to two paths to reach a destination MID for each delay and throughput class of service. The paths displayed are the best and next best paths among all available paths to the destination. The paths in use can be learned or default routes when this node is a cluster node. The paths are learned when the destination MID and this node are located in the same cluster. When the destination MID is located outside of the cluster, all packets destined to that MID will first be sent out of the cluster, and

	further forwarded by the nodes outside of the cluster to reach the destination. Therefore, the delay and throughput paths in use to send packets to all MIDs located outside of the cluster are the two best and next best delay or throughput paths to get out of the cluster, and are called the default routes.
Mib	DpnRouting
Values	learned default
Default	learned

ATTRIBUTE Rtg Dpn Mid midType

Access	Read only
Description	This attribute indicates the type of the MID for the module in the subnet. ***em*** - for a backbone (that is, non-cluster) Nortel Networks Multiservice Switch. ***am*** - for a DPN-100 node. ***cluster*** - for a Nortel Networks Multiservice Switch inside a cluster. ***unknown*** - for a node that is unknown to the cluster node.
Mib	DpnRouting
Values	em am cluster unknown
Default	No default

ATTRIBUTE Rtg Dpn Mid substituteRid

Access	Read only
Description	This attribute indicates the substitute RID in use for the MID. This RID will be substituted for the RID in DPN packets destined to the local node's RID and the MID in question when the MID is unreachable (when, for example, all links to an AM from the RID subnet are down). It will also be used in the case where the path through the substitute RID is better than that available through

the subnet's connection to the cluster containing the AM MID.

Substitute RIDs are learned from AM clusters that are supported by two RIDs (the subnet's RID and another one). The operator can check this value to determine if a possible back up route to an AM exists. When there are no *delayNextHopLinkGroups* or *tputNextHopLinkGroups* shown to reach the MID, the substitute RID will be used.

A value of 128 indicates that no substitute RID is known.

Mib	DpnRouting
Values	Decimal (1..128)
Default	128

ATTRIBUTE Rtg Dpn Mid delayNextHopLinkGroups

Access	Read only
Description	This attribute indicates the delay link group, or groups, that are being used to reach a neighbor which is the next hop in the path to the destination MID. DPN traffic will be spread across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest delay metrics to the destination. The link group can be that of either a Nortel Networks Multiservice Switch interconnection or a gateway to an AM. If no link groups are listed then the destination is not reachable in the delay class of service (except in the case of the local node's MID, or when a substitute RID path is available). Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.
Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)

Default	No default

ATTRIBUTE Rtg Dpn Mid tputNextHopLinkGroups

Access	Read only
Description	This attribute indicates the throughput link group, or groups, that are being used to reach a neighbor which is the next hop in the path to the destination MID. DPN traffic will be spread across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest throughput metrics to the destination. The link group can be that of either a Nortel Networks Multiservice Switch interconnection or a gateway to an AM. If no link groups are listed then the destination is not reachable in the throughput class of service (except in the case of the local node's MID, or when a substitute RID path is available). Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.
Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Mid delayMetric

Access	Read only
Description	This attribute indicates the delay metrics of up to two paths to the destination MID. The delay metric associated with a path is computed by the routing system based on the sum of the delays associated with the links (or estimated delays for links to AMs) in the path to the destination. It is computed for every possible path to the destination and is used by the *DpnAddressPlan* component for path comparison purposes. A path with a lower metric value is preferable to one with a higher value as it is associated with lower

delay facilities. The metrics displayed are those of the paths being used to reach the destination.

Metric values of 2147483647 for both paths means the MID is unreachable in the delay class of service (though it might still be reachable via its substitute RID). A metric value of 2147483647 for the second path only means that there is only one viable delay path to the destination.A value of 0 indicates that no cost is associated with the path to the destination. This would be the case for the local node's MID.

Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Mid tputMetric

Access	Read only
Description	This attribute indicates the throughput metrics to the destination MID. The throughput metric associated with a path is computed by the routing system based on the sum of the bandwidth associated with the links (or estimated bandwidth for links to AMs) in the path to the destination. It is computed for every possible path to the destination and is used by the *DpnAddressPlan* component for path comparison purposes. A path with a lower metric value is preferable to one with a higher value as it is associated with higher bandwidth facilities. The metrics displayed are those of the paths being used to reach the destination. Metric values of 2147483647 for both paths means the MID is unreachable in the throughput class of service (though it might still be reachable via its substitute RID). A metric value of 2147483647 for the second path only means that there is only one viable throughput path to the destination. A value of 0 indicates that no cost is associated with the path to the destination. This would be the case for the local node's RID.

Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Mid delayPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total delay traffic flows to the destination which are sent over each delay path. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Mid tputPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total throughput traffic flows to the destination which are sent over each throughput path. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

COMPONENT Rtg Dpn ReachableCallServerInfo (Cs)

Instance	dcr nui crd lnui scr npm grman gscr gdcr lcr
Groups	"GROUP Rtg Dpn Cs Operational (Oper)"
Scope	Network
Description	*Routing Dpn ReachableCallServerInfo/<server>* This component is a dynamic subcomponent of the *DpnAddressPlan*. It provides information about the Call Server functions, supported by one of the up to two Call Server Resource Modules, that are reachable. The information is accessed by specifying one of the following abbreviated names: scr - Source Call Routing Agent dcr - Destination Call Routing Agent gscr - Gateway Source Call Router Server gdcr - Gateway Destination Call Router Server grman - Gateway Call Routing Manager crd - Call Redirection Remote Server Interface lcr - (Limping) Call Redirection Server nui - Network User Identifier Remote Server Interface lnui - (Limping) Network User Identifier npm - Network Process Monitor System
Mib	DpnRouting
Common Verbs	Help List Display

GROUP Rtg Dpn Cs Operational (Oper)

Properties	Operational
Description	This group of attributes is maintained by the *DpnAddressPlan* component to provide information about the Call Server functions reachable on the Call Server Resource Modules.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn Cs routeType

Access	Read only
Description	This attribute indicates whether the paths in use to reach the destination call server is learned or default routes. When the paths in use are learned paths, the attribute value is ***learned***. When the paths are default routes, the attribute value is ***default***. The paths in use are always learned when this node is not a cluster node. There are up to two paths to reach a destination call server for each delay and throughput class of service. The paths displayed are the best and next best paths among all available paths to the destination. The paths in use can be learned or default routes when this node is a cluster node. The paths are learned when the call server in use is in the same cluster where this node is located. When the call server in use is located outside of the cluster, all packets destined to that call server will first be sent out of the cluster, and further forwarded by the nodes outside of the cluster to reach the module supporting the call server. Therefore, the delay and throughput paths in use to send packets to all call servers located outside of the cluster are the two best and next best delay or throughput paths to get out of the cluster, and are called the default routes.
Mib	DpnRouting
Values	learned default
Default	learned

ATTRIBUTE Rtg Dpn Cs delayNextHopLinkGroups

Access	Read only
Description	This attribute indicates the delay link group, or groups, that are being used to reach a neighbor which is the next hop in the path to the Call Server Resource Module (CSRM) supporting the server. DPN server traffic will be load shared across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest delay metrics to the destination. The link group can be that of either a Nortel Networks Multiservice Switch interconnection or a gateway to a CSRM. If no link groups are listed then the server is not reachable in the delay class of service. Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.
Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Cs tputNextHopLinkGroups

Access	Read only
Description	This attribute indicates the throughput link group, or groups, that are being used to reach a neighbor which is either the next hop in the path to the Call Server Resource Module (CSRM) supporting the server. DPN server traffic will be load shared across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest throughput metrics to the destination. The link group can be that of either a Nortel Networks Multiservice Switch interconnection or a gateway to the CSRM.

	If no link groups are listed then the server is not reachable in the throughput class of service. Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.
Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Cs delayMetric

Access	Read only
Description	This attribute indicates the delay metrics of up to two paths to the server supported on a Call Server Resource Module (CSRM). The delay metric associated with a path is computed by the routing system based on the sum of the delays associated with the links in the path to the CSRM supporting the server. It is computed for every possible path to the server and is used by the *DpnAddressPlan* component for path comparison purposes. A path with a lower metric value is preferable to one with a higher value as it is associated with lower delay facilities. The metrics displayed are those of the paths being used to reach the destination. Metric values of 2147483647 for both paths means the server is unreachable in the delay class of service. A metric value of 2147483647 for the second path only means that there is only one viable delay path to the destination. A value of 0 indicates that no cost is associated with the path to the destination.
Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)

Default	No default

ATTRIBUTE Rtg Dpn Cs tputMetric

Access	Read only
Description	This attribute indicates the throughput metrics of up to two paths to reach the server supported on a Call Server Resource Module (CSRM). The throughput metric associated with a path is computed by the routing system based on the sum of the bandwidth associated with the links in the path to the CSRM supporting the server. It is computed for every possible path to the server and is used by the *DpnAddressPlan* component for path comparison purposes. A path with a lower metric value is preferable to one with a higher value as it is associated with higher bandwidth facilities. The metrics displayed are those of the paths being used to reach the destination. Metric values of 2147483647 for both paths means the server is unreachable in the throughput class of service. A metric value of 2147483647 for the second path only means that there is only one viable throughput path to the destination. A value of 0 indicates that no cost is associated with the path to the destination.
Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Cs delayPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total delay traffic flows to the destination which are sent over each delay path. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting
Values	Decimal (0..100)

Units	%
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn Cs tputPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total throughput traffic flows to the destination which are sent over each throughput path. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

COMPONENT Rtg Dpn LocalLinkGroups (Lg)

Instance	String (1..12, ASCII)
Groups	"GROUP Rtg Dpn Lg Operational (Oper)"
Scope	Network
Description	*Routing Dpn LocalLinkGroups/<neighborNodeName>* This component is a dynamic subcomponent of the *DpnAddressPlan*. It provides information about the support of external gateways to RMs and AMs connected to this Nortel Networks Multiservice Switch.
Mib	DpnRouting
Common Verbs	Help List Display

GROUP Rtg Dpn Lg Operational (Oper)

Properties	Operational
Description	This group of attributes provides information about the gateways in use to reach Nortel Networks Multiservice Switches, RMs, and AMs connected to this node.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn Lg farEndType

Access	Read only
Description	This attribute indicates the type of the far end module (EM, AM or RM).
Mib	DpnRouting
Values	em rm am
Default	No default

ATTRIBUTE Rtg Dpn Lg farEndRid

Access	Read only
Description	This attribute indicates the far end neighbor RID. If the neighbor is an AM then the RID is that of the node.
Mib	DpnRouting
Values	Decimal (1..126)
Default	No default

ATTRIBUTE Rtg Dpn Lg farEndMid

Access	Read only
Description	This attribute indicates the far end neighbor MID.
Mib	DpnRouting
Values	Decimal (1..1910)

Default	No default

ATTRIBUTE Rtg Dpn Lg delayMetric

Access	Read only
Description	This attribute indicates the delay metric calculated for the link group. If the type of the far end switch is AM, the delay metric is calculated for MID routing, ranging from 1 to 2147483647. If the type of the far end switch is EM or RM, the delay metric, ranging from 1 to 255, is based on the measured round trip delay of the delay preferred links in the group. A link group with a low metric value is preferable to one with a higher value as it is associated with lower delay facilities.
Mib	DpnRouting
Values	Decimal (1..2147483647)
Default	No default

ATTRIBUTE Rtg Dpn Lg tputMetric

Access	Read only
Description	This attribute indicates the throughput metric calculated for the link group. If the type of the far end switch is AM, the throughput metric is calculated for MID routing, ranging from 1 to 2147483647. If the type of the far end switch is EM or RM, the throughput metric, ranging from 1 to 255, is based on the sum of the bandwidth available for all links in the group. A link group with a low metric value is preferable to one with a higher value as it is associated with higher bandwidth facilities.
Mib	DpnRouting
Values	Decimal (1..2147483647)
Default	No default

COMPONENT Rtg Dpn LpStatistics (LpStats)

Instance	Decimal (0..15)
Groups	"GROUP Rtg Dpn LpStats ForwardingStatistics (FwdStats)"
Scope	Network
Description	*Routing Dpn LpStatistics/n* This component provides DPN packet forwarding statistics for the LP identified by this component instance.
Mib	DpnRouting
Common Verbs	Help List Display

GROUP Rtg Dpn LpStats ForwardingStatistics (FwdStats)

Properties	Operational
Description	This group of attributes provides DPN packet forwarding statistics for this LP. The statistics can be used to monitor the connectionless traffic profile on this LP.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn LpStats totalPackets

Access	Read only
Description	This attribute counts the delay and throughput packets handled by DPN packet forwarding on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast***, DPRS packets

	that are tandem through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn LpStats throughputPackets

Access	Read only
Description	This attribute counts the throughput packets handled by DPN packet forwarding on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast,*** DPRS packets that are tandem through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn LpStats delayPackets

Access	Read only
Description	This attribute counts the delay packets handled by DPN packet forwarding on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast,*** DPRS packets that are tandem through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.

Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn LpStats normalReliabilityPackets

Access	Read only
Description	This attribute counts the normal reliability packets handled by DPN packet forwarding on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast,*** DPRS packets that are tandem through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn LpStats highReliabilityPackets

Access	Read only
Description	This attribute counts the high reliability packets handled by DPN packet forwarding on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast,*** DPRS packets that are tandem through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer

Default	No default

ATTRIBUTE Rtg Dpn LpStats discardNoRoute

Access	Read only
Description	This attribute counts the packets that have been discarded by packet forwarding due to failure to find a route to forward the packets on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn LpStats interruptingPackets

Access	Read only
Description	This attribute counts the multimedia packets handled by DPN packet forwarding on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. Note that DPRS packets leaving the network at this LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast***, DPRS packets that are tandem through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

ATTRIBUTE Rtg Dpn LpStats discardLpCongested

Access	Read only

Description	This attribute counts the packets that have been discarded by DPN packet forwarding, on the entire module, due to congestion on this LP when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of ***loadshare***, ***loadspread*** or ***loadspreadFast***. This value is the sum of the packets discarded by all LPs due to insufficient shared memory on this one. Note that DPRS packets leaving the network at this LP are not counted. Also, if the card type of this LP is PQC, and the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to the value of ***loadspreadFast***, DPRS packets that are tandem through the module at this LP are not counted. The counter wraps to zero when the maximum value is exceeded.
Mib	DpnRouting
Values	Long Integer
Default	No default

COMPONENT Rtg Dpn RidFilterInfo (RidFilter)

Instance	Decimal (1..126)
Groups	"GROUP Rtg Dpn RidFilter Provisioned (Prov)"
Scope	Network
Description	*Routing Dpn RidFilterInfo/<rid>* This component maintains information related to the filtering of RID reachability information in Routing Table Updates (RTUs) sent to and received from the instance RID.
Mib	DpnRouting
Common Verbs	Help List Display Add DELete

GROUP Rtg Dpn RidFilter Provisioned (Prov)

Properties	Provisioned

Description	This group of attributes specifies the criteria for filtering Routing Table Updates (RTUs) sent to and received from a neighboring RID.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn RidFilter importRidList

Access	Read and write
Description	This attribute specifies the list of RIDs whose reachability information will be accepted from the instance RID. Information about RIDs which do not appear in this list will be ignored and this node considers those RIDs to be unreachable from the instance RID. Note that this also applies to the instance RID itself, that is, if the instance RID does not appear in the import list, this node considers the instance RID to be unreachable from the instance RID. By default this list contains all valid RIDs, meaning that information about all RIDs will be accepted from the instance RID. When this list is empty, no RID information is accepted from the instance RID, therefore, no RID traffic will be routed to it. A warning is generated when an empty import list is detected. RID 127 is the Network Services Sharing (NSS) RID, used to identify DPN-100 nodes running call servers which can be used for remote call processing. This RID can be filtered like any other using the import RID list.
Mib	DpnRouting
List of	Decimal (1..127)
Default	(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107,

108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127)

ATTRIBUTE Rtg Dpn RidFilter exportRidList

Access	Read and write
Description	This attribute specifies the list of RIDs whose true reachability is advertised to the instance RID. RIDs which do not appear in this list are advertised to the instance RID as being unreachable from this node. By default, this list contains all valid RIDs, meaning that true reachability information for all RIDs is advertised to the instance RID. When this list is empty, all RIDs will be advertised to the instance RID as unreachable, including this node's own RID, therefore the instance RID will not route any RID traffic to this RID. A warning is generated when an empty export list is detected. RID 127 is the Network Services Sharing (NSS) RID, used to identify DPN-100 nodes running call servers which can be used for remote call processing. This RID can be filtered like any other using the import RID list.
Mib	DpnRouting
List of	Decimal (1..127)
Default	(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127)

COMPONENT Rtg Dpn DefaultRoute (DefRoute)

Groups	"GROUP Rtg Dpn DefRoute Operational (Oper)"
Scope	Network

Description	*Routing Dpn defaultRoute* This is a dynamic subcomponent of *DpnAddressPlan*. It has only one instance and only resides on a node when the *clusterNode* under the *Routing* component is provisioned as ***yes*** meaning the node is a cluster node. It provides information about the default paths in use to any RID, MID, or Call Server unknown to the cluster node.
Mib	DpnRouting
Common Verbs	Help List Display

GROUP Rtg Dpn DefRoute Operational (Oper)

Properties	Operational
Description	This group of attributes is maintained by the *DpnAddressPlan* component to provide information about the default routes to any unknown RID, MID, or Call Server from a cluster node.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn DefRoute delayNextHopLinkGroups

Access	Read only
Description	This attribute indicates the delay link group, or groups, that are being used at a cluster node to reach a neighbor which is the next hop in the default path to an unknown RID, MID, or Call Server. DPN traffic will be spread across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest delay metrics to the backbone. If no link groups are listed then the backbone and thus all RIDs, MIDs, and Call Servers outside of the local cluster are not reachable in the delay class of service. Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.

Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn DefRoute tputNextHopLinkGroups

Access	Read only
Description	This attribute indicates the throughput link group, or groups, that are being used at a cluster node to reach a neighbor which is the next hop in the default route to an unknown RID, MID, or Call Server. DPN traffic will be spread across the links, in up to two link groups, when available. The link groups selected are those associated with the two loop-free paths with the lowest throughput metrics to the backbone. If no link group is listed then the backbone and thus all RIDs, MIDs and Call Servers outside of the local cluster are not reachable in the throughput class of service. Link group instances are managed by the *TransportResource* component. Further information about the links in the group can be obtained from it.
Mib	DpnRouting
Values	The name of the component
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn DefRoute delayPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total delay traffic flows over each delay default path from the cluster node to reach a RID, MID, or Call Server outside of the cluster. These percentages are achieved when there is a large number of virtual circuits (VCs).

Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn DefRoute tputPathTrafficProportions

Access	Read only
Description	This attribute indicates the target percentages of the total throughput traffic flows over each throughput default path from the cluster node to reach a RID, MID or Call Server outside of the cluster. These percentages are achieved when there is a large number of virtual circuits (VCs).
Mib	DpnRouting
Values	Decimal (0..100)
Units	%
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn DefRoute delayMetric

Access	Read only
Description	This attribute indicates the delay metrics of up to two paths in use at a cluster node for forwarding packets to any unknown RID, MID, or Call server. The paths in use are the paths towards the backbone of the network. Packets destined to any unknown RID, MID, or Call Server are forwarded to a non-cluster node outside of the cluster and further handled by the node outside of the cluster to reach their destinations. Paths from the local cluster node to all connected non-cluster nodes in the RID subnet are found by the Routing System. The delay metric displayed is computed based on the sum of the delays associated with the links in a path from the local node to

one of those non-cluster nodes. A path with a lower metric value is preferable to one with a higher value as it is associated with lower delay facilities.

Metric values of 2147483647 for both paths means no default paths are in use and thus all unknown RIDs, MIDs, and Call Servers are unreachable in the delay class of service. A metric value of 2147483647 for the second path only means that there is only one viable delay path to get off the cluster.

Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

ATTRIBUTE Rtg Dpn DefRoute tputMetric

Access	Read only
Description	This attribute indicates the throughput metrics of up to two paths in use at a cluster node for forwarding packets to any unknown RID, MID, or Call server. The paths in use are the paths towards the backbone of the network. Packets destined to any unknown RID, MID, or Call Server are forwarded to a non-cluster node outside of the cluster and further handled by the node outside of the cluster to reach their destinations. Paths from the local cluster node to all connected non-cluster nodes in the RID subnet are found by the Routing System. The throughput metric displayed is computed based on the sum of the throughputs associated with the links in a path from the local node to one of those non-cluster nodes. A path with a lower metric value is preferable to one with a higher value as it is associated with lower throughput facilities. Metric values of 2147483647 for both paths means no default paths are in use and thus all unknown RIDs, MIDs, and Call Servers are unreachable in the throughput class of service. A metric value of 2147483647 for the second path only means that there is only one viable throughput path to get off the cluster.

Mib	DpnRouting
Values	Decimal (0..2147483647)
Replication	Decimal (0..1)
Default	No default

COMPONENT Rtg Dpn AutomaticRouteTester (Art)

Groups	"GROUP Rtg Dpn Art Provisioned (Prov)" "GROUP Rtg Dpn Art Operational (Oper)"
Scope	Network
Description	*Rtg Dpn AutomaticRouteTester* This component is a subcomponent of *DpnAddressPlan*. It provides the DPN automatic route testing capability by periodically sending DPN Ping packets to each reachable RID and MID destination in the DPN routing table. It monitors if these Ping packets are returned in a reasonable period of time (about 15 seconds), and analyzes the route information collected in these packets. An alarm will be raised if one or more of the following problems are detected to at least one of the destinations in the DPN routing table: (1) “Timeout” After sending three Ping packets (one round-trip-delay Ping packet and two path Ping packets) to a destination, none of them return back in a reasonable period of time. This is referred to as a “timeout” problem to this destination. (2) “Routing Loop” After analyzing the route information collected in the path Ping packets that have returned in time (a path Ping packet logs the route information (forward direction only) of all the tandem nodes this Ping packet has traversed before it reached the destination), a routing loop is detected if a specific node appears more than once on the route. This is referred to as a "routing loop" (sometimes simply “loop”) problem to this destination. Information about each error destination is accessible via a dynamic sub-component under this component. If the destination

is a RID destination, it will be *ErrorRid/x* (where x is the RID value of the RID destination). For MID destination, it will be *ErrorMid/y* (where y is the MID value of the MID destination). The maximum number of error destinations (counting both the RID and the MID destinations) that can be simultaneously tracked (and thus appear here) is 10.

Please note that *ErrorRid/x* or *ErrorMid/y only* exist as long as there is a problem to this destination. If the problem no longer exist or this error destination becomes unreachable, the component (*ErrorRid/x* or *ErrorMid/y)* that keeps track of this error destination will be automatically removed.

Mib	DpnRouting
Dyn. Subcomp.	"COMPONENT Rtg Dpn Art ErrorRid (ErrRid)" "COMPONENT Rtg Dpn Art ErrorMid (ErrMid)"
Common Verbs	Help List Display

GROUP Rtg Dpn Art Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes provides information about the option(s) and parameter(s) that the operator can set to control the behavior of automatic route tester.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn Art cosUnderTest

Access	Read and write
Description	This attribute specifies the COS type(s) (delay, throughput, delay and throughput) for which the automatic route testing is conducted. A description of possible values for this attribute follows: ***none***: Do not conduct route testing for any COS type (essentially the automatic route tester is turned off).

delayCosOnly: Conduct route testing to each reachable RID and MID destination for delay COS only.
tputCosOnly: Conduct route testing to each reachable RID and MID destination for throughput COS only.
delayAndTputCos: Conduct route testing to each reachable RID and MID destination for delay and throughput COSs.

Setting this attribute to "***none***" allows the operator to turn off the automatic route tester. Using value "***delayCosOnly***" or "***tputCosOnly***" tells the automated route tester to only work on one COS of the operator's choice. Choosing value "***delayAndTputCos***" when both the delay and throughput COSs are to be tested.

The network resources consumption (such as CPU, memory, link bandwidth) of the automatic route tester working on two COSs will roughly be two times as much as working on only one COS. The time to complete a full cycle of route testing to every reachable destination is also expected to be twice as long when working on two COSs.

Mib	DpnRouting
Values	none delayCosOnly tputCosOnly delayAndTputCos
Default	none

ATTRIBUTE Rtg Dpn Art testInterval (interval)

Access	Read and write
Description	This attribute specifies the time interval between the successive tests on different destinations. The automatic route tester periodically tries to test the route to a different reachable destination (RID or MID). In order not to put too heavy a load on the network, it will wait for a period of time equal to this interval before it will start working on another destination. The smaller the value of this attribute, the more frequently the automatic route tester gets invoked to work on route testing. On

one hand, doing so will reduce the amount of time needed to complete a fully cycle of route testing to every reachable destination. One the other hand, this will increase the resource consumption of the automatic route tester accordingly.

During each testInterval, the automatic route tester will first retry the routes to each error destination, if any, to see if they have recovered. After the retries of all these error destinations, another RID/MID destination from the DPN routing table (not in the error destination list) will be chosen to conduct route testing only if the current number of error destinations is less than 10. If the number of error destinations has reached 10, no other destinations will be chosen and the automatic route tester will focus on retrying only these error destinations at each testInterval. However, if the routes to at least one error destination has recovered or has become unreachable, the number of error destinations will fall below 10, and the selection and conducting of route testing on another destination from the DPN routing table will resume.

Mib	DpnRouting
Values	Decimal (5..900)
Units	seconds
Default	60

GROUP Rtg Dpn Art Operational (Oper)

Properties	Operational
Description	This group of attributes provides information about the outstanding error destinations discovered by the automatic route tester.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn Art numOfLoopDests (numOfLoop)

Access	Read only
Description	This attribute indicates the total number of RID and MID destinations to which a routing loop problem has been detected.

Whenever a new error destination of routing loop type is found, this value is increased by one, and whenever the loop problem to one destination goes away or this destination has become unreachable, this value is decreased by one.

Mib: DpnRouting

Values: Decimal (0..10)

Default: 0

ATTRIBUTE Rtg Dpn Art numOfTimeoutDests (numOfTimeout)

Access: Read only

Description:

This attribute indicates the total number of RID and MID destinations to which a timeout problem has been detected.

Whenever a new error destination of timeout type is found, this value is increased by one, and whenever the timeout problem to one destination goes away or this destination has become unreachable, this value is decreased by one.

Mib: DpnRouting

Values: Decimal (0..10)

Default: 0

COMPONENT Rtg Dpn Art ErrorRid (ErrRid)

Instance: Decimal (1..127)

Groups: "GROUP Rtg Dpn Art ErrRid Operational (Oper)"

Scope: Network

Description: *Rtg Dpn Art ErrorRid/**
This component provides information about one outstanding problematic RID destination that has a timeout problem, loop problem, or both.

There is one instance of this component per error RID destination.

Mib DpnRouting

Common Verbs
Help
List
Display

GROUP Rtg Dpn Art ErrRid Operational (Oper)

Properties Operational

Description This group of attributes provides information about a single error destination (RID or MID) discovered by the automatic route tester.

Mib DpnRouting

ATTRIBUTE Rtg Dpn Art ErrRid delayCosErrType (delayErrType)

Access Read only

Description This attribute indicates the type of error that was found with the route to this destination (on delay COS) by the automatic route tester.

Mib DpnRouting

Values
noError
timeout
loop

Default noError

ATTRIBUTE Rtg Dpn Art ErrRid throughputCosErrType (tputErrType)

Access Read only

Description This attribute indicates the type of error that was found with this destination (on throughput COS) by the automatic route tester.

Mib DpnRouting

Values	noError timeout loop
Default	noError

ATTRIBUTE Rtg Dpn Art ErrRid delayCosErrPathInfo (delayErrPath)

Access	Read only
Description	This attribute provides hop-by-hop route information for a destination to which a routing loop problem (on delay COS) was found. For a timeout problem, this information is not provided.
Mib	DpnRouting
List of	String (0..32, ASCII)
Default	No default

ATTRIBUTE Rtg Dpn Art ErrRid throughputCosPathInfo (tputErrPath)

Access	Read only
Description	This attribute provides hop-by-hop route information for a destination to which a routing loop problem (on throughput COS) was found. For a timeout problem, this information is not provided.
Mib	DpnRouting
List of	String (0..32, ASCII)
Default	No default

COMPONENT Rtg Dpn Art ErrorMid (ErrMid)

Instance	Decimal (1..2046)
Groups	"GROUP Rtg Dpn Art ErrMid Operational (Oper)"
Scope	Network
Description	*Rtg Dpn Art ErrorMid/** This component provides information about one outstanding problematic MID destination that has a timeout problem, loop problem, or both.

	There is one instance of this component per error MID destination.
Mib	DpnRouting
Common Verbs	Help List Display

GROUP Rtg Dpn Art ErrMid Operational (Oper)

Properties	Operational
Description	This group of attributes provides information about a single error destination (RID or MID) discovered by the automatic route tester.
Mib	DpnRouting

ATTRIBUTE Rtg Dpn Art ErrMid delayCosErrType (delayErrType)

Access	Read only
Description	This attribute indicates the type of error that was found with the route to this destination (on delay COS) by the automatic route tester.
Mib	DpnRouting
Values	noError timeout loop
Default	noError

ATTRIBUTE Rtg Dpn Art ErrMid throughputCosErrType (tputErrType)

Access	Read only
Description	This attribute indicates the type of error that was found with this destination (on throughput COS) by the automatic route tester.
Mib	DpnRouting

Values	noError timeout loop
Default	noError

ATTRIBUTE Rtg Dpn Art ErrMid delayCosErrPathInfo (delayErrPath)

Access	Read only
Description	This attribute provides hop-by-hop route information for a destination to which a routing loop problem (on delay COS) was found. For a timeout problem, this information is not provided.
Mib	DpnRouting
List of	String (0..32, ASCII)
Default	No default

ATTRIBUTE Rtg Dpn Art ErrMid throughputCosPathInfo (tputErrPath)

Access	Read only
Description	This attribute provides hop-by-hop route information for a destination to which a routing loop problem (on throughput COS) was found. For a timeout problem, this information is not provided.
Mib	DpnRouting
List of	String (0..32, ASCII)
Default	No default

COMPONENT Rtg Dpn PerformanceStatistics (PerfStats)

Scope	Network
Description	*Rtg Dpn PerfStats* This component is a subcomponent of *Rtg Dpn* component. It is responsible for monitoring the performance of *Dpn* component by recording statistics. Statistics maintained by this component include (1) number of routing control packets and bytes that are transmitted and received by the *Dpn* component, and (2) RID subnet statistics (such as number of MIDs, number of gateway

nodes etc.) that are stored in the database and maintained by the *Dpn* component.

Routing control packets (also known as routing protocol packets), which are sent and received by the *Dpn* component, can be categorized into two types: intra-subnet protocol packets and inter subnet protocol packets. Intra-subnet protocol packets are also called broadcast packets, and are used to advertise reachable RID, MID, Call Server functions, Call Server Resource Module (CSRM) RID, and substitute RID information in a subnet. Inter subnet protocol packets are used to convey routing information between RID subnets and to inter-network with DPN-100 networks. The packet statistics provided by this component include only broadcast packets that are transmitted to and received from other nodes in the subnet in which this node resides.

The subnet statistics (*DpnRidSubnetStatistics*), maintained by this component, provide subnet characteristics from this node's view. When there are no clusters being deployed in a RID subnet, the *PerfStats DpnRidSubnetStatistics* provided by each node in the subnet should be identical. If there exist clusters in a RID subnet, the subnet statistics provided by subnet backbone nodes and cluster nodes would be different. However, the *PerfStats DpnRidSubnetStatistics* provided by each subnet backbone node should be identical; the *PerfStats DpnRidSubnetStatistics* provided by each cluster node in the same cluster should be identical.

Mib	DpnRouting
Dyn. Subcomp.	"COMPONENT Rtg Dpn PerfStats LinkGroupStatistics (LgStats)"
Common Verbs	Help List Display

COMPONENT Rtg Dpn PerfStats LinkGroupStatistics (LgStats)

Instance	String (1..12, ASCII)

Scope	Network
Description	*Rtg Dpn PerfStats LgStats/<aNeighborNodeName>* This component is a dynamic subcomponent of *Rtg Dpn PerfStats* component. It provides statistics of broadcast packets that are transmitted to and received from the neighbor node identified by the *LgStats* component. Note that there is one *LgStats* instance per spanning tree link group (also known as spanning tree neighbor), and that not all physical link groups staged on this node are present as *LgStats* instances. This is because a spanning tree forwarding algorithm is used by the *Dpn* component to perform broadcasting (that is, broadcast packets are forwarded only along the spanning tree branches, not forwarded on every physical link groups staged on a node) in order to achieve broadcast efficiency and lower broadcast traffic. The spanning tree is computed by the *Rtg Top* component, and is computed on a per RID subnet basis upon topology change. Even though the spanning tree spans and covers every node, including cluster nodes, in the subnet, the *Dpn* component is informed only the local link groups that are on the spanning tree, as only these spanning tree link groups are needed to perform the broadcasting. Therefore, for each local spanning tree link group inside the subnet in which this node locates, there is an *LgStats* instance added to record the statistics of broadcast packet that are transmitted to and received from the spanning tree neighbor. Note also that some *Dpn* broadcasts in a subnet do go across backbone and cluster border. Therefore, on a backbone or cluster border node, a spanning tree link group, identified by an *LgStats* instance, may be a backbone cluster border link group. An *LgStats* instance also represents a broadcast neighbor. When the link group to a broadcast neighbor goes down and then comes

back, statistics maintained by the *LgStats* instance will be reset and restart from zero.

Mib: DpnRouting

Common Verbs:
- Help
- List
- Display

COMPONENT Rtg Topology (Top)

Groups: "GROUP Rtg Top Statistics (Stats)"

Scope: Network

Description:

Rtg Topology
This component is a subcomponent of *Routing*. It resides on all Nortel Networks Multiservice Switches and is responsible for maintaining a topological database describing the network topology in terms of nodes and connectivity between them in a topology region. Note that a topology region is an autonomous groups of nodes, in which each of the nodes has its *regionId* (attribute of *ModuleData* component) set to the same value. A node only exchanges topology information with connected nodes in the same region.

This component also computes the reachability costs to each node within the topology region for multiple address plans taking into account the underlying transport attributes of interest to them.

Mib: BaseRouting

Subcomponents: "COMPONENT Rtg Top PerformanceStatistics (PerfStats)"

Dyn. Subcomp.: "COMPONENT Rtg Top Node"
"COMPONENT Rtg Top BorderLinkGroup (BLg)"

Common Verbs:
- Help
- List
- Display

GROUP Rtg Top Statistics (Stats)

Properties	Operational
Description	*Rtg Top Statistics* This group contains operational data stored and maintained by this component for recording statistics of routing control packets that have been sent or received by *Topology.*
Mib	BaseRouting

ATTRIBUTE Rtg Top controlPktRx

Access	Read only
Description	This attribute shows the total number of topology routing control packets which have been received by this node from other nodes in the network.
Mib	BaseRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Top controlBytesRx

Access	Read only
Description	This attribute shows the total number of topology routing control packet bytes received by this node from other nodes in the network.
Mib	BaseRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Top controlPktTx

Access	Read only
Description	This attribute shows the total number of topology routing control packets which have been sent by this node to other nodes in the network.

Mib	BaseRouting
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Top controlBytesTx

Access	Read only
Description	This attribute shows the total number of topology routing control packet bytes sent by this node to other nodes in the network.
Mib	BaseRouting
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtg Top Node

Instance	String (1..12, ASCII)
Groups	"GROUP Rtg Top Node Operational (Oper)"
Scope	Network
Description	*Rtg Top Node/<neighborNodeName>* This component is a dynamic subcomponent of *Topology*. It describes the existence of a node whose *clusterNode* (attribute under the *Routing* component) is provisioned the same value as that of this node, and indicates this node's view of interconnections to the node. If this node is a cluster node, that is the attribute *clusterNode* for this node is provisioned with the value ***yes***, then this component provides reachability information for each node supported in the cluster in which this node is located. Note that a cluster, consisting of one or more interconnected cluster nodes, is typically deployed at the edge of a topology region to provide access services. Therefore, in other words, if this node is in a cluster of a topology region, there is one instance of this component for each node in the cluster topology. Similarly, if this node is a non-cluster node, that is the attribute

clusterNode for this node is provisioned with the value ***no***, then this component provides reachability information for each node supported in the topology region but excluding all cluster nodes. Note that, in contrast, a non-cluster node typically provides transportation for traffic flows originating or terminating on cluster nodes. A group of interconnected non-cluster nodes is typically located in the center of a topology region to connect clusters. To simplify the description of all subcomponents of *Node* component as well as their attributes in the following text, this group of interconnected non-cluster nodes in a topology region is referred as the backbone or a topology region's backbone, and a non-cluster node in the backbone is referred as a backbone node. Therefore, if this node is in the backbone of a topology region, there is one instance of this component for each node located in the backbone.

Mib	BaseRouting
Dyn. Subcomp.	"COMPONENT Rtg Top Node LinkGroup (Lg)" "COMPONENT Rtg Top Node ClusterNode" "COMPONENT Rtg Top Node PeerBorderNode" "COMPONENT Rtg Top Node NodeAddress (Addr)" "COMPONENT Rtg Top Node ReachableAddr (RAddr)"
Common Verbs	Help List Display

GROUP Rtg Top Node Operational (Oper)

Properties	Operational
Description	*Rtg Top Node/<neighborNodeName> Operational* This group contains operational data stored and maintained by the *Node* component for recognizing interconnections to nodes existing in either the backbone or a cluster where this node locates.
Mib	BaseRouting

ATTRIBUTE Rtg Top Node nodeId

Access	Read only

Description	This attribute is a number that uniquely identifies the *Node* component instance in a topology region. It is the identifier used in the routing control packets sent by this node to other nodes in the same topology region. The *nodeId* for each node in a topology region is learned from the routing protocol packets.
Mib	BaseRouting
Values	Decimal (1..4095)
Default	No default

COMPONENT Rtg Top Node LinkGroup (Lg)

Instance	String (1..12, ASCII)
Groups	"GROUP Rtg Top Node Lg Operational (Oper)"
Scope	Network
Description	*Rtg Top Node/<neighborNodeName> LinkGroup/ <neighborNodeName>* This component is a dynamic subcomponent of the *Node* component. It describes the link group that connects two nodes with the same *clusterNode* value, more precisely, from a cluster node to a cluster node or from a non cluster node to a non cluster node (referred to as backbone node). This type of link group is also known as the normal link group. This component provides information, in this node's view, about normal link groups supported on each node in either the backbone or a cluster depending on the location of this node. If this node is in a cluster, there is one instance of this component for each link group (excluding cluster border link group) supported by each node in the cluster. Similarly, if this node is a non-cluster node, i.e. it is located in the backbone of a topology region, there is one instance of this

component for each link group (excluding cluster border link groups) supported by each node in the backbone.

Mib	BaseRouting
Dyn. Subcomp.	"COMPONENT Rtg Top Node Lg PorTrunkObject (TrkObj)"
Common Verbs	Help List Display

GROUP Rtg Top Node Lg Operational (Oper)

Properties	Operational
Description	*Rtg Top Node/<neighborNodeName> LinkGroup/ <neighborNodeName> Operational* *Rtg Top BorderLinkGroup/<neighborNodeName> Operational* This group contains the operational data stored and maintained by the *LinkGroup* and *BorderLinkGroup* components to recognize characteristics of link groups staged on a node.
Mib	BaseRouting

ATTRIBUTE Rtg Top Node Lg delayMetric

Access	Read only
Description	This attribute indicates the outbound cost to forward packets across the link group for the delay class of service. It is calculated using the average delay of delay preferred links in the link group. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities. A metric value of 2147483647 means that the link group is unusable for the delay class of service.
Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

ATTRIBUTE Rtg Top Node Lg tputMetric

Access	Read only
Description	This attribute indicates the outbound cost to forward packets across the link group for a throughput class of service. It is computed from the combined speed of each link in the link group. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities. A metric value of 2147483647 means that the trunk group is unusable for the throughput class of service.
Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

ATTRIBUTE Rtg Top Node Lg logicalNetworkNumber (lnn)

Access	Read only
Description	This attribute is a list of integers which indicate the logical network numbers supported by the trunk group. Each of these numbers corresponds with a particular instance of network protocol supported on this switch. LNN 0 is present on all link groups by default to allow control traffic on the link group.
Mib	BaseRouting
List of	Decimal (0..2047)
Default	No default

COMPONENT Rtg Top Node Lg PorTrunkObject (TrkObj)

Instance	Decimal (1..1023)
Groups	"GROUP Rtg Top Node Lg TrkObj Operational (Oper)"
Scope	Network

Description	*Rtg Top Node/<neighborNodeName> LinkGroup/ <neighborNodeName> Trunk/<Trm Lk Id>* This component corresponds to a trunk object stored in topological database. There is one instance of this component for each link that can carry PORS traffic in the *LinkGroup* or *BorderLinkGroup* component. The *PorTrunkObject* instance is the same as the *Link* instance allocated by *Trm* for the trunk. Display command applied to this component shows PORS data of the trunk object in topological database.
Mib	BaseRouting
Common Verbs	Help List Display

GROUP Rtg Top Node Lg TrkObj Operational (Oper)

Properties	Operational
Description	*Rtg Top Node/<neighborNodeName> LinkGroup/ <neighborNodeName> Trunk/<Trm Lk Id> Operational* This group contains the operational data stored and maintained by the *PorTrunkObject* component.
Mib	BaseRouting

ATTRIBUTE Rtg Top Node Lg TrkObj maxReservableBwOut (mrbwo)

Access	Read only
Description	This attribute displays trunk bandwidth which can be used for reservations on behalf of connections requiring path oriented routing. This bandwidth is displayed in bit/s and has been calculated by concerned trunk path administrator from the trunk bandwidth and from the percentage of trunk bandwidth provisioned for reservations by PORS.
Mib	BaseRouting
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj trunkCost (cost)

Access	Read only
Description	This attribute displays trunk cost metric provisioned as *trunkCost* attribute of a concerned trunk path administrator.
Mib	BaseRouting
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj trunkDelay (delay)

Access	Read only
Description	This attribute displays one-directional trunk delay measured by trunk during staging. This is half (rounded down to an integer) of the delay displayed by attribute *delay* under *Trm Link*.
Mib	BaseRouting
Values	Decimal (0..65535)
Units	msec
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj trunkSecurity (sec)

Access	Read only
Description	This attribute displays trunk security metric provisioned as *trunkSecurity* attribute under the trunk path administrator.
Mib	BaseRouting
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj supportedTrafficTypes (sttyp)

Access	Read only
Description	This attribute indicates the type of traffic that can be transmitted on the trunk. There are eight possible traffic types and the trunk can transmit all of them if desired. The voice, data and video

traffic types are defined, and five other traffic types can be defined in using *supportedTrafficTypes* under the trunk path administrator. This attribute is used in the route selection process to limit the route to trunks that support the traffic to be carried by the path.

Mib: BaseRouting

Set of:
voice
data
video
trafficType1 (tt1)
trafficType2 (tt2)
trafficType3 (tt3)
trafficType4 (tt4)
trafficType5 (tt5)

Default: No default

ATTRIBUTE Rtg Top Node Lg TrkObj trunkType (typ)

Access: Read only

Description: This attribute lists the type of the trunk. There can be up to eight types of trunks. The terrestrial and satellite trunk types have been defined, leaving six remaining types that can be defined by the network administration. The set of allowed trunk types for a path is indicated in the *permittedTrunkTypes* attribute of the *PLC*. When selecting a route, PORS only chooses trunks whose *Pa trunkType* is in the *permittedTrunkTypes* set of the path.

Mib: BaseRouting

Values:
terrestrial
satellite
trunkType1 (tt1)
trunkType2 (tt2)
trunkType3 (tt3)
trunkType4 (tt4)
trunkType5 (tt5)
trunkType6 (tt6)

Default: No default

ATTRIBUTE Rtg Top Node Lg TrkObj customerParameter (cpar)

Access	Read only
Description	This attribute indicates the customer defined parameter for the trunk. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary *PLC* attribute, *requiredCustomerParam*, also has a value from zero to seven. The Route Selector does not consider trunks whose *Pa customerParameter* is greater than the *requiredCustomerParam* of the path.
Mib	BaseRouting
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj farEndTrmLkInstance (far)

Access	Read only
Description	This attribute indicates identification of the corresponding trunk providing the reverse direction of transmission.
Mib	BaseRouting
Values	Decimal (1..1023)
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj mapMode

Access	Read only
Description	This attribute indicates if the trunk is in Map Mode or not. A value of ***yes*** indicates that the trunk is in Map mode and ***no*** if it is not.
Mib	BaseRouting
Values	no yes
Default	No default

ATTRIBUTE Rtg Top Node Lg TrkObj unreservedBwOut (unres)

Access	Read only
Description	This attribute displays a table. In the first row there are setup priorities. In the second row there are numerators of parts of unreserved bandwidth corresponding to setup priority 0 (first column) through 4 (fifth column). The denominator is 255.
Mib	BaseRouting
Array of	Decimal (0..255)
Row	setupPriority [bwPartOver255]
Column	unreservedBwParts [Decimal (0..4)]
Default	No default

COMPONENT Rtg Top Node ClusterNode

Instance	String (1..12, ASCII)
Groups	"GROUP Rtg Top Node ClusterNode Operational (Oper)"
Scope	Network
Description	*Rtg Top Node/<backboneBorderNodeName> ClusterNode/ <clusterNodeName>* *Rtg Top BorderLinkGroup/<neighborNodeName> ClusterNode/ <clusterNodeName>* This component is a dynamic subcomponent of both the *Node* and *BorderLinkGroup* components. It exists only on a non cluster node (also referred as a backbone node), that is, this component is present under *Node* and/or *BorderLinkGroup* only if the attribute *clusterNode* for this node is provisioned with ***no***. This component does not exist on any cluster node. If this node is a backbone node, this component, under *Node*, describes the reachability from a border node in the backbone to a cluster node. Note that a border node refers to the node that is connected by cluster border link groups. Therefore, this component provides information, in this backbone node's view, about all cluster nodes (which might be located in multiple

clusters) reachable through all border nodes in the backbone. There is one instance of this component for each cluster node reachable through a border node.

If this node is also a border node in the backbone, that is, this node is a backbone node and has at least one cluster border link group staged on it. Then, this component, under the *BorderLinkGroup*, describes the reachability to a cluster node through a local cluster border link group. There is one instance of this component for each cluster node in a cluster that can be reached through a cluster border link group. Note that this information (reachable cluster nodes through a cluster border link group) is only known to the local node, and is not shared with the other nodes in the backbone.

Mib BaseRouting

Common Verbs
Help
List
Display

GROUP Rtg Top Node ClusterNode Operational (Oper)

Properties Operational

Description *Rtg Top Node/<backboneBorderNodeName> ClusterNode/ <clusterNodeName> Operational*

Rtg Top BorderLinkGroup/<neighborNodeName> ClusterNode/ <clusterNodeName> Operational

Rtg Top Node/<clusterBorderNodeName> PeerBorderNode/ <backboneBorderNodeName> Operational

This group contains the operational data stored and maintained by the *ClusterNode* component on a backbone node and/or the *PeerBorderNode* component on a cluster node.

Mib BaseRouting

ATTRIBUTE Rtg Top Node ClusterNode nodeId

Access Read only

Description	This attribute is a number that uniquely identifies the *ClusterNode* and/or the *PeerBorderNode* instance in topology region. It is the identifier used in the routing control packets sent by this node to other nodes in the same topology region. The *nodeId* for each node in a topology region is learned from the routing protocol packets.
Mib	BaseRouting
Values	Decimal (1..4095)
Default	No default

ATTRIBUTE Rtg Top Node ClusterNode delayMetric

Access	Read only
Description	This attribute indicates the outbound cost for the delay class of service to reach the destination (a cluster node or a peer border node in the backbone). It is the sum of delay metrics of multiple hops from the border node to reach the destination. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities. A metric value of 2147483647 means that the destination is unreachable for the delay class of service.
Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

ATTRIBUTE Rtg Top Node ClusterNode tputMetric

Access	Read only
Description	This attribute indicates the outbound cost for the throughput class of service to reach the destination (a cluster node or a peer border node in the backbone). It is the sum of throughput metrics of multiple hops from the border node to reach the destination. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities.

	A metric value of 2147483647 means that the destination is unreachable for the throughput class of service.
Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

COMPONENT Rtg Top Node PeerBorderNode

Instance	String (1..12, ASCII)
Groups	"GROUP Rtg Top Node PeerBorderNode Operational (Oper)"
Scope	Network
Description	*Rtg Top Node/<clusterBorderNodeName> PeerBorderNode/ <backboneBorderNodeName>* This component is a dynamic subcomponent of the *Node* component. It exists only on a cluster node, that is this component is present under *Node* only if the attribute *clusterNode* for this node is provisioned as ***yes***. This component does not exist on any non- cluster node (also referred as backbone node). This component describes the reachability from a border node in the cluster to a peer border node in the backbone. It provides information, in this node's view, about those peer border nodes in the backbone reachable through each border node in the cluster. There is one instance of this component for each peer border node in the backbone reachable through a cluster border node.
Mib	BaseRouting
Common Verbs	Help List Display

GROUP Rtg Top Node PeerBorderNode Operational (Oper)

Properties	Operational
Description	*Rtg Top Node/<backboneBorderNodeName> ClusterNode/ <clusterNodeName> Operational*

Rtg Top BorderLinkGroup/<neighborNodeName> ClusterNode/ <clusterNodeName> Operational

Rtg Top Node/<clusterBorderNodeName> PeerBorderNode/ <backboneBorderNodeName> Operational

This group contains the operational data stored and maintained by the *ClusterNode* component on a backbone node and/or the *PeerBorderNode* component on a cluster node.

Mib: BaseRouting

ATTRIBUTE Rtg Top Node PeerBorderNode nodeId

Access: Read only

Description: This attribute is a number that uniquely identifies the *ClusterNode* and/or the *PeerBorderNode* instance in topology region. It is the identifier used in the routing control packets sent by this node to other nodes in the same topology region.

The *nodeId* for each node in a topology region is learned from the routing protocol packets.

Mib: BaseRouting

Values: Decimal (1..4095)

Default: No default

ATTRIBUTE Rtg Top Node PeerBorderNode delayMetric

Access: Read only

Description: This attribute indicates the outbound cost for the delay class of service to reach the destination (a cluster node or a peer border node in the backbone). It is the sum of delay metrics of multiple hops from the border node to reach the destination. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities.

A metric value of 2147483647 means that the destination is unreachable for the delay class of service.

Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

ATTRIBUTE Rtg Top Node PeerBorderNode tputMetric

Access	Read only
Description	This attribute indicates the outbound cost for the throughput class of service to reach the destination (a cluster node or a peer border node in the backbone). It is the sum of throughput metrics of multiple hops from the border node to reach the destination. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities. A metric value of 2147483647 means that the destination is unreachable for the throughput class of service.
Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

COMPONENT Rtg Top Node NodeAddress (Addr)

Instance	String (1..40, ASCII)
Scope	Network
Description	*Rtg Top Node/<nodeName> NodeAddress/<nodeAddress>* This component represents an NSAP address (or prefix) which can be reached from the node identified by the instance of the *Node* component. Each instance of this component actually represents a *nodePrefix* or an *alternatePorsPrefixes* provisioned under the *Mod* component on the node identified by the instance of the *Node* component. Instances of this component associated with a remote node are learned from the topology information broadcast sent by the remote node. Topology information is exchanged only between nodes within the same topology region's backbone or cluster. Instances of this component under all *Node* components represent

the set of all node addresses stored in the topology database maintained by the local node.

Mib: BaseRouting

Common Verbs:
- Help
- List
- Display

COMPONENT Rtg Top Node ReachableAddr (RAddr)

Instance: address [String (1..40, ASCII)]
linkId [Decimal (0..9999)]

Groups: "GROUP Rtg Top Node RAddr Operational (Oper)"

Scope: Network

Description: *Rtg Top Node/<nodeName> ReachableAddr/ <reachableAddr>,<linkId>*
This component represents an NSAP address (or prefix) as well as the associated link ID which can be reached from the node identified by the instance of the *Node* component. Actually, an instance of this component really represents either an *Address* component provisioned under a *Trunk* component or a *SummaryAddress* component provisioned under the *Routing* component on the node identified by the instance of the *Node* component.

Instances of this component associated with a remote node are learned from the topology information broadcast sent by the remote node. Topology information is exchanged only between nodes within the same topology region's backbone or cluster. Instances of this component under all *Node* components represent the set of all reachable addresses stored in the topology database maintained by the local node.

If a *SummaryAddress* component, provisioned under the *Routing* component, is the prefix of an *Address* component provisioned under a *Trunk* component on the same node, the *Address* component will be removed from the list of *ReachableAddr* instances associated with and broadcast by that node. This

behavior is also referred as reachable addresses summarization. That is, if an *Address* component is summarized by a *SummaryAddress* component provisioned on the same node, the *Address* component will not be broadcast by that node, therefore, it will not be displayed through a *ReachableAddr* component instance associated with that node.

Mib BaseRouting

Common Verbs
Help
List
Display

GROUP Rtg Top Node RAddr Operational (Oper)

Properties Operational

Description *Rtg Top Node/<aNodeName> ReachableAddr/<anAddress> Operational*
This group contains the operational data stored and maintained by a *ReachableAddr* component in the topology database of the local node.

Mib BaseRouting

ATTRIBUTE Rtg Top Node RAddr cost

Access Read only

Description This attribute indicates the cost to reach the *ReachableAddr* component from the node identified by the instance of the *Node* component. The value of this attribute associated with a *ReachableAddr* component provisioned on a remote node is learned from the topology information exchange protocol packets sent by the remote node.

If the *ReachableAddr* represents a *Trunk Address* component on a node (which could be either a remote node or the local node), the value displayed in this attribute is actually the cost provisioned in the *cost* attribute under the *Trunk Address* component on the node. If the *ReachableAddr* represents a *Routing SummaryAddress* component on a node, then the value displayed

in this attribute is the cost provisioned in the *cost* attribute under the *Routing SummaryAddress* on the node.

Mib: BaseRouting

Values: Decimal (0..2147483647)

Default: No default

ATTRIBUTE Rtg Top Node RAddr porsReachable (prsR)

Access: Read only

Description: This attribute indicates whether the *Trunk* component under which the *ReachableAddr* is provisioned is able to carry PORS traffic or not. In other words, this attribute indicates whether there is a *PathAdmin* component present under the *Trunk* Component which is also the parent component of the *ReachableAddr* component.The value of this attribute associated with a *ReachableAddr* component provisioned on a remote node is learned from the topology information exchange protocol packets sent by the remote node.

The value of this attribute is ***yes*** if there is a *PathAdmin* component existing under the *ReachableAddr* component's parent - the *Trunk* component, and is ***no*** otherwise.

Mib: BaseRouting

Values: no
yes

Default: No default

ATTRIBUTE Rtg Top Node RAddr clusterBorderNode (cbn)

Access: Read only

Description: This attribute indicates whether the *ReachableAddr* is provisioned on a backbone-cluster border node or not. The value of this attribute associated with a *ReachableAddr* component provisioned on a remote node is learned from the topology information exchange protocol packets sent by the remote node.

The value of this attribute is ***yes*** if the node on which the

	ReachableAddr is provisioned is a backbone border node or a cluster border node, and is ***no*** otherwise.
Mib	BaseRouting
Values	no yes
Default	No default

COMPONENT Rtg Top BorderLinkGroup (BLg)

Instance	String (1..12, ASCII)
Groups	"GROUP Rtg Top BLg Operational (Oper)"
Scope	Network
Description	*Rtg Top BorderLinkGroup/<neighborNodeName>* This component is a dynamic subcomponent of *Topology*. It describes the link group that connects two nodes with different *clusterNode* values, or more precisely, from a cluster node to a non-cluster node (also referred as a backbone node). This type of link group is also known as the cluster border link group. This component provides information about the support of cluster border link groups connected to this node, regardless whether this node is a cluster node or a backbone node.
Mib	BaseRouting
Dyn. Subcomp.	"COMPONENT Rtg Top BLg PorTrunkObject (TrkObj)" "COMPONENT Rtg Top BLg ClusterNode"
Common Verbs	Help List Display

GROUP Rtg Top BLg Operational (Oper)

Properties	Operational
Description	*Rtg Top Node/<neighborNodeName> LinkGroup/ <neighborNodeName> Operational*

Rtg Top BorderLinkGroup/<neighborNodeName> Operational

This group contains the operational data stored and maintained by the *LinkGroup* and *BorderLinkGroup* components to recognize characteristics of link groups staged on a node.

Mib BaseRouting

ATTRIBUTE Rtg Top BLg delayMetric

Access Read only

Description This attribute indicates the outbound cost to forward packets across the link group for the delay class of service. It is calculated using the average delay of delay preferred links in the link group. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities.

A metric value of 2147483647 means that the link group is unusable for the delay class of service.

Mib BaseRouting

Values Decimal (1..2147483647)

Default No default

ATTRIBUTE Rtg Top BLg tputMetric

Access Read only

Description This attribute indicates the outbound cost to forward packets across the link group for a throughput class of service. It is computed from the combined speed of each link in the link group. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities.

A metric value of 2147483647 means that the trunk group is unusable for the throughput class of service.

Mib BaseRouting

Values Decimal (1..2147483647)

Default	No default

ATTRIBUTE Rtg Top BLg logicalNetworkNumber (lnn)

Access	Read only
Description	This attribute is a list of integers which indicate the logical network numbers supported by the trunk group. Each of these numbers corresponds with a particular instance of network protocol supported on this switch. LNN 0 is present on all link groups by default to allow control traffic on the link group.
Mib	BaseRouting
List of	Decimal (0..2047)
Default	No default

COMPONENT Rtg Top BLg PorTrunkObject (TrkObj)

Instance	Decimal (1..1023)
Groups	"GROUP Rtg Top BLg TrkObj Operational (Oper)"
Scope	Network
Description	*Rtg Top Node/<neighborNodeName> LinkGroup/ <neighborNodeName> Trunk/<Trm Lk Id>* This component corresponds to a trunk object stored in topological database. There is one instance of this component for each link that can carry PORS traffic in the *LinkGroup* or *BorderLinkGroup* component. The *PorTrunkObject* instance is the same as the *Link* instance allocated by *Trm* for the trunk. Display command applied to this component shows PORS data of the trunk object in topological database.
Mib	BaseRouting
Common Verbs	Help List Display

GROUP Rtg Top BLg TrkObj Operational (Oper)

Properties	Operational
Description	*Rtg Top Node/<neighborNodeName> LinkGroup/ <neighborNodeName> Trunk/<Trm Lk Id> Operational* This group contains the operational data stored and maintained by the *PorTrunkObject* component.
Mib	BaseRouting

ATTRIBUTE Rtg Top BLg TrkObj maxReservableBwOut (mrbwo)

Access	Read only
Description	This attribute displays trunk bandwidth which can be used for reservations on behalf of connections requiring path oriented routing. This bandwidth is displayed in bit/s and has been calculated by concerned trunk path administrator from the trunk bandwidth and from the percentage of trunk bandwidth provisioned for reservations by PORS.
Mib	BaseRouting
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj trunkCost (cost)

Access	Read only
Description	This attribute displays trunk cost metric provisioned as *trunkCost* attribute of a concerned trunk path administrator.
Mib	BaseRouting
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj trunkDelay (delay)

Access	Read only

Description	This attribute displays one-directional trunk delay measured by trunk during staging. This is half (rounded down to an integer) of the delay displayed by attribute *delay* under *Trm Link*.
Mib	BaseRouting
Values	Decimal (0..65535)
Units	msec
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj trunkSecurity (sec)

Access	Read only
Description	This attribute displays trunk security metric provisioned as *trunkSecurity* attribute under the trunk path administrator.
Mib	BaseRouting
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj supportedTrafficTypes (sttyp)

Access	Read only
Description	This attribute indicates the type of traffic that can be transmitted on the trunk. There are eight possible traffic types and the trunk can transmit all of them if desired. The voice, data and video traffic types are defined, and five other traffic types can be defined in using *supportedTrafficTypes* under the trunk path administrator. This attribute is used in the route selection process to limit the route to trunks that support the traffic to be carried by the path.

Mib	BaseRouting
Set of	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj trunkType (typ)

Access	Read only
Description	This attribute lists the type of the trunk. There can be up to eight types of trunks. The terrestrial and satellite trunk types have been defined, leaving six remaining types that can be defined by the network administration. The set of allowed trunk types for a path is indicated in the *permittedTrunkTypes* attribute of the *PLC*. When selecting a route, PORS only chooses trunks whose *Pa trunkType* is in the *permittedTrunkTypes* set of the path.
Mib	BaseRouting
Values	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj customerParameter (cpar)

Access	Read only
Description	This attribute indicates the customer defined parameter for the trunk. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their

network, thus allowing them to customize the use of their trunks. A complementary *PLC* attribute, *requiredCustomerParam*, also has a value from zero to seven. The Route Selector does not consider trunks whose *Pa customerParameter* is greater than the *requiredCustomerParam* of the path.

Mib	BaseRouting
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj farEndTrmLkInstance (far)

Access	Read only
Description	This attribute indicates identification of the corresponding trunk providing the reverse direction of transmission.
Mib	BaseRouting
Values	Decimal (1..1023)
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj mapMode

Access	Read only
Description	This attribute indicates if the trunk is in Map Mode or not. A value of ***yes*** indicates that the trunk is in Map mode and ***no*** if it is not.
Mib	BaseRouting
Values	no yes
Default	No default

ATTRIBUTE Rtg Top BLg TrkObj unreservedBwOut (unres)

Access	Read only
Description	This attribute displays a table. In the first row there are setup priorities. In the second row there are numerators of parts of

	unreserved bandwidth corresponding to setup priority 0 (first column) through 4 (fifth column). The denominator is 255.
Mib	BaseRouting
Array of	Decimal (0..255)
Row	setupPriority [bwPartOver255]
Column	unreservedBwParts [Decimal (0..4)]
Default	No default

COMPONENT Rtg Top BLg ClusterNode

Instance	String (1..12, ASCII)
Groups	"GROUP Rtg Top BLg ClusterNode Operational (Oper)"
Scope	Network
Description	*Rtg Top Node/<backboneBorderNodeName> ClusterNode/ <clusterNodeName>* *Rtg Top BorderLinkGroup/<neighborNodeName> ClusterNode/ <clusterNodeName>* This component is a dynamic subcomponent of both the *Node* and *BorderLinkGroup* components. It exists only on a non cluster node (also referred as a backbone node), that is, this component is present under *Node* and/or *BorderLinkGroup* only if the attribute *clusterNode* for this node is provisioned with ***no***. This component does not exist on any cluster node. If this node is a backbone node, this component, under *Node*, describes the reachability from a border node in the backbone to a cluster node. Note that a border node refers to the node that is connected by cluster border link groups. Therefore, this component provides information, in this backbone node's view, about all cluster nodes (which might be located in multiple clusters) reachable through all border nodes in the backbone. There is one instance of this component for each cluster node reachable through a border node.

If this node is also a border node in the backbone, that is, this node is a backbone node and has at least one cluster border link group staged on it. Then, this component, under the *BorderLinkGroup*, describes the reachability to a cluster node through a local cluster border link group. There is one instance of this component for each cluster node in a cluster that can be reached through a cluster border link group. Note that this information (reachable cluster nodes through a cluster border link group) is only known to the local node, and is not shared with the other nodes in the backbone.

Mib: BaseRouting

Common Verbs:
- Help
- List
- Display

GROUP Rtg Top BLg ClusterNode Operational (Oper)

Properties: Operational

Description:

Rtg Top Node/<backboneBorderNodeName> ClusterNode/ <clusterNodeName> Operational

Rtg Top BorderLinkGroup/<neighborNodeName> ClusterNode/ <clusterNodeName> Operational

Rtg Top Node/<clusterBorderNodeName> PeerBorderNode/ <backboneBorderNodeName> Operational

This group contains the operational data stored and maintained by the *ClusterNode* component on a backbone node and/or the *PeerBorderNode* component on a cluster node.

Mib: BaseRouting

ATTRIBUTE Rtg Top BLg ClusterNode nodeId

Access: Read only

Description: This attribute is a number that uniquely identifies the *ClusterNode* and/or the *PeerBorderNode* instance in topology region. It is the identifier used in the routing control packets sent

by this node to other nodes in the same topology region.

The *nodeId* for each node in a topology region is learned from the routing protocol packets.

Mib	BaseRouting
Values	Decimal (1..4095)
Default	No default

ATTRIBUTE Rtg Top BLg ClusterNode delayMetric

Access	Read only
Description	This attribute indicates the outbound cost for the delay class of service to reach the destination (a cluster node or a peer border node in the backbone). It is the sum of delay metrics of multiple hops from the border node to reach the destination. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities. A metric value of 2147483647 means that the destination is unreachable for the delay class of service.
Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

ATTRIBUTE Rtg Top BLg ClusterNode tputMetric

Access	Read only
Description	This attribute indicates the outbound cost for the throughput class of service to reach the destination (a cluster node or a peer border node in the backbone). It is the sum of throughput metrics of multiple hops from the border node to reach the destination. A low outbound cost is preferable to a higher value as it is associated with higher speed facilities. A metric value of 2147483647 means that the destination is unreachable for the throughput class of service.

Mib	BaseRouting
Values	Decimal (1..2147483647)
Default	No default

COMPONENT Rtg Top PerformanceStatistics (PerfStats)

Scope	Network
Description	*Rtg Top PerfStats* This component is a subcomponent of *Rtg Top* component. It is responsible for monitoring the performance of *Top* component by recording statistics. Statistics maintained by this component include the number of (1) routing control packets and (2) various information fragments (also known as database entries) that are stored and maintained in the topology database by the *Top* component. Routing control packets (also known as routing protocol packets), sent and received by the *Top* component, can be categorized into two types: topology protocol packets and cluster protocol packets. Topology protocol packets are used to advertise topology information and are exchanged only between nodes in the same flat topology region, region's backbone, or cluster. Therefore, the topology database, maintained by the *Top* component, contains only information of nodes in the same flat topology region, region's backbone, or cluster. Cluster protocol packets are used to convey routing information across the backbone-cluster boundary and are exchanged only between backbone and cluster border nodes. If clusters are not deployed, the packet statistics provided by this component include only topology protocol packets that are transmitted to and received from other nodes in the same topology region. The database statistics maintained by this component provides information of the topology database that contains all nodes in the same topology region in which this node resides. If clusters are deployed in the topology region, on a backbone node, the packet statistics provided by this component include

only topology protocol packets that are transmitted to and received from other nodes in the backbone. On a backbone border node, the packet statistics provided by this component also include the cluster protocol packets that are sent to and received from the connected cluster border nodes. Since the topology database, maintained by a *Top* component, is the same on either a backbone node or a backbone border node, the database statistics provided by this component should be identical on all nodes in the backbone.

Similarly, on a cluster node, the packet statistics provided by this component include only topology protocol packets that are transmitted to and received from other node in the cluster. On a cluster border node, the packet statistics provided by this component also include the cluster protocol packets that are sent to and received from the connected backbone border nodes. Since the topology database, maintained by a *Top* component, is the same on either a cluster node or a cluster border node, the database statistics provided by this component should be identical on all nodes in the same cluster.

Mib	BaseRouting
Dyn. Subcomp.	"COMPONENT Rtg Top PerfStats LinkGroupStatistics (LgStats)"
Common Verbs	Help List Display

COMPONENT Rtg Top PerfStats LinkGroupStatistics (LgStats)

Instance	String (1..12, ASCII)
Scope	Network
Description	*Rtg Top PerfStats LgStats/<aNeighborNodeName>* This component is a dynamic subcomponent of *Rtg Top PerfStats* component. It provides statistics of topology protocol packets that are transmitted to and received from the neighbor node identified by the *LgStats* component.

Note that there is one *LgStats* instance per locally staged *Lg* on this node. Topology protocol packets are exchanged only between neighbor nodes that are in the same flat topology region, region's backbone, or cluster, they are not sent across a topology region border nor a backbone-cluster border. Therefore, for each locally staged *Lg* that is in the same flat topology region, region's backbone, or cluster in which this node resides, there is one *LgStats* instance added to record the statistic of topology protocol packets that are transmitted to and received from the neighbor node.

Statistics maintained by an *LgStats* instance only exist for the duration of the *Lg* component. When the *Lg* to a neighbor goes down and then comes back, statistics maintained by the corresponding *LgStats* instance will be reset and restart from zero.

Mib: BaseRouting

Common Verbs:
- Help
- List
- Display

COMPONENT Rtg PathOrientedRoutingSystem (Pors)

Groups: "GROUP Rtg Pors Provisioned (Prov)"
"GROUP Rtg Pors Information (Info)"

Scope: Application

Description: This is the *Routing PathOrientedRoutingSystem* Component. It is used to display attributes of the PORS connections on a module and attributes for setting optimization timing for PORS

connections. The *PathOrientedRoutingSystem* component also optimizes PORS connections on this module.

Mib: PorsVc

Opt. Subcomp.: "COMPONENT Rtg Pors Profile (Prof)"
"COMPONENT Rtg Pors ManualPath (Mpath)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB Optimize (Opt) Rtg Pors

Impact: Service

Description: Optimize [-segmented] Rtg Pors

If this module is not optimizing, this command forces an optimization process to begin immediately. Optimization is carried out on each active connection, on the module, at a rate of one per second.

If no option is specified, all unsegmented PORS connections sourced on the module that allow optimization will attempt to optimize.

If the -segmented option is specified, disruptive optimization will be triggered for segmented calls. Calls sourced on the module that are specified in the *optimizationScope* attribute and that allow optimization will be selected. Simultaneous optimization of segmented and unsegmented call types is not permitted.

This command may be used regardless of whether periodic optimization has been disabled by setting the *optimizationInterval* to zero.

GROUP Rtg Pors Provisioned (Prov)

Properties: Provisioned

Description	This group contains all provisionable attributes for the *Routing PathOrientedRoutingSystem* component.
Mib	PorsVc

ATTRIBUTE Rtg Pors optimizationInterval

Access	Read and write
Description	This attribute specifies the interval at which periodic optimization occurs. The time defined is from the end of one optimization pass until the start of another pass. Periodic optimization has no effect on segmented calls. If an interval of zero is specified periodic optimization is disabled on this module.
Mib	PorsVc
Values	Decimal (0; 1..1440)
Units	minutes
Default	30

ATTRIBUTE Rtg Pors optimizationScope (opts)

Access	Read and write
Description	This attribute specifies the type of routing point that is considered for segmented optimization. Note that only routing points that are sourcing call segments can be considered. Segmented optimization occurs when the destination node of the call segment is switched, or when an alternate path to the existing call segment destination node has at least a 10% improvement in path cost over the current path. Segmented optimization is disruptive to the call or calls being optimized. Three types of routing points can be selected as candidates for segmented optimization. ***applicationService***: The source application. Enabling this routing point selects all calls sourced on the node. Call disruption will affect all call segments.

outboundRGty:
The outbound gateway that is leaving the region or cluster. Enabling this routing point selects all calls leaving the region or cluster from this node. Call disruption is from the outbound link to the destination node.

inboundRGty:
The inbound gateway that is entering a new region or cluster. Enabling this routing point will select all calls that enter the region or cluster through this node. Call disruption is from the current node to the destination node.

Mib	PorsVc
Set of	applicationService inboundRGty outboundRGty
Default	No default

GROUP Rtg Pors Information (Info)

Properties	Operational
Description	This group contains operational information for the *PathOrientedRoutingSystem* component.
Mib	PorsVc

ATTRIBUTE Rtg Pors activeConnections

Access	Read only
Description	This attribute is the current number of active PORS connections on this module. Active connections are connections that are in the Logical Connection component ***pathUp*** *state*. This value is updated when requested and represents the current number of active PORS connections. During *Pors* optimization this number represents all the connections that receive optimization requests.

Mib	PorsVc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtg Pors optimizationState

Access	Read only
Description	This attribute is the current state of the *Pors* optimization. The ***disabled*** state means that the *optimizationInterval* has been set to zero. The ***scheduled*** state means that the optimization will be started at the *nextOptimizationTime.* The optimizing state means that *Pors* is currently attempting to optimize all connections on the module.
Mib	PorsVc
Values	disabled scheduled optimizing
Default	No default

ATTRIBUTE Rtg Pors lastOptimizationTime

Access	Read only
Description	This attribute specifies the time that the last optimization started.
Mib	PorsVc
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rtg Pors nextOptimizationTime

Access	Read only
Description	This attribute specifies the time the next optimization process will begin. In the event that *optimizationInterval* is set to zero this value is also set to 0.

Mib	PorsVc
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rtg Pors optimizationPasses

Access	Read only
Description	This is the number of optimization passes for the PORS connection manager. An optimization pass consists of a notification to each active PORS connection to attempt to optimize. All types of optimization passes are included in this statistic.
Mib	PorsVc
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtg Pors optimizationProgress

Access	Read only
Description	This attribute is the percentage of active connections that have been sent an optimization request. A message is sent to each *Pors* component LC requesting it to optimize its route. This value is cleared at the beginning of each optimization pass.
Mib	PorsVc
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Rtg Pors pathsOptimized

Access	Read only
Description	This attribute is the number of successfully optimized paths for the latest optimization pass. Successfully optimized paths are paths that switched to a better route.

	This value is cleared at the beginning of each optimization pass.
Mib	PorsVc
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtg Pors totalPathsOptimized

Access	Read only
Description	This attribute is the number of successfully optimized paths on this module since the CP became active.
Mib	PorsVc
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtg Pors Profile (Prof)

Instance	Decimal (1..255)
Groups	"GROUP Rtg Pors Prof Provisioned (Prov)"
Scope	Application
Description	*Rtg Pors Prof/n* This component includes all attributes which may generically apply to a set of *LogicalConnections*. It is basically identical to the *PermanentLogicalConnection* except it does not include a *remoteName* or *manualPath* attribute. The specification of emission and discard priority is also a bit different in that they

may be left unspecified in which case the emission and discard priority of the connection will be selected by the application.

Mib PorsVc

Common Verbs
Help
List
Display
Add
DELete

GROUP Rtg Pors Prof Provisioned (Prov)

Properties Provisioned

Description This group contains all provisionable attributes for a PORS profile..

Mib PorsVc

ATTRIBUTE Rtg Pors Prof setupPriority (spri)

Access Read and write

Description This attribute specifies the priority at which a path is established. Zero is the highest priority and four is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The *holdingPriority*, a complementary attribute of this attribute, specifies the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority.*

Mib PorsVc

Values Decimal (0..4)

Default 2

ATTRIBUTE Rtg Pors Prof holdingPriority (hpri)

Access Read and write

Description	This attribute specifies the priority that a path holds once it is established. Zero is the highest priority and four is the lowest. A path's *holdingPriority* determines this path's likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority.*
Mib	PorsVc
Values	Decimal (0..4)
Default	2

ATTRIBUTE Rtg Pors Prof requiredTxBandwidth (tbw)

Access	Read and write
Description	This attribute specifies the bandwidth (in bits per second) reserved by a path on each of the trunks of its route.This attribute represents the bandwidth for traffic outgoing to the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced but is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that transmit at this end represents receive at the remote end. Note that when the values do not correspond, the originating end of the connection determines the value. A value of 0 (the default) means that the bandwidth will be the Peak Cell Rate for CLP0+1 as chosen by the user. A non zero value overrides this reservation.
Mib	PorsVc
Values	Decimal (0..155520000)
Units	bit/s
Default	0

ATTRIBUTE Rtg Pors Prof requiredRxBandwidth (rbw)

Access	Read and write

Description	This attribute specifies the bandwidth (in bits per second) reserved by a path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced but is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that transmit at this end represents receive at the remote end. Note that when the values do not correspond, the originating end of the connection determines the value. A value of 0 (the default) means that the bandwidth will be the Peak Cell Rate for CLP0+1 as chosen by the user. A non zero value overrides this reservation.
Mib	PorsVc
Values	Decimal (0..155520000)
Units	bit/s
Default	0

ATTRIBUTE Rtg Pors Prof requiredTrafficType (rttyp)

Access	Read and write
Description	This attribute specifies the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1,*** then only trunks that include ***trafficType1*** in *supportedTrafficType* will be candidates for this connection.
Mib	PorsVc
Values	voice data

video
trafficType1 (tt1)
trafficType2 (tt2)
trafficType3 (tt3)
trafficType4 (tt4)
trafficType5 (tt5)

Default: data

ATTRIBUTE Rtg Pors Prof permittedTrunkTypes (pttyp)

Access: Read and write

Description: This attribute specifies up to eight types of trunk that can be used on the route. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the *Trunk* component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.

Mib: PorsVc

Set of:
terrestrial
satellite
trunkType1 (tt1)
trunkType2 (tt2)
trunkType3 (tt3)
trunkType4 (tt4)
trunkType5 (tt5)
trunkType6 (tt6)

Default: (terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Rtg Pors Prof requiredSecurity (rsec)

Access: Read and write

Description: This attribute specifies the required minimum level of security of the trunks on the route. A value of zero represents the most secure while seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the *Trunk* component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected

	does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	PorsVc
Values	Decimal (0..7)
Default	4

ATTRIBUTE Rtg Pors Prof requiredCustomerParm (rcparm)

Access	Read and write
Description	This attribute specifies the allowed customer defined parameter of the trunks on the route. Its value, a number from zero to seven, is chosen by network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	PorsVc
Values	Decimal (0..7)
Default	4

ATTRIBUTE Rtg Pors Prof pathAttributeToMinimize (pamin)

Access	Read and write
Description	This attribute specifies whether a route is selected on the basis of minimizing the cost or the delay. Each trunk has a cost and a delay metric associated with it. The cost of a selected route is the sum of the trunk cost metrics for all trunks included in the route. The delay of a selected route is the sum of the trunk delay metric for all trunks included in the route.
Mib	PorsVc
Values	cost delay
Default	cost

ATTRIBUTE Rtg Pors Prof maximumAcceptableCost (maxCost)

Access	Read and write
Description	This attribute specifies an upper bound on the cost metric of a route, which is the sum of the cost metrics of all trunks on the route. The cost metric is the *trunkCost* attribute of the Trunk component. If for any trunk the *trunkCost* is larger than the *maximumAcceptableCost*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route cost is being compared with the *maximumAcceptableCost* attribute, and this is done regardless of the value of *pathAttributeToMinimize*. No route is selected if the cost metric of the shortest route is larger than the *maximumAcceptableCost*.
Mib	PorsVc
Values	Decimal (0..65535)
Default	1280

ATTRIBUTE Rtg Pors Prof maximumAcceptableDelay (maxDelay)

Access	Read and write
Description	This attribute specifies an upper bound on the delay of a route, which is the sum of the delay of all trunks on the route. It should be provisioned with a reasonable maximum acceptable delay for the end to end one way delay of a 512 byte packet. Remember, that during its staging, the trunk measures a *measuredRoundTripDelay.* This delay is divided by two and truncated to an integer number of milliseconds to provide a one way delay which is used to populate the delay in this trunk object in the topological database. The value includes emission, propagation, and queuing delays. A 512 byte data packet is used to perform the measurement. If for any trunk, half of the trunk's *measuredRoundTripDelay* is larger than the *maximumAcceptableDelay*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route delay is being compared with the *maximumAcceptableDelay* attribute, and this is done for any minimization criterion. No route is selected if the

	delay metric of the shortest route is larger than the *maximumAcceptableDelay.*
Mib	PorsVc
Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Rtg Pors Prof emissionPriority (epri)

Access	Read and write
Description	This attribute specifies the urgency with which packets on the path are emitted by the trunks on the route. An *EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher). The default value for this attribute *(sameAsApplication)* will cause the connection's emissionPriority to be inherited from the user of the profile. In other words, setting this attribute to anything other than the default acts as an override to the priority normally used by the application linked to this profile.
Mib	PorsVc
Values	sameAsApplication ep0 ep1 ep2
Default	sameAsApplication

ATTRIBUTE Rtg Pors Prof discardPriority (dpri)

Access	Read and write
Description	This attribute specifies the importance of the packets on the path. One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority* (numerically lower) are discarded after packets with a higher *discardPriority* (numerically higher).

The default value for this attribute *(sameAsApplication)* will cause the connection's discardPriority to be inherited from the user of the profile. In other words, setting this attribute to anything other than the default acts as an override to the priority normally used by the application linked to this profile.

Mib: PorsVc

Values:
sameAsApplication
dp1
dp2
dp3

Default: sameAsApplication

ATTRIBUTE Rtg Pors Prof pathFailureAction (pfa)

Access: Read and write

Description: This attribute specifies whether the application can tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is chosen, the application is informed as soon as possible about a failure by disconnection. If the attribute is set to ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure.
With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect.

Mib: PorsVc

Values:
reRoutePath
disconnectConnection

Default: reRoutePath

ATTRIBUTE Rtg Pors Prof bumpPreference (bpref)

Access: Read and write

Description: This attribute specifies when bumping may be triggered as a result of this call being routed/rerouted or optimized. There are

two possibilities:
bumpWhenNecessary: means that this call will only trigger the bumping of another call (subject to setup/holding priority restrictions) when there is no other way to establish a route for this call.
bumpToObtainBestRoute: means that this call may trigger the bumping of other calls (subject to setup/holding priority restrictions) if doing so would result in this call obtaining a better (lower cost/delay) route.
Since bumping to obtain the best route can be somewhat intrusive the default is only to bump when there is no other way to route the call.

Mib	PorsVc
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	bumpWhenNecessary

ATTRIBUTE Rtg Pors Prof optimization (opt)

Access	Read and write
Description	If this attribute is ***enabled***, this connection will be optimized periodically as specified by the *Rtg Pors* attribute *optimizationInterval*. If this attribute is ***disabled***, the connection will use the route it was given for the life of the connection or until a failure or *lock* results in the call being rerouted.
Mib	PorsVc
Values	disabled enabled
Default	enabled

ATTRIBUTE Rtg Pors Prof users (usr)

Access	Read only
Description	This attribute specifies all of the components which are associated with this *Profile*. Users of this profile will select and instantiate routes based on the attributes of this profile when PORS is used to choose and instantiate the route. If IISP or PNNI

	are used to choose and instantiate the route these attributes are ignored since they have no counterparts in IISP or PNNI routing.
Mib	PorsVc
List of	Link (Service, profile)
Default	No default

COMPONENT Rtg Pors ManualPath (Mpath)

Instance	Decimal (1..255)
Groups	"GROUP Rtg Pors Mpath Provisioned (Prov)" "GROUP Rtg Pors Mpath Operational (Oper)"
Scope	Application
Description	*Rtg Pors ManualPath/n* This component specifies the sequence of *Trunk*s used by a service as the route between source and destination nodes. Services with a link to this component bypass PORS automatic route selection in favor of the route specified in the *route* attribute. This component, along with the *Rtg Pors Profile/n* component and the signaled called party NSAP address, determine the end to end path. An instance of this component should be provisioned for every unique list of *Trunks* used as a route by a service bypassing PORS automatic routing.
Mib	PorsVc
Common Verbs	Help List Display Add DELete

GROUP Rtg Pors Mpath Provisioned (Prov)

Properties	Provisioned
Description	This group contains all provisionable attributes for a PORS manual path.

Mib	PorsVc

ATTRIBUTE Rtg Pors Mpath route

Access	Read and write
Description	This attribute specifies the sequence of trunks used as the route for a path. If any trunk in the sequence does not meet the requirements (bandwidth, permittedTrunkType, security, customerParm, etc.) for a component listed in *users*, path validation fails and no path is instantiated for that user. Changing this attribute will cause active connections of users of this *ManualPath* to move to the new route only if the users have *optimization* ***enabled*** and *Rtg Pors optimizationInterval* > 0. Otherwise, changing this attribute will cause the users' current connections to stay on the old *route* with all new calls instantiating their paths with the new *route*. Optimization can be disabled by having the application use a *Rtg Pors Prof/n* component with *optimization* ***disabled*** or by setting *Rtg Pors optimizationInterval* ***0***. As an example, the trunk component name for the trunk instance 10 on node MoonBase is *EM/MoonBase Trk/10*. These strings are case insensitive but the complete component name must be input. Note 1: the trunk designation must be in the 3-letter form 'trk'. Note 2: only the outbound trunk component names are used to provision the *route*.
Mib	PorsVc
Vector of	String (0..40, ASCII)
Index	Decimal (0..19)
Default	([20] "")

ATTRIBUTE Rtg Pors Mpath users (usr)

Access	Read only
Description	This attribute specifies all of the components that will use this *ManualPath* to instantiate a path. Users of this component have paths that follow the sequence of *Trunks* specified in the *route* attribute of this component when PORS is used to choose and instantiate the route.

Mib	PorsVc
List of	Link (Service, porsManualPath)
List Size	30
Default	No default

GROUP Rtg Pors Mpath Operational (Oper)

Properties	Operational
Description	This group contains operational information for the *Rtg Pors ManualPath/n* component.
Mib	PorsVc

ATTRIBUTE Rtg Pors Mpath lastSetupFailureReason (lfr)

Access	Read only
Description	This attribute indicates the reason for the most recent failure for an attempted connection using this *ManualPath*'s *route*. The following is a brief description of the reasons: ***none*** - This path has no information for the teardown. ***insufficientTxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the *Trunks* for this path in the transmit direction. If a trunk in the *route* attribute was previously locked, or has a *Trk PA* subcomponent that is not in the ***up*** *state* , that *Trunk* is considered as having no available bandwidth. If the *Trunk PA* is in ***mapped*** *mode*, the inability to allocate an *Atmif Vcc* also results in this failure reason. ***insufficientRxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the *Trunks* for this path in the receive direction. If a trunk in the *route* attribute was previously locked, or has a *Trk PA* subcomponent that is not in the ***up*** *state* , that *Trunk* is considered as having no available bandwidth. ***trunkFailure***- A *Trunk* on the path has failed or has gone down, due to a provisioning change of a critical attribute, as the path was being established. ***trunkCardFailure***- A *Trunk* FP card has failed along the path as the path was being established.

accessCardFailure- The FP on which the peer access service was running has failed as the path was being established.
operatorForced- The path has terminated due to the operator locking a *Trunk* along the path as the path was being established.
lostLcnClash- The path has terminated because the *Trk PA*'s at both ends of an intermediate trunk have allocated the same *Trk LC* to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different *Trk LC*'s). It is normal to get the odd clash especially when the *Trk PA usedLC* is approaching the *Trk PA maxLC*. An LCN clash results in the path failing to instantiate only if the application disabled rerouting. By default rerouting is enabled for all applications. Applications can disable rerouting by using a *Rtg Pors Prof/n* component with *pathFailureAction* set to ***disconnectConnection***.
networkCongestion - The path has failed to establish due to control information being lost and not being recoverable.
trunkNotFound - Check for *Trunks* not up or names provisioned incorrectly in *route* attribute .
farEndNotFound - The far end is not provisioned or is not up. The called NSAP address cannot be reached through the last node in the *Rtg Pors ManualPath path*.
farEndBusy - The far end has been reached but it is busy. Check remote end provisioning.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
serviceTypeMismatch - The remote service type does not match this service type. Check provisioning.
bumped - Another call bumped this path, as it was being established, from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path. A manual path that is bumped fails to instantiate if it cannot bump another path along the same *route*, or if it has *pathFailureAction* set to ***disconnectConnection***.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a *mode* required by the service was not supported by one of the *Trunks* the route went through or by the

	far end service it connected to. Currently the only mode that this applies to is the map/mux mode on *Trk Pa Atm* component.
Mib	PorsVc
Values	none insufficientTxLcOrBandwidth insufficientRxLcOrBandwidth trunkFailure trunkCardFailure operatorForced lostLcnClash networkCongestion trunkNotFound farEndNotFound farEndBusy unknownReason farEndNotReady serviceTypeMismatch bumped accessCardFailure trunkOrFarEndDidNotSupportMode
Default	none

ATTRIBUTE Rtg Pors Mpath lastSetupFailurePoint (lfp)

Access	Read only
Description	This attribute indicates the point in the *route* at which the path failed to establish. A failure at either end of a trunk will result in the display of the name of the trunk nearer the calling end.
Mib	PorsVc
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Rtg Pors Mpath lastSetupFailedUser (lfu)

Access	Read only
Description	This attribute indicates the component in the *users* attribute that last failed to instantiate a path based on the *route*.

Mib	PorsVc
Values	The name of the component
Default	No default

COMPONENT Rtg SummaryAddress (SumAddr)

Instance	String (0..40, ASCII)
Groups	"GROUP Rtg SumAddr Prov"
Scope	Application
Description	*Rtg SummaryAddress/<sumAddr>* This is an optional subcomponent of the *Routing* component. It is used to summarize a set of addresses provisioned as the *Trunk/<n> Address/<addr>* components. When one or more of those addresses have a prefix in common, an instance of this component can be added using the common prefix as the instance value. If this node is not a cluster node, the summary address identified by this component will be distributed to all nodes but not to any cluster node in the Topology region. If this is a cluster node, this summary address will be distributed to all cluster nodes located in the local cluster only. That is, the address will not be distributed outside of this cluster.
Mib	BaseRouting
Common Verbs	Help List Display LOCK Unlock

GROUP Rtg SumAddr Prov

Properties	Provisioned
Description	This group of attributes specifies the provisionable characteristics of the *Routing SummaryAddress* component.

Mib	BaseRouting

ATTRIBUTE Rtg SumAddr cost (cost)

Access	Read and write
Description	This attribute specifies a cost of reaching the addresses summarized by the *Routing SummaryAddress/<sumAddr>* component. The value is assigned by the network administrator to represent the network cost of reaching the summarized address through this node. It can be related to distance, speed, dollars, or any other factor that could be taken into consideration.
Mib	BaseRouting
Values	Decimal (0..65435)
Default	200

Nortel Networks Multiservice Switch 7400/15000/20000

Component Rtg

Release 6.1

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7400/15000/20000

Component Rtr

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COMPONENT Router (Rtr)

Instance	String (1..16, ASCII)
Groups	"GROUP Rtr Provisioned" "GROUP Rtr CustomerIdentifierData (CidData)" "GROUP Rtr RouterProvisioned (RtrProv)" "GROUP Rtr OsiState (State)" "GROUP Rtr IfNumberOper" "GROUP Rtr Statistics (Stats)"
Scope	Application
Description	*Router/<string>* The *Router* component represents an instance of a Routing Component on the platform. The purpose of the *Router* component is to provide IP routing and forwarding services as well as MPLS signalling and forwarding services. At any time, the number of Routing Components (*Router, VpnRouteForwarder* and *VirtualRouter)* existing in the current view plus the number of newly created Routing Components in the edit view must be less than the maximum allowed number of Routing Components. This is regardless of how many *VirtualRouter*, *VpnRouteForwarder* or *Router* components may have been deleted in the edit view. Any Routing Component which, when created in the edit view, results in a total count greater than the maximum allowed, is labelled as invalid and must be deleted.

It is recommended that the deletion of any *VirtualRouter*, *VpnRouteForwarder* or *Router* components existing in the current view should be activated using the *Activate Prov* command before creating any new *VirtualRouter*, *VpnRouteForwarder* or *Router* components.

Mib: no_mib

Subcomponents:
"COMPONENT Rtr Arp"
"COMPONENT Rtr Icmp"
"COMPONENT Rtr RelayBC"
"COMPONENT Rtr Udp"
"COMPONENT Rtr Tcp"
"COMPONENT Rtr MemoryManagement (Mm)"

Opt. Subcomp.:
"COMPONENT Rtr BootpRelayAgent (Bootp)"
"COMPONENT Rtr BorderGatewayProtocol (Bgp)"
"COMPONENT Rtr Ospf (Ospf)"
"COMPONENT Rtr Isis (Isis)"
"COMPONENT Rtr RoutingInformationProtocol (Rip)"
"COMPONENT Rtr Static"
"COMPONENT Rtr VpnRouteForwarder (Vrf)"
"COMPONENT Rtr Interface (If)"
"COMPONENT Rtr MultiprotocolLabelSwitching (Mpls)"
"COMPONENT Rtr RsvpTe"
"COMPONENT Rtr Ldp (Ldp)"
"COMPONENT Rtr ControlPlaneProtection (Cpp)"
"COMPONENT Rtr DifferentiatedServicesDomain (Dsd)"

Dyn. Subcomp.:
"COMPONENT Rtr Cache"
"COMPONENT Rtr ForwardTable (Fwd)"
"COMPONENT Rtr RouteDataBaseEntry (Rdb)"

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr Provisioned

Properties: Provisioned

Description	This group contains the router attributes common to the *Router* and *Router VpnRouteForwarder* components.
Mib	no_mib

ATTRIBUTE Rtr sourceRoute

Access	Read and write
Description	This attribute specifies whether or not this *Router* or *VpnRouteForwarder* allows processing of datagrams which have a source route IP option.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr cacheTableSize (cts)

Access	Read and write
Description	This attribute specifies the maximum number of entries that can exist in the local cache table on each *Lp* for this *Router* or *VpnRouteForwarder*. This attribute provides a way to control the resources allocated to the IP cache tables. The default cache table size is *300* for an FP and *100* for a CP. The attribute value must be a multiple of 100.
Mib	no_mib
Vector of	Decimal (100..8000)
Index	Decimal (0..15)
Default	([1] 100, [15] 300)

GROUP Rtr CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib	no_mib

ATTRIBUTE Rtr customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Rtr RouterProvisioned (RtrProv)

Properties	Provisioned
Description	This group contains provisioned attributes specific to the *Router* component.
Mib	no_mib

ATTRIBUTE Rtr virtualRouterProcessor (vrp)

Access	Read and write
Criticality	Process

Description	This attribute specifies the *LogicalProcessor* on which this *Router* resides. The following card types may support a *Router* component: ***CP*** ***CPeD*** ***CPeE*** ***VpnXc***
Mib	no_mib
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP Rtr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

	The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

	The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr IfNumberOper

Properties	Operational
Description	This group contains the ifNumber attribute.
Mib	no_mib

ATTRIBUTE Rtr ifNumber (ifN)

Access	Read only
Description	This attribute defines the number of *IfEntries* in the *IfTable*.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

GROUP Rtr Statistics (Stats)

Properties	Operational
Description	This is the GROUP holding the struct which contains statistical attributes for IP.
Mib	no_mib

ATTRIBUTE Rtr inReceives

Access	Read only

Description	This is the number of input datagrams received from the interfaces, including those received in error. *inReceives* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr inHdrErrors

Access	Read only
Description	The number of input datagrams discarded due to errors in their IP headers, including bad checksums, version number mismatch, other format errors, time-to-live exceeded, errors discovered in processing their IP options, etc. *inHdrErrors* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr inAddrErrors

Access	Read only
Description	The number of input datagrams discarded due to errors such as invalid address, unsupported address class. *inAddrErrors* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr forwDatagrams

Access	Read only
Description	The number of input datagrams for which this router was not their final IP destination, as a result of which an attempt was made to find a route to forward them to that final destination.

	forwDatagrams wraps to zero if reaches it's maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr inUnknownProtos

Access	Read only
Description	The number of locally-addressed datagrams received successfully but discarded because of an unknown or unsupported protocol *inUnknownProtos* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr inDiscards

Access	Read only
Description	The number of input datagrams for which no problems were encountered to prevent their continued processing, but which were discarded due to the lack of buffers. This does not include any datagram discarded while awaiting for re-assembly. *inDiscards* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr inDelivers

Access	Read only
Description	The number of input datagrams successfully delivered to IP user-protocols (including ICMP). *inDelivers* wraps to zero if reaches its maximum defined value.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr outRequests

Access	Read only
Description	The number of datagrams which local IP user-protocols (including ICMP) supplied to IP in requests for transmission. This sum does not include datagrams counted in *ForwDatagrams*. *outRequests* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr outDiscards

Access	Read only
Description	The number of outbound datagrams that were discarded due to the lack of buffers. This sum also includes datagrams counted in *forwDatagrams* if any such packets met the discard criterion. *outDiscards* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr outNoRoutes

Access	Read only
Description	The number of outbound datagrams discarded because no route could be found to transmit them to their destination. This counter includes any datagrams counted in *forwDatagrams*. *outNoRoutes* wraps to zero if reaches its maximum defined value.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr reasmTimeOut

Access	Read only
Description	The maximum number of seconds, which received fragments are held while they are awaiting reassembly at this gateway.
Mib	no_mib
Values	Decimal (0..5)
Units	seconds
Default	5

ATTRIBUTE Rtr reasmReqds

Access	Read only
Description	The number of the IP fragments received by this gateway which needed to be reassembled. *reasmReqds* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr reasmOks

Access	Read only
Description	The number of IP fragments successfully reassembled by this gateway. *reasmOks* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr reasmFails

Access	Read only
Description	The number of times this gateway is unabled to assemble IP-fragments for whatever reasons. *reasmFails* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr fragOks

Access	Read only
Description	The number of IP datagrams that have been successfully fragmented by this gateway. *fragOks* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr fragFails

Access	Read only
Description	The number of IP-fragments that have been discarded because they needed to be fragmented but could not be. For example, their Don’t Fragment flag was set. *fragFails* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr fragCreates

Access	Read only

Description	This number of IP fragments that have been generated as a result of fragmentation by this gateway. *fragCreates* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr routingDiscards

Access	Read only
Description	The number of routing entries which were chosen to be discarded even though they are valid. One possible reason for discarding such an entry could be to free -up buffer space for other routing entries. In this implementation, this number is always zero because IP never deletes a valid routing entry.
Mib	no_mib
Values	Decimal (0..0)
Default	0

ATTRIBUTE Rtr inSrcRouteDiscards

Access	Read only
Description	The number of input datagrams which had a source route IP option and were discarded because this functionality is not allowed for this Routing Component. *srcRouteDiscards* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Arp

Groups	"GROUP Rtr Arp Provisioned (Prov)"
Scope	Application

Description	*Vr/<string> Ip Arp* *Rtr/<string> Arp* *Rtr/<string> Vrf/<string> Arp* The component specifies the Address Resolution Protocol.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Arp HostEntry (Host)"
Dyn. Subcomp.	"COMPONENT Rtr Arp DynHostEntry (DynHost)"
Common Verbs	Help List Display

VERB Clear Rtr Arp

Impact	Passive
Description	*Clear [-logicalIf(Ip Address)] [-includeInverse] Vr/<string> Ip Arp* *Clear [-logicalIf(Ip Address)] [-includeInverse] Rtr/<string> Arp* The *Clear* verb is intended for manually flushing dynamically learned ARP entries. Without any options, *Clear* will flush all non-inverse dynamic ARP entries. The *Clear* verb does not affect static ARP host entries, that is, entries which correspond to *HostEntry* subcomponents of this component. These entries can be removed by deleting the corresponding provisioned *HostEntry* component.

The *-logicalIf* or *-interface* option is used to flush dynamic ARP entries which were learned on a particular *IpPort LogicalInterface* or *Interface*. The option must specify the IP address of an existing *IpPort LogicalInterface* (which may be under any *ProtocolPort) or Interface*.

The *-includeInverse* option is used to force the deletion of inverse ARP entries. Inverse ARP entries which are learned through inverse ARP (*FrDte*) and inverse ATM ARP (*AtmMpe*) are important and should not be cleared by the users accidentally. If the option is not present, inverse ARP entries are not cleared.

GROUP Rtr Arp Provisioned (Prov)

Properties	Provisioned
Description	The ARP refresh feature allows the router to periodically verify ARP table entries. Whenever the router updates an ARP entry, or creates a new entry, a timeout value is assigned to the entry. When the timeout for an entry expires, the router will send a unicast ARP request to the currently-known physical address. If an ARP response comes back, the entry will be assigned a new timeout. If, however, the host has gone away or been assigned a new physical address, the host will not respond to the unicast ARP, and the entry will be removed from the ARP table. The new physical address will be discovered through the normal ARP mechanism when the next communication is attempted to the host.
Mib	no_mib

ATTRIBUTE Rtr Arp autoRefresh

Access	Read and write
Description	This attribute is used to enable or disable the ARP refresh feature.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Arp autoRefreshTimeout

Access	Read and write
Description	This attribute defines the timeout value, in minutes, which is assigned to updated ARP entries, or newly created ARP entries. The range for the timeout is 1 minute to 1440 minutes (24 hours).
Mib	no_mib
Values	Decimal (1..1440)
Units	minutes
Default	5

ATTRIBUTE Rtr Arp retryTimes

Access	Read and write
Description	This attribute defines the number of times that an ARP request will be sent to a remote host if there is no reply received. This value is assigned when ARP entries are updated or created. The range of the value can be from 0 to 127.
Mib	no_mib
Values	Decimal (0..127)
Units	times
Default	127

COMPONENT Rtr Arp DynHostEntry (DynHost)

Instance	hostAddress (addr) [IP address] cos [0 1 2 3 notApplicable (na)]
Groups	"GROUP Rtr Arp DynHost Operational (Oper)"
Scope	Application

Description

Vr/<string> Ip Arp DynHostEntry/<Ip Address>
Router/<string> Arp DynHostEntry/<Ip Address>
Router/<string> Vrf/<string> DynHostEntry/<Ip Address>
This component is a table that contains all Arp host entries (both static and dynamic). Each IP ARP entry in the table is uniquely defined by its IP address and connection class (cos) value.

For *Vr*, when associated *mediaType* under *IpPort* is ***frameRelay***, ***atmMpeLlcEncap,*** and ***atmMpeVcEncap***, the connection class value of the arp entry is ***0, 1, 2,*** or ***3*** . For all other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

For *Router* or *Vrf*, when the media associated with the interface is *atmMpe* or *IpoDlci*, the connection class value of the arp entry is ***0, 1, 2,*** or ***3***. For all other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

An IP packet that has been assigned a particular connection class value will be forwarded using the arp entry which corresponds to the next hop gateway IP address and matching connection class value where the next hop gateway IP address is determined via a forwarding table look up on the packet's destination IP address. When there are arp entries that match the next hop gateway IP address, but not the packet's connection class, then the packet will be forwarded using the arp entry that has the next lowest connection class value; failing this, the packet will be forwarded using the arp entry that has the next highest connection class value.

Mib

no_mib

Common Verbs

Help
List
Display

VERB Clear Rtr Arp DynHost

Impact	Passive
Description	*Clear [-inverse] Vr/<string> Ip Arp DynHostEntry/<Ip Address>* *Clear [-inverse] Router/<string> Arp DynHostEntry/<Ip Address>* *Clear [-inverse] Router/<string> Vrf/<string> Arp DynHostEntry/<Ip Address>* The *Clear* verb is used to delete the single dynamically learned ARP entry that is represented by this component. The *Clear* command does not affect static ARP host entries, that is, entries whose *type* attribute has the value ***static***. These entries can be removed by deleting the corresponding provisioned *HostEntry* component under *Arp*. The *-inverse* option deletes the ARP entry even if it was an inverse ARP entry. Inverse ARP entries are learned through inverse ARP (*FrDte* or *IpoDlci*) and inverse ATM ARP (*AtmMpe*), and should not be removed by the users accidentally. If the option is not present, an inverse ARP entry is not cleared.

GROUP Rtr Arp DynHost Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *DynHostEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Arp DynHost physAddress

Access	Read only
Description	This attribute indicates the physical address of the host in canonical form.
Mib	no_mib

Values	String (0..8, Dashed Hex)
Default	No default

ATTRIBUTE Rtr Arp DynHost maxTxUnit (mtu)

Access	Read only
Description	This attribute indicates the maximum MTU size that can be accepted by the host.
Mib	no_mib
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Rtr Arp DynHost encapsulationType (encap)

Access	Read only
Description	This attribute indicates the encapsulation type of the host.
Mib	no_mib
Values	ieee8023 ethernet notApplicable
Default	No default

ATTRIBUTE Rtr Arp DynHost permanentVirtualCircuitNumber (pvcNo)

Access	Read only
Description	This attribute indicates the permanent virtual circuit number to the remote host.
Mib	no_mib
Values	Decimal (0..4095)
Default	No default

ATTRIBUTE Rtr Arp DynHost ifIndex

Access	Read only

Description	This attribute indicates the *ifIndex* of the protocol port that is associated with this entry.
Mib	no_mib
Values	Decimal (1..65535)
Default	1

ATTRIBUTE Rtr Arp DynHost type

Access	Read only
Description	This attribute indicates how this entry was learned.
Mib	no_mib
Values	pending invalid dynamic static
Default	No default

ATTRIBUTE Rtr Arp DynHost ncPhysAddress

Access	Read only
Description	This attribute indicates the physical address of the host in non-canonical form. This attribute is not displayed for hosts on non-LAN media.
Mib	no_mib
Values	String (0..8, Dashed Hex)
Default	No default

ATTRIBUTE Rtr Arp DynHost tunnelDestinationAddress (tda)

Access	Read only
Description	This attribute indicates the IP address of a remote IP tunnel endpoint in the shared domain. A value of 0.0.0.0 is used when the entry is not referring to an IP tunnel.

Mib	no_mib
Values	IP address
Default	0.0.0.0

COMPONENT Rtr Arp HostEntry (Host)

Instance	hostAddress (addr) [IP address] cos [0 1 2 3 notApplicable (na)]
Groups	"GROUP Rtr Arp Host Provisioned (Prov)" "GROUP Rtr Arp Host Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Arp HostEntry/<Ip Address>,<cos>* *Rtr/<string> Arp HostEntry/<Ip Address>,<cos>* *Rtr/<string> Vrf/<string> Arp HostEntry/<Ip Address>,<cos>* This component defines a static host entry in the ARP table. For *Vr*, a connection class (cos) value of ***0, 1, 2,*** or ***3*** is used when the associated *mediaType* under *IpPort* is ***frameRelay***, ***atmMpeLlcEncap***, or ***atmMpeVcEncap***. For other media types, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis). For *Router* and *Vrf*, a connection class (cos) value of ***0, 1, 2,*** or ***3*** is used when the media associated with the interface is *AtmMpe* or *IpoDlci*. For other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Arp Host Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *HostEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Arp Host physAddress

Access	Read and write
Description	This attribute identifies the physical address of the host being defined. The value for this attribute should only be specified for media types supporting physical addresses (e.g. ethernet, fddi, tokenRing etc.)
Mib	no_mib
Values	String (0..8, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Rtr Arp Host maxTxUnit (mtu)

Access	Read and write
Description	Specify the maximum transmit unit (MTU) size that can be accepted by the host. If this value is not specified, the value for the media interface is used. The specified MTU must be less than or equal to the interface's MTU size.
Mib	no_mib
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Rtr Arp Host permanentVirtualCircuitNumber (pvcNo)

Access	Read and write
Description	This attribute specifies the number of the PVC for the static host entry. It is the instance number of the X.25 media, Frame Relay

	media, and of the *AtmConnection* component on the ATM MPE interface..
Mib	no_mib
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Rtr Arp Host tunnelDestinationAddress (tda)

Access	Read and write
Description	This attribute specifies the IP address of a remote IP tunnel endpoint in the shared domain. A value of 0.0.0.0 is used when the entry is not referring to an IP tunnel.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Arp Host encap

Access	Read and write
Description	This attribute specifies the encapsulation type for the host. The value for this attribute should only be specified for the hosts on the ethernet media. If a value of ***auto*** is specified, the application based on the media will determine the proper applicable encapsulation type.
Mib	no_mib
Values	ieee8023 ethernet auto
Default	auto

GROUP Rtr Arp Host Operational (Oper)

Properties	Operational

Description	This group contains the operational attributes of the *HostEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Arp Host operMaxTxUnit (operMtu)

Access	Read only
Description	This attribute indicates the operational value of the maximum transmission unit.
Mib	no_mib
Values	Decimal (0..0; 80..18944)
Default	No default

ATTRIBUTE Rtr Arp Host operEncap

Access	Read only
Description	This attribute indicates the operational encapsulation type. if the value of the attribute *encap* is set to ***auto***, then the application will determine the encapsulation type based on the media being used and assigns the appropriate value.
Mib	no_mib
Values	ieee8023 ethernet notApplicable
Default	No default

COMPONENT Rtr BootpRelayAgent (Bootp)

Groups	"GROUP Rtr Bootp AdministrativeControl (AdminControl)" "GROUP Rtr Bootp Provisioned (Prov)" "GROUP Rtr Bootp OsiState (State)" "GROUP Rtr Bootp OperationalStatus (OperStatus)"
Scope	Application
Description	*Vr/<string> Ip BootpRelayAgent* *Rtr/<string> BootpRelayAgent*

Rtr/<string> Vrf<string> BootpRelayAgent
The *BootpRelayAgent* component contains all the necessary attributes and components to provision a BOOTP relay agent. The BOOTP relay agent functionality conforms to that described in RFCs 951 and 1542.

The purpose of the BOOTP relay agent is to forward BOOTP request packets from a client to a server, and also to deliver server BOOTP replies back to the client. When a BOOTP request is received on a port, the request will be sent to a provisioned list of IP addresses for that port. In addition, the request will be broadcast out all other BOOTP ports which allow it.

Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr Bootp BootpPortEntry (PpE)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Bootp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Bootp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet

	forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Bootp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *BootpRelayAgent* component.
Mib	no_mib

ATTRIBUTE Rtr Bootp hopDiscardThreshold (hops)

Access	Read and write
Description	BOOTP packets contain a ‘hops’ field which is used to limit the number of relay agents that can process the packet (each relay agent increments the ‘hops’ field by one). This attribute is used by the relay agent to determine when to discard a BOOTP packet. If the ‘hops’ field exceeds the *hopDiscardThreshold* the BOOTP packet will be discarded.
Mib	no_mib
Values	Decimal (2..16)
Default	4

GROUP Rtr Bootp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib no_mib

ATTRIBUTE Rtr Bootp adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib no_mib

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Rtr Bootp operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Bootp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Bootp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Bootp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr Bootp BootpPortEntry (PpE)

Instance	String (1..20, ASCII)
Groups	"GROUP Rtr Bootp PpE Operational (Oper)" "GROUP Rtr Bootp PpE Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Ip BootpRelayAgent BootpPortEntry/<string> Rtr/<string> BootpRelayAgent BootpPortEntry/<string> Rtr/<string> Vrf/<string> BootpRelayAgent BootpPortEntry/ <string>* The *BootpPortEntry* component contains information about the provisioned *BootpPort*. This component is indexed by a string which represents a *VirtualRouter ProtocolPort* or *Rtr Interface* or *Rtr Vrf Interface* component name.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Bootp PpE Operational (Oper)

Properties	Operational
Description	This group contains *BootpPortEntry* component operational data.
Mib	no_mib

ATTRIBUTE Rtr Bootp PpE status

Access	Read only
Description	This attribute indicates the status of the provisioned *BootpPortEntry* component. A value of ***disabled*** is used when the parent components is in a disabled state. A value of ***up*** is used when the *BootpPortEntry* is in an operational state. A state of ***down*** is used if the media associated with the *BootpPortEntry* is not ready or disabled.
Mib	no_mib
Values	up down disabled
Default	No default

GROUP Rtr Bootp PpE Statistics (Stats)

Properties	Operational
Description	This group contains *BootpPortEntry* component statistics.
Mib	no_mib

ATTRIBUTE Rtr Bootp PpE inRequests

Access	Read only
Description	This attribute counts the total number of BOOTP Request messages received on this port.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bootp PpE inReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages received on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bootp PpE outRequests

Access	Read only
Description	This attribute counts total the number of BOOTP Request messages broadcast out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bootp PpE outReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages sent out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bootp PpE inRequestErrors

Access	Read only

Description	This attribute counts the number of BOOTP Request messages received on this port but not forwarded due to an error. An error occurs if the BOOTP hop limit has been exceeded.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bootp PpE inReplyErrors

Access	Read only
Description	This attribute counts the number of BOOTP Reply messages received on this port but not forwarded due to an error. An error occurs if the giaddr field in the BOOTP reply does not match an IP address assigned to this *VirtualRouter* or *Rtr* or *Rtr Vrf*, or if the output *IpPort* or *Interface* for the BOOTP reply is not provisioned for BOOTP.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Cache

Instance	Decimal (0..15)
Groups	"GROUP Rtr Cache OsiState (State)" "GROUP Rtr Cache Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Cache/n* *Rtr/<string> Cache/n*

Rtr/<string> Vrf/<string> Cache/n
This component represents the IP cache table on LP *n*.

Mib: no_mib

Common Verbs:
Help
List
Display

VERB Clear Rtr Cache

Impact: Service

Description:
Clear Vr/<string> Ip Cache/n
Clear Router/<string> Cache/n
Clear Router/<string> Vrf/<string> Cache/n
This verb clears all entries in the cache table on LP *n*. This command deletes all the *Entry* subcomponents of *Cache/n*.

GROUP Rtr Cache OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: no_mib

ATTRIBUTE Rtr Cache adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Cache operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Cache usageState (osiUsage)

Access: Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Cache Operational (Oper)

Properties	Operational
Description	This group houses all the operational attributes of an *Ip* cache table.
Mib	no_mib

ATTRIBUTE Rtr Cache entriesFree (ef)

Access	Read only
Description	This attribute is indicative of the number of free *Ip* cache table entries. A consistently high value for this attribute indicates that there is a resource surplus of the memory requirements for cache table. This surplus could be utilized elsewhere if needed by adjusting the appropriate *cacheTableMaxEntries* attribute. For *Vr*, *cacheTableMaxEntries* is under the *Ip* component; for *Rtr* and *Vrf*, it is under the respective components.
Mib	no_mib
Values	Decimal (0..8000)

Default	No default

ATTRIBUTE Rtr Cache totalLookups (tl)

Access	Read only
Description	This attribute indicates the total number of local cache lookups. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Cache lookupMisses (lm)

Access	Read only
Description	This attribute indicates the total number of local cache lookup misses. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Cache cacheTableMaxEntries (ctme)

Access	Read only
Description	This attribute indicates the current maximum number of entries that can exist in the IP local cache table on each LP.
Mib	no_mib
Values	Decimal (0..8000)
Default	No default

COMPONENT Rtr BorderGatewayProtocol (Bgp)

Groups	"GROUP Rtr Bgp Provisioned (Prov)" "GROUP Rtr Bgp Operational (Oper)"

	"GROUP Rtr Bgp OsiState (State)" "GROUP Rtr Bgp AdministrativeControl (AdminControl)" "GROUP Rtr Bgp OperationalStatus (OperStatus)"
Scope	Application
Description	*Vr/<string> Ip BorderGatewayProtocol* *Rtr/<string> BorderGatewayProtocol* *Rtr/<string> Vrf/<string> BorderGatewayProtocol* This component is used to run the Border Gateway Protocol for IP.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Bgp ImportPolicy (Import)" "COMPONENT Rtr Bgp ExportPolicy (Export)" "COMPONENT Rtr Bgp As" "COMPONENT Rtr Bgp AggregatePolicy (Aggregate)"
Dyn. Subcomp.	"COMPONENT Rtr Bgp IndbEntry (Indb)" "COMPONENT Rtr Bgp LocaldbEntry (Localdb)" "COMPONENT Rtr Bgp OutdbEntry (Outdb)" "COMPONENT Rtr Bgp LocalVpn" "COMPONENT Rtr Bgp MBgpRibEntry (MBgpRib)" "COMPONENT Rtr Bgp MplsVpnRibEntry (MvRib)" "COMPONENT Rtr Bgp Ipv4LabelRibEntry (LRib)"
Dyn. Subcomp.	"COMPONENT Rtr Bgp Peer"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Bgp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Bgp* component.

Mib	no_mib

ATTRIBUTE Rtr Bgp bgpIdentifier

Access	Read and write
Criticality	Component
Description	This attribute specifies the *Bgp* Identifier of this *Bgp* component instance. It is picked from the IP address space, and should follow the same rule as choosing an unique IP address for *IpPort* or *Interface*.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp localAs

Access	Read and write
Criticality	Component
Description	This attribute specifies the autonomous system identifier for this *Bgp* component instance.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp defaultLocalPreference (locPrf)

Access	Read and write
Criticality	Component
Description	This attribute specifies this *Bgp* component instance's default degree of preference for routes. It can be overridden by the *localPreference* provisioned in *ImportPolicy.* A higher value indicates a more preferred route.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	144

ATTRIBUTE Rtr Bgp defaultMultiExitDisc (med)

Access	Read and write
Criticality	Component
Description	This attribute specifies this *Bgp* component instance's default metric to discriminate between multiple exit points to the same adjacent autonomous system. It can be overridden by the s*endMultiExitDiscToEbgp* provisioned in *ExportPolicy.* A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967294

ATTRIBUTE Rtr Bgp routeThrottleLimit (rtl)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of routes in the IP forwarding table this *Bgp* component instance will process at one time to decide if a route in the IP forwarding table should be exported to a peer. This limit is used because the throttling requirements are different under different network configurations.
Mib	no_mib
Values	Decimal (1..1000)
Default	250

ATTRIBUTE Rtr Bgp routeThrottleInter (rti)

Access	Read and write
Criticality	Component

Description	This attribute specifies the interval between the processing of the routes in the IP forwarding table to decide if a route in the IP forwarding table should be exported to a peer. This interval is used because the throttling requirements is different under different network configurations.
Mib	no_mib
Values	Decimal (1..30)
Units	seconds
Default	5

ATTRIBUTE Rtr Bgp routeReflector (rr)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this *Bgp* instance is a Route Reflector. If the value of this attribute is ***true***, *Bgp* redistributes routes it learns from an IBGP speaker to other IBGP speakers in the AS. The rule of redistribution depends on the peer type: 1) When a route is learned from a non-client peer, it is redistributed to all the client peers within the cluster. 2) When a route is learned from a client peer, it is redistributed to all the non-client peers and also to the client peers. If the value of this attribute is ***false***, *Bgp* does not redistribute routes it learns from one IBGP speaker to other IBGP speakers in the AS.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Bgp routeReflectorCluster (rrCluster)

Access	Read and write
Criticality	Component
Description	This attribute identifies the cluster consisting of the Route Reflector and its peer clients. When *routeReflector* of *Bgp* is ***true***,

value of 0.0.0.0 or 255.255.255.255 is invalid; the default value of this attribute is same as *bgpIdentifier*. For redundancy, a cluster may have more than one Route Reflector; in this case, the value of this attribute of all the Route Reflectors in the same cluster should be same. The value of this attribute is ignored when *routeReflector* of *Bgp* is ***false***

Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp redistributeIgpToIbgp (rigp)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this *Bgp* instance allows exporting of IGP routes to internal Bgp peers. IGP routes include the routes learned from OSPF, RIP, local routes and static routes. If the value of this attribute is ***true***, and if *ExportPolicy* is specified to distribute, then *Bgp* allows IGP route to be distributed to internal Bgp peers. If the value of this attribute is ***false***, *Bgp* does not allow IGP routes to be distributed to internal *Bgp* peer, even if *ExportPolicy* is specified to distribute. This attribute is set to true if and only this Bgp is part of the Carrier Manage Service, otherwise, a routing loop may result.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Bgp defaultIbgpRtePreference (ibgpPref)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's default routing preference for IBGP routes. It can be overridden by the *IbgpRtePreference* provisioned in *ImportPolicy.* A lower value indicates a more preferred route.

Mib	no_mib
Values	Decimal (1..253)
Default	122

ATTRIBUTE Rtr Bgp defaultEbgpRtePreference (ebgpPrf)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's default routing preference for EBGP routes. It can be overridden by the *ebgpRtePreference* provisioned in *ImportPolicy.* A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..253)
Default	70

ATTRIBUTE Rtr Bgp vpnPeeringTopology (topology)

Access	Read and write
Description	Under the *Vr* component, this attribute specifies the peering mode that determines if a dynamic IBGP peer is to be instantiated between this *BGP* instance and a discovered IP Tunnel endpoint on the remote customer VR. This mode controls the distribution of IP routing information among VPN sites through dynamic BGP sessions after auto-discovery has taken place. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value. In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of

the attribute.

Under the *Rtr* or *Rtr Vrf* component, this attribute is not used.

Mib: no_mib

Values:
none
hub
spoke

Default: No default

ATTRIBUTE Rtr Bgp alarmGeneration (alarms)

Access: Read and write

Description: This attribute specifies the level of alarm generation for this *Bgp* instance.

A value of ***all*** specifies that all BGP alarms are made visible.

A value of ***normal*** specifies that all BGP alarms are made visible, except for the following:
- *Bgp Peer* listening failure alarms,
- *Bgp Peer* connect failure alarms, and
- *Bgp* notification alarms.

Any listening failure or connect failure alarms which were previously set for a *Peer* component under this *Bgp* instance are cleared.

A value of ***none*** specifies that no BGP alarms are made visible. Any listening failure, connect failure, or “no auto discovery” alarms which were previously set for a *Peer* component under this *Bgp* instance are cleared.

Note that, because the listening failure, connect failure, and “no auto discovery” alarms are triggered by state changes in the *Peer* component, they are not automatically regenerated when previously disabled alarm generation is enabled. For example, consider the following:
- If the *Bgp alarmGeneration* attribute is set to ***all*** and a *Peer* enters a listening failure state, a listening failure alarm is set against that *Peer* subcomponent.

- If the *Bgp alarmGeneration* attribute is then set to ***normal*** or ***none***, the above listening failure alarm is cleared.
- If the *Bgp alarmGeneration* attribute is then set back to ***all***, no alarm is generated because the *Peer* subcomponent has not changed state.
- If the *Peer* then exits the listening failure state, a listening failure alarm clear is generated for the *Peer*, even though there is no alarm set for that component.

When the scope of alarm generation has been increased for a *Bgp* instance, previously existing alarms which had been suppressed can be regenerated by locking and unlocking the *Bgp Peer* subcomponents.

For a *VirtualRouter* with *vpnMode* attribute be set to ***carrier***, it is recommended that the *alarmGeneration* attribute be set to ***all***. For a *VirtualRouter* with the *vpnMode* attribute set to ***customer***, it is recommended that the *alarmGeneration* attribute be set to either ***normal*** or ***none***, for scalability reasons.

Similarly, for a *Router* component, it is recommended that the *alarmGeneration* attribute be set to ***all***. For a *Router Vrf* component, it is recommended that the *alarmGeneration* attribute be set to either ***normal*** or ***none***, for scalability reasons.

Mib: no_mib

Values:
none
normal
all

Default: all

ATTRIBUTE Rtr Bgp keyTransitionDelay (keyDelay)

Access: Read and write

Description: This attribute specifies a default delay period associated with a change of *md5Key* value event for the *Bgp* component. The *md5Key* is set under the *Bgp Peer Descriptor* component.

This is the time that can elapse before the local router transitions to using the new key for transmission for all the Bgp Peer

sessions' under this *Bgp* component. This time is not used to control when to accept the new key for reception, and the new key is immediately accepted for reception.

This delay equates to the amount of time the operator has to provision both the local and remote ends with the new key, without losing service.

This can be overridden by the *keyTransitionDelay* provisioned under the *Bgp Peer Descriptor* component.

Mib	no_mib
Values	Decimal (1..20160)
Units	minutes
Default	10

ATTRIBUTE Rtr Bgp bgpImportRouteLimit (birl)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the maximum number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated. The default value of zero implies no protection. This limit is set based on the requirements of the network configuration and is critical to BGP.
Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Rtr Bgp bgpImportRouteDiscardLimit (bird)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated and subsequent routes are discarded. The default value of zero

	signifies no protection. This limit is set based on the requirements of the network configuration and is critical to BGP.
Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

GROUP Rtr Bgp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Bgp* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp tableVersion

Access	Read only
Description	This attribute indicates the version of the BGP routing table. It is incremented every time the BGP routing table changes. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp inMsgs

Access	Read only
Description	This attribute counts the total number of BGP messages received without error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp inErrors

Access	Read only
Description	This attribute counts the total number of BGP messages received from all peers that proved to be in error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp inErrorMsgs

Access	Read only
Description	This attribute counts the total number of BGP NOTIFICATION messages from all the peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp outMsgs

Access	Read only
Description	This attribute counts the total number of BGP messages sent to peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp outDiscards

Access	Read only

Description	This attribute counts the number of BGP messages that were locally generated but were not sent out due to resource limitations within a *Bgp* instance. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp outErrorMsgs

Access	Read only
Description	This attribute counts the BGP NOTIFICATION messages sent to the peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp indbSize

Access	Read only
Description	This attribute indicates the number of *Bgp* indb entries under this *Bgp* component instance.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

GROUP Rtr Bgp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib no_mib

ATTRIBUTE Rtr Bgp adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib no_mib

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Rtr Bgp operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Bgp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Bgp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Bgp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Bgp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Bgp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr Bgp Peer

Instance	IP address
Groups	"GROUP Rtr Bgp Peer OsiState (State)" "GROUP Rtr Bgp Peer Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp Peer/<Ip Address>* *Rtr/<string> Bgp Peer/<Ip Address>* *Rtr/<string> Vrf/<string> Bgp Peer/<Ip Address>* This component identifies the properties of a BGP peer. The index value of this entry identifies the IP address of that peer. This component is required for BGP to set up a peer session with a remote peer. Peers with discovered IP address are dynamic peers, where the provisioned ones are static peers.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Bgp Peer Descriptor (Desc)"
Dyn. Subcomp.	"COMPONENT Rtr Bgp Peer Vpn"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Bgp Peer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	no_mib

ATTRIBUTE Rtr Bgp Peer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Bgp Peer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Bgp Peer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values: idle
active (activ)
busy

Default: idle

GROUP Rtr Bgp Peer Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the *Peer* component.

Mib: no_mib

ATTRIBUTE Rtr Bgp Peer connectionState

Access: Read only

Description	This attribute indicates the current state of this BGP peer connection. The meaning of each state is as follows: ***idle*** - it is the initial state of the BGP peer connection. Error events will also cause BGP peer connection to transit to the idle state. ***connect*** - BGP has initiated a TCP connection request to this peer, and waiting for reply from that peer. ***active*** - BGP is not initiating a TCP connection request to this peer, because TCP connection failed and is waiting for connection retry time-out. ***openSent*** - a TCP connection to this peer has been established, but the OPEN message has not been successfully exchanged. ***openConfirm*** - OPEN message has been successfully exchanged with this peer, but the first KEEPALIVE message has not been received from that peer. ***established*** - the first KEEPALIVE message has been received from this peer, which means this BGP peer connection has been established. See RFC 1771 for a detailed description of BGP state transitions.
Mib	no_mib
Values	idle connect active openSent openConfirm established
Default	idle

ATTRIBUTE Rtr Bgp Peer bgpIdentifier (bgpId)

Access	Read only
Description	This attribute indicates the BGP Identifier of this *Bgp Peer* component. It is learned from the peer through the OPEN message.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Peer versionNegotiated (vn)

Access	Read only
Description	This attribute indicates the BGP version number negotiated with this peer through the OPEN message. Currently, only BGP version 4 is supported. BGP will reject the peer connection if our peer proposes a BGP version other than 4.
Mib	no_mib
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Rtr Bgp Peer holdTimeNegotiated (htn)

Access	Read only
Description	This attribute indicates the maximum time in seconds, that may elapse without receiving a KEEPALIVE or UPDATE message before the connection is considered down. This is the negotiated value with peer through the OPEN message. The hold time must be either zero or at least three seconds. If the negotiated hold time is zero, then periodic KEEPALIVE messages are not expected from the peer.
Mib	no_mib
Values	Decimal (0; 3..65535)
Units	seconds
Default	No default

ATTRIBUTE Rtr Bgp Peer keepAliveNegotiated (kan)

Access	Read only
Description	This attribute indicates the interval in seconds, between BGP KEEPALIVE message retransmissions. This keepalive interval will have the same ratio to the hold time negotiated with the peer as that of the locally configured keepalive and hold time. This attribute will be zero if the *holdTimeNegotiated* attribute is zero, which means periodic KEEPALIVE messages will not be sent.

Mib	no_mib
Values	Decimal (0..21845)
Units	seconds
Default	No default

ATTRIBUTE Rtr Bgp Peer localAddressUsed (lau)

Access	Read only
Description	This attribute indicates the local IP address used for this BGP peer connection. If the *localAddressConfigured* attribute is non-zero, its value will be used. Otherwise, the local address will be assigned by TCP based on the remote IP address of this peer connection and the IP forwarding table.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Peer localPort

Access	Read only
Description	This attribute indicates the local TCP port for the connection between the BGP peers.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp Peer remotePort

Access	Read only
Description	This attribute indicates the remote TCP port for the connection between the BGP peers.
Mib	no_mib
Values	Decimal (0..65535)

Default	No default

ATTRIBUTE Rtr Bgp Peer lastError

Access	Read only
Description	This attribute indicates the last error code and subcode seen by this *Bgp* component instance on this peer connection. The first byte of this two byte OCTET STRING contains the error code, and the second byte contains the subcode. A value of zero means that no error has occurred. Check RFC 1771 for mappings of error codes and error subcodes.
Mib	no_mib
Values	String (2, Hex)
Default	No default

ATTRIBUTE Rtr Bgp Peer connectionEstablishedTime (ceTime)

Access	Read only
Description	This attribute indicates how long since this *Peer* component's last transition to or from the ***established*** state. It is set to zero when the *Peer* component is activated.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Rtr Bgp Peer connectionEstablishedTransitions (ceTrans)

Access	Read only
Description	This attribute counts the total number of times the BGP connection state transitioned into the ***established*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer inUpdateElapsedTime (iuet)

Access	Read only
Description	This attribute indicates the elapsed time in seconds since the last BGP UPDATE message was received from the peer. Each time *inUpdates* attribute is incremented, the value of this attribute is set to zero.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Rtr Bgp Peer inMsgs

Access	Read only
Description	This attribute counts the number of BGP messages received without error from the BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer inUpdates

Access	Read only
Description	This attribute counts the number of BGP UPDATE messages received on this peer connection. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer inErrors

Access	Read only
Description	This attribute counts the number of messages received from this BGP peer that proved to be in error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer inErrorMsgs

Access	Read only
Description	This attribute counts the number of BGP NOTIFICATION messages received from this BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer outMsgs

Access	Read only
Description	This attribute counts the number of locally generated BGP messages sent to this BGP peer. It does not include discarded messages. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer outUpdates

Access	Read only

Description	This attribute counts the number of BGP UPDATE messages sent to this peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer outDiscards

Access	Read only
Description	This attribute counts the number of locally generated BGP messages not sent to this BGP peer due to resource limitations within a BGP entity. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer outErrorMsgs

Access	Read only
Description	This attribute counts the number of BGP NOTIFICATION messages sent to this BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer inRoutes

Access	Read only
Description	This attribute indicates the number of routes received from this BGP peer.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Peer peerType

Access	Read only
Description	This attribute indicates the way this peer is created. Peer is **static,** if created through provisioning or **dynamic,** if created through IP VPN auto discovery. For *Router* and *Vrf*, all peers are statically created. So, this value will always be ***static***.
Mib	no_mib
Values	static dynamic
Default	No default

ATTRIBUTE Rtr Bgp Peer authenticationType

Access	Read only
Description	This attribute indicates the authentication type of this BGP peer. If the *md5Key* attribute under the *Bgp Peer Desc* component is set to a null string, this peer's authentication type is ***none***; otherwise, if the *md5Key* attribute is set to a valid non-null string, this peer's authentication type is ***md5***. If this BGP peer's *peerType* is ***dynamic***, its authentication type is always ***none***.
Mib	no_mib
Values	none md5
Default	No default

ATTRIBUTE Rtr Bgp Peer noAuthenticationPkts

Access	Read only

Description	This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which do not contain the MD5 authentication information, but MD5 authentication is provisioned on the local BGP peer. This type of authentication failure occurs when the *md5Key* attribute under the local *Bgp Peer Desc* component is set to a valid non-null string, but the remote BGP peer does not use MD5 authentication, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Peer badAuthenticationPkts

Access	Read only
Description	This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which fail the MD5 authentication. This type of authentication failure occurs when the *md5Key* attribute set under the local *Bgp Peer Desc* component does not match the MD5 key used by the remote BGP peer, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Peer unexpectedAuthenticationPkts

Access	Read only
Description	This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which contain the MD5 authentication information, but MD5 authentication is not provisioned on the local BGP peer. This type of authentication failure occurs when the *md5Key* attribute under the

local *Bgp Peer Desc* component is set to a null string, but the remote BGP peer uses MD5 authentication, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Rtr Bgp Peer addressFamilyNegotiated (afn)

Access: Read only

Description: The attribute indicates the list of multi-protocol extensions negotiated on this peer session. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI).

To perform IP VPN auto discovery in a VPN, the value of ***ipv4Vpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances.

To perform IP VPN multi-protocol BGP route distribution in a VPN, the value of ***mbgpVpn*** and ***ipv4Vpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances.

To perform RFC 2547 VPN route distribution in a VPN using multi-protocol BGP extensions, the value of ***ipv4MplsVpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances.

To distribute IPv4 Unicast routes with labels, using multi-protocol BGP extensions, the value of ***ipv4Label*** must be in the *addressFamilyNegotated* list of the peer instance.

ipv4Unicast represents AFI = 1 and SAFI = 1
ipv4Vpn represents AFI = 1 and SAFI = 140 (not for RFC 2547)
mbgpVpn represents AFI = 1 and SAFI = 141 (not for RFC 2547)
ipv4MplsVpn represents AFI = 1 and SAFI = 128
ipv4Label represents AFI = 1 and SAFI = 4

Mib	no_mib
List of	ipv4Unicast ipv4Vpn mbgpVpn ipv4MplsVpn ipv4Label
Default	No default

ATTRIBUTE Rtr Bgp Peer capabilityNegotiated (cn)

Access	Read only
Description	The attribute indicates the list of capabilities negotiated on this peer session.
Mib	no_mib
List of	mpExtensions routeRefresh cooperativeRouteFiltering
Default	No default

COMPONENT Rtr Bgp Peer Descriptor (Desc)

Groups	"GROUP Rtr Bgp Peer Desc Provisioned (Prov)"
Scope	Network
Description	*Vr/<string> Ip Bgp Peer/<Ip Address> Desc* *Rtr/<string> Bgp Peer/<Ip Address> Desc* *Rtr/<string> Vrf/<string> Bgp Peer/<Ip Address> Desc* This component contains provisioned attributes for BGP peers.

Provisioned attributes are only used when the peer is a statically provisioned peer.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Rtr Bgp Peer Desc Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisional attributes for this BGP *Peer* component

Mib: no_mib

ATTRIBUTE Rtr Bgp Peer Desc peerAs

Access: Read and write

Description: This attribute specifies the autonomous system identifier of this BGP *Peer* component. It is used to verify the autonomous system identifier learned from the peer through the OPEN message. The peer connection is rejected and a NOTIFICATION message is sent to the peer if these two numbers don't match.

Mib: no_mib

Values: Decimal (0..65535)

Default: 0

ATTRIBUTE Rtr Bgp Peer Desc localAddressConfigured (lac)

Access: Read and write

Description: This attribute specifies the local IP address configured for this *Bgp Peer* connection. If this attribute is 0.0.0.0, TCP chooses a local IP interface based on the remote IP address of this peer

	connection and the IP forwarding table. The value chosen is stored in the *localAddressUsed* attribute under the same *Peer* component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Bgp Peer Desc keepAliveConfigured (kac)

Access	Read and write
Description	This attribute specifies the configured interval between BGP KEEPALIVE message retransmissions. It is used to establish the ratio between keepalive interval and hold time. If this attribute is zero, then the *holdTimeConfigured* attribute must be zero, which means that periodic KEEPALIVE messages will not be sent.
Mib	no_mib
Values	Decimal (0..21845)
Units	seconds
Default	30

ATTRIBUTE Rtr Bgp Peer Desc holdTimeConfigured (htc)

Access	Read and write
Description	This attribute specifies the maximum time that may elapse without receiving a KEEPALIVE or UPDATE message before the connection is considered down. The hold time must be either zero or at least three seconds. If this attribute is zero, then the *keepAliveConfigured* attribute should also be zero, which means that periodic KEEPALIVE messages will not be sent.
Mib	no_mib
Values	Decimal (0; 3..65535)
Units	seconds
Default	90

ATTRIBUTE Rtr Bgp Peer Desc connectRetryTime (connectRetry)

Access	Read and write
Description	This attribute specifies the time interval for the ConnectRetry timer. It is the minimum amount of time that must elapse between successive TCP connection retries for establishing BGP peer connection.
Mib	no_mib
Values	Decimal (1..65535)
Units	seconds
Default	120

ATTRIBUTE Rtr Bgp Peer Desc minAsOrigTime (minAsOrig)

Access	Read and write
Description	This attribute specifies the time interval for the MinAsOriginationInterval timer. It is the minimum amount of time that must elapse between updates that advertise a change to a route within the local autonomous system to neighboring autonomous systems.
Mib	no_mib
Values	Decimal (1..65535)
Units	seconds
Default	15

ATTRIBUTE Rtr Bgp Peer Desc minRouteAdvTime (minRouteAdv)

Access	Read and write
Description	This attribute specifies the time interval for the MinRouteAdvertisementInterval timer. Feasible routes received from peers in other autonomous systems may only be re-advertised to peers in other autonomous systems at a rate no greater than MinRouteAdvertisementInterval.
Mib	no_mib

Values	Decimal (1..65535)
Units	seconds
Default	30

ATTRIBUTE Rtr Bgp Peer Desc defaultInAggMed (diaMed)

Access	Read and write
Description	This attribute specifies this *Bgp Peer* component instance's metric for generating a dynamic default route whenever this external BGP peer got established. It is used to prioritize between the dynamic default routes generated by BGP speakers. If this attribute is not set, BGP does not generate a dynamic default route. When this attribute is set, BGP automatically generates a dynamic default route when the connection established.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Rtr Bgp Peer Desc isRouteReflectorClient (isRrClient)

Access	Read and write
Description	This attribute specifies whether the peer is a client peer or non-client peer of this *Bgp* instance. The attribute is ignored unless the value of the '*routeReflector*' attribute of the '*Bgp*' component is set to ***true***.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Bgp Peer Desc removePrivateAs (remPrivate)

Access	Read and write
Description	This attribute specifies the treatment of the AS_PATH path attribute in routes sent to the peer. If this attribute is enabled, then

	BGP will remove private AS numbers from the AS_PATH. This attribute is meaningful only for external peers.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Bgp Peer Desc nextHopSelf (nhs)

Access	Read and write
Description	This attribute controls the setting of the NEXT_HOP path attribute in routes advertised to the peer. If this attribute is enabled, BGP will advertise itself as the NEXT_HOP. This is useful when routes are propagated from an EBGP peer to an IBGP peer: the IBGP peer does not need to have a route to the EBGP peer.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Bgp Peer Desc md5Key

Access	Write only
Description	This attribute specifies this *Bgp Peer* component instance's MD5 key value that is used by the MD5 authentication on this BGP Peer session's underlying TCP connection. A null string indicates that the MD5 authentication is not to be used on the TCP connection to this Bgp Peer session.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Peer Desc keyTransitionDelay (keyDelay)

Access	Read and write
Description	This attribute specifies a delay period associated with a change of *md5Key* value event of the *Peer* component. This is the time that can elapse before the local router transitions to using the new key for transmission for this Bgp Peer session.This time is not used to control when to accept the new key for reception, and the new key is immediately accepted for reception. This delay equates to the amount of time the operator has to provision both the local and remote ends with the new key, without losing service. If ***sameAsBgp*** is specified, the value of *keyTransitionDelay* set under the parent *Bgp* component is used. Otherwise the value of this attribute will be used**.** The default is to use ***sameAsBgp***.
Mib	no_mib
Values	Decimal (1..20160) sameAsBgp
Units	minutes
Default	sameAsBgp

ATTRIBUTE Rtr Bgp Peer Desc multiHopEbgp (mhEbgp)

Access	Read and write
Description	This attribute specifies whether MultiHop EBGP (External BGP) route distribution is supported on this EBGP peer. MultiHop EBGP allows routes to be distributed between EBGP peers that are not directly connected and can span multiple hops
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Bgp Peer Desc asPathCheck

Access	Read and write
Description	This attribute specifies the treatment of the AS_PATH loop detection mechanism in routes received from the peer. If this attribute is set to ***disabled***, AS_PATH loop is not detected. If this attribute is set to ***enabled***, AS_PATH loop is detected.
Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Bgp Peer Desc attachSiteOfOrigin (attachSoo)

Access	Read and write
Description	This attribute specifies the site of origin identifier to attach for this BGP Peer connection. If this attribute is set, a site of origin extended community path attribute is attached to the routes received from this peer unless the site of origin extended community path attribute is already included in the routes.
Mib	no_mib
Values	String (0..21, RFC2547RdRtSyntax)
Default	No default

ATTRIBUTE Rtr Bgp Peer Desc checkSiteOfOrigin (checkSoo)

Access	Read and write
Description	This attribute specifies the site of origin identifiers to check for this BGP Peer connection. If this attribute is set, a check is done when routes are received from this peer or advertised to this peer. If the site of origin extended community path attribute presents in received routes and matches any Site Of Origin in this attribute, the routes are not accepted. If the site of origin extended community path attribute

	presents in the advertised routes and matches any SOO in this attribute, the routes are not advertised to this peer. If this attribute is not set, no check and filtering is done.
Mib	no_mib
List of	String (3..21, RFC2547RdRtSyntax)
List Size	256
Default	No default

ATTRIBUTE Rtr Bgp Peer Desc bgpPeerRouteLimit (bprl)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the maximum number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated. The default value of zero implies no protection. This limit is set based on the requirements of the network configuration and is optional but critical under the peer.
Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Rtr Bgp Peer Desc bgpPeerRouteDiscard (bprd)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated and subsequent routes are discarded. The default value of zero signifies no protection. This limit is set based on the requirements of the network configuration and is optional but critical under the peer.
Mib	no_mib
Values	Decimal (0..4000000000)

Default	0

ATTRIBUTE Rtr Bgp Peer Desc addressFamily

Access	Read and write
Description	The attribute specifies the supported network layer protocols being carried in any BGP-4 UPDATE messages over this Peer session. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). To perform IP VPN auto discovery in a VPN, the value of ***ipv4Vpn*** must be added to this attribute on all VCGs' peer instances. To perform IP VPN multi-protocol BGP route distribution in a VPN, the value of ***mbgpVpn*** and ***ipv4Vpn*** must be in the *addressFamily* list of all the VCGs' Peer instances. To perform RFC 2547 VPN route distribution in a VPN using multi-protocol BGP extensions, the value of ***ipv4MplsVpn*** must be in the *addressFamily* list of all the VCGs' peer instances. To distribute IPv4 Unicast routes with labels, using multi-protocol BGP extensions, the value of ***ipv4Label*** must be in the *addressFamily* list of the peer instance. ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***ipv4Vpn*** represents AFI = 1 and SAFI = 140 (not for RFC 2547) ***mbgpVpn*** represents AFI = 1 and SAFI = 141 (not for RFC 2547) ***ipv4MplsVpn*** represents AFI = 1 and SAFI = 128 ***ipv4Label*** represents AFI=1 and SAFI=4
Mib	no_mib
List of	ipv4Unicast ipv4Vpn mbgpVpn ipv4MplsVpn ipv4Label
Default	(ipv4Unicast)

COMPONENT Rtr Bgp Peer Vpn

Instance	String (7, Dashed Hex)
Scope	Application
Description	*Vr*/<string> *Ip Bgp Peer*/<Ip Address> *Vpn*/<Vpn id> This component contains all VPN information that is learned by this BGP peer instance.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr Bgp Peer Vpn Ipv4"
Common Verbs	Help List Display

COMPONENT Rtr Bgp Peer Vpn Ipv4

Instance	IP address
Groups	"GROUP Rtr Bgp Peer Vpn Ipv4 Operational (Oper)"
Scope	Application
Description	*Vr*/<string> *Ip Bgp Peer*/<Ip Address> *Vpn*/<Vpn id> *Ipv4* This component contains all IPv4 tunnel based VPN information gathered by this BGP peer for the specified VPN.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Bgp Peer Vpn Ipv4 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ipv4* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Peer Vpn Ipv4 publicIpAddress

Access	Read only
Description	This attribute indicates the public IP Address for the remote IP VPN tunnel endpoint. It is used to encapsulate IP packets from the local IP VPN site to the remote site.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Peer Vpn Ipv4 asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments through which the IP VPN information arrives. The AS Path lists the ASs in reverse traversal order from the point of origin. This attribute is not applicable and is not displayed for locally - learned IP VPN information.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Peer Vpn Ipv4 vpnPeeringTopology

Access	Read only
Description	This attribute indicates the peering mode of the remote customer BGP from which this VPN information is originated. This mode determines if a dynamic IBGP peer is instantiated between this *BGP* instance and the remote IP Tunnel endpoint on the remote customer VR. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value.

	In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.
Mib	no_mib
Values	none hub spoke
Default	No default

ATTRIBUTE Rtr Bgp Peer Vpn Ipv4 asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator of this IP VPN information in the local AS. When the Route Reflector in the backbone distributes a discovered VPN information to other IBGP speakers, the value of this attribute in the discovered VPN information is used if one is present; otherwise, the Route Reflector's router-id is used. A value of 0.0.0.0 indicates this *Bgp* instance is not a Route Reflector. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Peer Vpn Ipv4 redundant

Access	Read only
Description	This attribute indicates that the IP VPN information entry learned from more than one BGP peers in the carrier backbone. This attribute is not applicable and is not displayed for locally learned IP VPN information.

Mib	no_mib
Values	no yes
Default	No default

ATTRIBUTE Rtr Bgp Peer Vpn Ipv4 rrClusterList

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the sequence of cluster-ids that this discovered IP VPN information has traversed. When the Route Reflector in the backbone reflects a discovered VPN information to other non-client IBGP peers, the cluster ID of the Route Reflector is added to the cluster list of the received VPN information. A blank list indicates this attribute is not present in the received VPN information or if this *Bgp* instance is not a Route Reflector. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Bgp ImportPolicy (Import)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Bgp Import Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Import/n* *Rtr/<string> Bgp Import/n* *Rtr/<string> Vrf/<string> Bgp Import/n* Each instance of this component describes a BGP import policy. A BGP import policy is used to decide if certain routing information learned from its peer is to be ignored or used. If no import policy is provisioned, BGP will accept all routes

received from its IBGP peers, but will not use any routing information received from its EBGP peers.
If multiple import policies are provisioned, the one with the most specific match will apply.
The keys are matched in the following order from the least specified to the most specified:
Network,
peerAs,
peerIpAddress,
originAs,
originProtocol,
matchAsPath,
matchCommunity.

Example1:
There are 2 import policies defined:
vr/0 ip bgp import/1, originProtocol = ***any***, originAs = ***20***, usageFlag = ***use***
vr/0 ip bgp import/2, originProtocol = ***igp***, usageFlag = ***ignore***
If a BGP NLRI contains a route originally learned from an igp with origin AS 20, it will be used.
Example2:
There are 2 import policies defined:
vr/0 ip bgp import/1, originProtocol = ***any***, matchAsPath = ***"1 2 3"***, usageFlag = ***ignore***
vr/0 ip bgp import/2, originProtocol = ***any***, usageFlag = use
If a BGP NLRI contains a route originally learned from an igp with the AsPath "1 2 3 4", it will be ignored.

For Router and Vrf, the example is similar with 'Vr/0 Ip' replaced with 'Router/0' and 'Router/0 Vrf/1' respectively.

Mib: no_mib

Opt. Subcomp.: "COMPONENT Rtr Bgp Import Network (Net)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Bgp Import Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes for the *Import* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Import peerAs

Access	Read and write
Description	This key attribute specifies the autonomous system number of the peer from which the routes are learned. A value of 0 for this attribute means that peer AS number will match any AS number.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Bgp Import peerIpAddress

Access	Read and write
Description	This key attribute specifies the IP address of the peer from which the routes are learned. A value of 0.0.0.0 for this attribute means that peer IP address will match any IP address.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Bgp Import originAs

Access	Read and write
Description	This key attribute specifies the autonomous system number where the routes were originated. A value of 0 for this attribute means origin AS number will match any AS number.
Mib	no_mib

Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Bgp Import originProtocol

Access	Read and write
Description	This key attribute specifies the protocols that originated the routes. A value of ***incomplete*** for this attribute means this information is not available.
Mib	no_mib
Values	any igp egp incomplete
Default	any

ATTRIBUTE Rtr Bgp Import usageFlag (usage)

Access	Read and write
Description	This attribute specifies whether BGP will use or ignore information in received update if it meets criteria specified by the key attributes of this component.
Mib	no_mib
Values	use ignore
Default	use

ATTRIBUTE Rtr Bgp Import localPreference (locPrf)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's degree of preference for those routes that match the criteria of this import policy. A higher value indicates a more preferred route. A value of 0 for this attribute means that the default local preference value provisioned under the *Bgp* component should be used.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Import asPathExpression (asExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the received update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS number separated by a space which making up a AS path. The following characters has the special meaning: ‘.’ - Matches any AS number. ‘^n’ - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path. ‘n$’ - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path. ‘[n1... n2]’ - Matches any AS number that appeared in the set n1... n2. ‘n1 - n2’ - Matches any AS number between the range of n1 and n2. ‘()’ - is supported to change the order of evaluation. ‘n*’ - Matches 0 or more occurrences of n, where n can be a set, range or AS number. ‘n+’ - Matches 1 or more occurrences of n, where n can be a set, range or AS number. ‘n?’ - Matches 0 or 1 occurrences of n, where n can be a AS set, range or number. The following logical operators are evaluated in descending order: ‘NOT’ - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x. ‘AND’- Given two regular expressions x and y, x AND y

matches the intersection of the AS path that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y.
For example: The AS path "5 4 3 2 1", where 1 is the origin AS, would be match by any one of the following regular expressions:
1$,
^5,
4 3,
5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4.* 1
Empty regular expression implies a match on all AS path.

Mib: no_mib

Values: String (0..255, ASCII)

Default: No default

ATTRIBUTE Rtr Bgp Import communityExpression (comExpr)

Access: Read and write

Description: This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280.

The basic syntax of a regular expression is a list of Community number separated by a space which making up a Community attribute.

The following characters have a special meaning:
'[n1... n2]' - Matches any Community number that appeared in the
set n1...n2.
'n1 - n2' - Matches any Community number between the range of n1 and n2.
'()' - is supported to change the order of evaluation.
'n*' - Matches 0 or more occurrences of n, where n can be a set, range or Community number.

‘n+’ - Matches 1 or more occurrences of n, where n can be a set, range or Community number.
‘n?’ - Matches 0 or 1 occurrences of n, where n can be a set, range or number.
The following logical operators are evaluated in descending order:
‘NOT’ - Given a regular expression x, NOT x matches the Community attribute that is not matched by x.
‘AND’- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y.
‘OR’ - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y.
For example: The Community path “1 2 3 4 5” would be match by any one of the following regular expression:
1,
5,
4 3,
2 3 - 4*,
1 [3 4 2]+,
not (6 7 8 9 10) and 1 2
Empty regular expression implies a match on all Community path.

Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Import expressPreference (exprPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *expressAsPath* and *expressCommunity.* This attribute is ignored if attributes *expressAsPath* and *expressCommunity* are both empty. This attribute is used to break the tie when two import policies’ expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy.
Mib	no_mib

Values	Decimal (0..255)
Default	128

ATTRIBUTE Rtr Bgp Import appendCommunity (appCom)

Access	Read and write
Description	This attribute indicates which community number this import policy will send along with the Path Attribute. Refer to RFC 1997 for the detailed description of how this attribute may be used to pass additional information to BGP peers. If the value is set to 0, no community is appended to the Community attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Import ibgpRtePreference (ibgpPref)

Access	Read and write
Description	This attribute specifies the routing preference of IBGP routes matching this import policy. A lower value means the route is more preferred. If ***sameAsBgp*** is specified, the value of *defaultIbgpRtePref* set under the *Bgp* component is used. Otherwise the value of this attribute will be used as the routing preference**.** The default is to use sameAsBgp.
Mib	no_mib
Values	Decimal (1..253) sameAsBgp
Default	sameAsBgp

ATTRIBUTE Rtr Bgp Import ebgpRtePreference (ebgpPref)

Access	Read and write
Description	This attribute specifies the routing preference of EBGP routes matching this import policy. A lower value specifies the route is more preferred. If ***sameAsBgp*** is specified, the value of *defaultEbgpRtePref* set under the *Bgp* component is used.

	Otherwise the value of this attribute will be used as the routing preference. The default is to use sameAsBgp.
Mib	no_mib
Values	Decimal (1..253) sameAsBgp
Default	sameAsBgp

ATTRIBUTE Rtr Bgp Import addressFamily (af)

Access	Read and write
Description	This attribute specifies the Address Family of the routes this import policy should apply to. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). It can contain one of the following: ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***mbgpVpn*** represents AFI = 1 and SAFI = 141 (Not for RFC 2547) ***all***
Mib	no_mib
Values	all ipv4Unicast mbgpVpn ipv4Label
Default	all

ATTRIBUTE Rtr Bgp Import description (desc)

Access	Read and write
Description	This attribute specifies the policy. For example, ‘to import BGP routes from AS 1’.
Mib	no_mib
Values	String (0..255, ASCII)

Default	No default

COMPONENT Rtr Bgp Import Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Bgp Import Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Import/n Network/n* *Rtr/<string> Bgp Import/n Network/n* *Rtr/<string> Vrf/<string> Bgp Import/n Network/n* This is an optional subcomponent of *Import* component and identifies destination networks that this BGP import policy applies to. This component is used as a key for the import policy. If no network list is provisioned, the import policy applies to all networks.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Bgp Import Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Import Net prefix

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	no_mib

Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Import Net length

Access	Read and write
Description	This attribute specifies the length of the network prefix.
Mib	no_mib
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Rtr Bgp ExportPolicy (Export)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Bgp Export Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Export/n* *Rtr/<string> Bgp Export/n* *Rtr/<string> Vrf/<string> Bgp Export/n* Each instance of this component describes a BGP export policy. A BGP export policy is used to decide if certain routing information should be blocked or advertised to its peers. If no export policy is provisioned, BGP will advertise all external BGP learned routes to its internal peers, but not advertise any routing information to its external peers. If multiple export policies are provisioned, the one with the most specific match will apply. The keys are matched in the following order from the least specified to the most specified: *peerAs*, *peerIpAddress*, *protocol*, *ripInterface* (if applicable), *egpAs*, *bgpAs*, *ripNeighbour*, or *ospfTag* (whichever is applicable),

Network,
matchAsPath,
matchCommunity.

Example1: (for Router and Vrf, the examples are similar by replacing ‘vr/0 ip’ with ‘Router/a’ and ‘Router/a Vrf/b’ respectively)
There are 2 export policies defined:
vr/0 ip bgp export/1, protocol = ***all***, advertiseStatus = ***send***
vr/0 ip bgp export/2, protocol = ***rip***, advertiseStatus = ***block***
BGP will generate BGP updates for all routes except the routes learned from RIP.
Example2:
There are 2 export policies defined:
vr/0 ip bgp export/1, protocol = all, matchCommunity = ***303***, advertiseStatus = ***send***
vr/0 ip bgp export/2, protocol = ***all***, advertiseStatus = ***block***
BGP will generate BGP updates for all routes that belongs to Community 303.

Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Bgp Export Network (Net)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Bgp Export Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisioned attributes for the *Export* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Export peerAs

Access	Read and write

Description	This key attribute specifies the autonomous system number of the peer where the routes are advertised to. A value of 0 for this attribute means this export policy applies to all peer ASes.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Bgp Export peerIpAddress

Access	Read and write
Description	This key attribute specifies the IP address of the peer where the routes are advertised to. A value of 0.0.0.0 for this attribute means this export policy applies to all peers. This key attribute is used in export policies for AFI/SAFI = 1/128 only if the *addressFamily* attribute is set to ***ipv4MplsVpn***.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Bgp Export protocol

Access	Read and write
Description	This key attribute specifies which protocol the export policy applies to. If it is set to ***all***, that means this export policy will apply all routes in the IP routing table. Example: vr/1 ip ospf export/1 with advertise Status = block protocol = bgpExternal bgpAsId = 3 peerAs = 5 This policy specifies that all routes learned from EBGP Peers that are originated from AS 3 should not be advertised to AS 5.
Mib	no_mib

Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal bgpAggregate mbgp bgpMplsInternal
Default	all

ATTRIBUTE Rtr Bgp Export egpAsId (egpAs)

Access	Read and write
Description	This key attribute specifies the EGP autonomous system number that this export policy will apply to. When this value is non-zero, the *protocol* attribute must be set to ***egp***.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Bgp Export bgpAsId (bgpAs)

Access	Read and write
Description	This key attribute specifies the BGP autonomous system number that this export policy will apply to. When this value is non-zero, the *protocol* attribute must be set to either ***bgpInternal*** or ***bgpExternal***.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Bgp Export ospfTag

Access	Read and write
Description	This key attribute specifies the OSPF tag when the *protocol* attribute is set to either ***ospfInternal*** or ***ospfExternal***. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag not specified.
Mib	no_mib
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Rtr Bgp Export ripInterface (ripIf)

Access	Read and write
Description	This key attribute specifies the local RIP interface where the routes are learned from. The *ripInterface* attribute when non-zero should be equal to one of the IP addresses provisioned as a *logicalIf* component under *IpPort*, or the IP address of an *Interface* component. Otherwise, this policy will be ignored. The value of the *protocol* attribute must be set to ***rip*** if a value for the *ripInterface* attribute is non-zero.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Bgp Export ripNeighbor (ripNbr)

Access	Read and write
Description	This key attribute specifies the RIP neighbor where the routes were learned from. The value of the *protocol* attribute must be set to ***rip*** if the *ripNeighbor* attribute is non-zero.
Mib	no_mib

Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Bgp Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies whether data will be exported if it meets criteria specified by the other key attributes of this component.
Mib	no_mib
Values	send block
Default	send

ATTRIBUTE Rtr Bgp Export multiExitDisc (med)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's metric to discriminate between multiple exit points to an adjacent autonomous system if the route meets the criteria specified by the key attributes of this component. A lower value indicates a more preferred route. A value of 0 for this attribute means the default MED value provisioned under the *Bgp* component should be used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Export sendMultiExitDiscToEbgp (sendMed)

Access	Read and write
Description	This attribute specifies whether the Multi Exit Discriminator (MED) attribute should be included in an update message sent to an EBGP peer.
Mib	no_mib

Values	false true
Default	false

ATTRIBUTE Rtr Bgp Export asPathExpression (asExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the export update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS number separated by a space which making up a AS path. The following characters have a special meaning: ‘.’ - Matches any AS number. ‘^n’ - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path. ‘n$’ - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path. ‘[n1... n2]’ - Matches any AS number that appeared in the set n1... n2. ‘n1 - n2’ - Matches any AS number between the range of n1 and n2. ‘()’ - is supported to change the order of evaluation. ‘n*’ - Matches 0 or more occurrences of n, where n can be a set, range or AS number. ‘n+’ - Matches 1 or more occurrences of n, where n can be a set, range or AS number. ‘n?’ - Matches 0 or 1 occurrences of n, where n can be a set, range or number. The following logical operators are evaluated in descending order: ‘NOT’ - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x. ‘AND’- Given two regular expressions x and y, x AND y

matches the intersection of the AS path that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y.
For example: The AS path "5 4 3 2 1", where 1 is the origin AS, would be match by any one of the following regular expressions:
1$,
^5,
4 3,
5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4.* 1
Empty regular expression implies a match on all AS path.

Mib: no_mib

Values: String (0..255, ASCII)

Default: No default

ATTRIBUTE Rtr Bgp Export communityExpression (comExpr)

Access: Read and write

Description: This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280.
The basic syntax of a regular expression is a list of Community number separated by a space which making up a Community attribute.
The following characters have a special meaning:
'[n1... n2]' - Matches any Community number that appeared in the
set n1...n2.
'n1 - n2' - Matches any Community number between the range of n1 and n2.
'()' - is supported to change the order of evaluation.
'n*' - Matches 0 or more occurrences of n, where n can be a set, range or Community number.
'n+' - Matches 1 or more occurrences of n, where n can be a set, range or Community number.

‘n?’ - Matches 0 or 1 occurrences of n, where n can be a set, range or number.
The following logical operators are evaluated in descending order:
‘NOT’ - Given a regular expression x, NOT x matches the Community attribute that is not matched by x.
‘AND’- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y.
‘OR’ - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y.
For example: The Community path “1 2 3 4 5” would be match by any one of the following regular expression:
1,
5,
4 3,
2 3 - 4*,
1 [3 4 2]+,
not (6 7 8 9 10) and 1 2
Empty regular expression implies a match on all Community path.

Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Export expressPreference (exprPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *expressAsPath* and *expressCommunity.* This attribute is ignored if attributes *expressAsPath* and *expressCommunity* are both empty. This attribute is used to break the tie when two export policies’ expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy.
Mib	no_mib
Values	Decimal (0..255)

Default	128

ATTRIBUTE Rtr Bgp Export sendCommunity (sendCom)

Access	Read and write
Description	This attribute indicates which community number this export policy will send along with the Path Attribute. Refer to RFC 1997 for the detailed description of how this attribute may be used to pass additional information to BGP peers. If the value is set to 0, no community is added to the Community attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Export localPreference (locPrf)

Access	Read and write
Description	This attribute specifies the value of the LOCAL_PREFERENCE path attribute in routes sent to internal peers. A value of 0 means that the value specified in the import policy (if any) or the default local preference value should be used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Bgp Export virtualPrivateNetworkIdentifier (vpnId)

Access	Read and write
Description	This attribute specifies the Virtual Private Network (VPN) identifier of the routes this export policy should apply to. This attribute is only used if *addressFamily* has included ***mbgpVpn***. The value “00-00-00-00-00-00-00” identifies an unspecified VPN ID, meaning the VPN ID will not be used as a matching criteria in this export policy.
Mib	no_mib

Values	String (7, Dashed Hex)
Default	00-00-00-00-00-00-00

ATTRIBUTE Rtr Bgp Export addressFamily (af)

Access	Read and write
Description	This attribute specifies the Address Family of the routes this export policy should apply to. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). An export policy is applied for AFI/SAFI = 1/128 only when this attribute is set to ***ipv4MplsVpn***. In this case only *peerIpAddress*, *routeTarget*, and *advertiseStatus* attributes and *Network* component and its related attributes are used for export policies. It can contain one of the following: ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***mbgpVpn*** represents AFI = 1 and SAFI = 141 ***ipv4MplsVpn*** represents AFI = 1 and SAFI = 128 ***all***
Mib	no_mib
Values	all ipv4Unicast mbgpVpn ipv4MplsVpn
Default	all

ATTRIBUTE Rtr Bgp Export description (desc)

Access	Read and write
Description	This attribute describes the policy. For example, ‘to export BGP routes to MCI’.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Export insertDummyAs (insertAs)

Access	Read and write
Description	This attribute specifies the AS number(s) to be inserted into the AS Path Attribute. The value is a sequence of AS number separated by period(.). For example, if the value is ***20.20.30***, the AS numbers 20, 20 and 30 would be inserted at the end of the AS Path Attribute just before the local AS number.
Mib	no_mib
Values	Integer Sequence
Default	No default

ATTRIBUTE Rtr Bgp Export routeTarget (rt)

Access	Read and write
Description	This attribute specifies the Route Target of the routes this export policy should apply to.
Mib	no_mib
List of	String (3..21, RFC2547RdRtSyntax)
List Size	256
Default	No default

COMPONENT Rtr Bgp Export Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Bgp Export Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Export/n Network/n* *Rtr/<string> Bgp Export/n Network/n* *Rtr/<string> Vrf/<string> Export/n Network/n* This is an optional subcomponent of the *Export* component and identifies a destination network that this BGP export policy will apply to. This component is used as a key for the export policy. If no network list is provisioned, the export policy applies to all

	networks. This component and its associated attributes are applied in an export policy for AFI/SAFI = 1/128 only if *addressFamily* attribute is set to ***ipv4MplsVpn***.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Bgp Export Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Export Net prefix

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Export Net length

Access	Read and write
Description	This attribute specifies the length of the network prefix.
Mib	no_mib
Values	Decimal (1..32)
Units	bits

Default	No default

COMPONENT Rtr Bgp As

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Bgp As Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp As/n* *Rtr/<string> Bgp As/n* *Rtr/<string> Vrf/<string> Bgp As/n* This component associates attributes to an autonomous system.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Bgp As Provisioned (Prov)

Properties	Provisioned
Description	This group contains the attributes associated to each autonomous system for this *Bgp* component instance.
Mib	no_mib

ATTRIBUTE Rtr Bgp As weight

Access	Read and write
Description	This attribute specifies the weight for an autonomous system. It allows users to prefer some ASes over others. It is used in route selection. Lowest weight is preferred. Setting the weight of an AS to 255 will make any route that traverses through that AS unpreferred.
Mib	no_mib
Values	Decimal (0..255)

Default	128

COMPONENT Rtr Bgp AggregatePolicy (Aggregate)

Instance	prefix [IP address] length [Decimal (0..32)]
Scope	Application
Description	*Vr/<string> Ip Bgp AggregatePolicy/<Ip Address>,<Decimal>* *Rtr/<string> Bgp AggregatePolicy/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Bgp AggregatePolicy/<Ip Address>,<Decimal>* This component is used to perform aggregation of BGP routes for exporting. Aggregation is the process of combining the characteristics of several different routes in such a way that a single route can be advertised. Aggregation reduces the amount of information that a BGP speaker must store and exchange with other BGP speakers. Refer to RFC1771 for the set of rules regarding which routes can be aggregated. A ***network*** subcomponent is automatically added with the same network range as the aggregation policy key and its action is set to ***aggregate***. So by default all subnets under the aggregation key range will be aggregated. Examples (For *Router* and *Vrf*, the examples are similar by replacing ‘vr/0 ip’ with ‘Router/a’ and ‘Router/a Vrf/b’ respectively): Example #1: aggregate all the networks covered by A.0.0.0/8 add vr/0 ip bgp aggregate/A.0.0.0,8 (Note: the following subcomponent vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.0.0.0, length 8, action aggregate will be automatically added) Example #2: aggregate A.B.0.0/16 and A.C.0.0/16 as A.0.0.0/8 and advertise other networks add vr/0 ip bgp aggregate/A.0.0.0,8 set vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.B.0.0, length 16, action aggregate (Note: this set command will overwrite the default network subcomponent vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.0.0.0, length 8, action aggregate)

add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.C.0.0, length 16, action aggregate

Example #3: aggregate A.B.0.0/16 and A.C.0.0/16 as A.0.0.0/8 and advertise other networks; also advertise A.B.C.0/24
add vr/0 ip bgp aggregate/A.0.0.0,8
set vr/0 ip bgp aggregate/A.0.0.0,8 networkl/0 prefix A.B.0.0, length 16, action aggregate
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.C.0.0, length 16, action aggregate
add vr/0 ip bgp aggregate/A.0.0.0,8 network/2
set vr/0 ip bgp aggregate/A.0.0.0,8 network/2 prefix A.B.C.0, length 24, action advertise

Example #4: aggregate all networks under A.0.0.0/8, meanwhile advertise A.B.0.0/16
add vr/0 ip bgp aggregate/A.0.0.0,8
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.B.0.0, length 16, action advertise

Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Bgp Aggregate Network (Net)"
Common Verbs	Help List Display Add DELete

COMPONENT Rtr Bgp Aggregate Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Bgp Aggregate Net Provisioned (Prov)"
Scope	Application

Description	*Vr/<string> Ip Bgp Aggregate/<IP address>,<n> Network/n* *Rtr/<string> Bgp Aggregate/<IP address>,<n> Network/n* *Rtr/<string> Vrf/<string> Bgp Aggregate/<IP address>,<n> Network/n* This is an optional subcomponent of *Aggregate* component and identifies a set of more specific routes that this BGP will aggregate or advertise together with the aggregated route.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Bgp Aggregate Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Aggregate Net prefix

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Bgp Aggregate Net length

Access	Read and write
Description	This attribute specifies the length of the network prefix.

Mib	no_mib
Values	Decimal (0..32)
Units	bits
Default	0

ATTRIBUTE Rtr Bgp Aggregate Net protocol

Access	Read and write
Description	This attribute specifies the IP protocols to which this route should belong.
Mib	no_mib
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal
Default	all

ATTRIBUTE Rtr Bgp Aggregate Net egpAsId (egpAs)

Access	Read and write
Description	This attribute specifies an EGP autonomous system number. When this value is non-zero, the *protocol* attribute must be set to either ***egp*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if it is learned through egp and this attribute matches the EGP autonomous system number where the network is learned from. The default value 0 indicates that the EGP autonomous system number is not specified.
Mib	no_mib
Values	Decimal (0..65535)

Default	0

ATTRIBUTE Rtr Bgp Aggregate Net bgpAsId (bgpAs)

Access	Read and write
Description	This attribute specifies the BGP autonomous system number. When this value is non-zero, the *protocol* attribute must be set to either ***bgp*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if it is learned through BGP and this attribute matches the BGP autonomous system number where the network is learned from. The default value 0 indicates that the BGP autonomous system number is not specified.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Bgp Aggregate Net ospfTag

Access	Read and write
Description	This attribute specifies the OSPF tag. When this attribute is set to a value other than the default value FFFFFFFF in hex, the *protocol* attribute must be set to either ***ospf*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if its OSPF tag matches this value. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag is not specified.
Mib	no_mib
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Rtr Bgp Aggregate Net ripInterface (ripIf)

Access	Read and write

Description	This attribute specifies a local RIP interface which should be equal to one of the IP addresses provisioned as a *logicalIf* component under *IpPort*, or one of the IP addresses provisioned as an *Interface* component. When this value is non-zero, the value of the *protocol* attribute must be either set to ***rip*** or to ***all.*** And this more specific route will be advertised together with the aggregated route only if it is learned through RIP and this RIP interface. The default value 0.0.0.0 indicates that the RIP interface is not specified.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Bgp Aggregate Net action

Access	Read and write
Description	This attribute specifies whether this network should be aggregated or advertised out.
Mib	no_mib
Values	aggregate advertise
Default	aggregate

COMPONENT Rtr Bgp IndbEntry (Indb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Rtr Bgp Indb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string>Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address>*

	Rtr/<string> Vrf/<string> Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address> This component describes a BGP route received from one of its peers.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Bgp Indb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *IndbEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Indb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	no_mib
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Bgp Indb inLocaldb

Access	Read only
Description	This attribute indicates whether or not this route was chosen as the best BGP4 route.
Mib	no_mib

Values	false true
Default	No default

ATTRIBUTE Rtr Bgp Indb nextHop

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Indb localPreference

Access	Read only
Description	This attribute indicates our IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Indb calcLocalPref

Access	Read only
Description	This attribute indicates our degree of preference for this route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Indb multiExitDiscriminator (med)

Access	Read only

Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Indb atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Bgp Indb aggregatorAs

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp Indb aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.

Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Indb asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Indb unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Indb communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Indb asOriginatorId

Access	Read only

Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator in the local AS. A value of 0.0.0.0 indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Indb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. A blank list indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Bgp LocaldbEntry (Localdb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Rtr Bgp Localdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Vrf/<string> Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes an entry in the BGP local database. This database contains the routing information that the BGP

speaker has selected by applying its local import policies and decision process to the routing information stored in *IndbEntry*.

Mib: no_mib

Common Verbs: Help, List, Display

GROUP Rtr Bgp Localdb Operational (Oper)

Properties: Operational

Description: This group contains all the operational attributes of the *LocaldbEntry* component.

Mib: no_mib

ATTRIBUTE Rtr Bgp Localdb origin

Access: Read only

Description: This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.

Mib: no_mib

Values: igp, egp, incomplete

Default: No default

ATTRIBUTE Rtr Bgp Localdb nextHop

Access: Read only

Description: This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.

Mib: no_mib

Values: IP address

Default: No default

ATTRIBUTE Rtr Bgp Localdb localPreference

Access	Read only
Description	This attribute indicates our IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Localdb multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Localdb atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Bgp Localdb aggregatorAs

Access	Read only

Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp Localdb aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Localdb asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Localdb unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)

Default	No default

ATTRIBUTE Rtr Bgp Localdb communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Localdb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator in the local AS. A value of 0.0.0.0 indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Localdb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. A blank list indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Bgp OutdbEntry (Outdb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Rtr Bgp Outdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Vrf/<string> Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes an entry in the BGP output database that BGP advertises to its peers. The database contents are selected by applying its local export policies to the routing information stored in the IP forwarding table.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Bgp Outdb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *OutdbEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp Outdb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.

Mib	no_mib
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Bgp Outdb nextHop

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Outdb localPreference

Access	Read only
Description	This attribute indicates this *Bgp* instance's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp Outdb multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Rtr Bgp Outdb atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Bgp Outdb aggregatorAs

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp Outdb aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Outdb asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Outdb unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Outdb communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp Outdb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator of a route in the local AS. When the Route Reflector distributes a learned IBGP route to other IBGP speakers, the value of this attribute in the learned route is used if one is present; otherwise, the Route Reflector's router-id is used. A value of 0.0.0.0 indicates this *Bgp* instance is not a Route Reflector.

Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp Outdb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. When the Route Reflector redistributes a learned IBGP to other IBGP speakers, the cluster id of this Route Reflector is appended to the cluster list of the learned IBGP route. If this *Bgp* instance is not a Route Reflector, this attribute is blank.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Bgp LocalVpn

Instance	String (7, Dashed Hex)
Scope	Application
Description	*Vr*/<string> *Ip Bgp LocalVpn*/<Vpn id> This component contains all VPN information from the specified VPN that is learned from customer VR on the local node.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr Bgp LocalVpn Ipv4"
Common Verbs	Help List Display

COMPONENT Rtr Bgp LocalVpn Ipv4

Instance	IP address

Groups	"GROUP Rtr Bgp LocalVpn Ipv4 Operational (Oper)"
Scope	Application
Description	*Vr*/<string> *Ip Bgp LocalVpn*/<Vpn id> *Ipv4* This component contains all IPv4 tunnel based VPN information gathered by this BGP locally for the specified VPN.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Bgp LocalVpn Ipv4 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ipv4* component.
Mib	no_mib

ATTRIBUTE Rtr Bgp LocalVpn Ipv4 publicIpAddress

Access	Read only
Description	This attribute indicates the public IP Address for the remote IP VPN tunnel endpoint. It is used to encapsulate IP packets from the local IP VPN site to the remote site.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp LocalVpn Ipv4 vpnPeeringTopology

Access	Read only
Description	This attribute indicates the peering mode of the remote customer BGP from which this VPN information is originated. This mode determines if a dynamic IBGP peer is instantiated between this *BGP* instance and the remote IP Tunnel endpoint on the remote customer VR.

A ***none*** value specifies that BGP never instantiate dynamic IBGP peers.
Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value.

In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.

Mib: no_mib

Values:
none
hub
spoke

Default: No default

COMPONENT Rtr Bgp MBgpRibEntry (MBgpRib)

Instance:
vpnId [String (7, Dashed Hex)]
prefix [IP address]
length [Decimal (0..32)]
peer [IP address]

Groups: "GROUP Rtr Bgp MBgpRib Operational (Oper)"

Scope: Application

Description:
Vr/<string> Ip Bgp MBgpRibEntry/ <vpnid>,<prefix>,<length>,<peer_ip_address>
This component represents a single MBGP routing database entry received from one of the BGP peers of this virtual router.

The instance values of this component have the following meanings:
- *vpnId:* the virtual private network identifier associated with the MBGP route.
- *prefix*: the destination IP address prefix of the MBGP route.

- *length:* the length of the IP address prefix of the MBGP route.
- *peer_ip_address:* the IP address prefix of the BGP peer that the MBGP route has been learned from. A value of 0.0.0.0 indicates that the MBGP route is learned from a locally attaching customer VR.

This component only appears under a *VirtualRouter* component whose *vpnMode* attribute is set to ***carrier***.

Mib: no_mib

Common Verbs:
Help
List
Display

GROUP Rtr Bgp MBgpRib Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *MBgpRibEntry* component.

Mib: no_mib

ATTRIBUTE Rtr Bgp MBgpRib origin

Access: Read only

Description: This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.

Mib: no_mib

Values:
igp
egp
incomplete

Default: No default

ATTRIBUTE Rtr Bgp MBgpRib status

Access: Read only

Description	This attribute indicates whether the MBGP route has been distributed into the routing table of the customer VR corresponding to the VPN identifier value.
Mib	no_mib
Values	localVpnRoute inCvrRdb importBlocked importLimitExceeded unreachableNh
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib nextHop

Access	Read only
Description	This attribute indicates the IP address of the router that should be used as the next hop to reach the destination address prefix given by the instance value of this component.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib localPreference

Access	Read only
Description	This attribute indicates the local IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib multiExitDiscriminator (med)

Access	Read only

Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib aggregatorAs

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this path attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this path attribute.
Mib	no_mib

Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp MBgpRib unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Bgp MplsVpnRibEntry (MvRib)

Instance	routeDistinguisher [String (3..21, RFC2547RdRtSyntax)] prefix [IP address] length [Decimal (0..32)] peer [IP address]

Groups	"GROUP Rtr Bgp MvRib Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp MplsVpnRibEntry/* <routeDistinguisher>,<prefix>,<length>,<peerIpAddr> *Rtr/<string> Ip Bgp MplsVpnRibEntry/* <routeDistinguisher>,<prefix>,<length>,<peerIpAddr> The *MplsVpnRibEntry* component represents a single entry in the MPLS VPN routing information database.This component is used to maintain the MPLS VPN routes learned both locally and from the BGP peers. The instance values of this component have the following meaning: - *routeDistinguisher:* a string associated with the MPLS VPN route. The string is in the form of (1) AS:nn or (2) IPAddr:mm. where AS represents an autonomous system number, nn represents an index value, IPAddr represents an IP address, mm represents an index value - *prefix*: the destination IP address prefix of the MPLS VPN route. This is an IP address prefix as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute. - *length:* the length of the IP address prefix of the MPLS VPN route. This is the IP address prefix length as specified in the Network Layer Reachability Information field. - peerIpAddr: the IP address prefix of the BGP peer that the MPLS VPN route has been learned from.

This component is only applicable to the *Router* component or a virtual router whose *vpnMode* attribute is set to ***carrier***.

Mib: Bgp

Common Verbs:
- Help
- List
- Display
- LOCK
- Unlock

GROUP Rtr Bgp MvRib Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *BgpMplsRibEntry* component.

Mib: Bgp

ATTRIBUTE Rtr Bgp MvRib serviceLabel (sl)

Access: Read only

Description: This attribute indicates the service label (the inner label in a two-level MPLS label stack) allocated by the Provider Edge (PE) node and distributed together with the routing information toward the remote end PE. The service label is then used by the remote PE node to encapsulate traffic of the same VPN to the local PE node. When the local PE node processes a received packet which has the service label at the top of the stack, the PE pops the stack, and sends the packet to the Customer Edge (CE) node from which the route leads. (See also transportLabel attribute description.)

Mib: Bgp

Values: Decimal (0..1048575)

Default: No default

ATTRIBUTE Rtr Bgp MvRib transportLabel (tl)

Access: Read only

Description	This attribute indicates the transport label (the outer label in a two-level MPLS label stack) allocated by the Provider Edge (PE) node. The transport label identifies the MPLS tunnel (Labeled Switched Path) used to transport the service label encapsulated VPN traffic, between two PE nodes, through the backbone. The transport label is applied on top of the service label at the source PE node, and used to direct the VPN traffic (travelling through the network core) to the destination PE. At the destination PE node the transport label is stripped, leaving the service label encapsulated packet to be processed and forwarded to a CE node based on the service label. A value of ***awaitingLabel*** indicates the MPLS tunnel is currently not available and waiting to be established. A value of ***notApplicable*** indicates this is a local route and hence doesn't have a transport label.
Mib	Bgp
Values	Decimal (0..1048575) awaitingLabel notApplicable
Default	No default

ATTRIBUTE Rtr Bgp MvRib reachable (reach)

Access	Read only
Description	This attribute indicates whether a route is currently reachable through an LSP tunnel.
Mib	Bgp
Values	true false
Default	No default

ATTRIBUTE Rtr Bgp MvRib bgpNextHop (bgpNh)

Access	Read only
Description	This attribute indicates the bgp next hop IP address that should be used to reach the destination address prefix.

Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp MvRib origin

Access	Read only
Description	This attribute indicates the value of the ORIGIN path attribute of the route. A value of ***incomplete*** means that this information is not available.
Mib	Bgp
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Bgp MvRib localPreference (locPrf)

Access	Read only
Description	This attribute indicates the LOCAL_PREFERENCE path attribute of the route. The LOCAL_PREFERENCE path attribute is used by a BGP speaker to inform other BGP speakers in its own autonomous system of the originating speaker's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp MvRib asPath

Access	Read only
Description	This attribute indicates the AS_PATH path attribute of the route. The AS_PATH path attributes lists the sequence of AS path segments in reverse traversal order.

Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp MvRib multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp MvRib atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Bgp MvRib aggregatorAs

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of ***0*** indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp MvRib aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of ***0.0.0.0*** indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp MvRib communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp MvRib siteOfOrigin (soo)

Access	Read only
Description	This attribute indicates the site of origin extended community path attribute.
Mib	Bgp
Values	String (0..21, ASCII)
Default	No default

COMPONENT Rtr Bgp Ipv4LabelRibEntry (LRib)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Rtr Bgp LRib Operational (Oper)"
Scope	Application

Description	*Rtr/<string> Bgp ipv4LabelRibEntry/<prefix>,<length>,<peer>* The *ipv4LabelRibEntry* component represents a single entry in the routing information database which maintains the ipv4 labelled BGP routes learned both locally and remotely from the BGP peers. - *prefix*: the destination IP address prefix of the ipv4 labelled BGP route. This is an IP address prefix as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute. - *length*: the length of the IP address prefix of the ipv4 labelled BGP route. This is the IP address prefix length as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute. - *peer*: the IP address of the BGP peer from which the ipv4 labelled BGP route was learned. This component is only applicable to the *Bgp* component whose *Bgp Peer Descriptor addressFamily* attribute is set to ***ipv4Label***.
Mib	Bgp
Common Verbs	Help List Display

GROUP Rtr Bgp LRib Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *ipv4LabelRibEntry* component.
Mib	Bgp

ATTRIBUTE Rtr Bgp LRib nextHop (nh)

Access	Read only
Description	This attribute indicates the IP address of the next hop that should be used to reach the destination address.

Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp LRib inLabel (il)

Access	Read only
Description	This attribute indicates the label (if any) assigned by this Bgp speaker. The default value will be '*notApplicable*'.
Mib	Bgp
Values	Decimal (0..1048575) notApplicable
Default	No default

ATTRIBUTE Rtr Bgp LRib outLabel (ol)

Access	Read only
Description	This attribute indicates the label (if any) assigned by the next hop Bgp speaker. The default value will be '*notApplicable*'.
Mib	Bgp
Values	Decimal (0..1048575) notApplicable
Default	No default

ATTRIBUTE Rtr Bgp LRib origin

Access	Read only
Description	This attribute indicates the value of the ORIGIN path attribute of the route. A value of ***incomplete*** means that this information is not available.
Mib	Bgp
Values	igp egp incomplete

Default	No default

ATTRIBUTE Rtr Bgp LRib asPath

Access	Read only
Description	This attribute indicates the AS_PATH path attribute of the route. The AS_PATH path attribute lists the sequence of AS path segments in reverse traversal order.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp LRib multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Bgp LRib atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Bgp LRib aggregatorAs

Access	Read only

Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of ***0*** indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Bgp LRib aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of ***0.0.0.0*** indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Bgp LRib communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Bgp LRib siteOfOrigin (soo)

Access	Read only
Description	This attribute indicates the site of origin extended community path attribute.
Mib	Bgp
Values	String (0..21, ASCII)
Default	No default

COMPONENT Rtr ForwardTable (Fwd)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] typeOfService (tos) [Decimal (0..31)] gateway (gateway) [IP address]
Groups	"GROUP Rtr Fwd Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address>* *Rtr/<string> ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address* *Rtr/<string> Vrf/<string> ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address* This component contains the information to forward data.This table holds the best route information sent from Routing table.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Fwd Operational (Oper)

Properties	Operational
Description	Identifies a group of operational attributes associated with each entry in the Forward Table.
Mib	no_mib

ATTRIBUTE Rtr Fwd ifIndex

Access	Read only
Description	This attribute specifies the SNMP index associated with the protocol port or interface represented by the attribute *protocolPortName* or *interfaceName*, which identifies the local interface through which the next hop of this route should be reached.

Mib	no_mib
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Rtr Fwd type

Access	Read only
Description	This attribute specifies the type of route. Note that ***localInterface*** refers to a route for which the next hop is the final destination; ***remoteDestination*** refers to a route for which the next hop is not the final destination.
Mib	no_mib
Values	notDefined invalid localInterface remoteDestination
Default	No default

ATTRIBUTE Rtr Fwd protocol

Access	Read only
Description	This Attribute identifies the routing mechanism by which this route was learned.
Mib	no_mib
Values	other local netmgmt icmp egp ggp hello rip isIs esIs ciscoIgrp bbnSpfIgp

	ospf bgp idpr mpls mbgp bgpMplsInternal ebgpLabel
Default	No default

ATTRIBUTE Rtr Fwd age

Access	Read only
Description	This attribute specifies the number of seconds since this route was last updated or otherwise determined to be correct.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Fwd protocolPortName (pPName)

Access	Read only
Description	For a *Vr*, this attribute indicates the name of the protocol port by which the next hop of this route should be reached.
Mib	no_mib
Values	The name of the component
Default	No default

ATTRIBUTE Rtr Fwd nextHopAs

Access	Read only
Description	This attribute specifies the Autonomous System number of the Next Hop. If unknown or not relevant to the protocol indicated by the attribute *protocol*, the value should be zero.
Mib	no_mib
Values	Decimal (0..429467295)

Default	No default

ATTRIBUTE Rtr Fwd metric

Access	Read only
Description	This attribute specifies the primary routing metric for this route. The semantics of this metric are determined by the routing protocol specified by the value of the attribute *protocol*. If this metric is not used, its value should be set to -1.
Mib	no_mib
Values	Signed (-1..65535)
Default	-1

ATTRIBUTE Rtr Fwd interfaceName

Access	Read only
Description	For a *Rtr* or *Rtr Vrf*, this attribute indicates the name of the interface by which the next hop of this route should be reached.
Mib	no_mib
Values	The name of the component
Default	No default

COMPONENT Rtr Icmp

Groups	"GROUP Rtr Icmp Statistics (Stats)"
Scope	Application
Description	Vr/<string> Ip Icmp Rtr/<string> Icmp Rtr/<string> Vrf/<string> Icmp

The Icmp component controls all ICMP related attributes available to this router.

Mib: no_mib

Common Verbs:
- Help
- List
- Display

VERB Ping Rtr Icmp

Impact: Passive

Description:

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)] [-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)] [-traceRoute] [-continuous] [-dontFragment] [-cos(0..3)][-dscp(0..63)][-tos(0..FF)][-stop] Vr/<string> Ip Icmp

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)] [-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)] [-traceRoute] [-continuous] [-dontFragment] [-dscp(0..63)][-tos(0..FF)][-stop] Rtr/<string> Icmp

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)] [-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)] [-traceRoute] [-continuous] [-dontFragment] [-dscp(0..63)][-tos(0..FF)][-stop] Rtr/<string> Vrf/<string> Icmp

The *Ping* verb is intended for testing network connections at the IP level. The verb invokes ICMP to issue an echo request to the host specified by the *ipAddr* option and waits for its echo response.

If the *Ping* is successful, it outputs the following information:
- number of bytes received
- IP address of the responding host
- ICMP sequence number of the received packet
- elaspsed time from sending of the *Ping* to receiving of the response

The following options are supported:

-*srcAddr* is used to define the source IP address of the IP ICMP echo request packet. When not specified or specified as 0.0.0.0, the outgoing IP *Interface* or *LogicalIf* address is used as the source address.

-*netmask* when specified is used to define a range of IP host addresses to which echo requests are sent to (ping sweep). The netmask given must be contiguous. The -*retry* option is ignored if used together with this option. By default, the value is set to 255.255.255.255.

-*size* is used to define the size of the IP packet to be echoed including the IP and ICMP header. The default is 64 bytes. The maximum size is 4096.

-*retry* is used to define the number of times an echo request is resent if no echo reply is received. Default is 0.

-*traceRoute* is used to find the route the node would use to reach a particular destination IP address at the moment when the *Ping* command is executed with this option. The -*netmask*, -*size*, -*retry* and -*continuous* option are ignored if used together with this option. By default, the *traceRoute* option is not used.

-*continuous* causes ICMP to issue echo requests once per second to the host or hosts specified by the -*ipAddr* and the -*netmask* option. For every echo response ICMP receives, one line of output is printed. No output is produced if there is no response. The -*stop* option is used to stop ICMP from sending the echo requests. By default, the -*continuous* option is not used.

-*dontFragment* causes ICMP to set the Don’t Fragment flag of the IP packet that carries the echo request. This is useful in determining path MTU. By default, the *dontFragment* option is not used.

-*cos* causes the echo request packet to be forwarded with the given Class Of Service. Default is 0. This option is not supported

on a *Router* component, a *VpnRouteForwarder* component, nor on a *VirtualRouter* component that has a *DifferentiatedServicesDomain* subcomponent.

-*dscp* causes the six most significant bits of Type Of Service (TOS) byte of the echo request packet to be set to the given value. These six bits are know as the Differentiated Services Code Point (DSCP). Default is 0. This option cannot be used together with the -*tos* option.

-*tos* causes the Type Of Service (TOS) byte of the echo request packet to be set to the given value. Default is 0. This option cannot be used together with the -*dscp* option.

-*stop* is used to stop ICMP from sending echo requests due to a previously issued *Ping* command with the -*continuous* and/or -*netmask* option. Under any other situation, the *Ping* command with the -*stop* option has no effect.

Note: Only one *Ping* command per *VirtualRouter* or *Router* or *Router Vrf* is allowed to be in progress at any one time. Any in progress *Ping* command must be stopped before a new *Ping* command can be issued.

GROUP Rtr Icmp Statistics (Stats)

Properties	Operational
Description	This group holds statistics for ICMP.
Mib	no_mib

ATTRIBUTE Rtr Icmp inMsgs

Access	Read only
Description	This attribute counts the ICMP messages received by this gateway. This number includes *inErrors*. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Rtr Icmp inErrors

Access	Read only
Description	This attribute counts the ICMP messages received by this gateway but determined as having ICMP specific errors such as bad ICMP checksum or bad length. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inDestUnreachs

Access	Read only
Description	This attribute counts the ICMP destination unreachable messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inTimeExcds

Access	Read only
Description	This attribute counts the ICMP time exceeded messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inParmProbs

Access	Read only
Description	This attribute counts the ICMP parameter problem messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inSrcQuenchs

Access	Read only
Description	This attribute counts the ICMP source quench messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Icmp inRedirects

Access	Read only
Description	This attribute counts the ICMP redirect messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inEchos

Access	Read only
Description	This attribute counts the ICMP echo request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inEchoReps

Access	Read only
Description	This attribute counts the ICMP echo reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inTimestamps

Access	Read only
Description	This attribute counts the ICMP timestamp request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inTimestampReps

Access	Read only
Description	This attribute counts the ICMP timestamp reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inAddrMasks

Access	Read only
Description	This attribute counts the ICMP address mask request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inAddrMaskReps

Access	Read only
Description	This attribute counts the ICMP address mask reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outMsgs

Access	Read only
Description	This attribute counts the ICMP messages that this gateway attempted to send. This number includes *outErrors*. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outErrors

Access	Read only
Description	This attribute counts the ICMP messages that this gateway did not send due to problems discovered within ICMP such as a lack of buffers. *outErrors* does not include errors discovered outside the ICMP layer such as the inability of IP to route the resultant datagram. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outDestUnreachs

Access	Read only
Description	This attribute counts the ICMP destination unreachable messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Rtr Icmp outTimeExcds

Access	Read only
Description	This attribute counts the ICMP time exceeded messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outParmProbs

Access	Read only
Description	This attribute counts the ICMP parameter problem messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outSrcQuenchs

Access	Read only
Description	This attribute counts the ICMP source quench messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outRedirects

Access	Read only
Description	This attribute counts the ICMP redirect messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outEchos

Access	Read only
Description	This attribute counts the ICMP echo request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outEchoReps

Access	Read only
Description	This attribute counts the ICMP echo reply messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outTimestamps

Access	Read only
Description	This attribute counts the ICMP timestamp request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outTimestampReps

Access	Read only
Description	This attribute counts the ICMP timestamp reply messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outAddrMasks

Access	Read only
Description	This attribute counts the ICMP address mask request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outAddrMaskReps

Access	Read only
Description	This attribute counts the ICMP address mask reply message sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inRtrAdvs

Access	Read only
Description	This attribute counts the ICMP router advertisement messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp inRtrSolicits

Access	Read only
Description	This attribute counts the ICMP router solicitation messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outRtrAdvs

Access	Read only
Description	This attribute counts the ICMP router advertisement messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Icmp outRtrSolicits

Access	Read only
Description	This attribute counts the ICMP router solicitation messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Ospf (Ospf)

Groups	"GROUP Rtr Ospf Provisioned (Prov)" "GROUP Rtr Ospf Operational (Oper)" "GROUP Rtr Ospf OsiState (State)" "GROUP Rtr Ospf OperationalStatus (OperStatus)"
Scope	Application
Description	*Vr/<string> Ip Ospf* *Rtr/<string> Ospf* *Rtr/<string> Vrf/<string> Ospf*

	This component is configured to control the Open Shortest Path First IP routing protocol.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Ospf AreaEntry (Area)" "COMPONENT Rtr Ospf StubAreaEntry (Stub)" "COMPONENT Rtr Ospf AreaAggregateEntry (Aggregate)" "COMPONENT Rtr Ospf HostEntry (Host)" "COMPONENT Rtr Ospf VirtIfEntry (VirtIf)" "COMPONENT Rtr Ospf Export"
Dyn. Subcomp.	"COMPONENT Rtr Ospf VirtNbrEntry (VirtNbr)" "COMPONENT Rtr Ospf NeighborEntry (Nbr)" "COMPONENT Rtr Ospf LsdbEntry (Lsdb)" "COMPONENT Rtr Ospf ExtLsdbEntry (ExtLsdb)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Ospf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes are used to configure the OSPF component.
Mib	no_mib

ATTRIBUTE Rtr Ospf routerId (id)

Access	Read and write
Description	This attribute is an Ip Address that uniquely identifies the router in the autonomous system.
Mib	no_mib
Values	IP address

Default	No default

ATTRIBUTE Rtr Ospf snmpAdminStatus

Access	Read and write
Description	The administrative status of the OSPF Component in this routing component (*Vr*, *Rtr* or *Vrf*).
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr Ospf asBdrRtrStatus (asBr)

Access	Read and write
Description	This attribute is a flag to note whether this router is an autonomous system border router. If this router is configured to export any routes learned from other than OSPF-internal protocol, this attribute should be configured as autonomous system border router.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Ospf tosSupport

Access	Read and write
Description	The router's support for type-of-service routing. Only one value will be allowed. This is a deviation from supporting the MIB.
Mib	no_mib
Values	false
Default	false

ATTRIBUTE Rtr Ospf multicastForward

Access	Read and write
Description	A bit mask indicating the limits on Network Layer Multicast (class D) forwarding. It is represented as a sum of the following: if intra-Area forwarding is permitted, 1; else 0 if inter-Area forwarding is permitted 2; else 0 if inter-AS forwarding is permitted, 4; else 0 Only the value of 0 is being supported and this is a MIB deviation.
Mib	no_mib
Values	Decimal (0..0)
Default	0

ATTRIBUTE Rtr Ospf migrateRip

Access	Read and write
Description	This Attribute sets the preference level of OSPF-internal routes to be less preferred than RIP. This attribute should only be used when starting a migration of a network from RIP to OSPF. When ready to cut over to OSPF, set this attribute to a value of ***disabled*** and run under normal preferences. All OSPF routers in the Autonomous System should be running with the *migrateRip* attribute set to a value of ***enabled*** or with *migrateRip* ***disabled*** to prevent routing loops. It is important that the changeover period from RIP to OSPF be performed quickly on all OSPF routers so that no routing loops are formed. These routing loops could be caused by conflicts in the internal RIP and OSPF databases.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Ospf generateDefaultRouteMetric (genDefaultMetric)

Access	Read and write
Description	If this router is configured as an autonomous system border router, then this attribute causes the default route to be generated with a metric value equal to *generateDefaultRouteMetric* value. This route is put in the OSPF update along with the normal update routes when updates are sent to the neighbors. No default route will be generated if the value is 0.
Mib	no_mib
Values	Signed (-1..65535)
Default	0

ATTRIBUTE Rtr Ospf redistributeIbgp (ribgp)

Access	Read and write
Description	This attribute specifies whether the export policies of this *Ospf* instance can match routes learned from internal BGP (IBGP) peers when their *protocol* attribute value is ***all***. If *redistributeIbgp* is ***true***, a *protocol* value of ***all*** allows routes learned from IBGP peers to be included in the matching routes. If *redistributeIbgp* is ***false***, routes learned from IBGP peers are excluded when the *protocol* value is ***all***. To cause IBGP routes to be considered in this case, the *protocol* value must be set to ***bgpInternal***.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Ospf estimatedNumberOfInternalOSPFRoutes

Access	Read and write
Description	This attribute specifies the average estimated number of routes in the autonomous system that this OSPF instance will have to keep track of. If this value is provisioned too low it will cause

	increased CPU utilization due to dynamic memory allocation. If this value is provisioned too high the result is wasted memory.
Mib	no_mib
Values	Decimal (0..65535)
Default	500

ATTRIBUTE Rtr Ospf estimatedNumberOfExternalOSPFRoutes

Access	Read and write
Description	This attribute specifies the average estimated number of routes external to the autonomous system that this OSPF instance will have to keep track of. If this value is provisioned too low it will cause increased CPU utilization due to dynamic memory allocation. If this value is provisioned too high the result is wasted memory.
Mib	no_mib
Values	Decimal (0..65535)
Default	500

ATTRIBUTE Rtr Ospf estimatedNumberOfAreas

Access	Read and write
Description	This attribute specifies the average estimated number of areas in the autonomous system that this OSPF instance will have to keep track of.
Mib	no_mib
Values	Decimal (0..65535)
Default	2

ATTRIBUTE Rtr Ospf estimatedNumberOfInterfacesPerArea

Access	Read and write
Description	This attribute specifies the average estimated number of interfaces in a given area that this OSPF instance will have to keep track of.

Mib	no_mib
Values	Decimal (0..65535)
Default	10

ATTRIBUTE Rtr Ospf estimatedNumberOfNeighborsPerInterface

Access	Read and write
Description	This attribute specifies the average estimated number of neighbors that a given interface will have on it in this OSPF interface.
Mib	no_mib
Values	Decimal (0..65535)
Default	3

ATTRIBUTE Rtr Ospf defaultOspfIntRtePreference (ospfIntPref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF internal routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	30

ATTRIBUTE Rtr Ospf defaultOspfExt1RtePreference (ospfExt1Pref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF external type 1 routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	80

ATTRIBUTE Rtr Ospf defaultOspfExt2RtePreference (ospfExt2Pref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF external type 2 routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	120

ATTRIBUTE Rtr Ospf opaqueCapability (opcap)

Access	Read and write
Description	This attribute specifies whether the OSPF instance is allowed to participate in flooding Opaque LSAs. Such LSAs are also stored in the InwOspfLsdbEntry. Applications, such as MPLS Traffic Engineering, use this mechanism to flood their information throughout a network. Of the three Opaque LSA types (9,10,11), only type 10 LSAs (area scope) are supported.The OSPF instance remains fully inter-operable with non-opaque-capable neighbors. Opaque capability is not fully supported. When the ***mplsTeEmulation*** feature is provisioned, setting this attribute to ***true*** activates hooks to emulate TE capability by flooding hard-coded type 10 TE LSAs to opaque-capable neighbors. This emulated TE functionality is not standards compliant and is strictly provided for MPLS RSVP-TE inter-operability with vendors that are dependent on MPLS TE to establish LSPs.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Ospf spareInstance (spInst)

Access	Read and write

Description	This attribute specifies whether to maintain a copy of the link state database on the standby card. When this attribute is set to ***disable***, OSPF does not maintain a copy of the link state database. If the *virtualRouterProcessor* attribute of this *VirtualRouter* is set to ***Lp/0***, then the following conditions must both be true for a copy of the link-state database to be maintained on the standby CP: - This attribute must be set to ***enable***, and - The *Shelf cpEquipmentProtection* attribute must be set to ***hot***.
Mib	no_mib
Values	enable disable
Default	disable

ATTRIBUTE Rtr Ospf spfHoldTime (spfTime)

Access	Read and write
Description	This attribute specifies the minimum time interval between SPF calculations. If a link state change in the autonomous system is detected and the time since the last SPF calculation is greater than *spfHoldTime*, then the SPF calculation starts immediately. Otherwise, the SPF calculation waits until a time of at least *spfHoldTime* has elapsed since the previous SPF calculation. Setting this attribute to a lower value decreases convergence time in the OSPF autonomous system, but uses more CPU resource more frequently. Setting this attribute to a higher value increases convergence time but provides for a more scalable node configuration, especially if there are many *Ospf* components configured on the node.
Mib	no_mib
Values	Decimal (1..60)
Units	seconds

Default 1

ATTRIBUTE Rtr Ospf alarmGeneration (alarms)

Access Read and write

Description This attribute specifies the level of alarm generation for this *Ospf* instance.

A value of ***all*** specifies that all OSPF alarms are made visible.

A value of ***normal*** specifies that all existing OSPF alarms are made visible, except *Ospf NeighborEntry* state change alarms.

A value of ***none*** specifies that no OSPF alarms are made visible.

It is recommended that *VirtualRouter* components with the *vpnMode* attribute set to ***carrier*** should have the *alarmGeneration* attribute set to ***all***. *VirtualRouter* components with the *vpnMode* attribute set to ***customer*** should have the *alarmGeneration* attribute set to either ***normal*** or ***none***, for scalability reasons. Similarly, the *alarmGeneration* attribute should be set to ***all*** for *Router*. The *alarmGeneration* attribute should be set to either ***normal*** or ***none*** for *Vrf* for scalability reasons.

Mib no_mib

Values none
normal
all

Default all

ATTRIBUTE Rtr Ospf ecmpStatus

Access Read and write

Description This attribute specifies whether the Equal Cost Multi-Path (ECMP) functionality is enabled or not in the network meaning that the number of next hops for one route learned through OSPF depend on the value of *ecmpStatus*. If *ecmpStatus* is ***enabled,*** a maximum of three next hops are kept for one route. If it is ***disabled***, one next hop is kept for that route.

Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Ospf attachAsTag (asTag)

Access	Read and write
Description	This attribute specifies the treatment of the OSPF tag when routes are redistributed between BGP and OSPF. If this attribute is set to ***enabled***, an AS number is encoded as OSPF tag when routes are redistributed from BGP into OSPF. When routes are redistributed from OSPF into BGP, the OSPF tag is checked against the AS number to avoid routing loops. If this attribute is set to ***disabled***, an AS number is not encoded as OSPF tag when routes are redistributed from BGP into OSPF. When routes are redistributed from OSPF into BGP, the OSPF tag is not checked against the AS number.
Mib	no_mib
Values	disabled enabled
Default	enabled

GROUP Rtr Ospf Operational (Oper)

Properties	Operational
Description	These group of attributes identifies the operational attributes for this OSPF Component.
Mib	no_mib

ATTRIBUTE Rtr Ospf versionNumber (ver)

Access	Read only
Description	The Current Version number of the OSPF Protocol. (2).

Mib	no_mib
Values	Decimal (2..2)
Default	2

ATTRIBUTE Rtr Ospf areaBdrRtrStatus

Access	Read only
Description	This attribute is used to specify whether this router is configured as an area border router.
Mib	no_mib
Values	true false
Default	No default

ATTRIBUTE Rtr Ospf externLsaCount

Access	Read only
Description	The number of external (LS type 5) link-state advertisements in the link-state database.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Ospf externLsaChecksumSum

Access	Read only
Description	The 32-bit unsigned sum of the LS checksums of the external link-state database. This sum can be used to determine if there has been a change in a router's link state database, and to compare the link-state database of two routers.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf originateNewLsas

Access	Read only
Description	The number of new link-state advertisements that have been originated. This number is incremented each time the router originates a new LSA.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf rxNewLsas

Access	Read only
Description	The number of link-state advertisements received determined to be new instantiations. This number does not include newer instantiations of self-originated link-state advertisements.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr Ospf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Ospf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Ospf operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default	disabled

ATTRIBUTE Rtr Ospf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Ospf OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Ospf snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib

Values	up down testing
Default	up

COMPONENT Rtr Ospf AreaEntry (Area)

Instance	IP address
Groups	"GROUP Rtr Ospf Area Provisioned (Prov)" "GROUP Rtr Ospf Area Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf AreaEntry/<Ip Address>* *Rtr/<string> Ospf AreaEntry/<Ip Address>* *Rtr/<string> Vrf/<string> Ospf AreaEntry/<Ip Address>* This component contains the information about various areas that the router is connected to.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Ospf Area Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisionable attributes for the AreaEntry Component.
Mib	no_mib

ATTRIBUTE Rtr Ospf Area authType

Access	Read and write
Description	The authentication type specified for this area.
Mib	no_mib

Values	none simplePassword md5
Default	none

ATTRIBUTE Rtr Ospf Area importAsExtern

Access	Read and write
Description	The area's support for importing AS external link-state advertisements. For backbone area (that is, areaId 0.0.0.0), this attribute must be set to ***importExternal***.
Mib	no_mib
Values	importExternal (external) importNoExternal (noExternal) importNssa (nssa)
Default	importExternal

ATTRIBUTE Rtr Ospf Area areaSummary

Access	Read and write
Description	This variable controls the import of summary LSAs into stub areas. If it is ***noAreaSummary***, the router will neither originate nor propagate summary LSAs into the stub areas. It will rely entirely on its default route. If it is ***sendAreaSummary***, the router will both summarize and propagate summary LSAs.
Mib	no_mib
Values	noAreaSummary sendAreaSummary
Default	noAreaSummary

GROUP Rtr Ospf Area Operational (Oper)

Properties	Operational
Description	This group of attributes describes the Operational set of attributes for the AreaEntry component.

Mib	no_mib

ATTRIBUTE Rtr Ospf Area spfRuns

Access	Read only
Description	The number of times that the intra-area route table has been calculated using this area's link-state database since the protocol became operational.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Area areaBdrRtrCount

Access	Read only
Description	The total number of area border routers reachable within this area. This is initially zero, and is calculated in each Shortest Path First Pass.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Area asBdrRtrCount

Access	Read only
Description	The total number of Autonomous System border routers reachable within this area. This is initially zero, and is calculated in each Shortest Path First Pass.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Area lsaCount

Access	Read only

Description	The total number of link-state advertisements in this area's link-state database, excluding AS External LSAs.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Area areaLsaCksumSum

Access	Read only
Description	The 32-bit unsigned sum of the link-state advertisement's LS checksums contained in this area's link-state database. This sum excludes external (LS type 5) link-state advertisements. The sum can be used to determine if there has been a change in a router's link state database, and to compare the link-state database of two routers.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Ospf StubAreaEntry (Stub)

Instance	areaId [IP address] tos [Decimal (0..0)]
Groups	"GROUP Rtr Ospf Stub Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Ospf StubAreaEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf StubAreaEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf StubAreaEntry/<Ip Address>,<Decimal>*

	This component describes metrics that a default area border router will advertise into a stub area.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Ospf Stub Provisioned (Prov)

Properties	Provisioned
Description	These set of attributes explain the provisionable group for the *StubAreaEntry.*
Mib	no_mib

ATTRIBUTE Rtr Ospf Stub metric (metric)

Access	Read and write
Description	The metric value applied at the indicated type of service.
Mib	no_mib
Values	Decimal (1..4294967295)
Default	1

ATTRIBUTE Rtr Ospf Stub metricType

Access	Read and write
Description	This type of the metric advertised as a default route.
Mib	no_mib
Values	ospfMetric comparableCost nonComparable
Default	ospfMetric

ATTRIBUTE Rtr Ospf Stub advertiseDefault

Access	Read and write
Description	This attribute determines whether or not the default routing information will be advertised, depending on other criterion. Setting this value to ***no*** can prevent advertising default routing information. If the value of the attribute is set to ***yes***, then the value of the attribute *importAsExtern* for that particular *AreaEntry* should be set to ***importNssa***.
Mib	no_mib
Values	yes no
Default	yes

COMPONENT Rtr Ospf AreaAggregateEntry (Aggregate)

Instance	areaId [IP address] lsdbType [summaryLink nssaExternalLink] aggregateNet [IP address] aggregateMask [IP address]
Groups	"GROUP Rtr Ospf Aggregate Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Ospf AreaAggregateEntry/<Ip Address>,<enum>,* *<Ip Address>,<Ip Address>* *Rtr/<string> Ospf AreaAggregateEntry/<Ip Address>,<enum>,* *<Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf AreaAggregateEntry/<Ip Address>,<enum>,<Ip Address>,<Ip Address>*

This table entry replaces the Area Summary table from RFC1253 and is used as an extension for CIDR support.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr Ospf Aggregate Provisioned (Prov)

Properties: Provisioned

Description: Identifies a group of provisionable attributes.

Mib: no_mib

ATTRIBUTE Rtr Ospf Aggregate effect

Access: Read and write

Description: This attribute determines whether or not the routing information will be advertised, depending on other criterion. Setting this value to ***doNotAdvertiseMatching*** can prevent advertising routing information for the address and mask values specified as the indices for this entry.

Mib: no_mib

Values:
advertiseMatching
doNotAdvertiseMatching
invalid

Default: advertiseMatching

COMPONENT Rtr Ospf HostEntry (Host)

Instance:
address [IP address]
tos [Decimal (0..0)]

Groups: "GROUP Rtr Ospf Host Provisioned (Prov)"

Scope: Application

Description	*Vr/<string> Ip Ospf HostEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf HostEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf HostEntry/<Ip Address>,<Decimal>* This component indicates what hosts are directly attached to the router, and what metrics and types of service should be advertised for them. This component is an optional subcomponent of Ospf.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Ospf Host Provisioned (Prov)

Properties	Provisioned
Description	Provisionable set of attributes for the Host entry.
Mib	no_mib

ATTRIBUTE Rtr Ospf Host areaId

Access	Read and write
Description	This is an Ip address for the Host Entry that indicates the area it belongs to.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Ospf Host metric

Access	Read and write
Description	The metric to be advertised.
Mib	no_mib

Values	Decimal (1..65535)
Default	1

COMPONENT Rtr Ospf VirtIfEntry (VirtIf)

Instance	areaId [IP address] nbrRouterId [IP address]
Groups	"GROUP Rtr Ospf VirtIf Provisioned (Prov)" "GROUP Rtr Ospf VirtIf Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>* This component describes all the virtual links configured for this OSPF Router.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Ospf VirtIf Md5KeyId (KeyId)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Ospf VirtIf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes provide provisioning data for the *VirtIfEntry.*
Mib	no_mib

ATTRIBUTE Rtr Ospf VirtIf transitDelay (transDelay)

Access	Read and write

Description	The estimated number of seconds it takes to transmit a link-state update packet over this interface.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	1

ATTRIBUTE Rtr Ospf VirtIf retransInterval (retransInt)

Access	Read and write
Description	The number of seconds between link-state advertisement retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets. This value would be well over the expected round-trip time.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	5

ATTRIBUTE Rtr Ospf VirtIf helloInterval (helloInt)

Access	Read and write
Description	The length of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for the virtual neighbor.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Rtr Ospf VirtIf rtrDeadInterval (rtrDeadInt)

Access	Read and write
Description	The number of seconds that a router's Hello packets have not been seen before its neighbors declare the router down. This should be some multiple of the Hello interval. This value must be the same for the virtual neighbor.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	60

ATTRIBUTE Rtr Ospf VirtIf authKey

Access	Write only
Description	If authentication type is simple password, the password for this virtual circuit. If the value of the attribute is not set, then this attribute is ignored by the application. If the value of this attribute is set, then the value of the attribute *authType* under this particular *Area* should be set to ***simplePassword***, otherwise the application will ignore this authentication key.
Mib	no_mib
Values	String (1..8, Hex)
Default	0000000000000000

ATTRIBUTE Rtr Ospf VirtIf authType

Access	Read and write
Description	The authentication type specified for this *VirtIf*.
Mib	no_mib
Values	none simplePassword md5 SameAsArea

Default	SameAsArea

GROUP Rtr Ospf VirtIf Operational (Oper)

Properties	Operational
Description	Represents a group of operational attributes for the *VirtIfEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Ospf VirtIf state (state)

Access	Read only
Description	The state of the OSPF virtual interface.
Mib	no_mib
Values	down pointToPoint
Default	No default

ATTRIBUTE Rtr Ospf VirtIf events (events)

Access	Read only
Description	The number of state changes or error events on the virtual link.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Ospf VirtIf Md5KeyId (KeyId)

Instance	Decimal (1..255)
Groups	"GROUP Rtr Ospf VirtIf KeyId Provisioned (Prov)" "GROUP Rtr Ospf VirtIf KeyId Operational (Oper)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf KeyId/<ID>* *Rtr/<string> Interface/<Ip Address> OspfIf KeyId/<ID>*

Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf KeyId/<ID>
Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>
Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>
Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>
This component contains the information about various MD5 Authentication keys.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Ospf VirtIf KeyId Provisioned (Prov)

Properties: Provisioned

Description: This group describes the set of provisional attributes for the *KeyId* component.

Mib: no_mib

ATTRIBUTE Rtr Ospf VirtIf KeyId md5Key (Key)

Access: Write only

Description: The MD5 authentication key for the *KeyId* component.

Mib: no_mib

Values: String (0..16, ASCII)

Default: ""

GROUP Rtr Ospf VirtIf KeyId Operational (Oper)

Properties: Operational

Description	This group describes the set of operational attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr Ospf VirtIf KeyId inUseForGeneration (inUse)

Access	Read only
Description	This attribute indicates whether the *Key* is currently in use or not. If this attribute is equal to ***true***, it indicates the *Key* is active.
Mib	no_mib
Values	true false
Default	false

COMPONENT Rtr Ospf Export

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Ospf Export Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Ospf Export/n* *Rtr/<string> Ospf Export/n* *Rtr/<string> Vrf/<string> Ospf Export/n* Each instance of this component specifies an OSPF export policy. An OSPF export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as OSPF external routes onto attached OSPF areas of the routing component (*Vr*, *Rtr* or *Vrf*).

	The *Ospf* component by default advertises all OSPF external routes based on the metric and tag in the IP forwarding table.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Ospf Export NetworkList (NetList)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Ospf Export Provisioned (Prov)

Properties	Provisioned
Description	This Group contains all the Provisioned attributes for the Export Component.
Mib	no_mib

ATTRIBUTE Rtr Ospf Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	no_mib
Values	send block
Default	send

ATTRIBUTE Rtr Ospf Export metric (metric)

Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *metric* is ignored. The *metric* value is not used to select which routes to block or send, but rather the metric value advertised for

	the routes. A value of -1 indicates that the metric associated with the route in the forwarding table is used.
Mib	no_mib
Values	Signed (-1..16777215)
Default	-1

ATTRIBUTE Rtr Ospf Export protocol

Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If the value is ***all***, the policy applies to all routes in the forwarding table, with the following exceptions: external BGP routes are always excluded and internal BGP routes are excluded if the parent *Ospf* component's *reDistributeIBGP* attribute has the value ***false***.
Mib	no_mib
Values	all egp rip staticLocal staticRemote bgpInternal bgpExternal mbgp bgpMplsInternal
Default	all

ATTRIBUTE Rtr Ospf Export ripInterface (ripIf)

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the routes are learned. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same

routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of an *Interface* or a *LogicalIf* that has a *RipIf* on the same routing component.

Mib: no_mib

Values: IP address

Default: 0.0.0.0

ATTRIBUTE Rtr Ospf Export ripNeighbor (ripNbr)

Access: Read and write

Description: This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP neighbor of which the routes are learned from.
This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP neighbor.

Mib: no_mib

Values: IP address

Default: 0.0.0.0

ATTRIBUTE Rtr Ospf Export egpAsId (egpAs)

Access: Read and write

Description: This attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from.
This attribute can only be non zero when *protocol* is set to ***egp***. The value of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.

Mib: no_mib

Values: Decimal (0..65535)

Default: 0

ATTRIBUTE Rtr Ospf Export tag

Access	Read and write
Description	This attribute specifies the OSPF tag to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *tag* is ignored. The *tag* value is not used to select which routes to block or send, but rather the tag value advertised for the routes. A value of 4294967295 indicates that the tag associated with the route in the forwarding table is used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Rtr Ospf Export extLsaMetricType

Access	Read and write
Description	This attribute specifies the metric type in the OSPF external link state advertisement of the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *extLsaMetricType* is ignored. The *extLsaMetricType* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. The value ***useProtocolDefault*** indicates the metric type is automatically chosen based on the routing protocol which the route was learned from.
Mib	no_mib
Values	useProtocolDefault type1 type2
Default	useProtocolDefault

ATTRIBUTE Rtr Ospf Export bgpAsId (bgpAs)

Access	Read and write

Description	This attribute specifies the BGP AS from which a BGP route is learned from. This key is used only if the *protocol* is ***bgpExternal***. *bgpAsId* of value ***0*** matches all ASs.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Ospf Export bgpPeerIp (peerIp)

Access	Read and write
Description	This attribute specifies the BGP peer where the routes were learned from. *bgpPeerIp* of ***0*** matches all BGP peers. This attribute is used as a key when *protocol* is set to ***bgpInternal*** or ***bgpExternal***.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Ospf Export description (desc)

Access	Read and write
Description	This attribute describes the policy. For example, ‘to export OSPF routes to MCI’.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Ospf Export NetworkList (NetList)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Ospf Export NetList Provisioned (Prov)"
Scope	Application

Description	This component identifies a set of attributes when matched determines the export policy applied.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Ospf Export NetList Provisioned (Prov)

Properties	Provisioned
Description	This group identifies the set of provisionable attributes for the *ExportNetworkList* component.
Mib	no_mib

ATTRIBUTE Rtr Ospf Export NetList ipAddress

Access	Read and write
Description	This attribute identifies the 32 bit IP address to match against.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Ospf Export NetList ipMask (mask)

Access	Read and write
Description	This attribute is the IP Mask to be used with the IP Address to match against.
Mib	no_mib
Values	IP address
Default	No default

COMPONENT Rtr Ospf VirtNbrEntry (VirtNbr)

Instance	areaId [IP address] nbrRouterId [IP address]
Groups	"GROUP Rtr Ospf VirtNbr Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* This component describes all of OSPF's Virtual Neighbors.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ospf VirtNbr Operational (Oper)

Properties	Operational
Description	This group identifies a set of operational attributes.
Mib	no_mib

ATTRIBUTE Rtr Ospf VirtNbr nbrIpAddress (addr)

Access	Read only
Description	Indicates the Ip address this interface this virtual neighbor is using.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Ospf VirtNbr options

Access	Read only

Description	A bit mask corresponding to the neighbor's options field. Bit 1, if set indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Ospf VirtNbr state

Access	Read only
Description	The state of the virtual neighbor relationship.
Mib	no_mib
Values	down attempt init twoWay exchange exchangeStatrt loading full
Default	No default

ATTRIBUTE Rtr Ospf VirtNbr events

Access	Read only
Description	The number of times this virtual link has changed its state, or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf VirtNbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf VirtNbr exchangeStatus

Access	Read only
Description	Indicates the exchange status of the entry in this table.
Mib	no_mib
Values	master slave
Default	No default

COMPONENT Rtr Ospf NeighborEntry (Nbr)

Instance	address [IP address] addressLessIndex [Decimal (0)]
Groups	"GROUP Rtr Ospf Nbr Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf NbrEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf NbrEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf NbrEntry/<Ip Address>,<Decimal>* This component is a dynamic subcomponent of OSPF that describes all the OSPF Neighbors.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ospf Nbr Operational (Oper)

Properties	Operational
Description	This group identifies the operational set of attributes for the *NeighborEntry.*
Mib	no_mib

ATTRIBUTE Rtr Ospf Nbr rtrId

Access	Read only
Description	An Ip Address that uniquely identifies the neighboring router in the autonomous system.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Ospf Nbr options

Access	Read only
Description	A bit mask corresponding to the neighbor's options field. Bit 0, if set, indicates that the area accepts and operates on external information, if zero, it is a stub area. Bit 1, if set, indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Ospf Nbr priority

Access	Read only

Description	The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network.
Mib	no_mib
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtr Ospf Nbr state

Access	Read only
Description	The state of the relationship with this neighbor.
Mib	no_mib
Values	down attempt init twoWay exchangeStart exchange loading full
Default	No default

ATTRIBUTE Rtr Ospf Nbr events

Access	Read only
Description	The number of times this neighbor relationship has changed state, or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Nbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Nbr nbmaNbrStatus

Access	Read only
Description	This attribute describes the status of the entry.
Mib	no_mib
Values	valid invalid
Default	No default

ATTRIBUTE Rtr Ospf Nbr exchangeStatus

Access	Read only
Description	Indicates the exchange status for a neighbor entry.
Mib	no_mib
Values	master slave
Default	No default

ATTRIBUTE Rtr Ospf Nbr permanence

Access	Read only
Description	This attribute displays how the neighbor became an entry.
Mib	no_mib
Values	dynamic permanent
Default	dynamic

ATTRIBUTE Rtr Ospf Nbr opaqueCapability (opcap)

Access	Read only

Description	This attribute displays the Opaque capability of this neighbor.
Mib	no_mib
Values	true false
Default	No default

COMPONENT Rtr Ospf LsdbEntry (Lsdb)

Instance	areaId [IP address] lsdbType [Decimal (1..10)] lsId [IP address] routerId [IP address]
Groups	"GROUP Rtr Ospf Lsdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Vrf/<string> Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>* This dynamic component contains the Link State Advertisements (LSA) from all areas the device is connected to. The supported types are: router-LSA (1), network-LSA (2), network-summary-LSA (3), ASBR-summary-LSA (4), AS-external-LSA (5) Group-membership-LSA (6) NSSA-LSA (7) and opaqueArea-LSA (10).
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ospf Lsdb Operational (Oper)

Properties	Operational

Description	This group describes the Operational set of attributes for the *LsdbEntry.*
Mib	no_mib

ATTRIBUTE Rtr Ospf Lsdb sequence

Access	Read only
Description	A signed 32-bit integer, used to detect old and duplicate LSAs. The space of sequence numbers is linearly ordered. The larger the sequence number, the more recent the advertisement.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Lsdb age

Access	Read only
Description	The age of the Link State Advertisement in seconds.
Mib	no_mib
Values	Decimal (0..3600)
Units	seconds
Default	No default

ATTRIBUTE Rtr Ospf Lsdb checksum

Access	Read only
Description	The checksum of the complete contents of the advertisement, excepting the age field. The checksum used is the Fletcher checksum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf Lsdb advertisement

Access	Read only
Description	The entire LSA including its header.
Mib	no_mib
Values	String (1..65535, Hex)
Default	No default

COMPONENT Rtr Ospf ExtLsdbEntry (ExtLsdb)

Instance	lsdbType [Decimal (1..7)] lsId [IP address] routerId [IP address]
Groups	"GROUP Rtr Ospf ExtLsdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Vrf/<string> Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* This dynamic component contains the Link State Divertimentos (LSA) from other Autonomous systems. It is identical in format to the *Lsdb.* The purpose is to allow all external LSAs to be displayed together rather than distributed over the different non-stub areas. These types are: AS-external-LSA (5) and NSSA-LSA (7).
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ospf ExtLsdb Operational (Oper)

Properties	Operational

Description	This group describes the operational set of attributes for the *ExtLsdbEntry*.
Mib	no_mib

ATTRIBUTE Rtr Ospf ExtLsdb sequence

Access	Read only
Description	A signed 32-bit integer, used to detect old and duplicate LSAs. The space of sequence numbers is linearly ordered. The larger the sequence number, the more recent the advertisement.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf ExtLsdb age

Access	Read only
Description	The age of the Link State Advertisement in seconds.
Mib	no_mib
Values	Decimal (0..3600)
Units	seconds
Default	No default

ATTRIBUTE Rtr Ospf ExtLsdb checksum

Access	Read only
Description	The checksum of the complete contents of the advertisement, excepting the age field. The checksum used is the Fletcher checksum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ospf ExtLsdb advertisement

Access	Read only
Description	The entire LSA including its header.
Mib	no_mib
Values	String (1..36, Hex)
Default	No default

COMPONENT Rtr Isis (Isis)

Groups	"GROUP Rtr Isis Provisioned (Prov)" "GROUP Rtr Isis OsiState (State)" "GROUP Rtr Isis ErrorStatistics (Errors)" "GROUP Rtr Isis OperationalStatus (OperStatus)"
Scope	Application
Description	*Router/<id> Isis* This component is configured to control the Intermediate System to Intermediate System (ISIS) routing protocol. This component requires at least one *Net* subcomponent and no more than 3 *Net* subcomponents to be provisioned. This component requires at least one *Level* subcomponent to be provisioned.

	For ISIS routes to be entered into the routing table, at least one active *IsisIf* component must be provisioned.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Isis NetworkEntityTitle (Net)" "COMPONENT Rtr Isis IsisLevel (Level)"
Dyn. Subcomp.	"COMPONENT Rtr Isis NeighborEntry (Nbr)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Isis Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes is used to configure the *Isis* component.
Mib	no_mib

ATTRIBUTE Rtr Isis snmpAdminStatus (admin)

Access	Read: All Write: All
Description	This attribute specifies the administrative status of the *Isis* component in this *Router*.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr Isis intermediateSystemType (isType)

Access	Read: All Write: All
Description	This attribute specifies the ISIS level functionality of this *Router* as defined in ISO specification 10589. In this release only level1 ISIS support exists and therefore the value ***level1*** is the only value supported by this attribute.
Mib	no_mib
Values	level1
Default	level1

ATTRIBUTE Rtr Isis overloadBitControl

Access	Read: All Write: All
Description	This attribute specifies how the value of the overload bit in the *Router's* Link State PDU (LSP) should be derived. A value of ***on*** specifies that the overload bit is forced on in the LSP. A value of ***auto*** specifies that the overload bit value is fully controlled by system software. This means that system software, based on current operating conditions, may choose to set the overload bit as appropriate. Any other value specifies, in seconds, the time period after a software restart that the overload bit will be forced on.
Mib	no_mib
Values	Decimal (60..1800) on auto
Default	auto

ATTRIBUTE Rtr Isis ignoreLspErrors

Access	Read: All Write: All
Description	This attribute specifies how the system behaves on receipt of a corrupted Link State PDU (LSP). If the attribute value is ***ignore***, the system will discard a corrupted LSP. If the attribute value is ***purge***, the system will purge the LSP.
Mib	no_mib
Values	purge ignore
Default	purge

ATTRIBUTE Rtr Isis lspMaxLifetime

Access	Read: All Write: All
Description	This attribute specifies the time, in seconds, that an LSP generated by this *Router* may exist before being considered to be stale and therefore should be purged by other nodes in the network. A *Check Prov* error occurs if this attribute specifies a value less than or equeal to the value specified for the *lspRefreshInterval* attribute. A *Check Prov* warning is produced if the value of this attribute is not at least 300 seconds greater than the value of the *lspRefreshInterval* attribute.
Mib	no_mib
Values	Decimal (350..65535)
Units	seconds
Default	1200

ATTRIBUTE Rtr Isis lspRefreshInterval

Access	Read: All Write: All
Description	This attribute specifies the time, in seconds, between successive retransmissions of this *Router's* LSP. A *Check Prov* error occurs if this attribute specifies a value greater than the value specified for the *lspMaxLifetime* attribute. A *Check Prov* warning is produced if the value of this attribute is not at least 300 seconds less than the value of the *lspMaxLifetime* attribute.
Mib	no_mib
Values	Decimal (1..65535)
Units	seconds
Default	900

ATTRIBUTE Rtr Isis spfDelay

Access	Read: All Write: All
Description	This attribute specifies, in milliseconds, the delay between the detection of a network topology change and the execution of the ISIS Shortest Path First (SPF) route calculation algorithm.
Mib	no_mib
Values	Decimal (1..10000)
Units	msec
Default	2000

ATTRIBUTE Rtr Isis alarmGeneration

Access	Read and write
Description	This attribute specifies the level of alarm generation for this *Isis* instance.

A value of ***all*** specifies that all ISIS alarms are made visible.

A value of ***none*** specifies that no ISIS alarms are made visible.

Mib	no_mib
Values	none all
Default	all

GROUP Rtr Isis OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Isis adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Isis operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Isis usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Isis ErrorStatistics (Errors)

Properties	Operational
Description	The attributes in this group are essentially statistics or counters. Each attribute counts each particular, abnormal event that has occurred since the *Isis* component was last enabled or unlocked.
Mib	no_mib

ATTRIBUTE Rtr Isis rxCorruptedLsps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of corrupted LSPs received on all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis lsdbOverloads

Access	Read: All Write: Illegal
Description	This attribute indicates the number of occurrences of link state database overloads for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis attemptsToExceedMaxSeqNum

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that the maximum LSP sequence number has be reached for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis seqNumSkips

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that LSPs have been received where sequence numbers are nonsequential with respect to the previously received LSP. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis ownLspPurges

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that this *Router* has purged its own LSP. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis idFieldLenMismatches

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that this *Router* has received PDUs with ID Field lengths that do not match those used by this *Router*. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis maxAreaAddrMismatches

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that this *Router* has received a PDU with the “maximum number of supported area addresses” field set to a value greater than the maximum number of area addresses supported by this *Router*. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr Isis OperationalStatus (OperStatus)

Properties	Operational

Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Isis snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr Isis NetworkEntityTitle (Net)

Instance	String (1..46, ASCII)
Scope	Application
Description	*Rtr/id Isis NetworkEntityTitle/<net>* This component represents the *Router's* Network Entity Title (NET). A NET is an ISO address that uniquely identifies an ISIS router. The NET format is specified in ISO 8348. The *Net* instance ID must be formatted as follows: AA.aaaa.SSSS.SSSS.SSSS.NN where; "AA" represents the ISIS area number and is a two hex digit string. "aaaa" represents the ISIS area number and is a string of 0 to 24 hex digits and there must be an even number of digits in this field.

"SSSS.SSSS.SSSS" represents this *Router's* ISIS system ID. The system ID is made up of 12 hex digits, grouped in 3 groups of 4 hex digits, separated by the "." character. Note that when more than one *Net* component is provisioned, all *Net* components must have the same system ID portion of the *Net* instance ID.

"NN" represents the NSEL portion of the *Net* instance ID. This must always be "00" (zero zero).

The sections of the *Net* instance ID are separated by the "." character.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT Rtr Isis IsisLevel (Level)

Instance: Decimal (1..1)

Groups: "GROUP Rtr Isis Level Provisioned (Prov)"

Scope: Application

Description: *Rtr/<s> Isis IsisLevel/<1..2>*
The ISIS routing protocol supports a two-level routing hierarchy. This component represents those ISIS routing aspects that are specific to each level. In this release, only *Level/1* is supported.

Mib: no_mib

Dyn. Subcomp.: "COMPONENT Rtr Isis Level LsDbEntry (Lsdb)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Isis Level Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes is used to configure each ISIS routing level.
Mib	no_mib

ATTRIBUTE Rtr Isis Level preference

Access	Read: All Write: All
Description	This attribute specifies the routing preference assigned to ISIS routes for this level. A lower value indicates a “more preferred” route.
Mib	no_mib
Values	Decimal (1..255)
Default	32

COMPONENT Rtr Isis Level LsDbEntry (Lsdb)

Instance	sysId [String (1..14, ASCII)] psnid [Decimal (0..65536)] fragid [Decimal (0..65535)]
Groups	"GROUP Rtr Isis Level Lsdb Operational"
Scope	Application
Description	Rtr/<id> Isis Level/n LsDbEntry/SysId,PSNId,FragId This component describes an entry in the ISIS LSP Database.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Isis Level Lsdb Operational

Properties	Operational

Description	This group contains the set of operational attributes of the *LsDbEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Isis Level Lsdb seqNumber

Access	Read: All Write: Illegal
Description	This attribute indicates the sequence number of the LSP.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Isis Level Lsdb remainingLifetime

Access	Read: All Write: Illegal
Description	This attribute indicates, in seconds, the remaining lifetime of the LSP.
Mib	no_mib
Values	Decimal (0..65535)
Units	seconds
Default	No default

ATTRIBUTE Rtr Isis Level Lsdb attachment (att)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the default attachment bit is set in this LSP.
Mib	no_mib
Values	notAttached attached
Default	No default

ATTRIBUTE Rtr Isis Level Lsdb partitionRepair

Access	Read: All Write: Illegal
Description	This attribute indicates whether the partition repair bit is set in this LSP.
Mib	no_mib
Values	off on
Default	No default

ATTRIBUTE Rtr Isis Level Lsdb overloadBit

Access	Read: All Write: Illegal
Description	This attribute indicates whether the overload bit is set in this LSP.
Mib	no_mib
Values	off on
Default	No default

ATTRIBUTE Rtr Isis Level Lsdb isType

Access	Read: All Write: Illegal
Description	This attribute indicates which system type bits are set in this LSP.
Mib	no_mib
Values	none level1 level2 both
Default	No default

ATTRIBUTE Rtr Isis Level Lsdb lspBody

Access	Read: All Write: Illegal
Description	This attribute indicates the content of this LSP's body.
Mib	no_mib
Values	String (1..1500, Hex)
Default	No default

COMPONENT Rtr Isis NeighborEntry (Nbr)

Instance	sysId [String (1..14, ASCII)] level [Decimal (1..2)]
Groups	"GROUP Rtr Isis Nbr Operational (Oper)"
Scope	Application
Description	*Rtr/<id> Isis Nbr/SysId,Level* This component represents the list of ISIS adjacencies formed with the specified ISIS router at the specified level.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr Isis Nbr Adjacency (Adj)"
Common Verbs	Help List Display

GROUP Rtr Isis Nbr Operational (Oper)

Properties	Operational
Description	This group contains only one operational attribute, which represents the number of adjacencies formed with the router identified by the instance ID of the parent *NeighborEntry* component. This instance ID specifies the System ID of the neighbor router.
Mib	no_mib

ATTRIBUTE Rtr Isis Nbr adjacencies

Access	Read: All Write: Illegal
Description	This attribute indicates the number of adjacencies between this *Router* and the specified neighbor router at the specified ISIS level. The neighbor's system ID and the level at which the adjacency was formed is specified by the instance ID of the *NeighborEntry* component.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

COMPONENT Rtr Isis Nbr Adjacency (Adj)

Instance	Decimal (1..65535)
Groups	"GROUP Rtr Isis Nbr Adj Operational (Oper)"
Scope	Application
Description	*Rtr/<id> Isis Nbr/SysId,Level Adjacency/n* This component represents the collection information available regarding an adjacency formed with another ISIS router.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Isis Nbr Adj Operational (Oper)

Properties	Operational
Description	This group contains a set of attributes that indicate the characteristics of the adjacency.
Mib	no_mib

ATTRIBUTE Rtr Isis Nbr Adj neighborLinkLayerAddress (nbrLLAddr)

Access	Read: All Write: Illegal

Description	This attribute indicates the neighbor's link layer address for the link on which the adjacency was formed. In ISO ISIS terminology, this is referred to as the subnetwork point of attachment (SNPA).
Mib	no_mib
Values	String (0..11, ASCII)
Default	No default

ATTRIBUTE Rtr Isis Nbr Adj interface

Access	Read: All Write: Illegal
Description	This attribute indicates the *Interface* component on which this adjacency was formed. The format will be: *Rtr/<s> Interface/<IP Address>*
Mib	no_mib
Values	The name of the component
Default	No default

ATTRIBUTE Rtr Isis Nbr Adj state

Access	Read: All Write: Illegal
Description	This attribute indicates the operating state of the *adjacency.*
Mib	no_mib
Values	null initializing up fail
Default	No default

ATTRIBUTE Rtr Isis Nbr Adj holdTime

Access	Read: All Write: Illegal

Description	This attribute indicates, in seconds, the maximum time that may elapse without receiving a hello message before the adjacency is considered down.
Mib	no_mib
Values	Decimal (1..600)
Units	seconds
Default	No default

ATTRIBUTE Rtr Isis Nbr Adj priority

Access	Read: All Write: Illegal
Description	This attribute indicates the DIS priority of the neighbor associated with this *adjacency.*
Mib	no_mib
Values	Decimal (0..127)
Default	No default

ATTRIBUTE Rtr Isis Nbr Adj protocols

Access	Read: All Write: Illegal
Description	This attribute indicates the list of protocols supported by the neighbor on this *adjacency.*
Mib	no_mib
Values	none osi_only ip_only osi_and_ip
Default	No default

ATTRIBUTE Rtr Isis Nbr Adj areaAddresses

Access	Read: All Write: Illegal

Description	This attribute indicates the list of area addresses used by the neighbor associated with this *adjacency.*
Mib	no_mib
Values	String (0..85, ASCII)
Default	No default

ATTRIBUTE Rtr Isis Nbr Adj age

Access	Read: All Write: Illegal
Description	This attribute indicates the elapsed time, in seconds, since this *adjacency* was established.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

COMPONENT Rtr RelayBC

Groups	"GROUP Rtr RelayBC Provisioned (Prov)" "GROUP Rtr RelayBC Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip RelayBC* *Rtr/<string> RelayBC* *Rtr/<string> Vrf/<string> RelayBC* The *InwRelayBroadcast* component controls the dissemination of IP broadcast packets received as Link-Layer broadcast.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr RelayBC PortEntry (Port)"
Common Verbs	Help List Display

GROUP Rtr RelayBC Provisioned (Prov)

Properties	Provisioned
Description	This group contains global configuration attributes for the Relay Broadcast component.
Mib	no_mib

ATTRIBUTE Rtr RelayBC relayStatus

Access	Read and write
Description	Specifies whether or not IP will forward IP broadcast packets that were received as Link-Layer broadcasts.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr RelayBC relayNdStatus

Access	Read and write
Description	Specifies whether or not IP will forward broadcast packets whose protocol is Sun ND.
Mib	no_mib
Values	enabled disabled
Default	disabled

GROUP Rtr RelayBC Operational (Oper)

Properties	Operational
Description	This group contains RelayBroadcast component statistics.
Mib	no_mib

ATTRIBUTE Rtr RelayBC relayNdCount

Access	Read only

Description	Indicates the number of Sun ND packets received by this router which were forwarded. *relayNdCount* wraps to zero if reached its maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr RelayBC PortEntry (Port)

Instance	Decimal (0..4294967295)
Groups	"GROUP Rtr RelayBC Port Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip RelayBC PortEntry/<Decimal>* *Rtr/<string> RelayBC PortEntry/<Decimal>* This component is a table of destination UDP port numbers. In order for a packet to be forwarded by Relay Broadcast, the packet's destination UDP port number must be listed in this table.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr RelayBC Port Operational (Oper)

Properties	Operational
Description	This group contains statistics related to *InwPortEntry.*
Mib	no_mib

ATTRIBUTE Rtr RelayBC Port relayBcUdpCount

Access	Read only

Description	Indicates the number of forwarded packets with this destination UDP port number. *relayBcUdpCount* wraps to zero if reached its maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr RoutingInformationProtocol (Rip)

Groups	"GROUP Rtr Rip Provisioned (Prov)" "GROUP Rtr Rip OsiState (State)" "GROUP Rtr Rip AdministrativeControl (AdminControl)" "GROUP Rtr Rip OperationalStatus (OperStatus)" "GROUP Rtr Rip Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Rip* *Rtr/<string> Rip* *Rtr/<string> Vrf/<string> Rip* This component represents the Routing Information Protocol for the IP. There should be at least one *RipInterface* provisioned below an *Interface* or below a *LogicalIf* under an *IpPort*.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Rip Import (Import)" "COMPONENT Rtr Rip Export"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Rip Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes for the RIP component
Mib	no_mib

ATTRIBUTE Rtr Rip migrateRip

Access	Read and write
Description	This attribute sets the preference level of OSPF-internal routes to be less preferred than RIP. Note: This parameter should only be used when starting migration of network from RIP to OSPF. When ready to cut over to OSPF, set this attribute value to ***disabled*** and run under normal preferences. All OSPF routers in the Autonomous System should be running with *migrateRip* ***enabled*** or with *migrateRip* ***disabled*** to prevent routing loops. It is important that the changeover period from RIP to OSPF be performed quickly on all OSPF routers so that no routing loops are formed. These routing loops could be caused by conflicts in the internal RIP and OSPF databases.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Rip rfc1058MetricUsage (rfc1058)

Access	Read and write
Description	This attribute determines the metric usage for this RIP instance. This flag is used to determine the way metrics are incremented. RFC 1058 way: Sending Update: This is to use the metric for the route from the routing table as the advertised metric to be sent for that route. Nothing is ever added to this value from the sending side. The only special case handling is that if the route being advertised is the network route of a directly connected network, the metric in the routing table will be zero. Then the RipIf interface metric for

the interface being advertised is used as the advertise metric. If the interface being advertised is not a Rip interface, then metric value of 1 is used.
Receiving Update: Add receiving interface's RIP metric to the metric for the route in the received advertisement and install the result in the receiver's routing table as the metric for that route.
Older way:
Sending Updates: Add the out going interfaces rip metric to the metric for a route in the routing table to form the metric to be advertised for that route.
Receiving Updates: The metric received in the advertisement for a route is put directly in the routing table as the metric for that route.

Note: It is recommended that, all the routers in this autonomous system should be following the rfc1058 metric system.
Setting this flag to ***disabled*** will have the effect of running the RIP with old metric incrementing system.

Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Rip generateDiscardRoute (discard)

Access	Read and write
Description	This attribute specifies whether network discard routes should be added to the routing and forwarding table for the subnetted interfaces that are running RIP.
Mib	no_mib
Values	yes no
Default	yes

ATTRIBUTE Rtr Rip redistributeIbgp (ribgp)

Access	Read and write

Description	This attribute specifies whether the export policies of this *Rip* instance can match routes learned from internal BGP (IBGP) peers when their *protocol* attribute value is ***all.*** If *redistributeIbgp* is ***true***, a *protocol* value of ***all*** allows routes learned from IBGP peers to be included in the matching routes. If *redistributeIbgp* is ***false,*** routes learned from IBGP peers are excluded when the *protocol* value is ***all***. To cause IBGP routes to be considered in this case, the *protocol* value must be set to ***bgpInternal***.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Rip defaultRipRtePreference (ripPref)

Access	Read and write
Description	This attribute specifies this RIP component instance's default routing preference assigned to the RIP routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	82

GROUP Rtr Rip OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Rip adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Rip operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Rip usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Rip AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Rip snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet

forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

Default: up

GROUP Rtr Rip OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: no_mib

ATTRIBUTE Rtr Rip snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

Default: up

GROUP Rtr Rip Operational (Oper)

Properties: Operational

Description: This group defines a set of operational attributes belonging to the *RIP* component. It corresponds to the rip2Globals table in the RIP-2 standard MIB.

Mib	no_mib

ATTRIBUTE Rtr Rip routeChangesMade

Access	Read only
Description	This attribute counts the route changes made to the IP Route Database by Rip. This does not include the refresh of the route's age.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Rip queryResponses

Access	Read only
Description	This attribute counts the responses sent to RIP queries from other systems.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Rip Import (Import)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Rip Import Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Rip Import/<Decimal>* *Rtr/<string> Rip Import/<Decimal>* *Rtr/<string> Vrf/<string> Rip Import/<Decimal>* This component controls the functionality of Route Leaking. In

	other words, this component will determine what routes are used by RIP.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Rip Import Network (Net)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Rip Import Provisioned (Prov)

Properties	Provisioned
Description	This is the group of provisionable attributes for the *Import* Subcomponent.
Mib	no_mib

ATTRIBUTE Rtr Rip Import usageFlag (usage)

Access	Read and write
Description	This flag when set to ***ignore*** indicates the routes that are not used and if set to ***use***, indicates the routes which are used.
Mib	no_mib
Values	use ignore
Default	use

ATTRIBUTE Rtr Rip Import importMetric (metric)

Access	Read and write
Description	This attribute is used to override the default import metric for the RIP protocol. This value is not used to select which routes to use or ignore, rather it is the metric to be used in the routing table for the routes imported for this import policy. A value of zero indicates that the metric received in the update will be used.

Mib	no_mib
Values	Decimal (0..16)
Default	0

ATTRIBUTE Rtr Rip Import neighbor (nbr)

Access	Read and write
Description	This attribute indicates the IP Address of the neighbor this policy will apply to.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Rip Import interface (if)

Access	Read and write
Description	This attribute specifies the RIP interface to which this import policy applies. The value of 0.0.0.0 implies any RIP interface on the routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Rip Import description (desc)

Access	Read and write
Description	This attribute describes the policy. For example, ‘to import RIP routes from MCI’.
Mib	no_mib
Values	String (0..255, ASCII)

Default	No default

COMPONENT Rtr Rip Import Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Rip Import Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Rip Import/<Decimal> NetworkList/<Decimal> Rtr/<string> Rip Import/<Decimal> NetworkList/<Decimal> Rtr/<string> Vrf/<string> Rip Import/<Decimal> NetworkList/ <Decimal>* This component identifies a set of networks that this Import policy will apply to.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Rip Import Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains attributes for the *Import NetworkList* component for the Import Policy to be applied to.
Mib	no_mib

ATTRIBUTE Rtr Rip Import Net ipAddress (addr)

Access	Read and write
Description	This attribute specifies the IP address that needs to be matched against in this network list for the Import Policy to be applied to.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Rip Import Net ipMask (mask)

Access	Read and write
Description	This attribute specifies the IP mask for the attribute *ipAddress*.
Mib	no_mib
Values	IP address
Default	No default

COMPONENT Rtr Rip Export

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Rip Export Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Rip Export/<Decimal>* *Rtr/<string> Rip Export/<Decimal>* *Rtr/<string> Vrf/<string> Rip Export/<Decimal>* Each instance of this component specifies a RIP export policy. A RIP export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as a RIP route on one or all RIP interfaces of the routing component (*Vr*, *Rtr* or *Vrf*). The *Rip* component by default advertises all local routes and all RIP learned routes to all RIP interfaces based on the metric in the IP forwarding table.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Rip Export Network (Net)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Rip Export Provisioned (Prov)

Properties	Provisioned

Description	This group contains all the provisioned attributes for the *Export* component.
Mib	no_mib

ATTRIBUTE Rtr Rip Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	no_mib
Values	send block
Default	send

ATTRIBUTE Rtr Rip Export exportMetric (metric)

Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *exportMetric* is ignored. The *exportMetric* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. A value of 0 indicates that the exported routes will be advertised with their original metric. When exporting routes from other protocols into RIP, an *exportMetric* value of 0 will distribute these routes with the metric of the original protocol. If the metric of the original protocol exceeds 15, the exported routes will be considered as unreachable by RIP. If an *exportMetric* value of 16 is specified, the exported routes will be advertised into RIP as unreachable.
Mib	no_mib
Values	Decimal (0..16)
Default	0

ATTRIBUTE Rtr Rip Export protocol

Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If the value is ***all***, the policy applies to all routes in the forwarding table, with the following exceptions: external BGP routes are always excluded and internal BGP routes are excluded if the parent *Rip* component's *reDistributeIBGP* attribute has the value ***false***.
Mib	no_mib
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal mbgp bgpMplsInternal
Default	all

ATTRIBUTE Rtr Rip Export ripInterface (ripIf)

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the routes are learned. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Rip Export egpAsId (egpAs)

Access	Read and write
Description	Under the *Rtr* and *Rtr Vrf*, this attribute has no effect. Under the *Vr*, this attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from. This attribute can only be non zero when *protocol* is set to ***egp***. The value of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	no_mib
Values	Decimal (0..65536)
Default	0

ATTRIBUTE Rtr Rip Export ospfTag (tag)

Access	Read and write
Description	This attribute specifies the OSPF learned external routes to which this export policy applies, based on the learned OSPF tag of the routes. This attribute can only be set to a non default value when *protocol* is set to ***ospfExternal***. The default value of 4294967295 implies any tag.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Rtr Rip Export outInterface (outIf)

Access	Read and write
Description	This attribute specifies the RIP interface on the virtual router which routes are exported onto as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of

	outInterface is ignored. The *outInterface* value is not used to select which routes to block or send, but rather where to export the routes. A value of 0.0.0.0 indicates that the routes are exported to all RIP interfaces on the routing component (*Vr*, *Rtr* or *Vrf*). Otherwise, the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Rip Export bgpAsId (bgpAs)

Access	Read and write
Description	This key attribute specifies the BGP AS from which the routes are learned. This key will be used only when the *protocol* is set to ***bgpExternal***. *bgpAsId* of ***0*** matches all BGP ASs.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Rip Export description (desc)

Access	Read and write
Description	The attribute describes the policy. For example, ‘to export RIP routes to AS 1’.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Rip Export Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Rip Export Net Provisioned (Prov)"

Scope	Application
Description	*Vr/<string> Ip Rip Export/<Decimal> NetworkList/<Decimal> Rtr/<string> Rip Export/<Decimal> NetworkList/<Decimal> Rtr/<string> Vrf/<string> Rip Export/<Decimal> NetworkList/ <Decimal>* This component identifies a set of attributes when matched determines the export policy applied.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Rip Export Net Provisioned (Prov)

Properties	Provisioned
Description	This group identifies the set of Provisionable attributes for the *ExportNetworkList* component.
Mib	no_mib

ATTRIBUTE Rtr Rip Export Net ipAddress (addr)

Access	Read and write
Description	This attribute identifies the 32 bit IP address to match against.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Rip Export Net ipMask (mask)

Access	Read and write
Description	This attribute is the IP Mask to be used with the IP Address to match against.
Mib	no_mib

Values	IP address
Default	No default

COMPONENT Rtr RouteDataBaseEntry (Rdb)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] protocol (proto) [bogus local remote special ospf ospfExternal ospfType3Discard ospfType7Discard rip ripDiscard egp bgpExternal bgpInternal bgpAggrDiscard redistrib mpls mbgp bgpMplsInternal isis ebgpLabel] gateway [IP address]
Groups	"GROUP Rtr Rdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip RouteDataBaseEntry/ <destAddress>,<destMask>,<protocol>* *Rtr/<string> RouteDatabaseEntry/ <destAddress>,<destMask>,<protocol>* *Rtr/<string> Vrf/<string> RouteDatabaseEntry/ <destAddress>,<destMask>,<protocol>* This component is used to display the information in the Ip routing database. *destAddress* and *destMask* indicates the address and mask of the route in the RoutingDatabase. *protocol* indicates

	the protocol this entry is learned from. *gateway* indicates the nextHop address for remote routes. The value of *gateway* for the localInterface routes will be the same value as the *destAddress*.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Rdb Operational (Oper)

Properties	Operational
Description	Identifies a group of operational attributes associated with each entry in the routing database.
Mib	no_mib

ATTRIBUTE Rtr Rdb metric

Access	Read only
Description	This attribute specifies the primary routing metric for this route. The semantics of this metric are determined by the routing protocol specified by the value of the index to this entry *protocol*. If this metric is not used, its value should be set to -1.
Mib	no_mib
Values	Signed (-1..65535)
Default	-1

ATTRIBUTE Rtr Rdb preference (pref)

Access	Read only
Description	This attribute specifies the the preference value of this particular entry. The value of this attribute affects the way the routeEntries in this database are selected for installing it in the *ForwardTable*. The lower the preference value of this entry, the higher are the chances that this entry will be selected to install in the *ForwardTable*.

Mib	no_mib
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtr Rdb age

Access	Read only
Description	This attribute specifies the number of seconds since this route was last updated or otherwise determined to be correct.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Static

Groups	"GROUP Rtr Static OsiState (State)" "GROUP Rtr Static Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Static* *Rtr/<string> Static* *Rtr/<string> Vrf/<string> Static* The *Static* component is used to configure addition, deletion and modification of static routing information.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Static RouteEntry (Route)" "COMPONENT Rtr Static DiscardRouteEntry (Discard)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Static OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Static adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Static operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Static usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy

Default	idle

GROUP Rtr Static Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes are used to configure the Static component.
Mib	no_mib

ATTRIBUTE Rtr Static defaultStaticRemoteRtePreference (pref)

Access	Read and write
Description	This attribute specifies this *Static* component instance's default routing preference assigned to the remote routes. A lower value indicates a more preferred route. Assigning a non-zero value to the *staticRemoteRtePreference* attribute in *RouteEntry* will override this default.
Mib	no_mib
Values	Decimal (1..253)
Default	72

ATTRIBUTE Rtr Static defaultStaticDiscardRtePreference (discpref)

Access	Read and write
Description	This attribute specifies this *Static* component instance's default routing preference assigned to the discard routes. A lower value indicates a more preferred route. Assigning a non-zero value to the *staticDiscardRtePreference* attribute in *DiscardRouteEntry* will override this default.
Mib	no_mib
Values	Decimal (0..253)
Default	0

ATTRIBUTE Rtr Static maxEcmpNextHops

Access	Read and write

Description	This attribute specifies the maximum number of Equal Cost Multi-Path (ECMP) *NextHop*s that are supported for *Static RouteEntry*s. If *maxEcmpNextHops* is ***1*** then only a single available *NextHop* is used, even if multiple *NextHops* are provisioned with the same *metric* value under a given *Static RouteEntry.* In other words ECMP is disabled for static routes. If *maxEcmpNextHops* is ***3*** the traffic will be loadshared over the available *NextHops* that have the same value set for the *metric* attribute under a given *Static RouteEntry.* When *protected Static RouteEntry*s are provisioned, *maxEcmpNextHops* must be ***1***.
Mib	no_mib
Values	1 3
Default	3

COMPONENT Rtr Static RouteEntry (Route)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] typeOfService (tos) [Decimal (0..0)]
Groups	"GROUP Rtr Static Route Provisioned (Prov)" "GROUP Rtr Static Route Operational (Oper)" "GROUP Rtr Static Route OsiState (State)"
Scope	Application
Description	*Vr/<string> Ip Static RouteEntry*/<Ip Address>, <Ip Address>, <Decimal> *Rtr/<string> Static RouteEntry/*<Ip Address>, <Ip Address>, <Decimal> *Rtr/<string> Vrf/<string> Static RouteEntry/*<Ip Address>, <Ip Address>, <Decimal> This component describes the IP static routes. For a *RouteEntry* to be valid, there should be at least one *NextHop* provisioned. Up to three *NextHops* can be provisioned for each instance of a *RouteEntry.*

The value of index *destMask* should be contiguous.

Only the value zero is supported. Zero will be substituted for any value that is entered.

Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Static Route NextHop (Nh)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Static Route Provisioned (Prov)

Properties	Provisioned
Description	This group contains a provisionable set of attributes for the static route entry component.
Mib	no_mib

ATTRIBUTE Rtr Static Route staticRemoteRtePreference (pref)

Access	Read and write
Criticality	Component
Description	This attribute specifies the route preference of the static remote route. A lower preference value means the route is more preferred. If ***sameAsStatic*** is specified, the value of *defaultStaticRemoteRtePreference* in the *Static* component is used.
Mib	no_mib
Values	Decimal (1..253) sameAsStatic
Default	sameAsStatic

ATTRIBUTE Rtr Static Route protected

Access	Read and write
Description	This attribute specifies whether this route is protected or not. Note that *Vr Ip Static maxEcmpNextHops* must be ***1*** and *Vr Ip Ospf ecmpStatus* must be ***disabled*** when there is a *protected* static route under the *Vr*.
Mib	no_mib
Values	yes no
Default	no

ATTRIBUTE Rtr Static Route protectedFailureBehavior (protFlrB)

Access	Read and write
Description	This attribute specifies the behavior when all *NextHops* of a *protected* static route fail. If ***discard*** is specified, the static route will not be removed, it will continue to be used to discard traffic.
Mib	no_mib
Values	discard
Default	discard

GROUP Rtr Static Route Operational (Oper)

Properties	Operational
Description	This group contains a set of operational attributes for the static route entry component.
Mib	no_mib

ATTRIBUTE Rtr Static Route protectionLevel (protL)

Access	Read only
Description	This attribute indicates the current protection level for a *Static RouteEntry*. A value of ***portProtected*** indicates that the only alternative enabled *NextHop*(s) for this protected route are on the same card as the active *NextHop*. When the value is

cardProtected, one or more alternative enabled ***NextHop***s exist on a different card than the active ***NextHop***. If the value is ***unprotected***, no alternative enabled *NextHop*s exist or this is an unprotected static route (that is, *protected* = ***no*** for this *Static RouteEntry*).

Mib: no_mib

Values:
portProtected
cardProtected
unprotected
notApplicable

Default: No default

GROUP Rtr Static Route OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: no_mib

ATTRIBUTE Rtr Static Route adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Static Route operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Static Route usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values:
idle
active (activ)
busy

Default: idle

COMPONENT Rtr Static Route NextHop (Nh)

Instance: IP address

Groups:
"GROUP Rtr Static Route Nh Provisioned (Prov)"
"GROUP Rtr Static Route Nh OsiState (State)"
"GROUP Rtr Static Route Nh Operational (Oper)"

Scope: Application

Description:
Vr/<string> Ip Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>
Rtr/<string> Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>
Rtr/<string> Vrf/<string> Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>
This component provides the destination Ip address of the *NextHop* (some times referred to as the Gateway).

For a *RouteEntry* to be valid, there should be at least one *NextHop* provisioned. Up to three *NextHops* can be provisioned for each instance of a *RouteEntry.*

Each provisioned *NextHop* address should belong to a valid subnet.

A valid subnet for this IP entity can be provisioned as a *logicalIf* Entry under an *IpPort*.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Static Route Nh Provisioned (Prov)

Properties: Provisioned

Description: This group contains a provisionable set of attributes for the *Static RouteEntry NextHop* component.

Mib: no_mib

ATTRIBUTE Rtr Static Route Nh metric (metric)

Access: Read and write

Description: This attribute specifies the primary routing metric for this *NextHop*.

Mib: no_mib

Values: Signed (-1..65535)

Default: 1

GROUP Rtr Static Route Nh OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: no_mib

ATTRIBUTE Rtr Static Route Nh adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Static Route Nh operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Static Route Nh usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Static Route Nh Operational (Oper)

Properties	Operational
Description	
Mib	no_mib

ATTRIBUTE Rtr Static Route Nh heartbeatState (hbS)

Access	Read only
Description	This attribute indicates the state of the heartbeat mechanism with this *NextHop*'s next hop Router. The value will be ***disabled*** if the *heartbeatDeadInterval* is disabled for all *Static Route*s that share this *NextHop*.

The value may be ***undetermined*** briefly upon initialization, before the heartbeat mechanism has completed an assessment.
The value will be ***down*** if the *NextHop* Router has not responded to ICMP heartbeat requests nor ARP heartbeat requests.
The value will be ***icmpDegraded*** if the *NextHop* Router has only responded to ARP heartbeat requests.
The value will be ***up*** if the *NextHop* Router has responded to ICMP heartbeat requests.

Mib: no_mib

Values:
undetermined
disabled
down
icmpDegraded
up

Default: No default

COMPONENT Rtr Static DiscardRouteEntry (Discard)

Instance: destAddress (addr) [IP address]
destMask [IP address]

Scope: Application

Description: *Vr/<string> Ip Static DiscardRouteEntry/<Ip Address>,<Ip Address>*
Router/<string> Static DiscardRouteEntry/<Ip Address>,<Ip Address>
Router/<string> Vrf/<string> Static DiscardRouteEntry/<Ip Address>,<Ip Address>
This table identifies invalid martian networks. Forwarding of packets to the network address indicated by this entry will be discarded.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete

COMPONENT Rtr Udp

Groups	"GROUP Rtr Udp Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Ip Udp* *Rtr/<string> Udp* *Rtr/<string> Vrf/<string> Udp* *Udp* component controls all UDP related attributes supported by this router.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr Udp ListenEntry"
Common Verbs	Help List Display

GROUP Rtr Udp Statistics (Stats)

Properties	Operational
Description	This group holds statictics for UDP.
Mib	no_mib

ATTRIBUTE Rtr Udp inDatagrams

Access	Read only
Description	The number of UDP datagrams delivered to UDP users. *inDatagrams* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Udp noPorts

Access	Read only

Description	The number of UDP datagrams received for which there was no application at the destination port. *noPorts* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Udp inErrors

Access	Read only
Description	The number of received UDP datagrams that could not be delivered for reasons other than the lack of an application at the destination port. *inErrors* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Udp outDatagrams

Access	Read only
Description	The number of UDP datagrams sent from this gateway. *outDatagrams* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Udp ListenEntry

Instance	localAddress [IP address] localPort [Decimal (0..65535)]
Scope	Application

Description	The table contains UDP listener information.
Mib	no_mib
Common Verbs	Help List Display LOCK Unlock

COMPONENT Rtr Tcp

Groups	"GROUP Rtr Tcp Statistics (Stats)"
Scope	Application
Description	The *Tcp* component contains all attributes related to TCP.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr Tcp TcpEntry (TcpEntry)"
Common Verbs	Help List Display

GROUP Rtr Tcp Statistics (Stats)

Properties	Operational
Description	This group contains statistics for TCP.
Mib	no_mib

ATTRIBUTE Rtr Tcp rToAlgorithm

Access	Read only
Description	Indicate which algorithm was used to calculate the timeout value used for retransmitting unackowledged octet.
Mib	no_mib
Values	other constant

	rsre vanJacobson
Default	No default

ATTRIBUTE Rtr Tcp rToMin

Access	Read only
Description	Indicate the minimum value, measured in milliseconds, allowed for retransmission timeout.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE Rtr Tcp rToMax

Access	Read only
Description	Indicates the maximun value, measured in milliseconds, allowed for retransmission timeout.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Rtr Tcp maxConn

Access	Read only
Description	Limit on number of connections the TCP can support. The value is always -1 which indicates that the number of connections supported is dynamic (limited by memory in the system).
Mib	no_mib
Values	Signed (-1)
Default	-1

ATTRIBUTE Rtr Tcp activeOpens

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***synSent*** state from the ***closed*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp passiveOpens

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***synRcvd*** state from the ***listen*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp attemptFails

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***synSent*** state or the ***synRcvd*** state, plus the number of times TCP connections have made a direct transition to the ***listen*** state from the ***synRcvd*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp estabResets

Access	Read only

Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***established*** state or the ***closedWait*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp currEstab

Access	Read only
Description	The number of TCP connections for which the current state is either ***established*** or ***closedWait***.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp inSegs

Access	Read only
Description	The number of segments received, including those received in error. This count includes segments received on currently established connections.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp outSegs

Access	Read only
Description	The number of segments sent, including those on current connections but excluding those containing only retransmitted octets.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp retransSegs

Access	Read only
Description	The number of segments retransmitted that is, the number of TCP segments transmitted containing one or more previously transmitted octets.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp inErrs

Access	Read only
Description	Total number of segments received in error, for example bad TCP checksum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Tcp outRsts

Access	Read only
Description	Number of TCP segments sent containing the RST flag.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Tcp TcpEntry (TcpEntry)

Instance	localAddress [IP address] localPort [Decimal (0..65535)] remoteAddress [IP address] remotePort [Decimal (0..65535)]
Groups	"GROUP Rtr Tcp TcpEntry Operational (Oper)"
Scope	Application
Description	The component defines an entry in the TCP connection table. Each entry corresponds to TCP end-point identified by 4-tuples, *LocalAddress*, *LocalPort*, *RemoteAddress*, and *RemotePort*.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Tcp TcpEntry Operational (Oper)

Properties	Operational
Description	This group contains columnar entries for each end-point on the TCP.
Mib	no_mib

ATTRIBUTE Rtr Tcp TcpEntry state

Access	Read and write
Description	This attribute reflects the current state of this Tcp connection.
Mib	no_mib
Values	closed listen synSent synReceived established closeWait

finWait1
closing
lastAck
finWait2
timeWait
delete

Default: No default

COMPONENT Rtr VpnRouteForwarder (Vrf)

Instance: String (1..16, ASCII)

Groups:
"GROUP Rtr Vrf Provisioned"
"GROUP Rtr Vrf CustomerIdentifierData (CidData)"
"GROUP Rtr Vrf OperationalStatus (OperStatus)"
"GROUP Rtr Vrf OsiState (State)"
"GROUP Rtr Vrf IfNumberOper"
"GROUP Rtr Vrf Statistics (Stats)"
"GROUP Rtr Vrf VrfProvisioned"
"GROUP Rtr Vrf VpnIdentifier"
"GROUP Rtr Vrf VrfOperational (VrfOper)"

Scope: Application

Description:
Rtr/<string> VpnRouteForwarder/<string>
The *VpnRouteForwarder (Vrf)* component represents an instance of a Routing Component on the platform.

The *VpnRouteForwarder* component acts as an Edge Router connecting to a customer edge router providing the customer site with a VPN connection.

At any time, the number of Routing Components (*Router*, *VpnRouteForwarder* and *VirtualRouter*) existing in the current view plus the number of newly created Routing Components in the edit view must be less than the maximum allowed number of virtual routers. This is regardless of how many *VirtualRouter*, *VpnRouteForwarder* or *Router* components may have been deleted in the edit view. Any Routing Component which, when created in the edit view, results in a total count greater than the maximum allowed, is labelled as invalid and must be deleted.

It is recommended that the deletion of any *VirtualRouter*, *VpnRouteForwarder*, or *Router* components existing in the current view should be activated using the *Activate Prov* command before creating any new *VirtualRouter*, *VpnRouteForwarder*, or *Router* components.

Mib

no_mib

Subcomponents

"COMPONENT Rtr Vrf Arp"
"COMPONENT Rtr Vrf Icmp"
"COMPONENT Rtr Vrf RelayBC"
"COMPONENT Rtr Vrf Udp"
"COMPONENT Rtr Vrf Tcp"
"COMPONENT Rtr Vrf MemoryManagement (Mm)"

Opt. Subcomp.

"COMPONENT Rtr Vrf BootpRelayAgent (Bootp)"
"COMPONENT Rtr Vrf BorderGatewayProtocol (Bgp)"
"COMPONENT Rtr Vrf RouteDistinguisher (Rd)"
"COMPONENT Rtr Vrf RouteTarget (Rt)"
"COMPONENT Rtr Vrf ExportPolicy (Export)"
"COMPONENT Rtr Vrf Ospf (Ospf)"
"COMPONENT Rtr Vrf PolicerProfile (Policer)"
"COMPONENT Rtr Vrf DiffServProfile (DiffServProf)"
"COMPONENT Rtr Vrf RoutingInformationProtocol (Rip)"
"COMPONENT Rtr Vrf Static"
"COMPONENT Rtr Vrf Interface (If)"
"COMPONENT Rtr Vrf ControlPlaneProtection (Cpp)"
"COMPONENT Rtr Vrf DifferentiatedServicesDomain (Dsd)"

Dyn. Subcomp.

"COMPONENT Rtr Vrf Cache"
"COMPONENT Rtr Vrf ServiceLabelUsage (Slu)"
"COMPONENT Rtr Vrf ForwardTable (Fwd)"
"COMPONENT Rtr Vrf RouteDataBaseEntry (Rdb)"

Common Verbs

Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Rtr Vrf Provisioned

Properties	Provisioned
Description	This group contains the router attributes common to the *Router* and *Router VpnRouteForwarder* components.
Mib	no_mib

ATTRIBUTE Rtr Vrf sourceRoute

Access	Read and write
Description	This attribute specifies whether or not this *Router* or *VpnRouteForwarder* allows processing of datagrams which have a source route IP option.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf cacheTableSize (cts)

Access	Read and write
Description	This attribute specifies the maximum number of entries that can exist in the local cache table on each *Lp* for this *Router* or *VpnRouteForwarder*. This attribute provides a way to control the resources allocated to the IP cache tables. The default cache table size is *300* for an FP and *100* for a CP. The attribute value must be a multiple of 100.
Mib	no_mib
Vector of	Decimal (100..8000)
Index	Decimal (0..15)
Default	([1] 100, [15] 300)

GROUP Rtr Vrf CustomerIdentifierData (CidData)

Properties	Provisioned

Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Rtr Vrf customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Rtr Vrf OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users

only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Vrf operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Vrf usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in

	use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf IfNumberOper

Properties	Operational
Description	This group contains the ifNumber attribute.
Mib	no_mib

ATTRIBUTE Rtr Vrf ifNumber (ifN)

Access	Read only
Description	This attribute defines the number of *IfEntries* in the *IfTable*.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

GROUP Rtr Vrf Statistics (Stats)

Properties	Operational
Description	This is the GROUP holding the struct which contains statistical attributes for IP.
Mib	no_mib

ATTRIBUTE Rtr Vrf inReceives

Access	Read only
Description	This is the number of input datagrams received from the interfaces, including those received in error. *inReceives* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf inHdrErrors

Access	Read only
Description	The number of input datagrams discarded due to errors in their IP headers, including bad checksums, version number mismatch, other format errors, time-to-live exceeded, errors discovered in processing their IP options, etc. *inHdrErrors* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf inAddrErrors

Access	Read only
Description	The number of input datagrams discarded due to errors such as invalid address, unsupported address class. *inAddrErrors* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf forwDatagrams

Access	Read only

Description	The number of input datagrams for which this router was not their final IP destination, as a result of which an attempt was made to find a route to forward them to that final destination. *forwDatagrams* wraps to zero if reaches it's maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf inUnknownProtos

Access	Read only
Description	The number of locally-addressed datagrams received successfully but discarded because of an unknown or unsupported protocol *inUnknownProtos* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf inDiscards

Access	Read only
Description	The number of input datagrams for which no problems were encountered to prevent their continued processing, but which were discarded due to the lack of buffers. This does not include any datagram discarded while awaiting for re-assembly. *inDiscards* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf inDelivers

Access	Read only

Description	The number of input datagrams successfully delivered to IP user-protocols (including ICMP). *inDelivers* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf outRequests

Access	Read only
Description	The number of datagrams which local IP user-protocols (including ICMP) supplied to IP in requests for transmission. This sum does not include datagrams counted in *ForwDatagrams*. *outRequests* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf outDiscards

Access	Read only
Description	The number of outbound datagrams that were discarded due to the lack of buffers. This sum also includes datagrams counted in *forwDatagrams* if any such packets met the discard criterion. *outDiscards* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf outNoRoutes

Access	Read only
Description	The number of outbound datagrams discarded because no route could be found to transmit them to their destination. This counter

	includes any datagrams counted in *forwDatagrams*. *outNoRoutes* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf reasmTimeOut

Access	Read only
Description	The maximum number of seconds, which received fragments are held while they are awaiting reassembly at this gateway.
Mib	no_mib
Values	Decimal (0..5)
Units	seconds
Default	5

ATTRIBUTE Rtr Vrf reasmReqds

Access	Read only
Description	The number of the IP fragments received by this gateway which needed to be reassembled. *reasmReqds* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf reasmOks

Access	Read only
Description	The number of IP fragments successfully reassembled by this gateway. *reasmOks* wraps to zero if reaches its maximum defined value.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf reasmFails

Access	Read only
Description	The number of times this gateway is unabled to assemble IP-fragments for whatever reasons. *reasmFails* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf fragOks

Access	Read only
Description	The number of IP datagrams that have been successfully fragmented by this gateway. *fragOks* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf fragFails

Access	Read only
Description	The number of IP-fragments that have been discarded because they needed to be fragmented but could not be. For example, their Don’t Fragment flag was set. *fragFails* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf fragCreates

Access	Read only
Description	This number of IP fragments that have been generated as a result of fragmentation by this gateway. *fragCreates* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf routingDiscards

Access	Read only
Description	The number of routing entries which were chosen to be discarded even though they are valid. One possible reason for discarding such an entry could be to free -up buffer space for other routing entries. In this implementation, this number is always zero because IP never deletes a valid routing entry.
Mib	no_mib
Values	Decimal (0..0)
Default	0

ATTRIBUTE Rtr Vrf inSrcRouteDiscards

Access	Read only
Description	The number of input datagrams which had a source route IP option and were discarded because this functionality is not allowed for this Routing Component. *srcRouteDiscards* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

GROUP Rtr Vrf VrfProvisioned

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Router Vrf* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf snmpAdminStatus

Access	Read and write
Description	This attribute specifies the desired SNMP state of the VRF. The ***up*** state indicates that the VRF is operational and packet forwarding is allowed. The ***down*** state indicates that the VRF is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr Vrf mode

Access	Read and write
Criticality	Process
Description	This attribute specifies the mode of operation of the *VRF* component. A value of ***rfc2547*** specifies that the *VRF* is provisioned as an access node for the BGP/MPLS VPN network. A value of ***ipRouter*** specifies that the *VRF* is used for direct IP connectivity.
Mib	no_mib
Values	rfc2547 ipRouter

Default	rfc2547

ATTRIBUTE Rtr Vrf importRoutesAlarmLimit (importal)

Access	Read and write
Description	This attribute specifies the alarm threshold of number of 2547 VPN routes to be imported to this *Vrf*'s routing table from the *Router* component. When the number of routes imported to this *Vrf* reaches this limit, an alarm is generated and *Vrf* will continue importing routes. The current number of imported routes is available in the *routeImports* operational attribute of this *Vrf*. This attribute does not apply if the *mode* attribute of this *Vrf* is set to ***ipRouter***.
Mib	no_mib
Values	Decimal (1..65535)
Default	2400

ATTRIBUTE Rtr Vrf importRoutesDiscardLimit (importdl)

Access	Read and write
Description	This attribute specifies the maximum number of 2547 VPN routes to be imported to this *Vrf*'s routing table from the *Router* component. When the number of routes imported to this *Vrf* reaches this limit, an alarm is generated and *Vrf* will stop importing routes. The current number of imported routes is available in the *routeImports* operational attribute of this *Vrf*. This attribute does not apply if the *mode* attribute of this *Vrf* is set to ***ipRouter***.
Mib	no_mib
Values	Decimal (1..65535)
Default	3000

ATTRIBUTE Rtr Vrf exportRoutesAlarmLimit (exportal)

Access	Read and write
Description	This attribute specifies the alarm threshold of number of routes to be exported from this *Vrf*'s routing table to the 2547 VPN routing

database of the *Router* component. When the number of routes exported from this *Vrf* reaches this limit, an alarm is generated and *Vrf* will continue exporting routes.
The current number of exported routes is available in the *routeExports* operational attribute of this *Vrf*. This attribute does not apply if the *mode* attribute of this *Vrf* is set to ***ipRouter***.

Mib: no_mib

Values: Decimal (1..65535)

Default: 400

ATTRIBUTE Rtr Vrf exportRoutesDiscardLimit (exportdl)

Access: Read and write

Description: This attribute specifies the maximum number of routes to be exported from this *Vrf*'s routing table to the 2547 VPN routing database of the *Router* component. When the number of routes exported from this *Vrf* reaches this limit, an alarm is generated and *Vrf* will stop exporting routes.
The current number of exported routes is available in the *routeExports* operational attribute of this *Vrf*. This attribute does not apply if the *mode* attribute of this *Vrf* is set to ***ipRouter***.

Mib: no_mib

Values: Decimal (1..65535)

Default: 500

GROUP Rtr Vrf VpnIdentifier

Properties: Provisioned

Description: This group contains provisioned attributes to specify the Virtual Private Network (VPN) associated with this *Vrf* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf vpnId

Access: Read and write

Description	This attribute specifies the Virtual Private Network (VPN) associated with this *Vrf* component. This is a globally unique identifier composed of a three-octet long Organizationally Unique Identifier (OUI) followed by a four-octet long VPN index. It can be used by MDM to identify configured VPNs in the network. Provisioning the same VPN ID on a set of VRFs indicates that they belong to the same VPN. This attribute does not affect the distribution of routing information in the VPN. The value "***00-00-00-00-00-00-00***" identifies an unspecified VPN ID.
Mib	no_mib
Values	String (7, Dashed Hex)
Default	00-00-00-00-00-00-00

ATTRIBUTE Rtr Vrf vpnName

Access	Read and write
Description	This attribute specifies an identifier for grouping *Vrf* into VPNs. It can be used by MDM to identify configured VPNs in the network. Provisioning the same *vpnName* on a set of *Vrf* indicates that they belong to the same VPN. This attribute does not affect the distribution of routing information in the VPN. If no value is provisioned, it implies that no *vpnName* has been specified.
Mib	no_mib
Values	String (0..255, ASCII)
Default	" "

GROUP Rtr Vrf VrfOperational (VrfOper)

Properties	Operational

Description	This group contains the operational attributes of the *Vrf* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf routeImports

Access	Read only
Description	This attribute indicates the current number of routes imported to this *Vrf* from *Router* BgpMpls database. The maximum value of this attribute is provisioned in attribute *importRoutesDiscardLimit*.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Rtr Vrf routeExports

Access	Read only
Description	This attribute indicates the current number of routes exported from this *Vrf* to Router BgpMpls database. The maximum value of this attribute is provisioned in attribute *exportRoutesDiscardLimit*.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

COMPONENT Rtr Vrf Arp

Groups	"GROUP Rtr Vrf Arp Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Arp* *Rtr/<string> Arp*

Rtr/<string> Vrf/<string> Arp
The component specifies the Address Resolution Protocol.

Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Arp HostEntry (Host)"
Dyn. Subcomp.	"COMPONENT Rtr Vrf Arp DynHostEntry (DynHost)"
Common Verbs	Help List Display

VERB Clear Rtr Vrf Arp

Impact	Passive
Description	*Clear [-logicalIf(Ip Address)] [-includeInverse] Vr/<string> Ip Arp* *Clear [-logicalIf(Ip Address)] [-includeInverse] Rtr/<string> Arp* The *Clear* verb is intended for manually flushing dynamically learned ARP entries. Without any options, *Clear* will flush all non-inverse dynamic ARP entries. The *Clear* verb does not affect static ARP host entries, that is, entries which correspond to *HostEntry* subcomponents of this component. These entries can be removed by deleting the corresponding provisioned *HostEntry* component. The *-logicalIf* or *-interface* option is used to flush dynamic ARP entries which were learned on a particular *IpPort LogicalInterface* or *Interface*. The option must specify the IP address of an existing *IpPort LogicalInterface* (which may be under any *ProtocolPort) or Interface*. The *-includeInverse* option is used to force the deletion of inverse ARP entries. Inverse ARP entries which are learned through inverse ARP (*FrDte*) and inverse ATM ARP (*AtmMpe*) are important and should not be cleared by the users accidentally. If the option is not present, inverse ARP entries are not cleared.

GROUP Rtr Vrf Arp Provisioned (Prov)

Properties	Provisioned
Description	The ARP refresh feature allows the router to periodically verify ARP table entries. Whenever the router updates an ARP entry, or creates a new entry, a timeout value is assigned to the entry. When the timeout for an entry expires, the router will send a unicast ARP request to the currently-known physical address. If an ARP response comes back, the entry will be assigned a new timeout. If, however, the host has gone away or been assigned a new physical address, the host will not respond to the unicast ARP, and the entry will be removed from the ARP table. The new physical address will be discovered through the normal ARP mechanism when the next communication is attempted to the host.
Mib	no_mib

ATTRIBUTE Rtr Vrf Arp autoRefresh

Access	Read and write
Description	This attribute is used to enable or disable the ARP refresh feature.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf Arp autoRefreshTimeout

Access	Read and write
Description	This attribute defines the timeout value, in minutes, which is assigned to updated ARP entries, or newly created ARP entries. The range for the timeout is 1 minute to 1440 minutes (24 hours).
Mib	no_mib
Values	Decimal (1..1440)
Units	minutes

Default	5

ATTRIBUTE Rtr Vrf Arp retryTimes

Access	Read and write
Description	This attribute defines the number of times that an ARP request will be sent to a remote host if there is no reply received. This value is assigned when ARP entries are updated or created. The range of the value can be from 0 to 127.
Mib	no_mib
Values	Decimal (0..127)
Units	times
Default	127

COMPONENT Rtr Vrf Arp DynHostEntry (DynHost)

Instance	hostAddress (addr) [IP address] cos [0 1 2 3 notApplicable (na)]
Groups	"GROUP Rtr Vrf Arp DynHost Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Arp DynHostEntry/<Ip Address>* *Router/<string> Arp DynHostEntry/<Ip Address>* *Router/<string> Vrf/<string> DynHostEntry/<Ip Address>* This component is a table that contains all Arp host entries (both static and dynamic). Each IP ARP entry in the table is uniquely defined by its IP address and connection class (cos) value. For *Vr*, when associated *mediaType* under *IpPort* is ***frameRelay***, ***atmMpeLlcEncap,*** and ***atmMpeVcEncap***, the connection class value of the arp entry is ***0, 1, 2,*** or ***3*** . For all other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

For *Router* or *Vrf*, when the media associated with the interface is *atmMpe* or *IpoDlci*, the connection class value of the arp entry is ***0, 1, 2,*** or ***3***. For all other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

An IP packet that has been assigned a particular connection class value will be forwarded using the arp entry which corresponds to the next hop gateway IP address and matching connection class value where the next hop gateway IP address is determined via a forwarding table look up on the packet's destination IP address. When there are arp entries that match the next hop gateway IP address, but not the packet's connection class, then the packet will be forwarded using the arp entry that has the next lowest connection class value; failing this, the packet will be forwarded using the arp entry that has the next highest connection class value.

Mib: no_mib

Common Verbs:
- Help
- List
- Display

VERB Clear Rtr Vrf Arp DynHost

Impact	Passive
Description	*Clear [-inverse] Vr/<string> Ip Arp DynHostEntry/<Ip Address>* *Clear [-inverse] Router/<string> Arp DynHostEntry/<Ip Address>* *Clear [-inverse] Router/<string> Vrf/<string> Arp DynHostEntry/<Ip Address>* The *Clear* verb is used to delete the single dynamically learned ARP entry that is represented by this component. The *Clear* command does not affect static ARP host entries, that is, entries whose *type* attribute has the value ***static***. These entries can be removed by deleting the corresponding provisioned *HostEntry* component under *Arp*. The *-inverse* option deletes the ARP entry even if it was an inverse ARP entry. Inverse ARP entries are learned through inverse ARP (*FrDte* or *IpoDlci*) and inverse ATM ARP (*AtmMpe*), and should not be removed by the users accidentally. If the option is not present, an inverse ARP entry is not cleared.

GROUP Rtr Vrf Arp DynHost Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *DynHostEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Arp DynHost physAddress

Access	Read only
Description	This attribute indicates the physical address of the host in canonical form.
Mib	no_mib
Values	String (0..8, Dashed Hex)

Default	No default

ATTRIBUTE Rtr Vrf Arp DynHost maxTxUnit (mtu)

Access	Read only
Description	This attribute indicates the maximum MTU size that can be accepted by the host.
Mib	no_mib
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Rtr Vrf Arp DynHost encapsulationType (encap)

Access	Read only
Description	This attribute indicates the encapsulation type of the host.
Mib	no_mib
Values	ieee8023 ethernet notApplicable
Default	No default

ATTRIBUTE Rtr Vrf Arp DynHost permanentVirtualCircuitNumber (pvcNo)

Access	Read only
Description	This attribute indicates the permanent virtual circuit number to the remote host.
Mib	no_mib
Values	Decimal (0..4095)
Default	No default

ATTRIBUTE Rtr Vrf Arp DynHost ifIndex

Access	Read only
Description	This attribute indicates the *ifIndex* of the protocol port that is associated with this entry.

Mib	no_mib
Values	Decimal (1..65535)
Default	1

ATTRIBUTE Rtr Vrf Arp DynHost type

Access	Read only
Description	This attribute indicates how this entry was learned.
Mib	no_mib
Values	pending invalid dynamic static
Default	No default

ATTRIBUTE Rtr Vrf Arp DynHost ncPhysAddress

Access	Read only
Description	This attribute indicates the physical address of the host in non-canonical form. This attribute is not displayed for hosts on non-LAN media.
Mib	no_mib
Values	String (0..8, Dashed Hex)
Default	No default

ATTRIBUTE Rtr Vrf Arp DynHost tunnelDestinationAddress (tda)

Access	Read only
Description	This attribute indicates the IP address of a remote IP tunnel endpoint in the shared domain. A value of 0.0.0.0 is used when the entry is not referring to an IP tunnel.
Mib	no_mib
Values	IP address

Default 0.0.0.0

COMPONENT Rtr Vrf Arp HostEntry (Host)

Instance
hostAddress (addr) [IP address]
cos [0
1
2
3
notApplicable (na)]

Groups
"GROUP Rtr Vrf Arp Host Provisioned (Prov)"
"GROUP Rtr Vrf Arp Host Operational (Oper)"

Scope
Application

Description
Vr/<string> Ip Arp HostEntry/<Ip Address>,<cos>
Rtr/<string> Arp HostEntry/<Ip Address>,<cos>
Rtr/<string> Vrf/<string> Arp HostEntry/<Ip Address>,<cos>
This component defines a static host entry in the ARP table.

For *Vr*, a connection class (cos) value of ***0, 1, 2,*** or ***3*** is used when the associated *mediaType* under *IpPort* is ***frameRelay***, ***atmMpeLlcEncap***, or ***atmMpeVcEncap***. For other media types, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

For *Router* and *Vrf*, a connection class (cos) value of ***0, 1, 2,*** or ***3*** is used when the media associated with the interface is *AtmMpe* or *IpoDlci*. For other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

Mib
no_mib

Common Verbs
Help
List
Display
Add
DELete

GROUP Rtr Vrf Arp Host Provisioned (Prov)

Properties
Provisioned

Description	This group contains the provisionable attributes of the *HostEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Arp Host physAddress

Access	Read and write
Description	This attribute identifies the physical address of the host being defined. The value for this attribute should only be specified for media types supporting physical addresses (e.g. ethernet, fddi, tokenRing etc.)
Mib	no_mib
Values	String (0..8, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Rtr Vrf Arp Host maxTxUnit (mtu)

Access	Read and write
Description	Specify the maximum transmit unit (MTU) size that can be accepted by the host. If this value is not specified, the value for the media interface is used. The specified MTU must be less than or equal to the interface's MTU size.
Mib	no_mib
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Rtr Vrf Arp Host permanentVirtualCircuitNumber (pvcNo)

Access	Read and write
Description	This attribute specifies the number of the PVC for the static host entry. It is the instance number of the X.25 media, Frame Relay media, and of the *AtmConnection* component on the ATM MPE interface..
Mib	no_mib

Values	Decimal (0..4095)
Default	0

ATTRIBUTE Rtr Vrf Arp Host tunnelDestinationAddress (tda)

Access	Read and write
Description	This attribute specifies the IP address of a remote IP tunnel endpoint in the shared domain. A value of 0.0.0.0 is used when the entry is not referring to an IP tunnel.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Arp Host encap

Access	Read and write
Description	This attribute specifies the encapsulation type for the host. The value for this attribute should only be specified for the hosts on the ethernet media. If a value of ***auto*** is specified, the application based on the media will determine the proper applicable encapsulation type.
Mib	no_mib
Values	ieee8023 ethernet auto
Default	auto

GROUP Rtr Vrf Arp Host Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *HostEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Arp Host operMaxTxUnit (operMtu)

Access	Read only
Description	This attribute indicates the operational value of the maximum transmission unit.
Mib	no_mib
Values	Decimal (0..0; 80..18944)
Default	No default

ATTRIBUTE Rtr Vrf Arp Host operEncap

Access	Read only
Description	This attribute indicates the operational encapsulation type. if the value of the attribute *encap* is set to ***auto***, then the application will determine the encapsulation type based on the media being used and assigns the appropriate value.
Mib	no_mib
Values	ieee8023 ethernet notApplicable
Default	No default

COMPONENT Rtr Vrf BootpRelayAgent (Bootp)

Groups	"GROUP Rtr Vrf Bootp AdministrativeControl (AdminControl)" "GROUP Rtr Vrf Bootp Provisioned (Prov)" "GROUP Rtr Vrf Bootp OsiState (State)" "GROUP Rtr Vrf Bootp OperationalStatus (OperStatus)"
Scope	Application
Description	*Vr/<string> Ip BootpRelayAgent* *Rtr/<string> BootpRelayAgent* *Rtr/<string> Vrf<string> BootpRelayAgent* The *BootpRelayAgent* component contains all the necessary attributes and components to provision a BOOTP relay agent. The BOOTP relay agent functionality conforms to that described in RFCs 951 and 1542.

The purpose of the BOOTP relay agent is to forward BOOTP request packets from a client to a server, and also to deliver server BOOTP replies back to the client. When a BOOTP request is received on a port, the request will be sent to a provisioned list of IP addresses for that port. In addition, the request will be broadcast out all other BOOTP ports which allow it.

Mib: no_mib

Dyn. Subcomp.: "COMPONENT Rtr Vrf Bootp BootpPortEntry (PpE)"

Common Verbs:

- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Rtr Vrf Bootp AdministrativeControl (AdminControl)

Properties: Provisioned

Description: This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Bootp snmpAdminStatus

Access: Read and write

Description: The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values	up down testing
Default	up

GROUP Rtr Vrf Bootp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *BootpRelayAgent* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bootp hopDiscardThreshold (hops)

Access	Read and write
Description	BOOTP packets contain a ‘hops’ field which is used to limit the number of relay agents that can process the packet (each relay agent increments the ‘hops’ field by one). This attribute is used by the relay agent to determine when to discard a BOOTP packet. If the ‘hops’ field exceeds the *hopDiscardThreshold* the BOOTP packet will be discarded.
Mib	no_mib
Values	Decimal (2..16)
Default	4

GROUP Rtr Vrf Bootp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bootp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf Bootp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Bootp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Bootp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bootp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable

to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

Default: up

COMPONENT Rtr Vrf Bootp BootpPortEntry (PpE)

Instance: String (1..20, ASCII)

Groups:
"GROUP Rtr Vrf Bootp PpE Operational (Oper)"
"GROUP Rtr Vrf Bootp PpE Statistics (Stats)"

Scope: Application

Description:
Vr/<string> Ip BootpRelayAgent BootpPortEntry/<string> Rtr/<string> BootpRelayAgent BootpPortEntry/<string> Rtr/<string> Vrf/<string> BootpRelayAgent BootpPortEntry/ <string>
The *BootpPortEntry* component contains information about the provisioned *BootpPort*. This component is indexed by a string which represents a *VirtualRouter ProtocolPort* or *Rtr Interface* or *Rtr Vrf Interface* component name.

Mib: no_mib

Common Verbs:
Help
List
Display

GROUP Rtr Vrf Bootp PpE Operational (Oper)

Properties: Operational

Description: This group contains *BootpPortEntry* component operational data.

Mib: no_mib

ATTRIBUTE Rtr Vrf Bootp PpE status

Access	Read only
Description	This attribute indicates the status of the provisioned *BootpPortEntry* component. A value of ***disabled*** is used when the parent components is in a disabled state. A value of ***up*** is used when the *BootpPortEntry* is in an operational state. A state of ***down*** is used if the media associated with the *BootpPortEntry* is not ready or disabled.
Mib	no_mib
Values	up down disabled
Default	No default

GROUP Rtr Vrf Bootp PpE Statistics (Stats)

Properties	Operational
Description	This group contains *BootpPortEntry* component statistics.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bootp PpE inRequests

Access	Read only
Description	This attribute counts the total number of BOOTP Request messages received on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bootp PpE inReplies

Access	Read only

Description	This attribute counts the total number of BOOTP Reply messages received on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bootp PpE outRequests

Access	Read only
Description	This attribute counts total the number of BOOTP Request messages broadcast out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bootp PpE outReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages sent out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bootp PpE inRequestErrors

Access	Read only
Description	This attribute counts the number of BOOTP Request messages received on this port but not forwarded due to an error. An error occurs if the BOOTP hop limit has been exceeded.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bootp PpE inReplyErrors

Access	Read only
Description	This attribute counts the number of BOOTP Reply messages received on this port but not forwarded due to an error. An error occurs if the giaddr field in the BOOTP reply does not match an IP address assigned to this *VirtualRouter* or *Rtr* or *Rtr Vrf*, or if the output *IpPort* or *Interface* for the BOOTP reply is not provisioned for BOOTP.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf Cache

Instance	Decimal (0..15)
Groups	"GROUP Rtr Vrf Cache OsiState (State)" "GROUP Rtr Vrf Cache Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Cache/n* *Rtr/<string> Cache/n* *Rtr/<string> Vrf/<string> Cache/n* This component represents the IP cache table on LP *n*.
Mib	no_mib
Common Verbs	Help List Display

VERB Clear Rtr Vrf Cache

Impact	Service
Description	*Clear Vr/<string> Ip Cache/n* *Clear Router/<string> Cache/n* *Clear Router/<string> Vrf/<string> Cache/n* This verb clears all entries in the cache table on LP *n*. This command deletes all the *Entry* subcomponents of *Cache/n*.

GROUP Rtr Vrf Cache OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Cache adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf Cache operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Cache usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Cache Operational (Oper)

Properties	Operational
Description	This group houses all the operational attributes of an *Ip* cache table.
Mib	no_mib

ATTRIBUTE Rtr Vrf Cache entriesFree (ef)

Access	Read only
Description	This attribute is indicative of the number of free *Ip* cache table entries. A consistently high value for this attribute indicates that there is a resource surplus of the memory requirements for cache table. This surplus could be utilized elsewhere if needed by adjusting the appropriate *cacheTableMaxEntries* attribute. For *Vr*, *cacheTableMaxEntries* is under the *Ip* component; for *Rtr* and *Vrf*, it is under the respective components.
Mib	no_mib
Values	Decimal (0..8000)
Default	No default

ATTRIBUTE Rtr Vrf Cache totalLookups (tl)

Access	Read only
Description	This attribute indicates the total number of local cache lookups. It wraps around to zero when it exceeds its maximum value of 4294967295.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Cache lookupMisses (lm)

Access	Read only
Description	This attribute indicates the total number of local cache lookup misses. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Cache cacheTableMaxEntries (ctme)

Access	Read only
Description	This attribute indicates the current maximum number of entries that can exist in the IP local cache table on each LP.
Mib	no_mib
Values	Decimal (0..8000)
Default	No default

COMPONENT Rtr Vrf BorderGatewayProtocol (Bgp)

Groups	"GROUP Rtr Vrf Bgp Provisioned (Prov)" "GROUP Rtr Vrf Bgp Operational (Oper)" "GROUP Rtr Vrf Bgp OsiState (State)" "GROUP Rtr Vrf Bgp AdministrativeControl (AdminControl)" "GROUP Rtr Vrf Bgp OperationalStatus (OperStatus)"
Scope	Application
Description	*Vr/<string> Ip BorderGatewayProtocol* *Rtr/<string> BorderGatewayProtocol* *Rtr/<string> Vrf/<string> BorderGatewayProtocol*

	This component is used to run the Border Gateway Protocol for IP.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Bgp ImportPolicy (Import)" "COMPONENT Rtr Vrf Bgp ExportPolicy (Export)" "COMPONENT Rtr Vrf Bgp As" "COMPONENT Rtr Vrf Bgp AggregatePolicy (Aggregate)"
Dyn. Subcomp.	"COMPONENT Rtr Vrf Bgp IndbEntry (Indb)" "COMPONENT Rtr Vrf Bgp LocaldbEntry (Localdb)" "COMPONENT Rtr Vrf Bgp OutdbEntry (Outdb)" "COMPONENT Rtr Vrf Bgp LocalVpn" "COMPONENT Rtr Vrf Bgp MBgpRibEntry (MBgpRib)" "COMPONENT Rtr Vrf Bgp MplsVpnRibEntry (MvRib)" "COMPONENT Rtr Vrf Bgp Ipv4LabelRibEntry (LRib)"
Dyn. Subcomp.	"COMPONENT Rtr Vrf Bgp Peer"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf Bgp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Bgp* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp bgpIdentifier

Access	Read and write
Criticality	Component

Description	This attribute specifies the *Bgp* Identifier of this *Bgp* component instance. It is picked from the IP address space, and should follow the same rule as choosing an unique IP address for *IpPort* or *Interface*.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp localAs

Access	Read and write
Criticality	Component
Description	This attribute specifies the autonomous system identifier for this *Bgp* component instance.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp defaultLocalPreference (locPrf)

Access	Read and write
Criticality	Component
Description	This attribute specifies this *Bgp* component instance's default degree of preference for routes. It can be overridden by the *localPreference* provisioned in *ImportPolicy*. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	144

ATTRIBUTE Rtr Vrf Bgp defaultMultiExitDisc (med)

Access	Read and write
Criticality	Component
Description	This attribute specifies this *Bgp* component instance's default metric to discriminate between multiple exit points to the same adjacent autonomous system. It can be overridden by the s*endMultiExitDiscToEbgp* provisioned in *ExportPolicy.* A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967294

ATTRIBUTE Rtr Vrf Bgp routeThrottleLimit (rtl)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of routes in the IP forwarding table this *Bgp* component instance will process at one time to decide if a route in the IP forwarding table should be exported to a peer. This limit is used because the throttling requirements are different under different network configurations.
Mib	no_mib
Values	Decimal (1..1000)
Default	250

ATTRIBUTE Rtr Vrf Bgp routeThrottleInter (rti)

Access	Read and write
Criticality	Component
Description	This attribute specifies the interval between the processing of the routes in the IP forwarding table to decide if a route in the IP forwarding table should be exported to a peer. This interval is used because the throttling requirements is different under different network configurations.

Mib	no_mib
Values	Decimal (1..30)
Units	seconds
Default	5

ATTRIBUTE Rtr Vrf Bgp routeReflector (rr)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this *Bgp* instance is a Route Reflector. If the value of this attribute is ***true***, *Bgp* redistributes routes it learns from an IBGP speaker to other IBGP speakers in the AS. The rule of redistribution depends on the peer type: 1) When a route is learned from a non-client peer, it is redistributed to all the client peers within the cluster. 2) When a route is learned from a client peer, it is redistributed to all the non-client peers and also to the client peers. If the value of this attribute is ***false***, *Bgp* does not redistribute routes it learns from one IBGP speaker to other IBGP speakers in the AS.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf Bgp routeReflectorCluster (rrCluster)

Access	Read and write
Criticality	Component
Description	This attribute identifies the cluster consisting of the Route Reflector and its peer clients. When *routeReflector* of *Bgp* is ***true***, value of 0.0.0.0 or 255.255.255.255 is invalid; the default value of this attribute is same as *bgpIdentifier*. For redundancy, a cluster may have more than one Route Reflector; in this case, the value of this attribute of all the Route Reflectors in the same cluster

	should be same. The value of this attribute is ignored when *routeReflector* of *Bgp* is ***false***
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp redistributeIgpToIbgp (rigp)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this *Bgp* instance allows exporting of IGP routes to internal Bgp peers. IGP routes include the routes learned from OSPF, RIP, local routes and static routes. If the value of this attribute is ***true***, and if *ExportPolicy* is specified to distribute, then *Bgp* allows IGP route to be distributed to internal Bgp peers. If the value of this attribute is ***false***, *Bgp* does not allow IGP routes to be distributed to internal *Bgp* peer, even if *ExportPolicy* is specified to distribute. This attribute is set to true if and only this Bgp is part of the Carrier Manage Service, otherwise, a routing loop may result.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf Bgp defaultIbgpRtePreference (ibgpPref)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's default routing preference for IBGP routes. It can be overridden by the *IbgpRtePreference* provisioned in *ImportPolicy.* A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..253)

Default	122

ATTRIBUTE Rtr Vrf Bgp defaultEbgpRtePreference (ebgpPrf)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's default routing preference for EBGP routes. It can be overridden by the *ebgpRtePreference* provisioned in *ImportPolicy.* A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..253)
Default	70

ATTRIBUTE Rtr Vrf Bgp vpnPeeringTopology (topology)

Access	Read and write
Description	Under the *Vr* component, this attribute specifies the peering mode that determines if a dynamic IBGP peer is to be instantiated between this *BGP* instance and a discovered IP Tunnel endpoint on the remote customer VR. This mode controls the distribution of IP routing information among VPN sites through dynamic BGP sessions after auto-discovery has taken place. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value. In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute. Under the *Rtr* or *Rtr Vrf* component, this attribute is not used.

Mib	no_mib
Values	none hub spoke
Default	No default

ATTRIBUTE Rtr Vrf Bgp alarmGeneration (alarms)

Access	Read and write
Description	This attribute specifies the level of alarm generation for this *Bgp* instance. A value of ***all*** specifies that all BGP alarms are made visible. A value of ***normal*** specifies that all BGP alarms are made visible, except for the following: - *Bgp Peer* listening failure alarms, - *Bgp Peer* connect failure alarms, and - *Bgp* notification alarms. Any listening failure or connect failure alarms which were previously set for a *Peer* component under this *Bgp* instance are cleared. A value of ***none*** specifies that no BGP alarms are made visible. Any listening failure, connect failure, or “no auto discovery” alarms which were previously set for a *Peer* component under this *Bgp* instance are cleared. Note that, because the listening failure, connect failure, and “no auto discovery” alarms are triggered by state changes in the *Peer* component, they are not automatically regenerated when previously disabled alarm generation is enabled. For example, consider the following: - If the *Bgp alarmGeneration* attribute is set to ***all*** and a *Peer* enters a listening failure state, a listening failure alarm is set against that *Peer* subcomponent. - If the *Bgp alarmGeneration* attribute is then set to ***normal*** or ***none***, the above listening failure alarm is cleared. - If the *Bgp alarmGeneration* attribute is then set back to ***all***, no

alarm is generated because the *Peer* subcomponent has not changed state.
- If the *Peer* then exits the listening failure state, a listening failure alarm clear is generated for the *Peer*, even though there is no alarm set for that component.

When the scope of alarm generation has been increased for a *Bgp* instance, previously existing alarms which had been suppressed can be regenerated by locking and unlocking the *Bgp Peer* subcomponents.

For a *VirtualRouter* with *vpnMode* attribute be set to ***carrier***, it is recommended that the *alarmGeneration* attribute be set to ***all***. For a *VirtualRouter* with the *vpnMode* attribute set to ***customer***, it is recommended that the *alarmGeneration* attribute be set to either ***normal*** or ***none***, for scalability reasons.

Similarly, for a *Router* component, it is recommended that the *alarmGeneration* attribute be set to ***all***. For a *Router Vrf* component, it is recommended that the *alarmGeneration* attribute be set to either ***normal*** or ***none***, for scalability reasons.

Mib: no_mib

Values:
none
normal
all

Default: all

ATTRIBUTE Rtr Vrf Bgp keyTransitionDelay (keyDelay)

Access: Read and write

Description: This attribute specifies a default delay period associated with a change of *md5Key* value event for the *Bgp* component. The *md5Key* is set under the *Bgp Peer Descriptor* component.

This is the time that can elapse before the local router transitions to using the new key for transmission for all the Bgp Peer sessions' under this *Bgp* component. This time is not used to control when to accept the new key for reception, and the new key is immediately accepted for reception.

	This delay equates to the amount of time the operator has to provision both the local and remote ends with the new key, without losing service. This can be overridden by the *keyTransitionDelay* provisioned under the *Bgp Peer Descriptor* component.
Mib	no_mib
Values	Decimal (1..20160)
Units	minutes
Default	10

ATTRIBUTE Rtr Vrf Bgp bgpImportRouteLimit (birl)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the maximum number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated. The default value of zero implies no protection. This limit is set based on the requirements of the network configuration and is critical to BGP.
Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Rtr Vrf Bgp bgpImportRouteDiscardLimit (bird)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated and subsequent routes are discarded. The default value of zero signifies no protection. This limit is set based on the requirements of the network configuration and is critical to BGP.

Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

GROUP Rtr Vrf Bgp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Bgp* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp tableVersion

Access	Read only
Description	This attribute indicates the version of the BGP routing table. It is incremented every time the BGP routing table changes. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp inMsgs

Access	Read only
Description	This attribute counts the total number of BGP messages received without error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp inErrors

Access	Read only

Description	This attribute counts the total number of BGP messages received from all peers that proved to be in error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp inErrorMsgs

Access	Read only
Description	This attribute counts the total number of BGP NOTIFICATION messages from all the peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp outMsgs

Access	Read only
Description	This attribute counts the total number of BGP messages sent to peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp outDiscards

Access	Read only
Description	This attribute counts the number of BGP messages that were locally generated but were not sent out due to resource limitations within a *Bgp* instance. This counter will wrap to zero once the value exceeds the maximum value.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp outErrorMsgs

Access	Read only
Description	This attribute counts the BGP NOTIFICATION messages sent to the peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp indbSize

Access	Read only
Description	This attribute indicates the number of *Bgp* indb entries under this *Bgp* component instance.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

GROUP Rtr Vrf Bgp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf Bgp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Bgp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Bgp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The

down state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

Default: up

GROUP Rtr Vrf Bgp OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Bgp snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

Default: up

COMPONENT Rtr Vrf Bgp Peer

Instance: IP address

Groups:
"GROUP Rtr Vrf Bgp Peer OsiState (State)"
"GROUP Rtr Vrf Bgp Peer Operational (Oper)"

Scope	Application
Description	*Vr/<string> Ip Bgp Peer/<Ip Address>* *Rtr/<string> Bgp Peer/<Ip Address>* *Rtr/<string> Vrf/<string> Bgp Peer/<Ip Address>* This component identifies the properties of a BGP peer. The index value of this entry identifies the IP address of that peer. This component is required for BGP to set up a peer session with a remote peer. Peers with discovered IP address are dynamic peers, where the provisioned ones are static peers.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Bgp Peer Descriptor (Desc)"
Dyn. Subcomp.	"COMPONENT Rtr Vrf Bgp Peer Vpn"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf Bgp Peer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Peer adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf Bgp Peer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Bgp Peer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Bgp Peer Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Peer* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Peer connectionState

Access	Read only
Description	This attribute indicates the current state of this BGP peer connection. The meaning of each state is as follows: ***idle*** - it is the initial state of the BGP peer connection. Error events will also cause BGP peer connection to transit to the idle state.

connect - BGP has initiated a TCP connection request to this peer, and waiting for reply from that peer.
active - BGP is not initiating a TCP connection request to this peer, because TCP connection failed and is waiting for connection retry time-out.
openSent - a TCP connection to this peer has been established, but the OPEN message has not been successfully exchanged.
openConfirm - OPEN message has been successfully exchanged with this peer, but the first KEEPALIVE message has not been received from that peer.
established - the first KEEPALIVE message has been received from this peer, which means this BGP peer connection has been established.
See RFC 1771 for a detailed description of BGP state transitions.

Mib	no_mib
Values	idle connect active openSent openConfirm established
Default	idle

ATTRIBUTE Rtr Vrf Bgp Peer bgpIdentifier (bgpId)

Access	Read only
Description	This attribute indicates the BGP Identifier of this *Bgp Peer* component. It is learned from the peer through the OPEN message.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer versionNegotiated (vn)

Access	Read only

Description	This attribute indicates the BGP version number negotiated with this peer through the OPEN message. Currently, only BGP version 4 is supported. BGP will reject the peer connection if our peer proposes a BGP version other than 4.
Mib	no_mib
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer holdTimeNegotiated (htn)

Access	Read only
Description	This attribute indicates the maximum time in seconds, that may elapse without receiving a KEEPALIVE or UPDATE message before the connection is considered down. This is the negotiated value with peer through the OPEN message. The hold time must be either zero or at least three seconds. If the negotiated hold time is zero, then periodic KEEPALIVE messages are not expected from the peer.
Mib	no_mib
Values	Decimal (0; 3..65535)
Units	seconds
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer keepAliveNegotiated (kan)

Access	Read only
Description	This attribute indicates the interval in seconds, between BGP KEEPALIVE message retransmissions. This keepalive interval will have the same ratio to the hold time negotiated with the peer as that of the locally configured keepalive and hold time. This attribute will be zero if the *holdTimeNegotiated* attribute is zero, which means periodic KEEPALIVE messages will not be sent.
Mib	no_mib
Values	Decimal (0..21845)

Units	seconds
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer localAddressUsed (lau)

Access	Read only
Description	This attribute indicates the local IP address used for this BGP peer connection. If the *localAddressConfigured* attribute is non-zero, its value will be used. Otherwise, the local address will be assigned by TCP based on the remote IP address of this peer connection and the IP forwarding table.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer localPort

Access	Read only
Description	This attribute indicates the local TCP port for the connection between the BGP peers.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer remotePort

Access	Read only
Description	This attribute indicates the remote TCP port for the connection between the BGP peers.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer lastError

Access	Read only
Description	This attribute indicates the last error code and subcode seen by this *Bgp* component instance on this peer connection. The first byte of this two byte OCTET STRING contains the error code, and the second byte contains the subcode. A value of zero means that no error has occurred. Check RFC 1771 for mappings of error codes and error subcodes.
Mib	no_mib
Values	String (2, Hex)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer connectionEstablishedTime (ceTime)

Access	Read only
Description	This attribute indicates how long since this *Peer* component's last transition to or from the ***established*** state. It is set to zero when the *Peer* component is activated.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer connectionEstablishedTransitions (ceTrans)

Access	Read only
Description	This attribute counts the total number of times the BGP connection state transitioned into the ***established*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer inUpdateElapsedTime (iuet)

Access	Read only

Description	This attribute indicates the elapsed time in seconds since the last BGP UPDATE message was received from the peer. Each time *inUpdates* attribute is incremented, the value of this attribute is set to zero.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer inMsgs

Access	Read only
Description	This attribute counts the number of BGP messages received without error from the BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer inUpdates

Access	Read only
Description	This attribute counts the number of BGP UPDATE messages received on this peer connection. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer inErrors

Access	Read only
Description	This attribute counts the number of messages received from this BGP peer that proved to be in error. This counter will wrap to zero once the value exceeds the maximum value.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer inErrorMsgs

Access	Read only
Description	This attribute counts the number of BGP NOTIFICATION messages received from this BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer outMsgs

Access	Read only
Description	This attribute counts the number of locally generated BGP messages sent to this BGP peer. It does not include discarded messages. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer outUpdates

Access	Read only
Description	This attribute counts the number of BGP UPDATE messages sent to this peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer outDiscards

Access	Read only
Description	This attribute counts the number of locally generated BGP messages not sent to this BGP peer due to resource limitations within a BGP entity. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer outErrorMsgs

Access	Read only
Description	This attribute counts the number of BGP NOTIFICATION messages sent to this BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer inRoutes

Access	Read only
Description	This attribute indicates the number of routes received from this BGP peer.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer peerType

Access	Read only
Description	This attribute indicates the way this peer is created. Peer is **static,** if created through provisioning or **dynamic,** if created through IP

VPN auto discovery.

For *Router* and *Vrf*, all peers are statically created. So, this value will always be ***static***.

Mib: no_mib

Values: static
dynamic

Default: No default

ATTRIBUTE Rtr Vrf Bgp Peer authenticationType

Access: Read only

Description: This attribute indicates the authentication type of this BGP peer. If the *md5Key* attribute under the *Bgp Peer Desc* component is set to a null string, this peer's authentication type is ***none***; otherwise, if the *md5Key* attribute is set to a valid non-null string, this peer's authentication type is ***md5***.

If this BGP peer's *peerType* is ***dynamic***, its authentication type is always ***none***.

Mib: no_mib

Values: none
md5

Default: No default

ATTRIBUTE Rtr Vrf Bgp Peer noAuthenticationPkts

Access: Read only

Description: This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which do not contain the MD5 authentication information, but MD5 authentication is provisioned on the local BGP peer. This type of authentication failure occurs when the *md5Key* attribute under the local *Bgp Peer Desc* component is set to a valid non-null string, but the remote BGP peer does not use MD5 authentication, or when a hacker is spoofing packets from a legitimate peer. This

counter will wrap to zero once the value exceeds the maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Rtr Vrf Bgp Peer badAuthenticationPkts

Access: Read only

Description: This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which fail the MD5 authentication. This type of authentication failure occurs when the *md5Key* attribute set under the local *Bgp Peer Desc* component does not match the MD5 key used by the remote BGP peer, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Rtr Vrf Bgp Peer unexpectedAuthenticationPkts

Access: Read only

Description: This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which contain the MD5 authentication information, but MD5 authentication is not provisioned on the local BGP peer. This type of authentication failure occurs when the *md5Key* attribute under the local *Bgp Peer Desc* component is set to a null string, but the remote BGP peer uses MD5 authentication, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer addressFamilyNegotiated (afn)

Access	Read only
Description	The attribute indicates the list of multi-protocol extensions negotiated on this peer session. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). To perform IP VPN auto discovery in a VPN, the value of ***ipv4Vpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances. To perform IP VPN multi-protocol BGP route distribution in a VPN, the value of ***mbgpVpn*** and ***ipv4Vpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances. To perform RFC 2547 VPN route distribution in a VPN using multi-protocol BGP extensions, the value of ***ipv4MplsVpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances. To distribute IPv4 Unicast routes with labels, using multi-protocol BGP extensions, the value of ***ipv4Label*** must be in the *addressFamilyNegotated* list of the peer instance. ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***ipv4Vpn*** represents AFI = 1 and SAFI = 140 (not for RFC 2547) ***mbgpVpn*** represents AFI = 1 and SAFI = 141 (not for RFC 2547) ***ipv4MplsVpn*** represents AFI = 1 and SAFI = 128 ***ipv4Label*** represents AFI = 1 and SAFI = 4
Mib	no_mib
List of	ipv4Unicast ipv4Vpn mbgpVpn ipv4MplsVpn ipv4Label

Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer capabilityNegotiated (cn)

Access	Read only
Description	The attribute indicates the list of capabilities negotiated on this peer session.
Mib	no_mib
List of	mpExtensions routeRefresh cooperativeRouteFiltering
Default	No default

COMPONENT Rtr Vrf Bgp Peer Descriptor (Desc)

Groups	"GROUP Rtr Vrf Bgp Peer Desc Provisioned (Prov)"
Scope	Network
Description	*Vr/<string> Ip Bgp Peer/<Ip Address> Desc* *Rtr/<string> Bgp Peer/<Ip Address> Desc* *Rtr/<string> Vrf/<string> Bgp Peer/<Ip Address> Desc* This component contains provisioned attributes for BGP peers. Provisioned attributes are only used when the peer is a statically provisioned peer.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf Bgp Peer Desc Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisional attributes for this BGP *Peer* component
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Peer Desc peerAs

Access	Read and write
Description	This attribute specifies the autonomous system identifier of this BGP *Peer* component. It is used to verify the autonomous system identifier learned from the peer through the OPEN message. The peer connection is rejected and a NOTIFICATION message is sent to the peer if these two numbers don't match.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer Desc localAddressConfigured (lac)

Access	Read and write
Description	This attribute specifies the local IP address configured for this *Bgp Peer* connection. If this attribute is 0.0.0.0, TCP chooses a local IP interface based on the remote IP address of this peer connection and the IP forwarding table. The value chosen is stored in the *localAddressUsed* attribute under the same *Peer* component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Peer Desc keepAliveConfigured (kac)

Access	Read and write
Description	This attribute specifies the configured interval between BGP KEEPALIVE message retransmissions. It is used to establish the ratio between keepalive interval and hold time. If this attribute is zero, then the *holdTimeConfigured* attribute must be zero, which means that periodic KEEPALIVE messages will not be sent.

Mib	no_mib
Values	Decimal (0..21845)
Units	seconds
Default	30

ATTRIBUTE Rtr Vrf Bgp Peer Desc holdTimeConfigured (htc)

Access	Read and write
Description	This attribute specifies the maximum time that may elapse without receiving a KEEPALIVE or UPDATE message before the connection is considered down. The hold time must be either zero or at least three seconds. If this attribute is zero, then the *keepAliveConfigured* attribute should also be zero, which means that periodic KEEPALIVE messages will not be sent.
Mib	no_mib
Values	Decimal (0; 3..65535)
Units	seconds
Default	90

ATTRIBUTE Rtr Vrf Bgp Peer Desc connectRetryTime (connectRetry)

Access	Read and write
Description	This attribute specifies the time interval for the ConnectRetry timer. It is the minimum amount of time that must elapse between successive TCP connection retries for establishing BGP peer connection.
Mib	no_mib
Values	Decimal (1..65535)
Units	seconds
Default	120

ATTRIBUTE Rtr Vrf Bgp Peer Desc minAsOrigTime (minAsOrig)

Access	Read and write

Description	This attribute specifies the time interval for the MinAsOriginationInterval timer. It is the minimum amount of time that must elapse between updates that advertise a change to a route within the local autonomous system to neighboring autonomous systems.
Mib	no_mib
Values	Decimal (1..65535)
Units	seconds
Default	15

ATTRIBUTE Rtr Vrf Bgp Peer Desc minRouteAdvTime (minRouteAdv)

Access	Read and write
Description	This attribute specifies the time interval for the MinRouteAdvertisementInterval timer. Feasible routes received from peers in other autonomous systems may only be re-advertised to peers in other autonomous systems at a rate no greater than MinRouteAdvertisementInterval.
Mib	no_mib
Values	Decimal (1..65535)
Units	seconds
Default	30

ATTRIBUTE Rtr Vrf Bgp Peer Desc defaultInAggMed (diaMed)

Access	Read and write
Description	This attribute specifies this *Bgp Peer* component instance's metric for generating a dynamic default route whenever this external BGP peer got established. It is used to prioritize between the dynamic default routes generated by BGP speakers. If this attribute is not set, BGP does not generate a dynamic default route. When this attribute is set, BGP automatically generates a dynamic default route when the connection established.
Mib	no_mib
Values	Decimal (0..4294967295)

Default	4294967295

ATTRIBUTE Rtr Vrf Bgp Peer Desc isRouteReflectorClient (isRrClient)

Access	Read and write
Description	This attribute specifies whether the peer is a client peer or non-client peer of this *Bgp* instance. The attribute is ignored unless the value of the '*routeReflector*' attribute of the '*Bgp*' component is set to ***true***.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf Bgp Peer Desc removePrivateAs (remPrivate)

Access	Read and write
Description	This attribute specifies the treatment of the AS_PATH path attribute in routes sent to the peer. If this attribute is enabled, then BGP will remove private AS numbers from the AS_PATH. This attribute is meaningful only for external peers.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf Bgp Peer Desc nextHopSelf (nhs)

Access	Read and write
Description	This attribute controls the setting of the NEXT_HOP path attribute in routes advertised to the peer. If this attribute is enabled, BGP will advertise itself as the NEXT_HOP. This is useful when routes are propagated from an EBGP peer to an IBGP peer: the IBGP peer does not need to have a route to the EBGP peer.
Mib	no_mib

Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf Bgp Peer Desc md5Key

Access	Write only
Description	This attribute specifies this *Bgp Peer* component instance's MD5 key value that is used by the MD5 authentication on this BGP Peer session's underlying TCP connection. A null string indicates that the MD5 authentication is not to be used on the TCP connection to this Bgp Peer session.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Desc keyTransitionDelay (keyDelay)

Access	Read and write
Description	This attribute specifies a delay period associated with a change of *md5Key* value event of the *Peer* component. This is the time that can elapse before the local router transitions to using the new key for transmission for this Bgp Peer session.This time is not used to control when to accept the new key for reception, and the new key is immediately accepted for reception. This delay equates to the amount of time the operator has to provision both the local and remote ends with the new key, without losing service. If ***sameAsBgp*** is specified, the value of *keyTransitionDelay* set under the parent *Bgp* component is used. Otherwise the value of this attribute will be used**.** The default is to use ***sameAsBgp***.
Mib	no_mib

Values	Decimal (1..20160) sameAsBgp
Units	minutes
Default	sameAsBgp

ATTRIBUTE Rtr Vrf Bgp Peer Desc multiHopEbgp (mhEbgp)

Access	Read and write
Description	This attribute specifies whether MultiHop EBGP (External BGP) route distribution is supported on this EBGP peer. MultiHop EBGP allows routes to be distributed between EBGP peers that are not directly connected and can span multiple hops
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf Bgp Peer Desc asPathCheck

Access	Read and write
Description	This attribute specifies the treatment of the AS_PATH loop detection mechanism in routes received from the peer. If this attribute is set to ***disabled***, AS_PATH loop is not detected. If this attribute is set to ***enabled***, AS_PATH loop is detected.
Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Vrf Bgp Peer Desc attachSiteOfOrigin (attachSoo)

Access	Read and write
Description	This attribute specifies the site of origin identifier to attach for this BGP Peer connection.

	If this attribute is set, a site of origin extended community path attribute is attached to the routes received from this peer unless the site of origin extended community path attribute is already included in the routes.
Mib	no_mib
Values	String (0..21, RFC2547RdRtSyntax)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Desc checkSiteOfOrigin (checkSoo)

Access	Read and write
Description	This attribute specifies the site of origin identifiers to check for this BGP Peer connection. If this attribute is set, a check is done when routes are received from this peer or advertised to this peer. If the site of origin extended community path attribute presents in received routes and matches any Site Of Origin in this attribute, the routes are not accepted. If the site of origin extended community path attribute presents in the advertised routes and matches any SOO in this attribute, the routes are not advertised to this peer. If this attribute is not set, no check and filtering is done.
Mib	no_mib
List of	String (3..21, RFC2547RdRtSyntax)
List Size	256
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Desc bgpPeerRouteLimit (bprl)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the maximum number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated. The default value of zero implies no protection. This limit is set based on the requirements of the network configuration and is optional but critical under the peer.

Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer Desc bgpPeerRouteDiscard (bprd)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated and subsequent routes are discarded. The default value of zero signifies no protection. This limit is set based on the requirements of the network configuration and is optional but critical under the peer.
Mib	no_mib
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Rtr Vrf Bgp Peer Desc addressFamily

Access	Read and write
Description	The attribute specifies the supported network layer protocols being carried in any BGP-4 UPDATE messages over this Peer session. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). To perform IP VPN auto discovery in a VPN, the value of ***ipv4Vpn*** must be added to this attribute on all VCGs' peer instances. To perform IP VPN multi-protocol BGP route distribution in a VPN, the value of ***mbgpVpn*** and ***ipv4Vpn*** must be in the *addressFamily* list of all the VCGs' Peer instances. To perform RFC 2547 VPN route distribution in a VPN using multi-protocol BGP extensions, the value of ***ipv4MplsVpn*** must be in the *addressFamily* list of all the VCGs' peer instances.

To distribute IPv4 Unicast routes with labels, using multi-protocol BGP extensions, the value of ***ipv4Label*** must be in the *addressFamily* list of the peer instance.

ipv4Unicast represents AFI = 1 and SAFI = 1
ipv4Vpn represents AFI = 1 and SAFI = 140 (not for RFC 2547)
mbgpVpn represents AFI = 1 and SAFI = 141 (not for RFC 2547)
ipv4MplsVpn represents AFI = 1 and SAFI = 128
ipv4Label represents AFI=1 and SAFI=4

Mib	no_mib
List of	ipv4Unicast ipv4Vpn mbgpVpn ipv4MplsVpn ipv4Label
Default	(ipv4Unicast)

COMPONENT Rtr Vrf Bgp Peer Vpn

Instance	String (7, Dashed Hex)
Scope	Application
Description	*Vr*/<string> *Ip Bgp Peer/*<Ip Address> *Vpn*/<Vpn id> This component contains all VPN information that is learned by this BGP peer instance.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr Vrf Bgp Peer Vpn Ipv4"
Common Verbs	Help List Display

COMPONENT Rtr Vrf Bgp Peer Vpn Ipv4

Instance	IP address

Groups	"GROUP Rtr Vrf Bgp Peer Vpn Ipv4 Operational (Oper)"
Scope	Application
Description	*Vr*/<string> *Ip Bgp Peer*/<Ip Address> *Vpn*/<Vpn id> *Ipv4* This component contains all IPv4 tunnel based VPN information gathered by this BGP peer for the specified VPN.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Bgp Peer Vpn Ipv4 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ipv4* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Peer Vpn Ipv4 publicIpAddress

Access	Read only
Description	This attribute indicates the public IP Address for the remote IP VPN tunnel endpoint. It is used to encapsulate IP packets from the local IP VPN site to the remote site.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Vpn Ipv4 asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments through which the IP VPN information arrives. The AS Path lists the ASs in reverse traversal order from the point of origin.

	This attribute is not applicable and is not displayed for locally - learned IP VPN information.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Vpn Ipv4 vpnPeeringTopology

Access	Read only
Description	This attribute indicates the peering mode of the remote customer BGP from which this VPN information is originated. This mode determines if a dynamic IBGP peer is instantiated between this *BGP* instance and the remote IP Tunnel endpoint on the remote customer VR. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value. In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.
Mib	no_mib
Values	none hub spoke
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Vpn Ipv4 asOriginatorId

Access	Read only

Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator of this IP VPN information in the local AS. When the Route Reflector in the backbone distributes a discovered VPN information to other IBGP speakers, the value of this attribute in the discovered VPN information is used if one is present; otherwise, the Route Reflector's router-id is used. A value of 0.0.0.0 indicates this *Bgp* instance is not a Route Reflector. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Vpn Ipv4 redundant

Access	Read only
Description	This attribute indicates that the IP VPN information entry learned from more than one BGP peers in the carrier backbone. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	no_mib
Values	no yes
Default	No default

ATTRIBUTE Rtr Vrf Bgp Peer Vpn Ipv4 rrClusterList

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the sequence of cluster-ids that this discovered IP VPN information has traversed. When the Route Reflector in the backbone reflects a discovered VPN information to other non-client IBGP peers, the cluster ID of the Route Reflector is added to the cluster list of the received VPN information. A blank list indicates this attribute is not present in the received

	VPN information or if this *Bgp* instance is not a Route Reflector. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Vrf Bgp ImportPolicy (Import)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Vrf Bgp Import Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Import/n* *Rtr/<string> Bgp Import/n* *Rtr/<string> Vrf/<string> Bgp Import/n* Each instance of this component describes a BGP import policy. A BGP import policy is used to decide if certain routing information learned from its peer is to be ignored or used. If no import policy is provisioned, BGP will accept all routes received from its IBGP peers, but will not use any routing information received from its EBGP peers. If multiple import policies are provisioned, the one with the most specific match will apply. The keys are matched in the following order from the least specified to the most specified: *Network*, *peerAs*, *peerIpAddress*, *originAs*, *originProtocol*, *matchAsPath*, *matchCommunity*. Example1: There are 2 import policies defined: vr/0 ip bgp import/1, originProtocol = ***any***, originAs = ***20***,

usageFlag = ***use***
vr/0 ip bgp import/2, originProtocol = ***igp***, usageFlag = ***ignore***
If a BGP NLRI contains a route originally learned from an igp with origin AS 20, it will be used.
Example2:
There are 2 import policies defined:
vr/0 ip bgp import/1, originProtocol = ***any***, matchAsPath = ***"1 2 3"***, usageFlag = ***ignore***
vr/0 ip bgp import/2, originProtocol = ***any***, usageFlag = use
If a BGP NLRI contains a route originally learned from an igp with the AsPath "1 2 3 4", it will be ignored.

For Router and Vrf, the example is similar with 'Vr/0 Ip' replaced with 'Router/0' and 'Router/0 Vrf/1' respectively.

Mib: no_mib

Opt. Subcomp.: "COMPONENT Rtr Vrf Bgp Import Network (Net)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Vrf Bgp Import Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the provisionable attributes for the *Import* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Bgp Import peerAs

Access: Read and write

Description: This key attribute specifies the autonomous system number of the peer from which the routes are learned. A value of 0 for this attribute means that peer AS number will match any AS number.

Mib: no_mib

Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Import peerIpAddress

Access	Read and write
Description	This key attribute specifies the IP address of the peer from which the routes are learned. A value of 0.0.0.0 for this attribute means that peer IP address will match any IP address.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Import originAs

Access	Read and write
Description	This key attribute specifies the autonomous system number where the routes were originated. A value of 0 for this attribute means origin AS number will match any AS number.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Import originProtocol

Access	Read and write
Description	This key attribute specifies the protocols that originated the routes. A value of ***incomplete*** for this attribute means this information is not available.
Mib	no_mib
Values	any igp egp incomplete
Default	any

ATTRIBUTE Rtr Vrf Bgp Import usageFlag (usage)

Access	Read and write
Description	This attribute specifies whether BGP will use or ignore information in received update if it meets criteria specified by the key attributes of this component.
Mib	no_mib
Values	use ignore
Default	use

ATTRIBUTE Rtr Vrf Bgp Import localPreference (locPrf)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's degree of preference for those routes that match the criteria of this import policy. A higher value indicates a more preferred route. A value of 0 for this attribute means that the default local preference value provisioned under the *Bgp* component should be used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Import asPathExpression (asExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the received update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS number separated by a space which making up a AS path. The following characters has the special meaning: '.' - Matches any AS number. '^n' - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in

the AS path.
‘n$’ - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path.
‘[n1... n2]’ - Matches any AS number that appeared in the set n1...
n2.
‘n1 - n2’ - Matches any AS number between the range of n1 and n2.
‘()’ - is supported to change the order of evaluation.
‘n*’ - Matches 0 or more occurrences of n, where n can be a set, range or AS number.
‘n+’ - Matches 1 or more occurrences of n, where n can be a set, range or AS number.
‘n?’ - Matches 0 or 1 occurrences of n, where n can be a AS set, range or number.
The following logical operators are evaluated in descending order:
‘NOT’ - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x.
‘AND’- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y.
‘OR’ - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y.
For example: The AS path “5 4 3 2 1”, where 1 is the origin AS, would be match by any one of the following regular expressions:
1$,
^5,
4 3,
5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4.* 1
Empty regular expression implies a match on all AS path.

Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Import communityExpression (comExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of Community number separated by a space which making up a Community attribute. The following characters have a special meaning: ‘[n1... n2]’ - Matches any Community number that appeared in the set n1...n2. ‘n1 - n2’ - Matches any Community number between the range of n1 and n2. ‘()’ - is supported to change the order of evaluation. ‘n*’ - Matches 0 or more occurrences of n, where n can be a set, range or Community number. ‘n+’ - Matches 1 or more occurrences of n, where n can be a set, range or Community number. ‘n?’ - Matches 0 or 1 occurrences of n, where n can be a set, range or number. The following logical operators are evaluated in descending order: ‘NOT’ - Given a regular expression x, NOT x matches the Community attribute that is not matched by x. ‘AND’- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y. ‘OR’ - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y. For example: The Community path “1 2 3 4 5” would be match by any one of the following regular expression: ***1,*** ***5,*** ***4 3,*** ***2 3 - 4*,***

	1 [3 4 2]+, ***not (6 7 8 9 10) and 1 2*** Empty regular expression implies a match on all Community path.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Import expressPreference (exprPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *expressAsPath* and *expressCommunity.* This attribute is ignored if attributes *expressAsPath* and *expressCommunity* are both empty. This attribute is used to break the tie when two import policies' expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy.
Mib	no_mib
Values	Decimal (0..255)
Default	128

ATTRIBUTE Rtr Vrf Bgp Import appendCommunity (appCom)

Access	Read and write
Description	This attribute indicates which community number this import policy will send along with the Path Attribute. Refer to RFC 1997 for the detailed description of how this attribute may be used to pass additional information to BGP peers. If the value is set to 0, no community is appended to the Community attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Import ibgpRtePreference (ibgpPref)

Access	Read and write

Description	This attribute specifies the routing preference of IBGP routes matching this import policy. A lower value means the route is more preferred. If ***sameAsBgp*** is specified, the value of *defaultIbgpRtePref* set under the *Bgp* component is used. Otherwise the value of this attribute will be used as the routing preference**.** The default is to use sameAsBgp.
Mib	no_mib
Values	Decimal (1..253) sameAsBgp
Default	sameAsBgp

ATTRIBUTE Rtr Vrf Bgp Import ebgpRtePreference (ebgpPref)

Access	Read and write
Description	This attribute specifies the routing preference of EBGP routes matching this import policy. A lower value specifies the route is more preferred. If ***sameAsBgp*** is specified, the value of *defaultEbgpRtePref* set under the *Bgp* component is used. Otherwise the value of this attribute will be used as the routing preference**.** The default is to use sameAsBgp.
Mib	no_mib
Values	Decimal (1..253) sameAsBgp
Default	sameAsBgp

ATTRIBUTE Rtr Vrf Bgp Import addressFamily (af)

Access	Read and write
Description	This attribute specifies the Address Family of the routes this import policy should apply to. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). It can contain one of the following: ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***mbgpVpn*** represents AFI = 1 and SAFI = 141 (Not for RFC

	2547) ***all***
Mib	no_mib
Values	all ipv4Unicast mbgpVpn ipv4Label
Default	all

ATTRIBUTE Rtr Vrf Bgp Import description (desc)

Access	Read and write
Description	This attribute specifies the policy. For example, ‘to import BGP routes from AS 1’.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Vrf Bgp Import Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Vrf Bgp Import Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Import/n Network/n* *Rtr/<string> Bgp Import/n Network/n* *Rtr/<string> Vrf/<string> Bgp Import/n Network/n* This is an optional subcomponent of *Import* component and identifies destination networks that this BGP import policy applies to. This component is used as a key for the import policy.

	If no network list is provisioned, the import policy applies to all networks.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Bgp Import Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Import Net prefix

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Import Net length

Access	Read and write
Description	This attribute specifies the length of the network prefix.
Mib	no_mib
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Rtr Vrf Bgp ExportPolicy (Export)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Vrf Bgp Export Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Export/n* *Rtr/<string> Bgp Export/n* *Rtr/<string> Vrf/<string> Bgp Export/n* Each instance of this component describes a BGP export policy. A BGP export policy is used to decide if certain routing information should be blocked or advertised to its peers. If no export policy is provisioned, BGP will advertise all external BGP learned routes to its internal peers, but not advertise any routing information to its external peers. If multiple export policies are provisioned, the one with the most specific match will apply. The keys are matched in the following order from the least specified to the most specified: *peerAs*, *peerIpAddress*, *protocol*, *ripInterface* (if applicable), *egpAs*, *bgpAs*, *ripNeighbour*, or *ospfTag* (whichever is applicable), *Network*, *matchAsPath*, *matchCommunity*. Example1: (for Router and Vrf, the examples are similar by replacing ‘vr/0 ip’ with ‘Router/a’ and ‘Router/a Vrf/b’ respectively) There are 2 export policies defined: vr/0 ip bgp export/1, protocol = ***all***, advertiseStatus = ***send*** vr/0 ip bgp export/2, protocol = ***rip***, advertiseStatus = ***block*** BGP will generate BGP updates for all routes except the routes learned from RIP. Example2: There are 2 export policies defined: vr/0 ip bgp export/1, protocol = all, matchCommunity = ***303***,

advertiseStatus = ***send***
vr/0 ip bgp export/2, protocol = ***all***, advertiseStatus = ***block***
BGP will generate BGP updates for all routes that belongs to Community 303.

Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Bgp Export Network (Net)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Bgp Export Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisioned attributes for the *Export* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Export peerAs

Access	Read and write
Description	This key attribute specifies the autonomous system number of the peer where the routes are advertised to. A value of 0 for this attribute means this export policy applies to all peer ASes.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Export peerIpAddress

Access	Read and write
Description	This key attribute specifies the IP address of the peer where the routes are advertised to. A value of 0.0.0.0 for this attribute means this export policy applies to all peers. This key attribute is

used in export policies for AFI/SAFI = 1/128 only if the *addressFamily* attribute is set to ***ipv4MplsVpn***.

Mib: no_mib

Values: IP address

Default: 0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Export protocol

Access: Read and write

Description: This key attribute specifies which protocol the export policy applies to. If it is set to ***all***, that means this export policy will apply all routes in the IP routing table.
Example:
vr/1 ip ospf export/1 with
advertise Status = block
protocol = bgpExternal
bgpAsId = 3
peerAs = 5
This policy specifies that all routes learned from EBGP Peers that are originated from AS 3 should not be advertised to AS 5.

Mib: no_mib

Values:
all
egp
rip
ospfInternal
ospfExternal
staticLocal
staticRemote
bgpInternal
bgpExternal
bgpAggregate
mbgp
bgpMplsInternal

Default: all

ATTRIBUTE Rtr Vrf Bgp Export egpAsId (egpAs)

Access: Read and write

Description	This key attribute specifies the EGP autonomous system number that this export policy will apply to. When this value is non-zero, the *protocol* attribute must be set to ***egp***.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Export bgpAsId (bgpAs)

Access	Read and write
Description	This key attribute specifies the BGP autonomous system number that this export policy will apply to. When this value is non-zero, the *protocol* attribute must be set to either ***bgpInternal*** or ***bgpExternal***.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Export ospfTag

Access	Read and write
Description	This key attribute specifies the OSPF tag when the *protocol* attribute is set to either ***ospfInternal*** or ***ospfExternal***. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag not specified.
Mib	no_mib
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Rtr Vrf Bgp Export ripInterface (ripIf)

Access	Read and write
Description	This key attribute specifies the local RIP interface where the routes are learned from.

	The *ripInterface* attribute when non-zero should be equal to one of the IP addresses provisioned as a *logicalIf* component under *IpPort*, or the IP address of an *Interface* component. Otherwise, this policy will be ignored. The value of the *protocol* attribute must be set to ***rip*** if a value for the *ripInterface* attribute is non-zero.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Export ripNeighbor (ripNbr)

Access	Read and write
Description	This key attribute specifies the RIP neighbor where the routes were learned from. The value of the *protocol* attribute must be set to ***rip*** if the *ripNeighbor* attribute is non-zero.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies whether data will be exported if it meets criteria specified by the other key attributes of this component.
Mib	no_mib
Values	send block
Default	send

ATTRIBUTE Rtr Vrf Bgp Export multiExitDisc (med)

Access	Read and write

Description	This attribute specifies this *Bgp* component instance's metric to discriminate between multiple exit points to an adjacent autonomous system if the route meets the criteria specified by the key attributes of this component. A lower value indicates a more preferred route. A value of 0 for this attribute means the default MED value provisioned under the *Bgp* component should be used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Export sendMultiExitDiscToEbgp (sendMed)

Access	Read and write
Description	This attribute specifies whether the Multi Exit Discriminator (MED) attribute should be included in an update message sent to an EBGP peer.
Mib	no_mib
Values	false true
Default	false

ATTRIBUTE Rtr Vrf Bgp Export asPathExpression (asExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the export update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS number separated by a space which making up a AS path. The following characters have a special meaning: '.' - Matches any AS number. '^n' - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in

the AS path.
‘n$’ - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path.
‘[n1... n2]’ - Matches any AS number that appeared in the set n1...
n2.
‘n1 - n2’ - Matches any AS number between the range of n1 and n2.
‘()’ - is supported to change the order of evaluation.
‘n*’ - Matches 0 or more occurrences of n, where n can be a set, range or AS number.
‘n+’ - Matches 1 or more occurrences of n, where n can be a set, range or AS number.
‘n?’ - Matches 0 or 1 occurrences of n, where n can be a set, range or number.
The following logical operators are evaluated in descending order:
‘NOT’ - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x.
‘AND’- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y.
‘OR’ - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y.
For example: The AS path “5 4 3 2 1”, where 1 is the origin AS, would be match by any one of the following regular expressions:
1$,
^5,
4 3,
5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4.* 1
Empty regular expression implies a match on all AS path.

Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Export communityExpression (comExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of Community number separated by a space which making up a Community attribute. The following characters have a special meaning: ‘[n1... n2]’ - Matches any Community number that appeared in the set n1...n2. ‘n1 - n2’ - Matches any Community number between the range of n1 and n2. ‘()’ - is supported to change the order of evaluation. ‘n*’ - Matches 0 or more occurrences of n, where n can be a set, range or Community number. ‘n+’ - Matches 1 or more occurrences of n, where n can be a set, range or Community number. ‘n?’ - Matches 0 or 1 occurrences of n, where n can be a set, range or number. The following logical operators are evaluated in descending order: ‘NOT’ - Given a regular expression x, NOT x matches the Community attribute that is not matched by x. ‘AND’- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y. ‘OR’ - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y. For example: The Community path “1 2 3 4 5” would be match by any one of the following regular expression: ***1,*** ***5,*** ***4 3,*** ***2 3 - 4*,*** ***1 [3 4 2]+,*** ***not (6 7 8 9 10) and 1 2***

	Empty regular expression implies a match on all Community path.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Export expressPreference (exprPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *expressAsPath* and *expressCommunity.* This attribute is ignored if attributes *expressAsPath* and *expressCommunity* are both empty. This attribute is used to break the tie when two export policies' expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy.
Mib	no_mib
Values	Decimal (0..255)
Default	128

ATTRIBUTE Rtr Vrf Bgp Export sendCommunity (sendCom)

Access	Read and write
Description	This attribute indicates which community number this export policy will send along with the Path Attribute. Refer to RFC 1997 for the detailed description of how this attribute may be used to pass additional information to BGP peers. If the value is set to 0, no community is added to the Community attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Export localPreference (locPrf)

Access	Read and write

Description	This attribute specifies the value of the LOCAL_PREFERENCE path attribute in routes sent to internal peers. A value of 0 means that the value specified in the import policy (if any) or the default local preference value should be used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Bgp Export virtualPrivateNetworkIdentifier (vpnId)

Access	Read and write
Description	This attribute specifies the Virtual Private Network (VPN) identifier of the routes this export policy should apply to. This attribute is only used if *addressFamily* has included ***mbgpVpn***. The value “00-00-00-00-00-00-00” identifies an unspecified VPN ID, meaning the VPN ID will not be used as a matching criteria in this export policy.
Mib	no_mib
Values	String (7, Dashed Hex)
Default	00-00-00-00-00-00-00

ATTRIBUTE Rtr Vrf Bgp Export addressFamily (af)

Access	Read and write
Description	This attribute specifies the Address Family of the routes this export policy should apply to. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). An export policy is applied for AFI/SAFI = 1/128 only when this attribute is set to ***ipv4MplsVpn***. In this case only *peerIpAddress*, *routeTarget*, and *advertiseStatus* attributes and *Network* component and its related attributes are used for export policies. It can contain one of the following: ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***mbgpVpn*** represents AFI = 1 and SAFI = 141

	ipv4MplsVpn represents AFI = 1 and SAFI = 128 ***all***
Mib	no_mib
Values	all ipv4Unicast mbgpVpn ipv4MplsVpn
Default	all

ATTRIBUTE Rtr Vrf Bgp Export description (desc)

Access	Read and write
Description	This attribute describes the policy. For example, ‘to export BGP routes to MCI’.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Export insertDummyAs (insertAs)

Access	Read and write
Description	This attribute specifies the AS number(s) to be inserted into the AS Path Attribute. The value is a sequence of AS number separated by period(.). For example, if the value is ***20.20.30***, the AS numbers 20, 20 and 30 would be inserted at the end of the AS Path Attribute just before the local AS number.
Mib	no_mib
Values	Integer Sequence
Default	No default

ATTRIBUTE Rtr Vrf Bgp Export routeTarget (rt)

Access	Read and write
Description	This attribute specifies the Route Target of the routes this export policy should apply to.

Mib	no_mib
List of	String (3..21, RFC2547RdRtSyntax)
List Size	256
Default	No default

COMPONENT Rtr Vrf Bgp Export Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Vrf Bgp Export Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Export/n Network/n* *Rtr/<string> Bgp Export/n Network/n* *Rtr/<string> Vrf/<string> Export/n Network/n* This is an optional subcomponent of the *Export* component and identifies a destination network that this BGP export policy will apply to. This component is used as a key for the export policy. If no network list is provisioned, the export policy applies to all networks. This component and its associated attributes are applied in an export policy for AFI/SAFI = 1/128 only if *addressFamily* attribute is set to ***ipv4MplsVpn***.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Bgp Export Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Export Net prefix

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Export Net length

Access	Read and write
Description	This attribute specifies the length of the network prefix.
Mib	no_mib
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Rtr Vrf Bgp As

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Vrf Bgp As Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp As/n* *Rtr/<string> Bgp As/n* *Rtr/<string> Vrf/<string> Bgp As/n* This component associates attributes to an autonomous system.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Bgp As Provisioned (Prov)

Properties	Provisioned
Description	This group contains the attributes associated to each autonomous system for this *Bgp* component instance.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp As weight

Access	Read and write
Description	This attribute specifies the weight for an autonomous system. It allows users to prefer some ASes over others. It is used in route selection. Lowest weight is preferred. Setting the weight of an AS to 255 will make any route that traverses through that AS unpreferred.
Mib	no_mib
Values	Decimal (0..255)
Default	128

COMPONENT Rtr Vrf Bgp AggregatePolicy (Aggregate)

Instance	prefix [IP address] length [Decimal (0..32)]
Scope	Application
Description	*Vr/<string> Ip Bgp AggregatePolicy/<Ip Address>,<Decimal>* *Rtr/<string> Bgp AggregatePolicy/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Bgp AggregatePolicy/<Ip Address>,<Decimal>* This component is used to perform aggregation of BGP routes for exporting. Aggregation is the process of combining the characteristics of several different routes in such a way that a single route can be advertised. Aggregation reduces the amount of information that a BGP speaker must store and exchange with other BGP speakers. Refer to RFC1771 for the set of rules regarding which routes can be aggregated. A ***network*** subcomponent is automatically added with the same network range as the aggregation policy key and its action is set

to ***aggregate***. So by default all subnets under the aggregation key range will be aggregated.
Examples (For *Router* and *Vrf*, the examples are similar by replacing ‘vr/0 ip’ with ‘Router/a’ and ‘Router/a Vrf/b’ respectively):
Example #1: aggregate all the networks covered by A.0.0.0/8
add vr/0 ip bgp aggregate/A.0.0.0,8
(Note: the following subcomponent vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.0.0.0, length 8, action aggregate will be automatically added)

Example #2: aggregate A.B.0.0/16 and A.C.0.0/16 as A.0.0.0/8 and advertise other networks
add vr/0 ip bgp aggregate/A.0.0.0,8
set vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.B.0.0, length 16, action aggregate
(Note: this set command will overwrite the default network subcomponent
vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.0.0.0, length 8, action aggregate)
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.C.0.0, length 16, action aggregate

Example #3: aggregate A.B.0.0/16 and A.C.0.0/16 as A.0.0.0/8 and advertise other networks; also advertise A.B.C.0/24
add vr/0 ip bgp aggregate/A.0.0.0,8
set vr/0 ip bgp aggregate/A.0.0.0,8 networkl/0 prefix A.B.0.0, length 16, action aggregate
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.C.0.0, length 16, action aggregate
add vr/0 ip bgp aggregate/A.0.0.0,8 network/2
set vr/0 ip bgp aggregate/A.0.0.0,8 network/2 prefix A.B.C.0, length 24, action advertise

Example #4: aggregate all networks under A.0.0.0/8, meanwhile advertise A.B.0.0/16
add vr/0 ip bgp aggregate/A.0.0.0,8
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1

	set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.B.0.0, length 16, action advertise
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Bgp Aggregate Network (Net)"
Common Verbs	Help List Display Add DELete

COMPONENT Rtr Vrf Bgp Aggregate Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Vrf Bgp Aggregate Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Aggregate/<IP address>,<n> Network/n* *Rtr/<string> Bgp Aggregate/<IP address>,<n> Network/n* *Rtr/<string> Vrf/<string> Bgp Aggregate/<IP address>,<n> Network/n* This is an optional subcomponent of *Aggregate* component and identifies a set of more specific routes that this BGP will aggregate or advertise together with the aggregated route.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Bgp Aggregate Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.

Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Aggregate Net prefix

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Aggregate Net length

Access	Read and write
Description	This attribute specifies the length of the network prefix.
Mib	no_mib
Values	Decimal (0..32)
Units	bits
Default	0

ATTRIBUTE Rtr Vrf Bgp Aggregate Net protocol

Access	Read and write
Description	This attribute specifies the IP protocols to which this route should belong.
Mib	no_mib
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal

Default	all

ATTRIBUTE Rtr Vrf Bgp Aggregate Net egpAsId (egpAs)

Access	Read and write
Description	This attribute specifies an EGP autonomous system number. When this value is non-zero, the *protocol* attribute must be set to either ***egp*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if it is learned through egp and this attribute matches the EGP autonomous system number where the network is learned from. The default value 0 indicates that the EGP autonomous system number is not specified.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Aggregate Net bgpAsId (bgpAs)

Access	Read and write
Description	This attribute specifies the BGP autonomous system number. When this value is non-zero, the *protocol* attribute must be set to either ***bgp*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if it is learned through BGP and this attribute matches the BGP autonomous system number where the network is learned from. The default value 0 indicates that the BGP autonomous system number is not specified.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Bgp Aggregate Net ospfTag

Access	Read and write

Description	This attribute specifies the OSPF tag. When this attribute is set to a value other than the default value FFFFFFFF in hex, the *protocol* attribute must be set to either ***ospf*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if its OSPF tag matches this value. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag is not specified.
Mib	no_mib
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Rtr Vrf Bgp Aggregate Net ripInterface (ripIf)

Access	Read and write
Description	This attribute specifies a local RIP interface which should be equal to one of the IP addresses provisioned as a *logicalIf* component under *IpPort*, or one of the IP addresses provisioned as an *Interface* component. When this value is non-zero, the value of the *protocol* attribute must be either set to ***rip*** or to ***all.*** And this more specific route will be advertised together with the aggregated route only if it is learned through RIP and this RIP interface. The default value 0.0.0.0 indicates that the RIP interface is not specified.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Bgp Aggregate Net action

Access	Read and write
Description	This attribute specifies whether this network should be aggregated or advertised out.
Mib	no_mib

Values	aggregate advertise
Default	aggregate

COMPONENT Rtr Vrf Bgp IndbEntry (Indb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Rtr Vrf Bgp Indb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string>Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Vrf/<string> Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes a BGP route received from one of its peers.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Bgp Indb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *IndbEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Indb origin

Access	Read only

Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	no_mib
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb inLocaldb

Access	Read only
Description	This attribute indicates whether or not this route was chosen as the best BGP4 route.
Mib	no_mib
Values	false true
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb nextHop

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb localPreference

Access	Read only
Description	This attribute indicates our IBGP peer’s degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb calcLocalPref

Access	Read only
Description	This attribute indicates our degree of preference for this route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb aggregatorAs

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib

Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator in the local AS. A value of 0.0.0.0 indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Indb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. A blank list indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Vrf Bgp LocaldbEntry (Localdb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Rtr Vrf Bgp Localdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Vrf/<string> Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes an entry in the BGP local database. This database contains the routing information that the BGP speaker has selected by applying its local import policies and decision process to the routing information stored in *IndbEntry.*
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Bgp Localdb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *LocaldbEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Localdb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	no_mib

Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb nextHop

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb localPreference

Access	Read only
Description	This attribute indicates our IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb aggregatorAs

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.

Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator in the local AS. A value of 0.0.0.0 indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Localdb rrClusterList

Access	Read only

Description	This attribute indicates a sequence of cluster-ids that the route has traversed. A blank list indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Vrf Bgp OutdbEntry (Outdb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Rtr Vrf Bgp Outdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Vrf/<string> Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes an entry in the BGP output database that BGP advertises to its peers. The database contents are selected by applying its local export policies to the routing information stored in the IP forwarding table.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Bgp Outdb Operational (Oper)

Properties	Operational

Description	This group contains all the operational attributes of the *OutdbEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp Outdb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	no_mib
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb nextHop

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb localPreference

Access	Read only
Description	This attribute indicates this *Bgp* instance's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb aggregatorAs

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb aggregatorAddr

Access	Read only

Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator of a route in the local AS. When the Route Reflector distributes a learned IBGP route to other IBGP speakers, the value of this attribute in the learned route is used if one is present; otherwise, the Route Reflector's router-id is used. A value of 0.0.0.0 indicates this *Bgp* instance is not a Route Reflector.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp Outdb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. When the Route Reflector redistributes a learned IBGP to other IBGP speakers, the cluster id of this Route Reflector is appended to the cluster list of the learned IBGP route. If this *Bgp* instance is not a Route Reflector, this attribute is blank.
Mib	no_mib
List of	IP address
List Size	256
Default	No default

COMPONENT Rtr Vrf Bgp LocalVpn

Instance	String (7, Dashed Hex)
Scope	Application

Description	*Vr*/<string> *Ip Bgp LocalVpn*/<Vpn id> This component contains all VPN information from the specified VPN that is learned from customer VR on the local node.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr Vrf Bgp LocalVpn Ipv4"
Common Verbs	Help List Display

COMPONENT Rtr Vrf Bgp LocalVpn Ipv4

Instance	IP address
Groups	"GROUP Rtr Vrf Bgp LocalVpn Ipv4 Operational (Oper)"
Scope	Application
Description	*Vr*/<string> *Ip Bgp LocalVpn*/<Vpn id> *Ipv4* This component contains all IPv4 tunnel based VPN information gathered by this BGP locally for the specified VPN.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Bgp LocalVpn Ipv4 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ipv4* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp LocalVpn Ipv4 publicIpAddress

Access	Read only

Description	This attribute indicates the public IP Address for the remote IP VPN tunnel endpoint. It is used to encapsulate IP packets from the local IP VPN site to the remote site.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp LocalVpn Ipv4 vpnPeeringTopology

Access	Read only
Description	This attribute indicates the peering mode of the remote customer BGP from which this VPN information is originated. This mode determines if a dynamic IBGP peer is instantiated between this *BGP* instance and the remote IP Tunnel endpoint on the remote customer VR. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value. In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.
Mib	no_mib
Values	none hub spoke
Default	No default

COMPONENT Rtr Vrf Bgp MBgpRibEntry (MBgpRib)

Instance	vpnId [String (7, Dashed Hex)] prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Rtr Vrf Bgp MBgpRib Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp MBgpRibEntry/ <vpnid>,<prefix>,<length>,<peer_ip_address>* This component represents a single MBGP routing database entry received from one of the BGP peers of this virtual router. The instance values of this component have the following meanings: - *vpnId:* the virtual private network identifier associated with the MBGP route. - *prefix*: the destination IP address prefix of the MBGP route. - *length:* the length of the IP address prefix of the MBGP route. - *peer_ip_address:* the IP address prefix of the BGP peer that the MBGP route has been learned from. A value of 0.0.0.0 indicates that the MBGP route is learned from a locally attaching customer VR. This component only appears under a *VirtualRouter* component whose *vpnMode* attribute is set to ***carrier***.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Bgp MBgpRib Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *MBgpRibEntry* component.

Mib	no_mib

ATTRIBUTE Rtr Vrf Bgp MBgpRib origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	no_mib
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib status

Access	Read only
Description	This attribute indicates whether the MBGP route has been distributed into the routing table of the customer VR corresponding to the VPN identifier value.
Mib	no_mib
Values	localVpnRoute inCvrRdb importBlocked importLimitExceeded unreachableNh
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib nextHop

Access	Read only
Description	This attribute indicates the IP address of the router that should be used as the next hop to reach the destination address prefix given by the instance value of this component.
Mib	no_mib
Values	IP address

Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib localPreference

Access	Read only
Description	This attribute indicates the local IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	no_mib
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib aggregatorAs

Access	Read only

Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this path attribute.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this path attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	no_mib
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MBgpRib unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Vrf Bgp MplsVpnRibEntry (MvRib)

Instance	routeDistinguisher [String (3..21, RFC2547RdRtSyntax)] prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Rtr Vrf Bgp MvRib Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp MplsVpnRibEntry/* <routeDistinguisher>,<prefix>,<length>,<peerIpAddr> *Rtr/<string> Ip Bgp MplsVpnRibEntry/* <routeDistinguisher>,<prefix>,<length>,<peerIpAddr> The *MplsVpnRibEntry* component represents a single entry in the MPLS VPN routing information database.This component is used to maintain the MPLS VPN routes learned both locally and from the BGP peers. The instance values of this component have the following meaning: - *routeDistinguisher:* a string associated with the MPLS VPN route. The string is in the form of (1) AS:nn or (2) IPAddr:mm. where AS represents an autonomous system number, nn represents an index value, IPAddr represents an IP address, mm represents an index value

- *prefix*: the destination IP address prefix of the MPLS VPN route. This is an IP address prefix as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute.

- *length:* the length of the IP address prefix of the MPLS VPN route. This is the IP address prefix length as specified in the Network Layer Reachability Information field.

- peerIpAddr: the IP address prefix of the BGP peer that the MPLS VPN route has been learned from.

This component is only applicable to the *Router* component or a virtual router whose *vpnMode* attribute is set to ***carrier***.

Mib	Bgp
Common Verbs	Help List Display LOCK Unlock

GROUP Rtr Vrf Bgp MvRib Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *BgpMplsRibEntry* component.
Mib	Bgp

ATTRIBUTE Rtr Vrf Bgp MvRib serviceLabel (sl)

Access	Read only
Description	This attribute indicates the service label (the inner label in a two-level MPLS label stack) allocated by the Provider Edge (PE) node and distributed together with the routing information toward the remote end PE. The service label is then used by the remote PE node to encapsulate traffic of the same VPN to the local PE node. When the local PE node processes a received packet which has the service label at the top of the stack, the PE pops the stack,

	and sends the packet to the Customer Edge (CE) node from which the route leads. (See also transportLabel attribute description.)
Mib	Bgp
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib transportLabel (tl)

Access	Read only
Description	This attribute indicates the transport label (the outer label in a two-level MPLS label stack) allocated by the Provider Edge (PE) node. The transport label identifies the MPLS tunnel (Labeled Switched Path) used to transport the service label encapsulated VPN traffic, between two PE nodes, through the backbone. The transport label is applied on top of the service label at the source PE node, and used to direct the VPN traffic (travelling through the network core) to the destination PE. At the destination PE node the transport label is stripped, leaving the service label encapsulated packet to be processed and forwarded to a CE node based on the service label. A value of ***awaitingLabel*** indicates the MPLS tunnel is currently not available and waiting to be established. A value of ***notApplicable*** indicates this is a local route and hence doesn't have a transport label.
Mib	Bgp
Values	Decimal (0..1048575) awaitingLabel notApplicable
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib reachable (reach)

Access	Read only
Description	This attribute indicates whether a route is currently reachable through an LSP tunnel.

Mib	Bgp
Values	true false
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib bgpNextHop (bgpNh)

Access	Read only
Description	This attribute indicates the bgp next hop IP address that should be used to reach the destination address prefix.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib origin

Access	Read only
Description	This attribute indicates the value of the ORIGIN path attribute of the route. A value of ***incomplete*** means that this information is not available.
Mib	Bgp
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib localPreference (locPrf)

Access	Read only
Description	This attribute indicates the LOCAL_PREFERENCE path attribute of the route. The LOCAL_PREFERENCE path attribute is used by a BGP speaker to inform other BGP speakers in its own autonomous system of the originating speaker's degree of preference for an advertised route. A higher value indicates a more preferred route.

Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib asPath

Access	Read only
Description	This attribute indicates the AS_PATH path attribute of the route. The AS_PATH path attributes lists the sequence of AS path segments in reverse traversal order.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib aggregatorAs

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of ***0*** indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of ***0.0.0.0*** indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp MvRib siteOfOrigin (soo)

Access	Read only
Description	This attribute indicates the site of origin extended community path attribute.
Mib	Bgp

Values	String (0..21, ASCII)
Default	No default

COMPONENT Rtr Vrf Bgp Ipv4LabelRibEntry (LRib)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Rtr Vrf Bgp LRib Operational (Oper)"
Scope	Application
Description	*Rtr/<string> Bgp ipv4LabelRibEntry/<prefix>,<length>,<peer>* The *ipv4LabelRibEntry* component represents a single entry in the routing information database which maintains the ipv4 labelled BGP routes learned both locally and remotely from the BGP peers. - *prefix*: the destination IP address prefix of the ipv4 labelled BGP route. This is an IP address prefix as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute. - *length*: the length of the IP address prefix of the ipv4 labelled BGP route. This is the IP address prefix length as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute. - *peer*: the IP address of the BGP peer from which the ipv4 labelled BGP route was learned. This component is only applicable to the *Bgp* component whose *Bgp Peer Descriptor addressFamily* attribute is set to ***ipv4Label***.
Mib	Bgp
Common Verbs	Help List Display

GROUP Rtr Vrf Bgp LRib Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *ipv4LabelRibEntry* component.
Mib	Bgp

ATTRIBUTE Rtr Vrf Bgp LRib nextHop (nh)

Access	Read only
Description	This attribute indicates the IP address of the next hop that should be used to reach the destination address.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib inLabel (il)

Access	Read only
Description	This attribute indicates the label (if any) assigned by this Bgp speaker. The default value will be '*notApplicable*'.
Mib	Bgp
Values	Decimal (0..1048575) notApplicable
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib outLabel (ol)

Access	Read only
Description	This attribute indicates the label (if any) assigned by the next hop Bgp speaker. The default value will be '*notApplicable*'.
Mib	Bgp
Values	Decimal (0..1048575) notApplicable
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib origin

Access	Read only
Description	This attribute indicates the value of the ORIGIN path attribute of the route. A value of ***incomplete*** means that this information is not available.
Mib	Bgp
Values	igp egp incomplete
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib asPath

Access	Read only
Description	This attribute indicates the AS_PATH path attribute of the route. The AS_PATH path attribute lists the sequence of AS path segments in reverse traversal order.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib atomicAggregate

Access	Read only

Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib aggregatorAs

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of ***0*** indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of ***0.0.0.0*** indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)

Default	No default

ATTRIBUTE Rtr Vrf Bgp LRib siteOfOrigin (soo)

Access	Read only
Description	This attribute indicates the site of origin extended community path attribute.
Mib	Bgp
Values	String (0..21, ASCII)
Default	No default

COMPONENT Rtr Vrf RouteDistinguisher (Rd)

Instance	String (3..21, RFC2547RdRtSyntax)
Scope	Application
Description	*Rtr/<string> Vrf/<string> RouteDistinguisher/<admin>:n* The route distinguisher is used to create distinct routes to a common IPv4 address prefix. An IPv4 MPLS VPN (RFC2547) address consists of a route distinguisher and a IPv4 prefix. The route distinguisher value consists of an administrative part and an assigned number part. A route distinguisher can have two different formats as follows: **Type 0 format**: administrative field contains a 2 byte autonomous system number assigned by the operator and the assigned number field contains a 4 byte number also assigned by the operator. The two fields are separated by a colon. (e.g. as:number) **Type 1 format**: administrative field contains a 4 byte IPv4 address assigned by the operator and the assigned number field contains a 2 byte number also assigned by the operator. The two fields are separated by a colon. (e.g. IPAddr:number) Refer to RFC 2547 for further details regarding the route distinguisher.

There must be one and only one route distinguisher defined for the Vrf.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT Rtr Vrf RouteTarget (Rt)

Instance: String (3..21, RFC2547RdRtSyntax)

Groups: "GROUP Rtr Vrf Rt Provisioned (Prov)"

Scope: Application

Description: *Rtr/<string> Vrf/<string> RouteTarget/<admin>:n*
A route target is a form of policy which identifies a set of sites within a Virtual Private Network. They are used to control the distribution of IPv4 MPLS VPN (RFC2547) routes. Each instance of this component defines a VRF route target. ‘Export’ route targets are attached to a route received from a locally attached CE and advertised to other Provider Edge routers. ‘Import’ route targets are used by the Provider Edge router to determine whether a route received from another Provider Edge router could be installed in the VRF’s routing table associated with the locally attached CE.

The route target value consists of an administrative part and an assigned number part. A route distinguisher can have two different formats as follows:
Type 0 format: administrative field contains a 2 byte autonomous system number assigned by the operator and the assigned number field contains a 4 byte number also assigned by the operator. The two fields are separated by a colon. (e.g. as:number)
Type 1 format: administrative field contains a 4 byte IPv4 address assigned by the operator and the assigned number field contains a 2 byte number also assigned by the operator. The two

fields are separated by a colon. (e.g. IPAddr:number)

Refer to RFC 2547 for further details regarding route targets.

A Route Target can be defined as being either an import route target, and export route target, or both an import and an export route target.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Vrf Rt Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the *RouteTarget* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Rt mode

Access: Read and write

Description: This attribute specifies the mode of the route target. If the value is ***both***, the route target becomes both the import and export route targets.

Mib: no_mib

Values:
- both
- import
- export

Default: both

COMPONENT Rtr Vrf ExportPolicy (Export)

Instance: Decimal (0..65535)

Groups	"GROUP Rtr Vrf Export Provisioned (Prov)"
Scope	Application
Description	*Rtr/<string> Vrf/<string> ExportPolicy/n* Each instance of this component defines a VRF export policy. A VRF export policy is used to decide whether locally learned routing information is to be sent or blocked. If no export policy is provisioned, *Vrf* exports all routes into the IBGP routing database of the associated *Rtr*, except those learned from IBGP. If multiple export policies are provisioned, the policy with the most specific match to the route is applied. Example 1: Two export policies are defined: *Rtr/0 vrf/0 export/1, protocol =* ***all,*** *advertiseStatus =* ***send*** *Rtr/0 vrf/0 export/2, protocol =* ***rip****, advertiseStatus =* ***block*** This example specifies that *Vrf* should export all routes in this *Vrf*'s routing table, except routes learned from RIP. Example 2: Two export policies are defined: *Rtr/0 vrf/0 export/2, protocol =* ***all****, advertiseStatus =* ***send*** *Rtr/0 vrf/0 export/3, protocol =* ***rip****, advertiseStatus =* ***block*** *Rtr/0 vrf/0 export/3 network/1, prefix =* ***47.0.0.0****, length =* ***8*** *Vrf* willl export all routes in this *Vrf*'s routing table except routes learned from RIP which match the network address prefix 47.0.0.0/8.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Export Network (Net)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Export Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes for the *Export* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Export protocol

Access	Read and write
Description	This attribute specifies which protocol the export policy applies to. If the value is ***all***, the export policy is applied to routes from all protocols in the IP routing table.
Mib	no_mib
Values	all rip ospfInternal ospfExternal staticLocal staticRemote bgpExternal
Default	all

ATTRIBUTE Rtr Vrf Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies whether routing data which matches the criteria for this policy is exported.
Mib	no_mib
Values	send block
Default	send

ATTRIBUTE Rtr Vrf Export localPreference (locPrf)

Access	Read and write

Description	This attribute specifies the value of the LOCAL_PREFERENCE path attribute in routes advertised to the remote Provider Edge (PE) node. A value of ***0*** means that the default local preference value, taken from the *Router Bgp defaultLocalPreference*, is used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf Export Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Vrf Export Net Provisioned (Prov)"
Scope	Application
Description	*Rtr/<string> Vrf/<string> Export/n Network/n* Each *Network* component instance specifies a destination network address prefix that this VRF export policy applies to. If no *Network* component is provisioned under the *ExportPolicy* component, the policy applies to all destination network addresses.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Export Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Network* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Export Net prefix

Access	Read and write
Description	This attribute specifies the network address prefix. The prefix length is specified by the *length* attribute.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Export Net length

Access	Read and write
Description	This attribute specifies the length of the network address prefix. The prefix is specified by the *prefix* attribute.
Mib	no_mib
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Rtr Vrf ServiceLabelUsage (Slu)

Instance	Decimal (0..15)
Groups	"GROUP Rtr Vrf Slu Operational (Oper)"
Scope	Application
Description	*Rtr/<string> Vrf/<string> slu/*<lpNum> The *VrfServiceLabelUsage* component represents a single entry of the Vro and SL resource usage information database. The instance value of this component has the following meaning: - *lpNumber:* a decimal number identifies the lp number of the card on which the resources are allocated.

This component is only applicable to the *Vrf component*.

Mib no_mib

Common Verbs
Help
List
Display

GROUP Rtr Vrf Slu Operational (Oper)

Properties Operational

Description This group contains the operational attributes of the *VrfServiceLabelUsage* component.

Mib no_mib

ATTRIBUTE Rtr Vrf Slu serviceLabelInstalled (sli)

Access Read only

Description This attribute indicates the number of the service label distributed from remote Provider Edges (PE) and installed on the access card with <lpNumber> of this VRF.

Mib no_mib

Values Decimal (0..8000)

Default No default

ATTRIBUTE Rtr Vrf Slu vroInstalled (vroi)

Access Read only

Description This attribute indicates the number of VROs installed to RFC2547 datapaths on the access card with <lpNumber> of this VRF.

Mib no_mib

Values Decimal (0..8000)

Default No default

ATTRIBUTE Rtr Vrf Slu vroInstalledPercentage (vroip)

Access	Read only
Description	This attribute indicates the percentage of the vro used by the datapaths on the access card with <lpNumber> of this VRF.
Mib	no_mib
Values	Decimal (0..100)
Default	No default

ATTRIBUTE Rtr Vrf Slu forwardingMode (fwdm)

Access	Read: All Write: All
Description	This attribute indicates the forwarding mode of the datapaths on the access card with <lpNumber> of this VRF. The attribute can be set operationally. It should be set according to the VRO resource and the time requirement of the data flows. When it is set to ‘sw’ mode, user data will be forwarded in software datapath on the access LP of the VRF. When it is set to ‘hw’ mode, user data will be forwarded in hardware datapath, but if there is no enough VRO resource on the LP, the data may be forwarded in software datapath later on.
Mib	no_mib
Values	hw sw
Default	No default

COMPONENT Rtr Vrf ForwardTable (Fwd)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] typeOfService (tos) [Decimal (0..31)] gateway (gateway) [IP address]
Groups	"GROUP Rtr Vrf Fwd Operational (Oper)"
Scope	Application

Description	*Vr/<string> Ip ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address>* *Rtr/<string> ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address* *Rtr/<string> Vrf/<string> ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address* This component contains the information to forward data.This table holds the best route information sent from Routing table.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Fwd Operational (Oper)

Properties	Operational
Description	Identifies a group of operational attributes associated with each entry in the Forward Table.
Mib	no_mib

ATTRIBUTE Rtr Vrf Fwd ifIndex

Access	Read only
Description	This attribute specifies the SNMP index associated with the protocol port or interface represented by the attribute *protocolPortName* or *interfaceName*, which identifies the local interface through which the next hop of this route should be reached.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Rtr Vrf Fwd type

Access	Read only

Description	This attribute specifies the type of route. Note that ***localInterface*** refers to a route for which the next hop is the final destination; ***remoteDestination*** refers to a route for which the next hop is not the final destination.
Mib	no_mib
Values	notDefined invalid localInterface remoteDestination
Default	No default

ATTRIBUTE Rtr Vrf Fwd protocol

Access	Read only
Description	This Attribute identifies the routing mechanism by which this route was learned.
Mib	no_mib
Values	other local netmgmt icmp egp ggp hello rip isIs esIs ciscoIgrp bbnSpfIgp ospf bgp idpr mpls mbgp bgpMplsInternal ebgpLabel
Default	No default

ATTRIBUTE Rtr Vrf Fwd age

Access	Read only
Description	This attribute specifies the number of seconds since this route was last updated or otherwise determined to be correct.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Fwd protocolPortName (pPName)

Access	Read only
Description	For a *Vr*, this attribute indicates the name of the protocol port by which the next hop of this route should be reached.
Mib	no_mib
Values	The name of the component
Default	No default

ATTRIBUTE Rtr Vrf Fwd nextHopAs

Access	Read only
Description	This attribute specifies the Autonomous System number of the Next Hop. If unknown or not relevant to the protocol indicated by the attribute *protocol*, the value should be zero.
Mib	no_mib
Values	Decimal (0..429467295)
Default	No default

ATTRIBUTE Rtr Vrf Fwd metric

Access	Read only
Description	This attribute specifies the primary routing metric for this route. The semantics of this metric are determined by the routing

	protocol specified by the value of the attribute *protocol*. If this metric is not used, its value should be set to -1.
Mib	no_mib
Values	Signed (-1..65535)
Default	-1

ATTRIBUTE Rtr Vrf Fwd interfaceName

Access	Read only
Description	For a *Rtr* or *Rtr Vrf*, this attribute indicates the name of the interface by which the next hop of this route should be reached.
Mib	no_mib
Values	The name of the component
Default	No default

COMPONENT Rtr Vrf Icmp

Groups	"GROUP Rtr Vrf Icmp Statistics (Stats)"
Scope	Application
Description	Vr/<string> Ip Icmp Rtr/<string> Icmp Rtr/<string> Vrf/<string> Icmp The Icmp component controls all ICMP related attributes available to this router.
Mib	no_mib
Common Verbs	Help List Display

VERB Ping Rtr Vrf Icmp

Impact	Passive
Description	*Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)] [-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)] [-traceRoute] [-continuous] [-dontFragment] [-cos(0..3)][-dscp(0..63)][-tos(0..FF)][-stop] Vr/<string> Ip Icmp* *Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)] [-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)] [-traceRoute] [-continuous] [-dontFragment] [-dscp(0..63)][-tos(0..FF)][-stop] Rtr/<string> Icmp* *Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)] [-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)] [-traceRoute] [-continuous] [-dontFragment] [-dscp(0..63)][-tos(0..FF)][-stop] Rtr/<string> Vrf/<string> Icmp* The *Ping* verb is intended for testing network connections at the IP level. The verb invokes ICMP to issue an echo request to the host specified by the *ipAddr* option and waits for its echo response. If the *Ping* is successful, it outputs the following information: - number of bytes received - IP address of the responding host - ICMP sequence number of the received packet - elaspsed time from sending of the *Ping* to receiving of the response The following options are supported: -*srcAddr* is used to define the source IP address of the IP ICMP echo request packet. When not specified or specified as 0.0.0.0, the outgoing IP *Interface* or *LogicalIf* address is used as the source address. -*netmask* when specified is used to define a range of IP host

addresses to which echo requests are sent to (ping sweep). The netmask given must be contiguous. The *-retry* option is ignored if used together with this option. By default, the value is set to 255.255.255.255.

-size is used to define the size of the IP packet to be echoed including the IP and ICMP header. The default is 64 bytes. The maximum size is 4096.

-retry is used to define the number of times an echo request is resent if no echo reply is received. Default is 0.

-traceRoute is used to find the route the node would use to reach a particular destination IP address at the moment when the *Ping* command is executed with this option. The *-netmask*, *-size*, *-retry* and *-continuous* option are ignored if used together with this option. By default, the *traceRoute* option is not used.

-continuous causes ICMP to issue echo requests once per second to the host or hosts specified by the *-ipAddr* and the *-netmask* option. For every echo response ICMP receives, one line of output is printed. No output is produced if there is no response. The *-stop* option is used to stop ICMP from sending the echo requests. By default, the *-continuous* option is not used.

-dontFragment causes ICMP to set the Don't Fragment flag of the IP packet that carries the echo request. This is useful in determining path MTU. By default, the *dontFragment* option is not used.

-cos causes the echo request packet to be forwarded with the given Class Of Service. Default is 0. This option is not supported on a *Router* component, a *VpnRouteForwarder* component, nor on a *VirtualRouter* component that has a *DifferentiatedServicesDomain* subcomponent.

-dscp causes the six most significant bits of Type Of Service (TOS) byte of the echo request packet to be set to the given value. These six bits are know as the Differentiated Services Code Point (DSCP). Default is 0. This option cannot be used together with the *-tos* option.

-*tos* causes the Type Of Service (TOS) byte of the echo request packet to be set to the given value. Default is 0. This option cannot be used together with the -*dscp* option.

-*stop* is used to stop ICMP from sending echo requests due to a previously issued *Ping* command with the -*continuous* and/or -*netmask* option. Under any other situation, the *Ping* command with the -*stop* option has no effect.

Note: Only one *Ping* command per *VirtualRouter* or *Router* or *Router Vrf* is allowed to be in progress at any one time. Any in progress *Ping* command must be stopped before a new *Ping* command can be issued.

GROUP Rtr Vrf Icmp Statistics (Stats)

Properties	Operational
Description	This group holds statistics for ICMP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Icmp inMsgs

Access	Read only
Description	This attribute counts the ICMP messages received by this gateway. This number includes *inErrors*. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inErrors

Access	Read only
Description	This attribute counts the ICMP messages received by this gateway but determined as having ICMP specific errors such as bad ICMP checksum or bad length.

	The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inDestUnreachs

Access	Read only
Description	This attribute counts the ICMP destination unreachable messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inTimeExcds

Access	Read only
Description	This attribute counts the ICMP time exceeded messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inParmProbs

Access	Read only
Description	This attribute counts the ICMP parameter problem messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inSrcQuenchs

Access	Read only
Description	This attribute counts the ICMP source quench messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Icmp inRedirects

Access	Read only
Description	This attribute counts the ICMP redirect messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inEchos

Access	Read only
Description	This attribute counts the ICMP echo request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inEchoReps

Access	Read only
Description	This attribute counts the ICMP echo reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inTimestamps

Access	Read only
Description	This attribute counts the ICMP timestamp request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inTimestampReps

Access	Read only
Description	This attribute counts the ICMP timestamp reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Rtr Vrf Icmp inAddrMasks

Access	Read only
Description	This attribute counts the ICMP address mask request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inAddrMaskReps

Access	Read only
Description	This attribute counts the ICMP address mask reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outMsgs

Access	Read only
Description	This attribute counts the ICMP messages that this gateway attempted to send. This number includes *outErrors*. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outErrors

Access	Read only
Description	This attribute counts the ICMP messages that this gateway did not send due to problems discovered within ICMP such as a lack of buffers. *outErrors* does not include errors discovered outside the ICMP layer such as the inability of IP to route the resultant datagram. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outDestUnreachs

Access	Read only
Description	This attribute counts the ICMP destination unreachable messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outTimeExcds

Access	Read only
Description	This attribute counts the ICMP time exceeded messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Rtr Vrf Icmp outParmProbs

Access	Read only
Description	This attribute counts the ICMP parameter problem messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outSrcQuenchs

Access	Read only
Description	This attribute counts the ICMP source quench messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outRedirects

Access	Read only
Description	This attribute counts the ICMP redirect messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outEchos

Access	Read only
Description	This attribute counts the ICMP echo request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outEchoReps

Access	Read only
Description	This attribute counts the ICMP echo reply messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outTimestamps

Access	Read only
Description	This attribute counts the ICMP timestamp request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outTimestampReps

Access	Read only
Description	This attribute counts the ICMP timestamp reply messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outAddrMasks

Access	Read only
Description	This attribute counts the ICMP address mask request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outAddrMaskReps

Access	Read only
Description	This attribute counts the ICMP address mask reply message sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inRtrAdvs

Access	Read only

Description	This attribute counts the ICMP router advertisement messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp inRtrSolicits

Access	Read only
Description	This attribute counts the ICMP router solicitation messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outRtrAdvs

Access	Read only
Description	This attribute counts the ICMP router advertisement messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Icmp outRtrSolicits

Access	Read only
Description	This attribute counts the ICMP router solicitation messages sent by this gateway.

	The counter wraps to zero when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf Ospf (Ospf)

Groups	"GROUP Rtr Vrf Ospf Provisioned (Prov)" "GROUP Rtr Vrf Ospf Operational (Oper)" "GROUP Rtr Vrf Ospf OsiState (State)" "GROUP Rtr Vrf Ospf OperationalStatus (OperStatus)"
Scope	Application
Description	*Vr/<string> Ip Ospf* *Rtr/<string> Ospf* *Rtr/<string> Vrf/<string> Ospf*

	This component is configured to control the Open Shortest Path First IP routing protocol.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Ospf AreaEntry (Area)" "COMPONENT Rtr Vrf Ospf StubAreaEntry (Stub)" "COMPONENT Rtr Vrf Ospf AreaAggregateEntry (Aggregate)" "COMPONENT Rtr Vrf Ospf HostEntry (Host)" "COMPONENT Rtr Vrf Ospf VirtIfEntry (VirtIf)" "COMPONENT Rtr Vrf Ospf Export"
Dyn. Subcomp.	"COMPONENT Rtr Vrf Ospf VirtNbrEntry (VirtNbr)" "COMPONENT Rtr Vrf Ospf NeighborEntry (Nbr)" "COMPONENT Rtr Vrf Ospf LsdbEntry (Lsdb)" "COMPONENT Rtr Vrf Ospf ExtLsdbEntry (ExtLsdb)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf Ospf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes are used to configure the OSPF component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf routerId (id)

Access	Read and write
Description	This attribute is an Ip Address that uniquely identifies the router in the autonomous system.
Mib	no_mib
Values	IP address

Default	No default

ATTRIBUTE Rtr Vrf Ospf snmpAdminStatus

Access	Read and write
Description	The administrative status of the OSPF Component in this routing component (*Vr*, *Rtr* or *Vrf*).
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr Vrf Ospf asBdrRtrStatus (asBr)

Access	Read and write
Description	This attribute is a flag to note whether this router is an autonomous system border router. If this router is configured to export any routes learned from other than OSPF-internal protocol, this attribute should be configured as autonomous system border router.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf Ospf tosSupport

Access	Read and write
Description	The router's support for type-of-service routing. Only one value will be allowed. This is a deviation from supporting the MIB.
Mib	no_mib
Values	false
Default	false

ATTRIBUTE Rtr Vrf Ospf multicastForward

Access	Read and write
Description	A bit mask indicating the limits on Network Layer Multicast (class D) forwarding. It is represented as a sum of the following: if intra-Area forwarding is permitted, 1; else 0 if inter-Area forwarding is permitted 2; else 0 if inter-AS forwarding is permitted, 4; else 0 Only the value of 0 is being supported and this is a MIB deviation.
Mib	no_mib
Values	Decimal (0..0)
Default	0

ATTRIBUTE Rtr Vrf Ospf migrateRip

Access	Read and write
Description	This Attribute sets the preference level of OSPF-internal routes to be less preferred than RIP. This attribute should only be used when starting a migration of a network from RIP to OSPF. When ready to cut over to OSPF, set this attribute to a value of ***disabled*** and run under normal preferences. All OSPF routers in the Autonomous System should be running with the *migrateRip* attribute set to a value of ***enabled*** or with *migrateRip* ***disabled*** to prevent routing loops. It is important that the changeover period from RIP to OSPF be performed quickly on all OSPF routers so that no routing loops are formed. These routing loops could be caused by conflicts in the internal RIP and OSPF databases.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf Ospf generateDefaultRouteMetric (genDefaultMetric)

Access	Read and write
Description	If this router is configured as an autonomous system border router, then this attribute causes the default route to be generated with a metric value equal to *generateDefaultRouteMetric* value. This route is put in the OSPF update along with the normal update routes when updates are sent to the neighbors. No default route will be generated if the value is 0.
Mib	no_mib
Values	Signed (-1..65535)
Default	0

ATTRIBUTE Rtr Vrf Ospf redistributeIbgp (ribgp)

Access	Read and write
Description	This attribute specifies whether the export policies of this *Ospf* instance can match routes learned from internal BGP (IBGP) peers when their *protocol* attribute value is ***all***. If *redistributeIbgp* is ***true***, a *protocol* value of ***all*** allows routes learned from IBGP peers to be included in the matching routes. If *redistributeIbgp* is ***false***, routes learned from IBGP peers are excluded when the *protocol* value is ***all***. To cause IBGP routes to be considered in this case, the *protocol* value must be set to ***bgpInternal***.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf Ospf estimatedNumberOfInternalOSPFRoutes

Access	Read and write
Description	This attribute specifies the average estimated number of routes in the autonomous system that this OSPF instance will have to keep track of. If this value is provisioned too low it will cause increased CPU utilization due to dynamic memory allocation. If this value is provisioned too high the result is wasted memory.

Mib	no_mib
Values	Decimal (0..65535)
Default	500

ATTRIBUTE Rtr Vrf Ospf estimatedNumberOfExternalOSPFRoutes

Access	Read and write
Description	This attribute specifies the average estimated number of routes external to the autonomous system that this OSPF instance will have to keep track of. If this value is provisioned too low it will cause increased CPU utilization due to dynamic memory allocation. If this value is provisioned too high the result is wasted memory.
Mib	no_mib
Values	Decimal (0..65535)
Default	500

ATTRIBUTE Rtr Vrf Ospf estimatedNumberOfAreas

Access	Read and write
Description	This attribute specifies the average estimated number of areas in the autonomous system that this OSPF instance will have to keep track of.
Mib	no_mib
Values	Decimal (0..65535)
Default	2

ATTRIBUTE Rtr Vrf Ospf estimatedNumberOfInterfacesPerArea

Access	Read and write
Description	This attribute specifies the average estimated number of interfaces in a given area that this OSPF instance will have to keep track of.
Mib	no_mib

Values	Decimal (0..65535)
Default	10

ATTRIBUTE Rtr Vrf Ospf estimatedNumberOfNeighborsPerInterface

Access	Read and write
Description	This attribute specifies the average estimated number of neighbors that a given interface will have on it in this OSPF interface.
Mib	no_mib
Values	Decimal (0..65535)
Default	3

ATTRIBUTE Rtr Vrf Ospf defaultOspfIntRtePreference (ospfIntPref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF internal routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	30

ATTRIBUTE Rtr Vrf Ospf defaultOspfExt1RtePreference (ospfExt1Pref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF external type 1 routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	80

ATTRIBUTE Rtr Vrf Ospf defaultOspfExt2RtePreference (ospfExt2Pref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF external type 2 routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	120

ATTRIBUTE Rtr Vrf Ospf opaqueCapability (opcap)

Access	Read and write
Description	This attribute specifies whether the OSPF instance is allowed to participate in flooding Opaque LSAs. Such LSAs are also stored in the InwOspfLsdbEntry. Applications, such as MPLS Traffic Engineering, use this mechanism to flood their information throughout a network. Of the three Opaque LSA types (9,10,11), only type 10 LSAs (area scope) are supported.The OSPF instance remains fully inter-operable with non-opaque-capable neighbors. Opaque capability is not fully supported. When the ***mplsTeEmulation*** feature is provisioned, setting this attribute to ***true*** activates hooks to emulate TE capability by flooding hard-coded type 10 TE LSAs to opaque-capable neighbors. This emulated TE functionality is not standards compliant and is strictly provided for MPLS RSVP-TE inter-operability with vendors that are dependent on MPLS TE to establish LSPs.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf Ospf spareInstance (spInst)

Access	Read and write
Description	This attribute specifies whether to maintain a copy of the link state database on the standby card. When this attribute is set to ***disable***, OSPF does not maintain a copy of the link state

database.

If the *virtualRouterProcessor* attribute of this *VirtualRouter* is set to ***Lp/0***, then the following conditions must both be true for a copy of the link-state database to be maintained on the standby CP:

- This attribute must be set to ***enable***, and

- The *Shelf cpEquipmentProtection* attribute must be set to ***hot***.

Mib: no_mib

Values: enable
disable

Default: disable

ATTRIBUTE Rtr Vrf Ospf spfHoldTime (spfTime)

Access: Read and write

Description: This attribute specifies the minimum time interval between SPF calculations. If a link state change in the autonomous system is detected and the time since the last SPF calculation is greater than *spfHoldTime*, then the SPF calculation starts immediately. Otherwise, the SPF calculation waits until a time of at least *spfHoldTime* has elapsed since the previous SPF calculation.

Setting this attribute to a lower value decreases convergence time in the OSPF autonomous system, but uses more CPU resource more frequently. Setting this attribute to a higher value increases convergence time but provides for a more scalable node configuration, especially if there are many *Ospf* components configured on the node.

Mib: no_mib

Values: Decimal (1..60)

Units: seconds

Default: 1

ATTRIBUTE Rtr Vrf Ospf alarmGeneration (alarms)

Access	Read and write
Description	This attribute specifies the level of alarm generation for this *Ospf* instance. A value of ***all*** specifies that all OSPF alarms are made visible. A value of ***normal*** specifies that all existing OSPF alarms are made visible, except *Ospf NeighborEntry* state change alarms. A value of ***none*** specifies that no OSPF alarms are made visible. It is recommended that *VirtualRouter* components with the *vpnMode* attribute set to ***carrier*** should have the *alarmGeneration* attribute set to ***all***. *VirtualRouter* components with the *vpnMode* attribute set to ***customer*** should have the *alarmGeneration* attribute set to either ***normal*** or ***none***, for scalability reasons. Similarly, the *alarmGeneration* attribute should be set to ***all*** for *Router*. The *alarmGeneration* attribute should be set to either ***normal*** or ***none*** for *Vrf* for scalability reasons.
Mib	no_mib
Values	none normal all
Default	all

ATTRIBUTE Rtr Vrf Ospf ecmpStatus

Access	Read and write
Description	This attribute specifies whether the Equal Cost Multi-Path (ECMP) functionality is enabled or not in the network meaning that the number of next hops for one route learned through OSPF depend on the value of *ecmpStatus*. If *ecmpStatus* is ***enabled,*** a maximum of three next hops are kept for one route. If it is ***disabled***, one next hop is kept for that route.
Mib	no_mib

Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Vrf Ospf attachAsTag (asTag)

Access	Read and write
Description	This attribute specifies the treatment of the OSPF tag when routes are redistributed between BGP and OSPF. If this attribute is set to ***enabled***, an AS number is encoded as OSPF tag when routes are redistributed from BGP into OSPF. When routes are redistributed from OSPF into BGP, the OSPF tag is checked against the AS number to avoid routing loops. If this attribute is set to ***disabled***, an AS number is not encoded as OSPF tag when routes are redistributed from BGP into OSPF. When routes are redistributed from OSPF into BGP, the OSPF tag is not checked against the AS number.
Mib	no_mib
Values	disabled enabled
Default	enabled

GROUP Rtr Vrf Ospf Operational (Oper)

Properties	Operational
Description	These group of attributes identifies the operational attributes for this OSPF Component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf versionNumber (ver)

Access	Read only
Description	The Current Version number of the OSPF Protocol. (2).
Mib	no_mib

Values	Decimal (2..2)
Default	2

ATTRIBUTE Rtr Vrf Ospf areaBdrRtrStatus

Access	Read only
Description	This attribute is used to specify whether this router is configured as an area border router.
Mib	no_mib
Values	true false
Default	No default

ATTRIBUTE Rtr Vrf Ospf externLsaCount

Access	Read only
Description	The number of external (LS type 5) link-state advertisements in the link-state database.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Ospf externLsaChecksumSum

Access	Read only
Description	The 32-bit unsigned sum of the LS checksums of the external link-state database. This sum can be used to determine if there has been a change in a router's link state database, and to compare the link-state database of two routers.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf originateNewLsas

Access	Read only
Description	The number of new link-state advertisements that have been originated. This number is incremented each time the router originates a new LSA.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf rxNewLsas

Access	Read only
Description	The number of link-state advertisements received determined to be new instantiations. This number does not include newer instantiations of self-originated link-state advertisements.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr Vrf Ospf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Vrf Ospf operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Vrf Ospf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Ospf OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib

Values	up down testing
Default	up

COMPONENT Rtr Vrf Ospf AreaEntry (Area)

Instance	IP address
Groups	"GROUP Rtr Vrf Ospf Area Provisioned (Prov)" "GROUP Rtr Vrf Ospf Area Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf AreaEntry/<Ip Address>* *Rtr/<string> Ospf AreaEntry/<Ip Address>* *Rtr/<string> Vrf/<string> Ospf AreaEntry/<Ip Address>* This component contains the information about various areas that the router is connected to.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf Area Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisionable attributes for the AreaEntry Component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Area authType

Access	Read and write
Description	The authentication type specified for this area.
Mib	no_mib

Values	none simplePassword md5
Default	none

ATTRIBUTE Rtr Vrf Ospf Area importAsExtern

Access	Read and write
Description	The area's support for importing AS external link-state advertisements. For backbone area (that is, areaId 0.0.0.0), this attribute must be set to ***importExternal***.
Mib	no_mib
Values	importExternal (external) importNoExternal (noExternal) importNssa (nssa)
Default	importExternal

ATTRIBUTE Rtr Vrf Ospf Area areaSummary

Access	Read and write
Description	This variable controls the import of summary LSAs into stub areas. If it is ***noAreaSummary***, the router will neither originate nor propagate summary LSAs into the stub areas. It will rely entirely on its default route. If it is ***sendAreaSummary***, the router will both summarize and propagate summary LSAs.
Mib	no_mib
Values	noAreaSummary sendAreaSummary
Default	noAreaSummary

GROUP Rtr Vrf Ospf Area Operational (Oper)

Properties	Operational
Description	This group of attributes describes the Operational set of attributes for the AreaEntry component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Area spfRuns

Access	Read only
Description	The number of times that the intra-area route table has been calculated using this area's link-state database since the protocol became operational.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Area areaBdrRtrCount

Access	Read only
Description	The total number of area border routers reachable within this area. This is initially zero, and is calculated in each Shortest Path First Pass.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Area asBdrRtrCount

Access	Read only
Description	The total number of Autonomous System border routers reachable within this area. This is initially zero, and is calculated in each Shortest Path First Pass.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Area lsaCount

Access	Read only
Description	The total number of link-state advertisements in this area's link-state database, excluding AS External LSAs.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Area areaLsaCksumSum

Access	Read only
Description	The 32-bit unsigned sum of the link-state advertisement's LS checksums contained in this area's link-state database. This sum excludes external (LS type 5) link-state advertisements. The sum can be used to determine if there has been a change in a router's link state database, and to compare the link-state database of two routers.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf Ospf StubAreaEntry (Stub)

Instance	areaId [IP address] tos [Decimal (0..0)]
Groups	"GROUP Rtr Vrf Ospf Stub Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Ospf StubAreaEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf StubAreaEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf StubAreaEntry/<Ip Address>,<Decimal>*

	This component describes metrics that a default area border router will advertise into a stub area.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf Stub Provisioned (Prov)

Properties	Provisioned
Description	These set of attributes explain the provisionable group for the *StubAreaEntry.*
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Stub metric (metric)

Access	Read and write
Description	The metric value applied at the indicated type of service.
Mib	no_mib
Values	Decimal (1..4294967295)
Default	1

ATTRIBUTE Rtr Vrf Ospf Stub metricType

Access	Read and write
Description	This type of the metric advertised as a default route.
Mib	no_mib
Values	ospfMetric comparableCost nonComparable
Default	ospfMetric

ATTRIBUTE Rtr Vrf Ospf Stub advertiseDefault

Access	Read and write
Description	This attribute determines whether or not the default routing information will be advertised, depending on other criterion. Setting this value to ***no*** can prevent advertising default routing information. If the value of the attribute is set to ***yes***, then the value of the attribute *importAsExtern* for that particular *AreaEntry* should be set to ***importNssa***.
Mib	no_mib
Values	yes no
Default	yes

COMPONENT Rtr Vrf Ospf AreaAggregateEntry (Aggregate)

Instance	areaId [IP address] lsdbType [summaryLink nssaExternalLink] aggregateNet [IP address] aggregateMask [IP address]
Groups	"GROUP Rtr Vrf Ospf Aggregate Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Ospf AreaAggregateEntry/<Ip Address>,<enum>,* *<Ip Address>,<Ip Address>* *Rtr/<string> Ospf AreaAggregateEntry/<Ip Address>,<enum>,* *<Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf AreaAggregateEntry/<Ip Address>,<enum>,<Ip Address>,<Ip Address>*

This table entry replaces the Area Summary table from RFC1253 and is used as an extension for CIDR support.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr Vrf Ospf Aggregate Provisioned (Prov)

Properties: Provisioned

Description: Identifies a group of provisionable attributes.

Mib: no_mib

ATTRIBUTE Rtr Vrf Ospf Aggregate effect

Access: Read and write

Description: This attribute determines whether or not the routing information will be advertised, depending on other criterion. Setting this value to ***doNotAdvertiseMatching*** can prevent advertising routing information for the address and mask values specified as the indices for this entry.

Mib: no_mib

Values:
advertiseMatching
doNotAdvertiseMatching
invalid

Default: advertiseMatching

COMPONENT Rtr Vrf Ospf HostEntry (Host)

Instance:
address [IP address]
tos [Decimal (0..0)]

Groups: "GROUP Rtr Vrf Ospf Host Provisioned (Prov)"

Scope: Application

Description	*Vr/<string> Ip Ospf HostEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf HostEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf HostEntry/<Ip Address>,<Decimal>* This component indicates what hosts are directly attached to the router, and what metrics and types of service should be advertised for them. This component is an optional subcomponent of Ospf.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf Host Provisioned (Prov)

Properties	Provisioned
Description	Provisionable set of attributes for the Host entry.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Host areaId

Access	Read and write
Description	This is an Ip address for the Host Entry that indicates the area it belongs to.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Ospf Host metric

Access	Read and write
Description	The metric to be advertised.
Mib	no_mib
Values	Decimal (1..65535)

Default	1

COMPONENT Rtr Vrf Ospf VirtIfEntry (VirtIf)

Instance	areaId [IP address] nbrRouterId [IP address]
Groups	"GROUP Rtr Vrf Ospf VirtIf Provisioned (Prov)" "GROUP Rtr Vrf Ospf VirtIf Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>* This component describes all the virtual links configured for this OSPF Router.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Ospf VirtIf Md5KeyId (KeyId)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf VirtIf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes provide provisioning data for the *VirtIfEntry.*
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf VirtIf transitDelay (transDelay)

Access	Read and write
Description	The estimated number of seconds it takes to transmit a link-state update packet over this interface.

Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	1

ATTRIBUTE Rtr Vrf Ospf VirtIf retransInterval (retransInt)

Access	Read and write
Description	The number of seconds between link-state advertisement retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets. This value would be well over the expected round-trip time.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	5

ATTRIBUTE Rtr Vrf Ospf VirtIf helloInterval (helloInt)

Access	Read and write
Description	The length of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for the virtual neighbor.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Rtr Vrf Ospf VirtIf rtrDeadInterval (rtrDeadInt)

Access	Read and write
Description	The number of seconds that a router’s Hello packets have not been seen before its neighbors declare the router down. This

	should be some multiple of the Hello interval. This value must be the same for the virtual neighbor.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	60

ATTRIBUTE Rtr Vrf Ospf VirtIf authKey

Access	Write only
Description	If authentication type is simple password, the password for this virtual circuit. If the value of the attribute is not set, then this attribute is ignored by the application. If the value of this attribute is set, then the value of the attribute *authType* under this particular *Area* should be set to ***simplePassword***, otherwise the application will ignore this authentication key.
Mib	no_mib
Values	String (1..8, Hex)
Default	0000000000000000

ATTRIBUTE Rtr Vrf Ospf VirtIf authType

Access	Read and write
Description	The authentication type specified for this *VirtIf*.
Mib	no_mib
Values	none simplePassword md5 SameAsArea
Default	SameAsArea

GROUP Rtr Vrf Ospf VirtIf Operational (Oper)

Properties	Operational

Description	Represents a group of operational attributes for the *VirtIfEntry* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf VirtIf state (state)

Access	Read only
Description	The state of the OSPF virtual interface.
Mib	no_mib
Values	down pointToPoint
Default	No default

ATTRIBUTE Rtr Vrf Ospf VirtIf events (events)

Access	Read only
Description	The number of state changes or error events on the virtual link.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf Ospf VirtIf Md5KeyId (KeyId)

Instance	Decimal (1..255)
Groups	"GROUP Rtr Vrf Ospf VirtIf KeyId Provisioned (Prov)" "GROUP Rtr Vrf Ospf VirtIf KeyId Operational (Oper)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf KeyId/<ID>* *Rtr/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf KeyId/ <ID>* *Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>*

KeyId/<ID>
Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>
This component contains the information about various MD5 Authentication keys.

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf VirtIf KeyId Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisional attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf VirtIf KeyId md5Key (Key)

Access	Write only
Description	The MD5 authentication key for the *KeyId* component.
Mib	no_mib
Values	String (0..16, ASCII)
Default	""

GROUP Rtr Vrf Ospf VirtIf KeyId Operational (Oper)

Properties	Operational
Description	This group describes the set of operational attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf VirtIf KeyId inUseForGeneration (inUse)

Access	Read only

Description	This attribute indicates whether the *Key* is currently in use or not. If this attribute is equal to ***true***, it indicates the *Key* is active.
Mib	no_mib
Values	true false
Default	false

COMPONENT Rtr Vrf Ospf Export

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Vrf Ospf Export Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Ospf Export/n* *Rtr/<string> Ospf Export/n* *Rtr/<string> Vrf/<string> Ospf Export/n* Each instance of this component specifies an OSPF export policy. An OSPF export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as OSPF external routes onto attached OSPF areas of the routing component (*Vr*, *Rtr* or *Vrf*). The *Ospf* component by default advertises all OSPF external routes based on the metric and tag in the IP forwarding table.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Ospf Export NetworkList (NetList)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf Export Provisioned (Prov)

Properties	Provisioned

Description	This Group contains all the Provisioned attributes for the Export Component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	no_mib
Values	send block
Default	send

ATTRIBUTE Rtr Vrf Ospf Export metric (metric)

Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *metric* is ignored. The *metric* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. A value of -1 indicates that the metric associated with the route in the forwarding table is used.
Mib	no_mib
Values	Signed (-1..16777215)
Default	-1

ATTRIBUTE Rtr Vrf Ospf Export protocol

Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If the value is ***all***, the policy applies to all routes in the forwarding table, with the following exceptions: external BGP routes are always excluded and internal BGP routes are excluded

if the parent *Ospf* component's *reDistributeIBGP* attribute has the value ***false***.

Mib: no_mib

Values:
all
egp
rip
staticLocal
staticRemote
bgpInternal
bgpExternal
mbgp
bgpMplsInternal

Default: all

ATTRIBUTE Rtr Vrf Ospf Export ripInterface (ripIf)

Access: Read and write

Description: This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the routes are learned.
This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of an *Interface* or a *LogicalIf* that has a *RipIf* on the same routing component.

Mib: no_mib

Values: IP address

Default: 0.0.0.0

ATTRIBUTE Rtr Vrf Ospf Export ripNeighbor (ripNbr)

Access: Read and write

Description: This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP neighbor of which the routes are learned from.
This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP neighbor.

Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Ospf Export egpAsId (egpAs)

Access	Read and write
Description	This attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from. This attribute can only be non zero when *protocol* is set to ***egp***. The value of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Ospf Export tag

Access	Read and write
Description	This attribute specifies the OSPF tag to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *tag* is ignored. The *tag* value is not used to select which routes to block or send, but rather the tag value advertised for the routes. A value of 4294967295 indicates that the tag associated with the route in the forwarding table is used.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Rtr Vrf Ospf Export extLsaMetricType

Access	Read and write

Description	This attribute specifies the metric type in the OSPF external link state advertisement of the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *extLsaMetricType* is ignored. The *extLsaMetricType* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. The value ***useProtocolDefault*** indicates the metric type is automatically chosen based on the routing protocol which the route was learned from.
Mib	no_mib
Values	useProtocolDefault type1 type2
Default	useProtocolDefault

ATTRIBUTE Rtr Vrf Ospf Export bgpAsId (bgpAs)

Access	Read and write
Description	This attribute specifies the BGP AS from which a BGP route is learned from. This key is used only if the *protocol* is ***bgpExternal***. *bgpAsId* of value ***0*** matches all ASs.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Ospf Export bgpPeerIp (peerIp)

Access	Read and write
Description	This attribute specifies the BGP peer where the routes were learned from. *bgpPeerIp* of ***0*** matches all BGP peers. This attribute is used as a key when *protocol* is set to ***bgpInternal*** or ***bgpExternal***.
Mib	no_mib
Values	IP address

Default	0.0.0.0

ATTRIBUTE Rtr Vrf Ospf Export description (desc)

Access	Read and write
Description	This attribute describes the policy. For example, ‘to export OSPF routes to MCI’.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Vrf Ospf Export NetworkList (NetList)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Vrf Ospf Export NetList Provisioned (Prov)"
Scope	Application
Description	This component identifies a set of attributes when matched determines the export policy applied.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Ospf Export NetList Provisioned (Prov)

Properties	Provisioned
Description	This group identifies the set of provisionable attributes for the *ExportNetworkList* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Export NetList ipAddress

Access	Read and write

Description	This attribute identifies the 32 bit IP address to match against.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Ospf Export NetList ipMask (mask)

Access	Read and write
Description	This attribute is the IP Mask to be used with the IP Address to match against.
Mib	no_mib
Values	IP address
Default	No default

COMPONENT Rtr Vrf Ospf VirtNbrEntry (VirtNbr)

Instance	areaId [IP address] nbrRouterId [IP address]
Groups	"GROUP Rtr Vrf Ospf VirtNbr Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* This component describes all of OSPF's Virtual Neighbors.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Ospf VirtNbr Operational (Oper)

Properties	Operational

Description	This group identifies a set of operational attributes.
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf VirtNbr nbrIpAddress (addr)

Access	Read only
Description	Indicates the Ip address this interface this virtual neighbor is using.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Ospf VirtNbr options

Access	Read only
Description	A bit mask corresponding to the neighbor's options field. Bit 1, if set indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Vrf Ospf VirtNbr state

Access	Read only
Description	The state of the virtual neighbor relationship.
Mib	no_mib
Values	down attempt init twoWay exchange

	exchangeStatrt loading full
Default	No default

ATTRIBUTE Rtr Vrf Ospf VirtNbr events

Access	Read only
Description	The number of times this virtual link has changed its state, or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf VirtNbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf VirtNbr exchangeStatus

Access	Read only
Description	Indicates the exchange status of the entry in this table.
Mib	no_mib
Values	master slave
Default	No default

COMPONENT Rtr Vrf Ospf NeighborEntry (Nbr)

Instance	address [IP address] addressLessIndex [Decimal (0)]

Groups	"GROUP Rtr Vrf Ospf Nbr Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf NbrEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf NbrEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf NbrEntry/<Ip Address>,<Decimal>* This component is a dynamic subcomponent of OSPF that describes all the OSPF Neighbors.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Ospf Nbr Operational (Oper)

Properties	Operational
Description	This group identifies the operational set of attributes for the *NeighborEntry.*
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Nbr rtrId

Access	Read only
Description	An Ip Address that uniquely identifies the neighboring router in the autonomous system.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr options

Access	Read only
Description	A bit mask corresponding to the neighbor's options field. Bit 0, if set, indicates that the area accepts and operates on external information, if zero, it is a stub area. Bit 1, if set, indicates that

	the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr priority

Access	Read only
Description	The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network.
Mib	no_mib
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr state

Access	Read only
Description	The state of the relationship with this neighbor.
Mib	no_mib
Values	down attempt init twoWay exchangeStart exchange loading full
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr events

Access	Read only
Description	The number of times this neighbor relationship has changed state, or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr nbmaNbrStatus

Access	Read only
Description	This attribute describes the status of the entry.
Mib	no_mib
Values	valid invalid
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr exchangeStatus

Access	Read only
Description	Indicates the exchange status for a neighbor entry.
Mib	no_mib
Values	master slave
Default	No default

ATTRIBUTE Rtr Vrf Ospf Nbr permanence

Access	Read only
Description	This attribute displays how the neighbor became an entry.
Mib	no_mib
Values	dynamic permanent
Default	dynamic

ATTRIBUTE Rtr Vrf Ospf Nbr opaqueCapability (opcap)

Access	Read only
Description	This attribute displays the Opaque capability of this neighbor.
Mib	no_mib
Values	true false
Default	No default

COMPONENT Rtr Vrf Ospf LsdbEntry (Lsdb)

Instance	areaId [IP address] lsdbType [Decimal (1..10)] lsId [IP address] routerId [IP address]
Groups	"GROUP Rtr Vrf Ospf Lsdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Vrf/<string> Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>* This dynamic component contains the Link State Advertisements (LSA) from all areas the device is connected to. The supported

	types are: router-LSA (1), network-LSA (2), network-summary-LSA (3), ASBR-summary-LSA (4), AS-external-LSA (5) Group-membership-LSA (6) NSSA-LSA (7) and opaqueArea-LSA (10).
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Ospf Lsdb Operational (Oper)

Properties	Operational
Description	This group describes the Operational set of attributes for the *LsdbEntry.*
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf Lsdb sequence

Access	Read only
Description	A signed 32-bit integer, used to detect old and duplicate LSAs. The space of sequence numbers is linearly ordered. The larger the sequence number, the more recent the advertisement.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Lsdb age

Access	Read only
Description	The age of the Link State Advertisement in seconds.
Mib	no_mib
Values	Decimal (0..3600)
Units	seconds
Default	No default

ATTRIBUTE Rtr Vrf Ospf Lsdb checksum

Access	Read only
Description	The checksum of the complete contents of the advertisement, excepting the age field. The checksum used is the Fletcher checksum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf Lsdb advertisement

Access	Read only
Description	The entire LSA including its header.
Mib	no_mib
Values	String (1..65535, Hex)
Default	No default

COMPONENT Rtr Vrf Ospf ExtLsdbEntry (ExtLsdb)

Instance	lsdbType [Decimal (1..7)] lsId [IP address] routerId [IP address]
Groups	"GROUP Rtr Vrf Ospf ExtLsdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Vrf/<string> Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* This dynamic component contains the Link State Divertimentos (LSA) from other Autonomous systems. It is identical in format to the *Lsdb*. The purpose is to allow all external LSAs to be displayed together rather than distributed over the different non-

stub areas. These types are: AS-external-LSA (5) and NSSA-LSA (7).

Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Ospf ExtLsdb Operational (Oper)

Properties	Operational
Description	This group describes the operational set of attributes for the *ExtLsdbEntry.*
Mib	no_mib

ATTRIBUTE Rtr Vrf Ospf ExtLsdb sequence

Access	Read only
Description	A signed 32-bit integer, used to detect old and duplicate LSAs. The space of sequence numbers is linearly ordered. The larger the sequence number, the more recent the advertisement.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf ExtLsdb age

Access	Read only
Description	The age of the Link State Advertisement in seconds.
Mib	no_mib
Values	Decimal (0..3600)
Units	seconds
Default	No default

ATTRIBUTE Rtr Vrf Ospf ExtLsdb checksum

Access	Read only
Description	The checksum of the complete contents of the advertisement, excepting the age field. The checksum used is the Fletcher checksum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Ospf ExtLsdb advertisement

Access	Read only
Description	The entire LSA including its header.
Mib	no_mib
Values	String (1..36, Hex)
Default	No default

COMPONENT Rtr Vrf PolicerProfile (Policer)

Instance	String (1..20, ASCII)
Groups	"GROUP Rtr Vrf Policer Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip PolicerProfile/<string>* *Rtr/<string> Vrf/<string> PolicerProfile/<string>* This component and its subcomponents represent traffic conditioning rules for metering and policing IP packets received or transmitted at an interface. The rules specify various conditioning actions to be applied to individual packets after they are determined to be in-profile or out-of-profile with respect to various traffic rates and burst sizes. A *PolicerProfile* component is used to condition inbound or outbound IP traffic at a *VirtualRouter IpPort* or

VpnRouteForwarder Interface by setting the *linkToPolicerProfile* attribute of the *IngressServices* or *EgressServices* subcomponent, respectively.

At ingress interfaces the conditioning rules are applied to drop or re-mark the DSCP field of IP packets received at the interface after ingress classification and DSCP marking (if any), prior to VPN encapsulation (if any), and prior to selection of forwarding treatments.

At egress interfaces the conditioning rules are applied to drop or re-mark the DSCP field of IP packets transmitted at the interface, after VPN decapsulation (if any), and prior to the selection of forwarding treatments. Egress classification and DSCP marking with a *DiffServProfile* component is not allowed when a *PolicerProfile* component is used to condition outbound traffic.

See the description of the *DifferentiatedServicesDomain* component and its subcomponents for a explanation of how an IP packet is treated based on the value of the DSCP field in the IP packet header.

Each *PolicerProfile* component must have at least one *Meter* subcomponent.

The *Vr Ip* component cannot have a *PolicerProfile* subcomponent unless the *Vr* has a *DiffServDomain* subcomponent and the *Vr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the *LogicalProcessorType* linked to the *LogicalProcessor* includes ***ipPolicing***.

The *Vrf* component cannot have *PolicerProfile* subcomponents unless the *Rtr* or *Vrf* has a *DiffServDomain* subcomponent and the *Rtr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the *LogicalProcessorType* linked to the

LogicalProcessor includes ***ipPolicing***.

Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Policer Meter"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Policer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *PolicerProfile* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Policer linkToPolicerUsers (users)

Access	Read and write
Description	This attribute specifies the components that are linked to the *PolicerProfile*. Only *IngressServices* or *EgressServices* subcomponents of the same *VirtualRouter* or *VirtualRouteForwarder* can be linked to the *PolicerProfile*.
Mib	no_mib
List of	Link (Service, linkToPolicerProfile)
List Size	256
Default	No default

COMPONENT Rtr Vrf Policer Meter

Instance	String (1..20, ASCII)
Groups	"GROUP Rtr Vrf Policer Meter Provisioned (Prov)"
Scope	Application

Description	*Vr/<string> Ip Policer/<string> Meter<string>* *Rtr/<string> Vrf<string> Policer/<string> Meter<string>* This component represents properties of a traffic which will be enforced for the selected traffic stream on an Ip interface. The traffic stream is selected by the packet Per Hop Behavior (PHB) and is specified by the *PolicedPhb* subcomponents of the *Meter.*
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Policer Meter PolicedPhb (Phb)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Policer Meter Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *Meter* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Policer Meter committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (cir) in bits per second (bits/s). This is the maximum rate at which the network agrees to transfer information under normal conditions. The rate is measured over a time interval that is calculated internally based on the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values (t=*bc/cir*). The *commitedInformationRate(cir)* attribute must be zero if the *commitedBurstSize(bc)* attribute is zero.
Mib	no_mib
Values	Decimal (0..50000000)

Units	bit/s
Default	64000

ATTRIBUTE Rtr Vrf Policer Meter committedBurstSize (bc)

Access	Read and write
Description	This attribute specifies the committed burst size in bits. This is the maximum burst size that the network agrees to transfer under normal conditions. The burst size is measured over a time interval that is calculated internally based on the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values (t=*bc/cir*). The *commitedBurstSize(bc)* attribute must be zero if the *commitedInformationRate(cir)* attribute is zero.
Mib	no_mib
Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE Rtr Vrf Policer Meter excessBurstSize (be)

Access	Read and write
Description	This attribute specifies the excess burst size in bits. This is the amount of uncommitted data that the network will attempt to deliver over a specified time interval. The time interval is calculated internally based on the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values (t=*bc/cir*); however, if the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values are zero, then the time interval is specified by the *measurementInterval* (*t*) attribute. If the *be* attribute is set to ***0***, then packets that exceed the committed information rate are discarded.
Mib	no_mib
Values	Decimal (0..50000000)
Units	bits

Default	64000

ATTRIBUTE Rtr Vrf Policer Meter measurementInterval (t)

Access	Read and write
Description	This attribute specifies the time interval (in milliseconds) over which traffic rates and burst sizes are measured. This attribute value must be non-zero if *cir* and *bc* attribute values are zero. If the *cir* and *bc* attributes are non-zero then the *measurmentInterval* attribute is ignored.
Mib	no_mib
Values	Decimal (0..25500)
Units	msec
Default	0

COMPONENT Rtr Vrf Policer Meter PolicedPhb (Phb)

Instance	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

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59
60
61
62

63
df
ef
af11
af12
af13
af21
af22
af23
af31
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups "GROUP Rtr Vrf Policer Meter Phb Provisioned (Prov)"

Scope Application

Description *Vr/<string> Ip Policer/<string> Meter<string> PolicedPhb/ <phb>*
Rtr/<string> Vrf<string> Policer/<string> Meter<string> PolicedPhb/<phb>
This component is used to identify the traffic that is conditioned by the *Meter.*

An IP packet is assigned a PHB according to the value of DSCP field in the IP packet header and the set of existing *DiffServDomain PerHopBehavior* components. If the PHB assigned to the IP packet matches the *PolicedPhb* subcomponent instance, then the packet is conditioned by a policing mechanism that is established at the ingress or egress interface according to the *Meter* component provisioning.

The instance of this component must match a *PerHopBehavior* subcomponent of the *DiffServDomain* component used by the *Vr* or *Vrf*.

Each *Meter* component must have at least one *PolicedPhb* subcomponent.

Two *Meter* subcomponents of one *PolicerProfile* component cannot have *PolicedPhb* subcomponents with equal component instance values.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Vrf Policer Meter Phb Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioned attributes of the *PolicedPhb* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Policer Meter Phb initialBucket

Access: Read and write

Description: This attribute specifies whether or not traffic entering the *Meter* with this PHB contributes to the committed information rate.

If this attribute is set to ***committed*** then IP traffic entering the meter with this PHB is directed to the bucket tracking the committed information rate. The traffic is policed in a dual rate mode where both committed and excess information rates are enforced.

If this attribute is set to ***excess*** then IP traffic entering the meter

with this PHB is directed to bucket the tracking the excess information rate. The traffic is policed in a single rate mode where only the excess information rate is enforced.

Mib: no_mib

Values: committed
excess

Default: excess

ATTRIBUTE Rtr Vrf Policer Meter Phb outOfProfilePhb

Access: Read and write

Description: This attribute specifies a new PHB that is assigned to any packet that has exceeded the committed information rate. This attribute will have effect only if the *initialBucket* attribute is set to ***committed***.

The DSCP field of an IP packet that exceeds the committed information rate will be modifed to match this attribute value.

The value of this attribute must match a *PerHopBehavior* subcomponent of the *DiffServDomain* component used by the *Vr* or *Vrf*.

The default value of this attribute is equal to the *PolicedPhb* component instance for all PHBs except ***AF41***, ***AF42***, ***AF31***, ***AF32***, ***AF21***, ***AF22***, ***AF11***, ***AF12*** where the default value is ***AF42***, ***AF43***, ***AF32***, ***AF33***, ***AF22***, ***AF23***, ***AF12***, ***AF13***, respectively.

The traffic class associated with the new PHB assigned to the packet must be equal to the traffic class associated with the original PHB assigned to the packet prior to policing. The traffic class associated with a PHB is identified by the *DiffServDomain PerHopBehavior trafficClass* attribute.

Normally the drop precedence associated with the new PHB assigned to the packet is greater than the drop precedence associated with the original PHB assigned to the packet prior to policing.

If value of the *outOfProfilePhb* attribute is equal to the *PolicedPhb* component instance and the packet has exceeded the committed information rate at an egress interface that uses a *PolicerProfile* component, then the packet is assigned high drop precedence without modifing the packet's PHB or DSCP values. This direct means of drop precedence modification does not occur at any ingress interface that uses a *PolicerProfile*.

Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Default	No default

COMPONENT Rtr Vrf DiffServProfile (DiffServProf)

Instance	String (1..20, ASCII)

Groups	"GROUP Rtr Vrf DiffServProf Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string>* *Rtr/<string> Vrf/<string> DiffServProfile/<string>* This component and its subcomponents represent mapping rules for classifying and marking IP packets received or transmitted at an interface. At ingress interfaces the mapping rules are applied to mark the DSCP field of IP packets received at the interface, prior to policing (if any), prior to VPN encapsulation (if any), and prior to selection of forwarding treatments. At egress interfaces the mapping rules are applied to mark the DSCP field of IP packets transmitted at the interface, after VPN decapsulation (if any) and after selection of forwarding treatments. Egress traffic conditioning with a *PolicerProfile* component is not allowed when a *DiffServProfile* component is used to classify and mark outbound traffic. See the description of the *DifferentiatedServicesDomain* component and its subcomponents for a explanation of how an IP packet is treated based on the value of the DSCP field in the IP packet header. A *DiffServProfile* component is used to mark the DSCP field of inbound or outbound IP traffiic at a *VirtualRouter IpPort* or *VpnRouteForwarder Interface* by setting the *linkToDiffServProfile* attribute of the *IngressServices* or *EgressServices* subcomponent, respectively. Each *DiffServProfile* component used at an ingress interface must have a *DscpMap* subcomponent, or a *LinkMap* subcomponent, or at least one *MfMap* subcomponent. The *LinkMap* subcomponent and *DscpMap* subcomponent are not allowed to co-exist. The *LinkMap* subcomponent and *MfMap* subcomponents are not allowed to co-exist.

Multifield classification at an ingress interface using *MfMap* subcomponents overrides DSCP classification using the *DscpMap* subcomponent. This means that DSCP classification, which is controlled by *the DscpMap* component, is performed only if the packet does not match any *MfMap IpAddrLayer4Flow* component. If *MfMap* subcomponents are used without the *DscpMap* subcomponent and the packet does not match any *MfMap IpAddrLayer4Flow* component, then the packet is marked with DSCP 0.

Each *DiffServProfile* component used at an egress interface must have a *DscpMap* subcomponent. It cannot have a *LinkMap* subcomponent nor a *MfMap* subcomponent.

The *Vr Ip* component cannot have *DiffServProfile* subcomponents if the *Vr vpnMode* attribute is set to ***carrier***.

The *Vr Ip* component cannot have *DiffServProfile* subcomponents if the *Vr* has does not have a *DiffServDomain* subcomponent.

The *Vr Ip* component cannot have *DiffServProfile* subcomponents unless the *Vr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the *LogicalProcessorType* linked to the *LogicalProcessor* includes ***ipDiffServ***.

The *Vrf* component cannot have *PolicerProfile* subcomponents if neither the *Rtr* nor *Vrf* has a *DiffServDomain* subcomponent.

The *Vrf* component cannot have *PolicerProfile* subcomponents if the *Rtr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the *LogicalProcessorType* linked to the

LogicalProcessor includes ***ipDiffServ***.

Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf DiffServProf MfMap (Mf)" "COMPONENT Rtr Vrf DiffServProf LinkMap (LinkMap)" "COMPONENT Rtr Vrf DiffServProf DscpMap (DscpMap)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf DiffServProf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *DiffServProfile* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf DiffServProf linkToDiffServUsers (users)

Access	Read and write
Description	This attribute specifies the components that are linked to the *DiffServProfile* component. Only *IngressServices* or *EgressServices* subcomponents of the same *VirtualRouter* or *VpnRouteForwarder* can be linked to the *DiffServProfile* component.
Mib	no_mib
List of	Link (Service, linkToDiffServProfile)
List Size	256
Default	No default

COMPONENT Rtr Vrf DiffServProf MfMap (Mf)

Instance	String (1..20, ASCII)

Groups	"GROUP Rtr Vrf DiffServProf Mf Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string> MultiFieldMap/ <string>* *Rtr/<string> Vrf/<string> DiffServProfile/<string> MultiFieldMap/<string>* This component provides a mapping of multi-field (MF) Layer 3 and Layer 4 criteria to a DSCP value for classifying and marking IP packets received at an interface. This classification and marking method is used at an ingress interface when the DSCP value of some or all incomming IP packets cannot be trusted and must be marked with various DSCP values according to Layer 3 and Layer 4 header information. The component instance is an arbitrary text string to allow the operator to assign a meaningful name for easy reference. The *MfMap* component must have at least one *IpAddrLayer4Flow* subcomponent. See the description of the *DifferentiatedServicesDomain* and *DiffServProfile* components for more information.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf DiffServProf Mf IpAddrLayer4Flow"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf DiffServProf Mf Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes of the *MfMap* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf DiffServProf Mf assignedPhb (phb)

Access	Read and write
Description	This attribute indicates the Per Hop Behavior (PHB) assigned to a packet when the *MultiFieldMap* applies. The DSCP field of the IP packet is marked accordingly. Each *MfMap* subcomponent of the *DiffServProfile* must have an *assignedPhb* attribute value that corresponds to a unique DSCP value according to *DifferentiatedServicesDomain PerHopBehavior* component provisioning.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7

Default	df

COMPONENT Rtr Vrf DiffServProf Mf IpAddrLayer4Flow

Instance	Decimal (0..1023)
Groups	"GROUP Rtr Vrf DiffServProf Mf IpAddrLayer4Flow Provisioned (Prov)" "GROUP Rtr Vrf DiffServProf Mf IpAddrLayer4Flow ProtoProvisioned" "GROUP Rtr Vrf DiffServProf Mf IpAddrLayer4Flow Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string> MultiFieldMap/ <string> IpAddrLayer4Flow/<string>* *Rtr/<string> Vrf/<string> DiffServProfile/<string> MultiFieldMap/<string> IpAddrLayer4Flow/<string>* The *IpAddrLayer4Flow* component is used to specify multi-field (MF) Layer 3 and Layer 4 criteria. The IP packet is checked to see if it matches the criteria specified by each *IpAddrLayer4Flow* component, if any, under the *DiffServProfile* component. The PHB assigned to the packet is the value of the *assignedPhb* attribute on the parent *MultiFieldMap* component of the *IpAddrLayer4Flow* whose criteria best match the packet. The DSCP field of the IP packet is marked accordingly. For example, to assign PHB value ***AF41*** to FTP packets destined to subnet 123.123.123.0, an *IpAddrLayer4Flow* subcomponent is added to the *MultiFieldMap* component where the *assignedPhb* attribute is set to ***AF41***. The *prefix*, *prefixLength*, *protocol*, and *portNumberRange* attributes of the *IpAddrLayer4Flow* component are set to ***123.123.123.0***, ***24***, ***tcp***, and ***20***, ***21***, respectively. This criteria also applies to each FTP packet that originates from subnet 123.123.123.0, but only if the source address and port number of the packet do not match any *IpAddrLayer4Flow* subcomponents of the *DiffServProfile.*

The packet matching algorithm for MF classification is explained in more detail as follows.

A match can be found only if the IP header protocol field is one of ICMP, TCP, or UDP. The *prefix*, *prefixLength*, and *portNumberRange* attributes are checked only if the protocol field in the header is TCP or UDP.

The destination IP address and destination port number information from the packet is first compared against the *prefix* attribute in conjunction with the *prefixLength* and *portNumberRange* attributes. If the *prefixLength* is ***0*** and the *prefix* is ***0.0.0.0***, then any value in the packet's IP destination address fields is a match. If *portNumberRange* is ***0***, then any value in the packet's destination port number fields is a match.

If more than one *IpAddrLayer4Flow* component matches a packet (for instance one component specifies a range of IP addresses and a second specifies a single IP address in the range), then the component with the more precise match is used (the one which specifies the single address in this case). Precedence is always given to the IP address over the port number. For example, if one *IpAddrLayer4Flow* component specifies an range of IP addresses that includes the IP address from the packet and any port number, while a second *IpAddrLayer4Flow* component specifies an exact port number but a wider range of addresses, the first *IpAddrLayer4Flow* component is used.

If no match is found using the packet's destination IP address and destination port number information, then a second search is performed using the packet's source IP address and source port number information. This means that an *IpAddrLayer4Flow* component where the *protocol* is ***udp*** or ***tcp***, the *prefixLength* is ***0*** and the *portNumberRange* is ***0***, always matches some destination address and port number. This prevents the source address and port number check from being performed.

An ICMP packet matches any *IpAddrLayer4Flow* component whose *protocol* attribute is set to ***icmp***.

No attempt is made to match any packets where the options or fragment bits are set.

The *DiffServProfile* is not allowed to have more than 100 *IpAddressLayer4Flow* subcomponents.

See the description of the *DiffServProfile* component for more information.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Vrf DiffServProf Mf IpAddrLayer4Flow Provisioned (Prov)

Properties: Provisioned

Description: This group contains the *prefix* and *prefixLength* provisioned attributes of the *IpAddrLayer4Flow* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf DiffServProf Mf IpAddrLayer4Flow prefix

Access: Read and write

Description: This attribute specifies the IP address prefix for selecting IP packets.

Matching an IP address to the prefix is done in conjunction with the *prefixLength* attribute. If the value is ***0.0.0.0***, then the *prefixLength* attribute must be ***0***.

See the description of the *IpAddrLayer4Flow* component for more information.

Mib: no_mib

Values: IP address

Default	0.0.0.0

ATTRIBUTE Rtr Vrf DiffServProf Mf IpAddrLayer4Flow prefixLength (len)

Access	Read and write
Description	This attribute specifies the number of most significant bits of an IP address to be matched with the *prefix* for selecting IP packets. The *prefixLength* value ***0*** indicates any IP address. See the description of the *IpAddrLayer4Flow* component for more information.
Mib	no_mib
Values	Decimal (0..32)
Default	0

GROUP Rtr Vrf DiffServProf Mf IpAddrLayer4Flow ProtoProvisioned

Properties	Provisioned
Description	This group contains the *protocol* and *portNumberRange* provisioned attributes of the *IpAddrLayer4Flow* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf DiffServProf Mf IpAddrLayer4Flow protocol (proto)

Access	Read and write
Description	This attribute specifies the layer 4 (transport) protocol for selecting IP packets. If the value is ***icmp***, then the *prefixLength* attribute must be ***0***, and the *portNumberRange* attribute must not be set. See the description of the *IpAddrLayer4Flow* component for more information.
Mib	no_mib

Values	icmp tcp udp
Default	tcp

ATTRIBUTE Rtr Vrf DiffServProf Mf IpAddrLayer4Flow portNumberRange

Access	Read and write
Description	This attribute specifies the TCP or UDP port numbers for selecting IP packets. A single value specifies a single port number. Two values specifies a range of port numbers. The order of the two values is irrelevant. See the description of the *IpAddrLayer4Flow* component for more information.
Mib	no_mib
List of	Decimal (0..65535)
List Size	2
Default	No default

GROUP Rtr Vrf DiffServProf Mf IpAddrLayer4Flow Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *TosMap* and the *IpAddrLayer4Flow* components.
Mib	no_mib

ATTRIBUTE Rtr Vrf DiffServProf Mf IpAddrLayer4Flow COS

Access	Read only
Description	This attribute indicates the Class of Service (CoS) assigned to a packet when the *Policy* applies. The value of this attribute is equal to the *assignedCos* attribute of the *Policy* component.
Mib	no_mib

Values	Decimal (0..3)
Default	No default

COMPONENT Rtr Vrf DiffServProf LinkMap (LinkMap)

Groups	"GROUP Rtr Vrf DiffServProf LinkMap Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string> LinkMap* *Rtr/<string> Vrf/<string> DiffServProfile/<string> LinkMap* This component provides a mapping of Layer 2 connection class values to PHB values for classifying IP packets received at an interface. The DSCP field of the IP packet is marked accordingly. This classification and marking method is used at an ingress interface when the DSCP value of some or all incomming IP packets cannot be trusted and the DSCP field of all IP packets arriving at each Layer 2 connection is to be marked with exactly one of four different values. For *AtmMpe*, the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte*, the connection class is specified by the *ipCoS* attribute of the *StaticDlci* or *DynamicDlciDef* subcomponent. For *IpDlciGroup*, the connection class is specified by the *ipCos* attribute of the *FrConnection* subcomponent. For all other media, the connection class is specified by the *ipCoS* attribute of the *IpPort*. See the description of the *DifferentiatedServicesDomain* and *DiffServProfile* components for more information.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf DiffServProf LinkMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *LinkMap* component
Mib	no_mib

ATTRIBUTE Rtr Vrf DiffServProf LinkMap assignedPhb (phb)

Access	Read and write
Description	This attribute specifies a mapping of Layer 2 connection class values to PHB values for classifying IP packets received at an interface. The DSCP field of the IP packet is marked accordingly. The value on the right hand side of each element contained by this vector attribute should be a DSCP value that matches an existing *PerHopBehavior* subcomponent instance under the *DifferentiatedServicesDomain* component; otherwise, the packet will be treated according the *PerHopBehavior* subcomponent whose instance is associated with DSCP 0. See the description of the *LinkMap* component for more information.
Mib	no_mib
Vector of	Decimal (0..63)
Index	Decimal (0..3)
Default	([1] 0, [3] 0)

COMPONENT Rtr Vrf DiffServProf DscpMap (DscpMap)

Groups	"GROUP Rtr Vrf DiffServProf DscpMap Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string> DscpMap* *Rtr/<string> Vrf/<string> DiffServProfile/<string> DscpMap* This component provides a mapping of DSCP values to PHB

values for classifying IP packets received and transmitted at an interface. The DSCP field of the IP packet is marked accordingly.

This classification an marking method is used at an ingress interface when the DSCP value of all incomming IP packets can be trusted, but require full or partial translation to new values for correct forwarding treatment.

This classification an marking method can be used at an egress interface when the DSCP value of all outgoing IP packets require full or partial translation to new values for correct forwarding treatment at the next hop.

See the description of the *DifferentiatedServicesDomain* and *DiffServProfile* components for more information.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Vrf DiffServProf DscpMap Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes of the *DscpMap* component

Mib: no_mib

ATTRIBUTE Rtr Vrf DiffServProf DscpMap assignedPhb (phb)

Access: Read and write

Description: This attribute specifies a mapping of DSCP values to PHB values for classifying IP packets received and transmitted at an interface. The DSCP field of the IP packet is marked accordingly.

If the *DscpMap* component is used at an ingress interface, the

value on the right hand side of each element contained by this vector attribute should be a DSCP value that matches an existing *PerHopBehavior* subcomponent instance under the *DifferentiatedServicesDomain* component; otherwise, the packet will be treated according the *PerHopBehavior* subcomponent whose instance is associated with DSCP 0.

See the description of the *DscpMap* component for more information.

Mib	no_mib
Vector of	Decimal (0..63)
Index	Decimal (0..63)
Default	([1] 0, [63] 0)

COMPONENT Rtr Vrf RelayBC

Groups	"GROUP Rtr Vrf RelayBC Provisioned (Prov)" "GROUP Rtr Vrf RelayBC Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip RelayBC* *Rtr/<string> RelayBC* *Rtr/<string> Vrf/<string> RelayBC* The *InwRelayBroadcast* component controls the dissemination of IP broadcast packets received as Link-Layer broadcast.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf RelayBC PortEntry (Port)"
Common Verbs	Help List Display

GROUP Rtr Vrf RelayBC Provisioned (Prov)

Properties	Provisioned

Description	This group contains global configuration attributes for the Relay Broadcast component.
Mib	no_mib

ATTRIBUTE Rtr Vrf RelayBC relayStatus

Access	Read and write
Description	Specifies whether or not IP will forward IP broadcast packets that were received as Link-Layer broadcasts.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf RelayBC relayNdStatus

Access	Read and write
Description	Specifies whether or not IP will forward broadcast packets whose protocol is Sun ND.
Mib	no_mib
Values	enabled disabled
Default	disabled

GROUP Rtr Vrf RelayBC Operational (Oper)

Properties	Operational
Description	This group contains RelayBroadcast component statistics.
Mib	no_mib

ATTRIBUTE Rtr Vrf RelayBC relayNdCount

Access	Read only

Description	Indicates the number of Sun ND packets received by this router which were forwarded. *relayNdCount* wraps to zero if reached its maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf RelayBC PortEntry (Port)

Instance	Decimal (0..4294967295)
Groups	"GROUP Rtr Vrf RelayBC Port Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip RelayBC PortEntry/<Decimal>* *Rtr/<string> RelayBC PortEntry/<Decimal>* This component is a table of destination UDP port numbers. In order for a packet to be forwarded by Relay Broadcast, the packet's destination UDP port number must be listed in this table.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf RelayBC Port Operational (Oper)

Properties	Operational
Description	This group contains statistics related to *InwPortEntry.*
Mib	no_mib

ATTRIBUTE Rtr Vrf RelayBC Port relayBcUdpCount

Access	Read only

Description	Indicates the number of forwarded packets with this destination UDP port number. *relayBcUdpCount* wraps to zero if reached its maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf RoutingInformationProtocol (Rip)

Groups	"GROUP Rtr Vrf Rip Provisioned (Prov)" "GROUP Rtr Vrf Rip OsiState (State)" "GROUP Rtr Vrf Rip AdministrativeControl (AdminControl)" "GROUP Rtr Vrf Rip OperationalStatus (OperStatus)" "GROUP Rtr Vrf Rip Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Rip* *Rtr/<string> Rip* *Rtr/<string> Vrf/<string> Rip* This component represents the Routing Information Protocol for the IP. There should be at least one *RipInterface* provisioned below an *Interface* or below a *LogicalIf* under an *IpPort*.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Rip Import (Import)" "COMPONENT Rtr Vrf Rip Export"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf Rip Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes for the RIP component
Mib	no_mib

ATTRIBUTE Rtr Vrf Rip migrateRip

Access	Read and write
Description	This attribute sets the preference level of OSPF-internal routes to be less preferred than RIP. Note: This parameter should only be used when starting migration of network from RIP to OSPF. When ready to cut over to OSPF, set this attribute value to ***disabled*** and run under normal preferences. All OSPF routers in the Autonomous System should be running with *migrateRip* ***enabled*** or with *migrateRip* ***disabled*** to prevent routing loops. It is important that the changeover period from RIP to OSPF be performed quickly on all OSPF routers so that no routing loops are formed. These routing loops could be caused by conflicts in the internal RIP and OSPF databases.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf Rip rfc1058MetricUsage (rfc1058)

Access	Read and write
Description	This attribute determines the metric usage for this RIP instance. This flag is used to determine the way metrics are incremented. RFC 1058 way: Sending Update: This is to use the metric for the route from the routing table as the advertised metric to be sent for that route. Nothing is ever added to this value from the sending side. The only special case handling is that if the route being advertised is the network route of a directly connected network, the metric in the routing table will be zero. Then the RipIf interface metric for

the interface being advertised is used as the advertise metric. If the interface being advertised is not a Rip interface, then metric value of 1 is used.
Receiving Update: Add receiving interface's RIP metric to the metric for the route in the received advertisement and install the result in the receiver's routing table as the metric for that route.
Older way:
Sending Updates: Add the out going interfaces rip metric to the metric for a route in the routing table to form the metric to be advertised for that route.
Receiving Updates: The metric received in the advertisement for a route is put directly in the routing table as the metric for that route.

Note: It is recommended that, all the routers in this autonomous system should be following the rfc1058 metric system.
Setting this flag to ***disabled*** will have the effect of running the RIP with old metric incrementing system.

Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Vrf Rip generateDiscardRoute (discard)

Access	Read and write
Description	This attribute specifies whether network discard routes should be added to the routing and forwarding table for the subnetted interfaces that are running RIP.
Mib	no_mib
Values	yes no
Default	yes

ATTRIBUTE Rtr Vrf Rip redistributeIbgp (ribgp)

Access	Read and write

Description	This attribute specifies whether the export policies of this *Rip* instance can match routes learned from internal BGP (IBGP) peers when their *protocol* attribute value is ***all.*** If *redistributeIbgp* is ***true***, a *protocol* value of ***all*** allows routes learned from IBGP peers to be included in the matching routes. If *redistributeIbgp* is ***false,*** routes learned from IBGP peers are excluded when the *protocol* value is ***all***. To cause IBGP routes to be considered in this case, the *protocol* value must be set to ***bgpInternal***.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf Rip defaultRipRtePreference (ripPref)

Access	Read and write
Description	This attribute specifies this RIP component instance's default routing preference assigned to the RIP routes. A lower value indicates a more preferred route.
Mib	no_mib
Values	Decimal (1..254)
Default	82

GROUP Rtr Vrf Rip OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Rip adminState (osiAdmin)

Access	Read only

Description

This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib

no_mib

Values

locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default

unlocked

ATTRIBUTE Rtr Vrf Rip operationalState (osiOper)

Access

Read only

Description

This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib

no_mib

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Rip usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Rip AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Rip snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet

forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

Default: up

GROUP Rtr Vrf Rip OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Rip snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

Default: up

GROUP Rtr Vrf Rip Operational (Oper)

Properties: Operational

Description: This group defines a set of operational attributes belonging to the *RIP* component. It corresponds to the rip2Globals table in the RIP-2 standard MIB.

Mib	no_mib

ATTRIBUTE Rtr Vrf Rip routeChangesMade

Access	Read only
Description	This attribute counts the route changes made to the IP Route Database by Rip. This does not include the refresh of the route's age.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf Rip queryResponses

Access	Read only
Description	This attribute counts the responses sent to RIP queries from other systems.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf Rip Import (Import)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Vrf Rip Import Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Rip Import/<Decimal>* *Rtr/<string> Rip Import/<Decimal>* *Rtr/<string> Vrf/<string> Rip Import/<Decimal>* This component controls the functionality of Route Leaking. In

other words, this component will determine what routes are used by RIP.

Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Rip Import Network (Net)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Rip Import Provisioned (Prov)

Properties	Provisioned
Description	This is the group of provisionable attributes for the *Import* Subcomponent.
Mib	no_mib

ATTRIBUTE Rtr Vrf Rip Import usageFlag (usage)

Access	Read and write
Description	This flag when set to ***ignore*** indicates the routes that are not used and if set to ***use***, indicates the routes which are used.
Mib	no_mib
Values	use ignore
Default	use

ATTRIBUTE Rtr Vrf Rip Import importMetric (metric)

Access	Read and write
Description	This attribute is used to override the default import metric for the RIP protocol. This value is not used to select which routes to use or ignore, rather it is the metric to be used in the routing table for the routes imported for this import policy. A value of zero indicates that the metric received in the update will be used.

Mib	no_mib
Values	Decimal (0..16)
Default	0

ATTRIBUTE Rtr Vrf Rip Import neighbor (nbr)

Access	Read and write
Description	This attribute indicates the IP Address of the neighbor this policy will apply to.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Rip Import interface (if)

Access	Read and write
Description	This attribute specifies the RIP interface to which this import policy applies. The value of 0.0.0.0 implies any RIP interface on the routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Rip Import description (desc)

Access	Read and write
Description	This attribute describes the policy. For example, ‘to import RIP routes from MCI’.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Vrf Rip Import Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Vrf Rip Import Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Rip Import/<Decimal> NetworkList/<Decimal> Rtr/<string> Rip Import/<Decimal> NetworkList/<Decimal> Rtr/<string> Vrf/<string> Rip Import/<Decimal> NetworkList/ <Decimal>* This component identifies a set of networks that this Import policy will apply to.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Rip Import Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains attributes for the *Import NetworkList* component for the Import Policy to be applied to.
Mib	no_mib

ATTRIBUTE Rtr Vrf Rip Import Net ipAddress (addr)

Access	Read and write
Description	This attribute specifies the IP address that needs to be matched against in this network list for the Import Policy to be applied to.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Rip Import Net ipMask (mask)

Access	Read and write
Description	This attribute specifies the IP mask for the attribute *ipAddress*.
Mib	no_mib
Values	IP address
Default	No default

COMPONENT Rtr Vrf Rip Export

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Vrf Rip Export Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Rip Export/<Decimal>* *Rtr/<string> Rip Export/<Decimal>* *Rtr/<string> Vrf/<string> Rip Export/<Decimal>* Each instance of this component specifies a RIP export policy. A RIP export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as a RIP route on one or all RIP interfaces of the routing component (*Vr*, *Rtr* or *Vrf*). The *Rip* component by default advertises all local routes and all RIP learned routes to all RIP interfaces based on the metric in the IP forwarding table.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Rip Export Network (Net)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Rip Export Provisioned (Prov)

Properties	Provisioned

Description	This group contains all the provisioned attributes for the *Export* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Rip Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	no_mib
Values	send block
Default	send

ATTRIBUTE Rtr Vrf Rip Export exportMetric (metric)

Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *exportMetric* is ignored. The *exportMetric* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. A value of 0 indicates that the exported routes will be advertised with their original metric. When exporting routes from other protocols into RIP, an *exportMetric* value of 0 will distribute these routes with the metric of the original protocol. If the metric of the original protocol exceeds 15, the exported routes will be considered as unreachable by RIP. If an *exportMetric* value of 16 is specified, the exported routes will be advertised into RIP as unreachable.
Mib	no_mib
Values	Decimal (0..16)
Default	0

ATTRIBUTE Rtr Vrf Rip Export protocol

Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If the value is ***all***, the policy applies to all routes in the forwarding table, with the following exceptions: external BGP routes are always excluded and internal BGP routes are excluded if the parent *Rip* component's *reDistributeIBGP* attribute has the value ***false***.
Mib	no_mib
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal mbgp bgpMplsInternal
Default	all

ATTRIBUTE Rtr Vrf Rip Export ripInterface (ripIf)

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the routes are learned. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Rip Export egpAsId (egpAs)

Access	Read and write
Description	Under the *Rtr* and *Rtr Vrf*, this attribute has no effect. Under the *Vr*, this attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from. This attribute can only be non zero when *protocol* is set to ***egp***. The value of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	no_mib
Values	Decimal (0..65536)
Default	0

ATTRIBUTE Rtr Vrf Rip Export ospfTag (tag)

Access	Read and write
Description	This attribute specifies the OSPF learned external routes to which this export policy applies, based on the learned OSPF tag of the routes. This attribute can only be set to a non default value when *protocol* is set to ***ospfExternal***. The default value of 4294967295 implies any tag.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Rtr Vrf Rip Export outInterface (outIf)

Access	Read and write
Description	This attribute specifies the RIP interface on the virtual router which routes are exported onto as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *outInterface* is ignored. The *outInterface* value is not used to

	select which routes to block or send, but rather where to export the routes. A value of 0.0.0.0 indicates that the routes are exported to all RIP interfaces on the routing component (*Vr*, *Rtr* or *Vrf*). Otherwise, the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf Rip Export bgpAsId (bgpAs)

Access	Read and write
Description	This key attribute specifies the BGP AS from which the routes are learned. This key will be used only when the *protocol* is set to ***bgpExternal***. *bgpAsId* of ***0*** matches all BGP ASs.
Mib	no_mib
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Rtr Vrf Rip Export description (desc)

Access	Read and write
Description	The attribute describes the policy. For example, ‘to export RIP routes to AS 1’.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

COMPONENT Rtr Vrf Rip Export Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Rtr Vrf Rip Export Net Provisioned (Prov)"

Scope	Application
Description	*Vr/<string> Ip Rip Export/<Decimal> NetworkList/<Decimal> Rtr/<string> Rip Export/<Decimal> NetworkList/<Decimal> Rtr/<string> Vrf/<string> Rip Export/<Decimal> NetworkList/ <Decimal>* This component identifies a set of attributes when matched determines the export policy applied.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Rip Export Net Provisioned (Prov)

Properties	Provisioned
Description	This group identifies the set of Provisionable attributes for the *ExportNetworkList* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Rip Export Net ipAddress (addr)

Access	Read and write
Description	This attribute identifies the 32 bit IP address to match against.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf Rip Export Net ipMask (mask)

Access	Read and write
Description	This attribute is the IP Mask to be used with the IP Address to match against.
Mib	no_mib

Values	IP address
Default	No default

COMPONENT Rtr Vrf RouteDataBaseEntry (Rdb)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] protocol (proto) [bogus local remote special ospf ospfExternal ospfType3Discard ospfType7Discard rip ripDiscard egp bgpExternal bgpInternal bgpAggrDiscard redistrib mpls mbgp bgpMplsInternal ebgpLabel] gateway [IP address]
Groups	"GROUP Rtr Vrf Rdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip RouteDataBaseEntry/ <destAddress>,<destMask>,<protocol>* *Rtr/<string> RouteDatabaseEntry/ <destAddress>,<destMask>,<protocol>* *Rtr/<string> Vrf/<string> RouteDatabaseEntry/ <destAddress>,<destMask>,<protocol>* This component is used to display the information in the Ip routing database. *destAddress* and *destMask* indicates the address and mask of the route in the RoutingDatabase. *protocol* indicates the protocol this entry is learned from. *gateway* indicates the

nextHop address for remote routes. The value of *gateway* for the localInterface routes will be the same value as the *destAddress*.

Mib: no_mib

Common Verbs: Help, List, Display

GROUP Rtr Vrf Rdb Operational (Oper)

Properties: Operational

Description: Identifies a group of operational attributes associated with each entry in the routing database.

Mib: no_mib

ATTRIBUTE Rtr Vrf Rdb metric

Access: Read only

Description: This attribute specifies the primary routing metric for this route. The semantics of this metric are determined by the routing protocol specified by the value of the index to this entry *protocol*. If this metric is not used, its value should be set to -1.

Mib: no_mib

Values: Signed (-1..65535)

Default: -1

ATTRIBUTE Rtr Vrf Rdb preference (pref)

Access: Read only

Description: This attribute specifies the the preference value of this particular entry. The value of this attribute affects the way the routeEntries in this database are selected for installing it in the *ForwardTable*. The lower the preference value of this entry, the higher are the chances that this entry will be selected to install in the *ForwardTable*.

Mib: no_mib

Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtr Vrf Rdb age

Access	Read only
Description	This attribute specifies the number of seconds since this route was last updated or otherwise determined to be correct.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf Static

Groups	"GROUP Rtr Vrf Static OsiState (State)" "GROUP Rtr Vrf Static Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Static* *Rtr/<string> Static* *Rtr/<string> Vrf/<string> Static* The *Static* component is used to configure addition, deletion and modification of static routing information.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Static RouteEntry (Route)" "COMPONENT Rtr Vrf Static DiscardRouteEntry (Discard)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf Static OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Static adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf Static operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Static usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Static Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes are used to configure the Static component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Static defaultStaticRemoteRtePreference (pref)

Access	Read and write
Description	This attribute specifies this *Static* component instance's default routing preference assigned to the remote routes. A lower value indicates a more preferred route. Assigning a non-zero value to the *staticRemoteRtePreference* attribute in *RouteEntry* will override this default.
Mib	no_mib
Values	Decimal (1..253)
Default	72

ATTRIBUTE Rtr Vrf Static defaultStaticDiscardRtePreference (discpref)

Access	Read and write
Description	This attribute specifies this *Static* component instance's default routing preference assigned to the discard routes. A lower value indicates a more preferred route. Assigning a non-zero value to the *staticDiscardRtePreference* attribute in *DiscardRouteEntry* will override this default.
Mib	no_mib
Values	Decimal (0..253)
Default	0

ATTRIBUTE Rtr Vrf Static maxEcmpNextHops

Access	Read and write
Description	This attribute specifies the maximum number of Equal Cost Multi-Path (ECMP) *NextHop*s that are supported for *Static*

*RouteEntry*s.
If *maxEcmpNextHops* is ***1*** then only a single available *NextHop* is used, even if multiple *NextHops* are provisioned with the same *metric* value under a given *Static RouteEntry.* In other words ECMP is disabled for static routes.
If *maxEcmpNextHops* is ***3*** the traffic will be loadshared over the available *NextHops* that have the same value set for the *metric* attribute under a given *Static RouteEntry.*
When *protected Static RouteEntry*s are provisioned, *maxEcmpNextHops* must be ***1***.

Mib: no_mib

Values: 1
3

Default: 3

COMPONENT Rtr Vrf Static RouteEntry (Route)

Instance: destAddress (addr) [IP address]
destMask (mask) [IP address]
typeOfService (tos) [Decimal (0..0)]

Groups: "GROUP Rtr Vrf Static Route Provisioned (Prov)"
"GROUP Rtr Vrf Static Route Operational (Oper)"
"GROUP Rtr Vrf Static Route OsiState (State)"

Scope: Application

Description: *Vr/<string> Ip Static RouteEntry*/<Ip Address>, <Ip Address>, <Decimal>
Rtr/<string> Static RouteEntry/<Ip Address>, <Ip Address>, <Decimal>
Rtr/<string> Vrf/<string> Static RouteEntry/<Ip Address>, <Ip Address>, <Decimal>
This component describes the IP static routes.

For a *RouteEntry* to be valid, there should be at least one *NextHop* provisioned. Up to three *NextHops* can be provisioned for each instance of a *RouteEntry.*

The value of index *destMask* should be contiguous.

	Only the value zero is supported. Zero will be substituted for any value that is entered.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf Static Route NextHop (Nh)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Static Route Provisioned (Prov)

Properties	Provisioned
Description	This group contains a provisionable set of attributes for the static route entry component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Static Route staticRemoteRtePreference (pref)

Access	Read and write
Criticality	Component
Description	This attribute specifies the route preference of the static remote route. A lower preference value means the route is more preferred. If ***sameAsStatic*** is specified, the value of *defaultStaticRemoteRtePreference* in the *Static* component is used.
Mib	no_mib
Values	Decimal (1..253) sameAsStatic
Default	sameAsStatic

ATTRIBUTE Rtr Vrf Static Route protected

Access	Read and write

Description	This attribute specifies whether this route is protected or not. Note that *Vr Ip Static maxEcmpNextHops* must be ***1*** and *Vr Ip Ospf ecmpStatus* must be ***disabled*** when there is a *protected* static route under the *Vr*.
Mib	no_mib
Values	yes no
Default	no

ATTRIBUTE Rtr Vrf Static Route protectedFailureBehavior (protFlrB)

Access	Read and write
Description	This attribute specifies the behavior when all *NextHops* of a *protected* static route fail. If ***discard*** is specified, the static route will not be removed, it will continue to be used to discard traffic.
Mib	no_mib
Values	discard
Default	discard

GROUP Rtr Vrf Static Route Operational (Oper)

Properties	Operational
Description	This group contains a set of operational attributes for the static route entry component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Static Route protectionLevel (protL)

Access	Read only
Description	This attribute indicates the current protection level for a *Static RouteEntry*. A value of ***portProtected*** indicates that the only alternative enabled *NextHop*(s) for this protected route are on the same card as the active *NextHop*. When the value is ***cardProtected***, one or more alternative enabled ***NextHop***s exist on a different card than the active ***NextHop***. If the value is

unprotected, no alternative enabled *NextHop*s exist or this is an unprotected static route (that is, *protected* = ***no*** for this *Static RouteEntry*).

Mib	no_mib
Values	portProtected cardProtected unprotected notApplicable
Default	No default

GROUP Rtr Vrf Static Route OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Static Route adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Vrf Static Route operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Vrf Static Route usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has

spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values:
idle
active (activ)
busy

Default: idle

COMPONENT Rtr Vrf Static Route NextHop (Nh)

Instance: IP address

Groups:
"GROUP Rtr Vrf Static Route Nh Provisioned (Prov)"
"GROUP Rtr Vrf Static Route Nh OsiState (State)"
"GROUP Rtr Vrf Static Route Nh Operational (Oper)"

Scope: Application

Description:
Vr/<string> Ip Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>
Rtr/<string> Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>
Rtr/<string> Vrf/<string> Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>
This component provides the destination Ip address of the *NextHop* (some times referred to as the Gateway).

For a *RouteEntry* to be valid, there should be at least one *NextHop* provisioned. Up to three *NextHops* can be provisioned for each instance of a *RouteEntry.*

Each provisioned *NextHop* address should belong to a valid subnet.

A valid subnet for this IP entity can be provisioned as a *logicalIf* Entry under an *IpPort*.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Vrf Static Route Nh Provisioned (Prov)

Properties: Provisioned

Description: This group contains a provisionable set of attributes for the *Static RouteEntry NextHop* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Static Route Nh metric (metric)

Access: Read and write

Description: This attribute specifies the primary routing metric for this *NextHop*.

Mib: no_mib

Values: Signed (-1..65535)

Default: 1

GROUP Rtr Vrf Static Route Nh OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: no_mib

ATTRIBUTE Rtr Vrf Static Route Nh adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf Static Route Nh operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Static Route Nh usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf Static Route Nh Operational (Oper)

Properties	Operational
Description	
Mib	no_mib

ATTRIBUTE Rtr Vrf Static Route Nh heartbeatState (hbS)

Access	Read only
Description	This attribute indicates the state of the heartbeat mechanism with this *NextHop*'s next hop Router. The value will be ***disabled*** if the *heartbeatDeadInterval* is disabled for all *Static Route*s that share this *NextHop*. The value may be ***undetermined*** briefly upon initialization,

before the heartbeat mechanism has completed an assessment.
The value will be ***down*** if the *NextHop* Router has not responded to ICMP heartbeat requests nor ARP heartbeat requests.
The value will be ***icmpDegraded*** if the *NextHop* Router has only responded to ARP heartbeat requests.
The value will be ***up*** if the *NextHop* Router has responded to ICMP heartbeat requests.

Mib: no_mib

Values:
undetermined
disabled
down
icmpDegraded
up

Default: No default

COMPONENT Rtr Vrf Static DiscardRouteEntry (Discard)

Instance: destAddress (addr) [IP address]
destMask [IP address]

Scope: Application

Description: *Vr/<string> Ip Static DiscardRouteEntry/<Ip Address>,<Ip Address>*
Router/<string> Static DiscardRouteEntry/<Ip Address>,<Ip Address>
Router/<string> Vrf/<string> Static DiscardRouteEntry/<Ip Address>,<Ip Address>
This table identifies invalid martian networks. Forwarding of packets to the network address indicated by this entry will be discarded.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete

COMPONENT Rtr Vrf Udp

Groups	"GROUP Rtr Vrf Udp Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Ip Udp* *Rtr/<string> Udp* *Rtr/<string> Vrf/<string> Udp* *Udp* component controls all UDP related attributes supported by this router.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr Vrf Udp ListenEntry"
Common Verbs	Help List Display

GROUP Rtr Vrf Udp Statistics (Stats)

Properties	Operational
Description	This group holds statictics for UDP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Udp inDatagrams

Access	Read only
Description	The number of UDP datagrams delivered to UDP users. *inDatagrams* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Udp noPorts

Access	Read only

Description	The number of UDP datagrams received for which there was no application at the destination port. *noPorts* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Udp inErrors

Access	Read only
Description	The number of received UDP datagrams that could not be delivered for reasons other than the lack of an application at the destination port. *inErrors* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Udp outDatagrams

Access	Read only
Description	The number of UDP datagrams sent from this gateway. *outDatagrams* wraps to zero if reaches its maximum defined value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf Udp ListenEntry

Instance	localAddress [IP address] localPort [Decimal (0..65535)]
Scope	Application

Description	The table contains UDP listener information.
Mib	no_mib
Common Verbs	Help List Display LOCK Unlock

COMPONENT Rtr Vrf Tcp

Groups	"GROUP Rtr Vrf Tcp Statistics (Stats)"
Scope	Application
Description	The *Tcp* component contains all attributes related to TCP.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr Vrf Tcp TcpEntry (TcpEntry)"
Common Verbs	Help List Display

GROUP Rtr Vrf Tcp Statistics (Stats)

Properties	Operational
Description	This group contains statistics for TCP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Tcp rToAlgorithm

Access	Read only
Description	Indicate which algorithm was used to calculate the timeout value used for retransmitting unackowledged octet.
Mib	no_mib
Values	other constant

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Default	No default

ATTRIBUTE Rtr Vrf Tcp rToMin

Access	Read only
Description	Indicate the minimum value, measured in milliseconds, allowed for retransmission timeout.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE Rtr Vrf Tcp rToMax

Access	Read only
Description	Indicates the maximun value, measured in milliseconds, allowed for retransmission timeout.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Rtr Vrf Tcp maxConn

Access	Read only
Description	Limit on number of connections the TCP can support. The value is always -1 which indicates that the number of connections supported is dynamic (limited by memory in the system).
Mib	no_mib
Values	Signed (-1)
Default	-1

ATTRIBUTE Rtr Vrf Tcp activeOpens

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***synSent*** state from the ***closed*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp passiveOpens

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***synRcvd*** state from the ***listen*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp attemptFails

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***synSent*** state or the ***synRcvd*** state, plus the number of times TCP connections have made a direct transition to the ***listen*** state from the ***synRcvd*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp estabResets

Access	Read only

Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***established*** state or the ***closedWait*** state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp currEstab

Access	Read only
Description	The number of TCP connections for which the current state is either ***established*** or ***closedWait***.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp inSegs

Access	Read only
Description	The number of segments received, including those received in error. This count includes segments received on currently established connections.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp outSegs

Access	Read only
Description	The number of segments sent, including those on current connections but excluding those containing only retransmitted octets.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp retransSegs

Access	Read only
Description	The number of segments retransmitted that is, the number of TCP segments transmitted containing one or more previously transmitted octets.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp inErrs

Access	Read only
Description	Total number of segments received in error, for example bad TCP checksum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Tcp outRsts

Access	Read only
Description	Number of TCP segments sent containing the RST flag.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf Tcp TcpEntry (TcpEntry)

Instance	localAddress [IP address] localPort [Decimal (0..65535)] remoteAddress [IP address] remotePort [Decimal (0..65535)]
Groups	"GROUP Rtr Vrf Tcp TcpEntry Operational (Oper)"
Scope	Application
Description	The component defines an entry in the TCP connection table. Each entry corresponds to TCP end-point identified by 4-tuples, *LocalAddress*, *LocalPort*, *RemoteAddress*, and *RemotePort*.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Tcp TcpEntry Operational (Oper)

Properties	Operational
Description	This group contains columnar entries for each end-point on the TCP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Tcp TcpEntry state

Access	Read and write
Description	This attribute reflects the current state of this Tcp connection.
Mib	no_mib
Values	closed listen synSent synReceived established closeWait

	finWait1 closing lastAck finWait2 timeWait delete
Default	No default

COMPONENT Rtr Vrf Interface (If)

Instance	IP address
Groups	"GROUP Rtr Vrf If AdministrativeControl (AdminControl)" "GROUP Rtr Vrf If Provisioned (Prov)" "GROUP Rtr Vrf If NetMaskProv" "GROUP Rtr Vrf If OperationalStatus (OperStatus)" "GROUP Rtr Vrf If OsiState (State)" "GROUP Rtr Vrf If Operational (Oper)" "GROUP Rtr Vrf If RelayBcOperational (RelayBcOper)" "GROUP Rtr Vrf If IfTable (Ift)" "GROUP Rtr Vrf If AdditionalInfo"
Scope	Application
Description	*Rtr<string> Interface/<string>* *Rtr/<string> Vrf/<string> Interface/<string>* The *Interface* component represents a logical interface to the Ip network. When the *Interface* component is configured under *Vrf*,

rfc2547bis must be present in the *featureList* of the *SW Lpt/ <string>* component associated with this *Interface*.

Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf If AtmMultiprotocolEncapsulation (AtmMpe)" "COMPONENT Rtr Vrf If BootpPort (BootpP)" "COMPONENT Rtr Vrf If OspfInterface (OspfIf)" "COMPONENT Rtr Vrf If IsisInterface (IsisIf)" "COMPONENT Rtr Vrf If IngressServices (IS)" "COMPONENT Rtr Vrf If EgressServices (ES)" "COMPONENT Rtr Vrf If RipInterface (RipIf)" "COMPONENT Rtr Vrf If VrrpPort" "COMPONENT Rtr Vrf If Loopback (Lb)" "COMPONENT Rtr Vrf If RsvpTeIf" "COMPONENT Rtr Vrf If LabelDistributionProtocolIf (LdpIf)" "COMPONENT Rtr Vrf If IpoDlci" "COMPONENT Rtr Vrf If EnetApplication (Enet)" "COMPONENT Rtr Vrf If PppApplication (Ppp)"
Dyn. Subcomp.	"COMPONENT Rtr Vrf If MplsBgpInterface (MplsBgpIf)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf If AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf If Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for an Interface to the IP network.
Mib	no_mib

ATTRIBUTE Rtr Vrf If arpStatus

Access	Read and write
Description	This attribute specifies whether ARP is enabled or disabled on this *Interface*. If ***auto*** is specified, an appropriate value will be selected based on the *Interface* media type.
Mib	no_mib
Values	enabled disabled auto
Default	auto

ATTRIBUTE Rtr Vrf If proxyArpStatus

Access	Read and write

Description	This attribute specifies whether Proxy ARP is enabled or disabled for this *Interface*.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf If arpNoLearn

Access	Read and write
Description	This attribute specifies whether or not dynamic host entries will be installed in the ARP table when ARP packets are received on this *Interface*.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf If sendRedirect

Access	Read and write
Description	This attribute specifies whether or not ICMP host redirects will be sent out this *Interface*.
Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Vrf If multicastStatus

Access	Read and write
Description	This attribute specifies whether or not IP multicast packets can be sent out this *Interface*. If ***auto*** is specified, an appropriate value will be selected based on the *Interface* media.

Mib	no_mib
Values	enabled disabled auto
Default	auto

ATTRIBUTE Rtr Vrf If relayAddress

Access	Read and write
Description	This attribute specifies a relay broadcast address for this *Interface*. Each packet, received on this *Interface*, meeting the relay broadcast criteria will be forwarded to the specified relay broadcast address. An relay address of all zero's indicates no relay broadcast address.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf If relayBroadcast

Access	Read and write
Description	This attribute specifies how packets, received on other *Interface*, meeting the relay broadcast criteria, will be forwarded out this *Interface*. The three options are described as follows: ***enabled***: packets will be forwarded out this *Interface*. ***disabled***: packets will not be forwarded out this *Interface*. ***auto***: packets will be forwarded out this *Interface* only when the bridge state is forwarding.
Mib	no_mib
Values	enabled disabled auto
Default	disabled

ATTRIBUTE Rtr Vrf If linkDestinationAddress

Access	Read and write
Description	This attribute specifies the address for the link destination for this *Interface*. This attribute is required for PPP media when the netmask of the *Interface* is 32 bit.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf If lanModel

Access	Read and write
Criticality	Component
Description	This attribute specifies the lan model to use for this *Interface*.
Mib	no_mib
Values	localAreaNetwork (lan) nonBroadcastMultipleAccess (nbma)
Default	localAreaNetwork

ATTRIBUTE Rtr Vrf If interfaceType

Access	Read and write
Description	This attribute specifies whether the interface is an access or a core interface. For Router Interfaces, the default value is ***core***. For Vrf Interfaces, the default value is ***access***.
Mib	no_mib
Values	unspecified access core
Default	unspecified

ATTRIBUTE Rtr Vrf If icmpMaskReply

Access	Read and write

Description	This attribute specifies whether or not replies will be generated in response to ICMP Address Mask Requests received on this *Interface.*
Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr Vrf If directedBroadcast

Access	Read and write
Description	This attribute specifies whether or not directed broadcast to physical broadcast translation is enabled for incoming traffic on this *Interface.* The IP router requirement (RFC1812) says this translation should be ***enabled***; however, in some network environments, setting this attribute to ***disabled*** may prevent operational problem such as broadcast storms. Note that in some configuration, setting this attribute to ***disabled*** may cause Bootp to fail.
Mib	no_mib
Values	enabled disabled
Default	enabled

GROUP Rtr Vrf If NetMaskProv

Properties	Provisioned
Description	This group contains attributes required to define a *netMask*.
Mib	no_mib

ATTRIBUTE Rtr Vrf If netMask

Access	Read and write
Description	This attribute specifies the subnet mask for this *Interface*. This attribute must be specified because the IP application will not automatically provide a default value.

	If the media is: 1) *Loopback* with *mode* ***primayLoopback***, then the value of the *netMask* attribute must be ***255.255.255.255***; 2) *Loopback* with *mode* ***alwaysUpInterface***, then the value of the *netMask* attribute can be any non-zero value; 3) *Ppp*, then the value of the *netMask* attribute can be any non-zero value; 3) another other media, then the value of the *netMask* attribute can be any non-zero value other than ***255.255.255.255***.
Mib	no_mib
Values	IP address
Default	0.0.0.0

GROUP Rtr Vrf If OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf If OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf If operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf If usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf If Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for an *Interface*.
Mib	no_mib

ATTRIBUTE Rtr Vrf If operArpStatus

Access	Read only
Description	This attribute indicates the current operational ARP status. If the provisioned *arpStatus* is set to ***auto***, then the IP application automatically determines the *operArpStatus* based on the *Interface* media type.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf If operMulticastStatus

Access	Read only
Description	This attribute indicates the current operational Multicast status. If the provisioned *multicastStatus* is set to ***auto***, then the IP application automatically determines the *operMulticastStatus* based on the *Interface* media.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr Vrf If broadcastAddress

Access	Read only
Description	This attribute indicates the destination IP address to be used by any application which needs to broadcast on this *Interface*.

Mib	no_mib
Values	IP address
Default	No default

GROUP Rtr Vrf If RelayBcOperational (RelayBcOper)

Properties	Operational
Description	This group contains operational attributes for an *Interface*'s or *IpPort*'s RelayBc counters.
Mib	no_mib

ATTRIBUTE Rtr Vrf If relayAddressCount

Access	Read only
Description	This attribute indicates the number of frames received on this *Interface* or *IpPort* which were forwarded to the provisioned *relayAddress* for this port. This counter wraps to zero when it reaches it's maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If relayBcCount

Access	Read only
Description	This attribute indicates the number of frames received on this port which were forwarded to the *broadcastAddress* on other *IpPorts* or *Interfaces*. This counter is incremented once for every frame received on this port regardless of how many other ports it was sent on. This counter wraps to zero when it reaches it's maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

GROUP Rtr Vrf If IfTable (Ift)

Properties	Operational
Description	This group represents the SNMP interface table entry.
Mib	no_mib

ATTRIBUTE Rtr Vrf If ifAdminStatus (admStatus)

Access	Read only
Description	This attribute provides the current administration status of the interface. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr Vrf If ifOperStatus (opStatus)

Access	Read only
Description	This attribute provides the current operational status of the interface. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	down

ATTRIBUTE Rtr Vrf If ifLastChange (lastChange)

Access	Read only
Description	This attribute provides the value of sysUpTime at the time the interface entered its current operational state. If the current state

	was entered prior to the last re- initialization of the local network management subsystem, then this object contains a zero value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifInOctets (inOctets)

Access	Read only
Description	This attribute reports the total number of octets received on the interface, including framing characters. The 64-bit version may be available in the *ifHCInOctets* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifOutOctets (outOctets)

Access	Read only
Description	This attribute reports the total number of octets transmitted out of the interface, including framing characters. The 64-bit version may be available in the *ifHCOutOctets* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifInDiscards (inDiscard)

Access	Read only
Description	This attribute reports the number of inbound packets which were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher layer protocol. One possible reason for discarding such a packet could be to free up buffer space.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifOutDiscards (outDiscard)

Access	Read only
Description	This attribute reports the number of outbound packets which were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free up buffer space.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifInErrors (inErr)

Access	Read only
Description	This attribute reports the number of inbound packets that contained errors preventing them from being deliverable to a higher layer protocol.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifOutErrors (outErr)

Access	Read only
Description	This attribute reports the number of outbound packets that could not be transmitted because of errors.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifInUcastPkts (inUcast)

Access	Read only
Description	This attribute reports the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer. The 64-bit version may be available in the *ifHCInUcastPkts* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifOutUcastPkts (outUcast)

Access	Read only
Description	This attribute reports the total number of packets that higher level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. The 64-bit version may be available in the *ifHCOutUcastPkts* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifInNuCastPkts (inNucast)

Access	Read only
Description	This attribute reports the number of non-unicast (i.e., subnetwork- broadcast or subnetwork-multicast) packets delivered to a higher-layer protocol. The corresponding 64-bit versions may be available in the *ifInMulticastPkts* attribute and the *ifInBroadcastPkts* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifOutNuCastPkts (outNuCast)

Access	Read only
Description	This attribute reports the total number of packets that higher level protocols request be transmitted to a non-unicast address, including those that were discarded or not sent. The corresponding 64-bit versions may be available in the *ifOutMulticastPkts* and *ifOutBroadcastPkts* attributes.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifInUnknownProtos (inUknownProt)

Access	Read only
Description	This attribute reports the number of packets received via the interface which were discarded because of an unknown or unsupported protocol.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifOutQlength (outQlen)

Access	Read only
Description	This attribute represents the length of the output packet queue (in packets).
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifDescription (desc)

Access	Read only

Description	This attribute provides a textual string containing information about the interface. This string includes the name of the manufacturer, the product name and the version of the hardware interface.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf If ifType (type)

Access	Read only
Description	This attribute describes the type of interface, distinguished according to the physical/link protocol(s) immediately below the network layer in the protocol stack
Mib	no_mib
Values	other ddnX25 rfc877x25 ethernetCsmacd ethernet8023 tokenBus8024 tokenring8025 man802 starLan hyperChannel fddi lapb sdlc ds1 e1 basicIsdn primaryIsdn propPointToPointSerial ppp bnx ds3 smds

	frameRelay sonetSdh frameRelayService v35 hssi sonetPath aflane8023 aflane8025 v11 channel atmMpeVcEncap atmMpeLlcEncap ilsForwarder ipTunnel virtualMedia localMedia
Default	No default

ATTRIBUTE Rtr Vrf If ifMtu (mtu)

Access	Read only
Description	This attribute represents the size of the largest datagram which can be sent/received on the interface, specified in octets. For interfaces that are used for transmitting network datagrams, this is the size of the largest network datagram that can be sent on the interface.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifSpeed (speed)

Access	Read only
Description	This attribute provides an estimate of the interface's current bandwidth in bits per second. For interfaces which do not vary in bandwidth or for those where no accurate estimation can be made, this object should contain the nominal bandwidth.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If ifPhysicalAddress (phys)

Access	Read only
Description	This attribute represents the interface's address at the protocol layer immediately `below' the network layer in the protocol stack. For interfaces which do not have such an address (e.g., a serial line), this object should be an octet string of zero length.
Mib	no_mib
Values	String (0..17, ASCII)
Default	No default

GROUP Rtr Vrf If AdditionalInfo

Properties	Operational
Description	This group contains additional information associated with this ifEntry, including SNMP ifXTable entry information.
Mib	no_mib

ATTRIBUTE Rtr Vrf If ifHCInOctets (inHCOctets)

Access	Read only
Description	This attribute reports the total number of octets received on the interface, including framing characters. This High Capacity counter is a 64-bit version of the *ifInOctets* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ifHCInUcastPkts (inHCUcast)

Access	Read only

Description	This attribute reports the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer. This High Capacity counter is a 64-bit version of the *ifInUcastPkts* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ifHCOutOctets (outHCOctets)

Access	Read only
Description	This attribute reports the total number of octets transmitted out of the interface, including framing characters. This High Capacity counter is a 64-bit version of the *ifOutOctets* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ifHCOutUcastPkts (outHCUcast)

Access	Read only
Description	This attibutes reports the total number of packets that higher-level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. This High Capacity counter is a 64-bit version of the *ifOutUcastPkts* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr Vrf If AtmMultiprotocolEncapsulation (AtmMpe)

Groups	"GROUP Rtr Vrf If AtmMpe CustomerIdentifierData (CidData)" "GROUP Rtr Vrf If AtmMpe IfEntryProv (IfEntry)" "GROUP Rtr Vrf If AtmMpe Provisioned (Prov)"

	"GROUP Rtr Vrf If AtmMpe OsiState (State)" "GROUP Rtr Vrf If AtmMpe OperationalStatus (OperStatus)"
Scope	Application
Description	*Rtr/<string> If/<IP addr> AtmMpe* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe* This subcomponent represents a logical interface between the Router and an ATM media (*AtmIf*). Multiprotocol Encapsulation as specified in RFC1483 is used to transfer higher-layer protocol data across virtual channels in an ATM network. *AtmMpe* provides a means to associate multiple ATM virtual channel connections with a single *Router Interface*. The *AtmMpe* component is associated with virtual channel connections via a linkage attribute in each *AtmConnection* subcomponent.
Mib	no_mib
Subcomponents	"COMPONENT Rtr Vrf If AtmMpe AtmConnection (Ac)"
Opt. Subcomp.	"COMPONENT Rtr Vrf If AtmMpe SpvcTerminationPoint (Stp)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf If AtmMpe CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe customerIdentifier (cid)

Access	Read and write

Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Rtr Vrf If AtmMpe IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib

Values	up down testing
Default	up

ATTRIBUTE Rtr Vrf If AtmMpe ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Rtr Vrf If AtmMpe Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *AtmMpe* component under the Router Interface.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe maxTransmissionUnit (mtu)

Access	Read and write
Description	This attribute sets the size of the largest datagram which can be sent on the interface. This includes the size of the Logical Link Control header (if applicable) as well as the protocol data unit.
Mib	no_mib
Values	Decimal (256..9188)
Units	octets
Default	9188

ATTRIBUTE Rtr Vrf If AtmMpe encapType (etype)

Access	Read and write
Criticality	Component
Description	This attribute specifies the RFC-1483 encapsulation type to be used for the *AtmConnections* under this *AtmMpe*. Specifying ***llcEncap*** allows multiplexing of multiple protocols over the *VCCs*. The protocol of the carried PDU will be identified by an IEEE 802.2 Logical Link Control header. If Inverse ARP is to be carried over a VCC, ***llcEncap*** must be used. If the *Stp* component exists under the *AtmMpe*, ***llcEncap*** must be used. Specifying ***ipVcEncap*** indicates that all the VCCs (that is, *AtmConnection*s) under an *AtmMpe* component will use VC-based multiplexing and will carry IP PDUs only. Specifying ***llcBridgeEncap*** indicates that the VCC (that is, the *AtmConnection*) under an *AtmMpe* component will use the bridged Ethernet encapsulation format specified in RFC-1483. Note that when setting the *encapType* attribute to ***llcBridgeEncap***, the *maxTransmissionUnit* must be set within the ***[256 .. 1524]*** range.
Mib	no_mib
Values	llcEncap ipVcEncap llcBridgeEncap
Default	llcEncap

GROUP Rtr Vrf If AtmMpe OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf If AtmMpe operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf If AtmMpe usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf If AtmMpe OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable

to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

Default: up

COMPONENT Rtr Vrf If AtmMpe SpvcTerminationPoint (Stp)

Groups: "GROUP Rtr Vrf If AtmMpe Stp Provisioned (Prov)"
"GROUP Rtr Vrf If AtmMpe Stp Operational (Oper)"

Scope: Application

Description:
AtmMpe/n Stp
Rtr/<string> If/<IP addr> AtmMpe Stp
Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Stp
This component specifies the SPVC related provisioning for the *AtmMpe* component. Its presence identifies an *AtmMpe* component that contains one or more SPVC connections.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr Vrf If AtmMpe Stp Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisionable attributes of the *SpvcTerminationPoint* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Stp localAddress (laddr)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the NSAP address of this *AtmMpe* component. The default is an empty string. If no NSAP address is provisioned, a default NSAP address is provided. To view the generated default address refer to the *opLocalAddress* attribute under this component after the *act prov* command is executed.
Mib	no_mib
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Stp softPvcRetryPeriod (retry)

Access	Read: All Write: All
Description	This attribute specifies the interval at which an SPVC connection attempts establishment after a failed setup attempt occurs. The *softPvcRetryPeriod* attribute applies to all connections managed by the parent *AtmMpe* component.
Mib	no_mib
Values	Decimal (10..3600)
Units	seconds
Default	20

ATTRIBUTE Rtr Vrf If AtmMpe Stp softPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off before attempting to reestablish a connection after an established SPVC connection is cleared/released. The *softPvcHoldOffTime* attribute applies to all connections managed by the parent *AtmMpe* component.
Mib	no_mib

Values	Decimal (0; 50..3600000)
Units	msec
Default	20000

GROUP Rtr Vrf If AtmMpe Stp Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SpvcTerminationPoint* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Stp opLocalAddress (addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the NSAP address of this *AtmMpe* component. The value is the same as the provisioned *laddr*. If the *laddr* is not provisioned, the value of *addr* is automatically generated by the software.
Mib	no_mib
Values	String (0..20, Hex)
Default	""

COMPONENT Rtr Vrf If AtmMpe AtmConnection (Ac)

Instance	Decimal (1..255)
Groups	"GROUP Rtr Vrf If AtmMpe Ac Provisioned (Prov)" "GROUP Rtr Vrf If AtmMpe Ac OsiState (State)" "GROUP Rtr Vrf If AtmMpe Ac Operational (Oper)" "GROUP Rtr Vrf If AtmMpe Ac Statistics (Stats)" "GROUP Rtr Vrf If AtmMpe Ac IpIfLink"
Scope	Application
Description	*AtmMpe/n AtmConnection/n* *Rtr/<string> If/<IP addr> AtmMpe AtmConnection/n* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe AtmConnection/n*

This component represents a virtual channel through which internetworking frames are transported using RFC 1483 encapsulation.

The *AtmConnection* component contains OSI state information, frame based statistics, and the linkage to an ATM virtual channel connection. This component's instance value is used by higher-layer protocols when referring to a specific ATM connection.

Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf If AtmMpe Ac SourcePvc (SrcPvc)" "COMPONENT Rtr Vrf If AtmMpe Ac DestinationPvc (DstPvc)"
Dyn. Subcomp.	"COMPONENT Rtr Vrf If AtmMpe Ac AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf If AtmMpe Ac Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *AtmConnection* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Ac atmConnection (link)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM nailed up endpoint, *AtmIf/n Vcc/vpi.vci Nep*, that this connection is associated with. It must not be provisioned for an SPVC connection.

Mib	no_mib
Values	Link (Service, applicationName)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the *AtmConnection.* This value is used to distinguish the connection from others for the purpose of IP and MPLS forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers. If a packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one *AtmConnection*, then one of the connections is selected for transmitting the packet. For IP packets the selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet. For MPLS packets the selection is based on either the DSCP field of the IP packet or the EXP field of the MPLS packet. DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component. EXP based selection of the the outgoing connection is explained in the description of the *MplsServiceMap* component. Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component. Modifying this attribute will reset the *AtmConnection*. If the *AtmConnection* is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP

packet received on the *AtmConnection*. See the description of *Vr Ip CosPolicyGroup* for more information.

Mib	no_mib
Values	Decimal (0..3)
Default	0

ATTRIBUTE Rtr Vrf If AtmMpe Ac mplsSignaling (mplsSig)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this AtmMpe Ac is dedicated for MPLS signaling (LDP or CR-LDP), or shared between MPLS and IP. If the value is ***dedicated***, the *Ac* is dedicated for MPLS signaling; the route is not found in IP ARP. If the value is ***shared***, the *Ac* is accessible by IP. The checking of this provisionable attribute is done through semantic checking. The attribute takes on the value ***shared*** by default, and can only be ***dedicated*** if there are more than one *Ac* under the *AtmMpe*.
Mib	no_mib
Values	shared dedicated
Default	shared

GROUP Rtr Vrf If AtmMpe Ac OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Ac adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf If AtmMpe Ac operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf If AtmMpe Ac usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf If AtmMpe Ac Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *AtmConnection* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Ac speed

Access	Read only
Description	This attribute indicates the approximate bit rate for the connection. The bit rate is determined from the cell rate provisioned for the *Vcc* linked to this connection. The cell rate is multiplied by 53 bytes per cell and 8 bits per byte to obtain the bit

	rate. The *ifSpeed* of the entry in the ifTable corresponding to the *AtmMpe* component is the lowest speed of all the connections associated with the *AtmMpe* component. This attribute is always equal to 0 for an SPVC.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

GROUP Rtr Vrf If AtmMpe Ac Statistics (Stats)

Properties	Operational
Description	This group contains the frame based statistics maintained for the *AtmConnection* component. For cell based statistics, see the *Vcc* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Ac outPackets

Access	Read only
Description	This attribute counts the total number of packets sent on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac outOctets

Access	Read only
Description	This attribute counts the total number of octets sent on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac outDiscards

Access	Read only
Description	This attribute counts the total number of packets which were supposed to be sent on this connection but were discarded due to congestion or the connection being down. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac inPackets

Access	Read only
Description	This attribute counts the total number of packets received on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac inOctets

Access	Read only
Description	The attribute counts the total number of octets received on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac inUnknownProtos

Access	Read only
Description	This attribute counts the total number of packets received on this connection which were discarded because they contained an unknown or unsupported protocol (includes packets received for protocols not currently bound to the associated *ProtocolPort* component). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac inErrors

Access	Read only
Description	This attribute counts the total number of packets received on the connection which contained errors preventing them from being delivered to a higher-layer protocol (includes short frames). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr Vrf If AtmMpe Ac IpIfLink

Properties	Provisioned
Description	This group contains the link between this component and an *IpLogicalInterface*.
Mib	no_mib

ATTRIBUTE Rtr Vrf If AtmMpe Ac linkToIpLogicalInterface (ipIf)

Access	Read and write
Description	This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ipAddress*, that this connection is associated with.

This attribute is not applicable and cannot be set when the *AtmConection* component is added under an *Rtr If AtmMpe* or an *Rtr Vrf If AtmMpe* component.

When set, the value of this attribute must be consistent with the *linkToPrototocolPort* attribute value of the parent *AtmMpe* component. That is, they must both point to the same *PrototocolPort* component.

Mib: no_mib

Values: Link (Service, linkToMediaConnection)

Default: No default

COMPONENT Rtr Vrf If AtmMpe Ac SourcePvc (SrcPvc)

Groups: "GROUP Rtr Vrf If AtmMpe Ac SrcPvc Provisioned (Prov)"
"GROUP Rtr Vrf If AtmMpe Ac SrcPvc Operational (Oper)"

Scope: Application

Description: *AtmMpe/n Ac/m SrcPvc*
Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc
Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc
This component contains addressing and control information used by the calling SPVC endpoint to set up an SPVC connection to a remote called SPVC endpoint. An *Stp* component must exist under the *Ac* component if a *SrcPvc* component exists.

Mib: AtmMpeSpvc

Subcomponents: "COMPONENT Rtr Vrf If AtmMpe Ac SrcPvc TrafficManagement (Tm)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB Clear (Clr) Rtr Vrf If AtmMpe Ac SrcPvc

Impact	Service
Description	*Clear AtmMpe/n Ac/m SrcPvc* *Clear Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc* *Clear Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc* This command tears down the active SPVC connection under the *Ac* component and attempts to reestablish it. If there is no active SPVC, the clear command has no effect.

GROUP Rtr Vrf If AtmMpe Ac SrcPvc Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *SourcePvc* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc remoteAddress (raddr)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the NSAP address of the called SPVC endpoint (this must be a remote *AtmMpe* component).
Mib	AtmMpeSpvc
Values	String (20, Hex)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc remoteConnectionIdentifier (rci)

Access	Read: All Write: All
Criticality	Component

Description	This attribute specifies the remote connection identifier of the SPVC. It is provisioned with the *Ac* instance of the *AtmMpe Ac* component at the called SPVC endpoint.
Mib	AtmMpeSpvc
Values	Decimal (1..255)
Default	1

GROUP Rtr Vrf If AtmMpe Ac SrcPvc Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SrcPvc* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc state

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the connection.
Mib	AtmMpeSpvc
Values	active inactive
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc retryCount (retry)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed connection attempts.
Mib	AtmMpeSpvc
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc lastClearCause (cause)

Access	Read: All Write: Illegal
Description	This attribute indicates the last clear cause signalled by the connection due to a release. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The set of possible values and their meaning can be found in the ATM Forum Private Network-Network Interface Specification Version 1.0, Section 6.4.5.19.
Mib	AtmMpeSpvc
Values	Decimal (0..255)
Default	No default

COMPONENT Rtr Vrf If AtmMpe Ac SrcPvc TrafficManagement (Tm)

Groups	"GROUP Rtr Vrf If AtmMpe Ac SrcPvc Tm Provisioned (Prov)"
Scope	Application
Description	*AtmMpe/n Ac/m SrcPvc Tm* *Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc Tm* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc Tm* This component contains ATM QoS information used by the calling endpoint of an SPVC connection to request a particular QoS from ATM.
Mib	AtmMpeSpvc
Common Verbs	Help List Display

GROUP Rtr Vrf If AtmMpe Ac SrcPvc Tm Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *TrafficManagement* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc Tm atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the desired ATM service category for this connection.
Mib	AtmMpeSpvc
Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) constantBitRate (cbr)
Default	unspecifiedBitRate

ATTRIBUTE Rtr Vrf If AtmMpe Ac SrcPvc Tm peakCellRate (pcr)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the desired peak cell rate (PCR) in both directions for this connection. Refer to NTP NN10600-705 for more information on ATM Traffic Management.
Mib	AtmMpeSpvc
Values	Decimal (0..2147483647)
Default	0

COMPONENT Rtr Vrf If AtmMpe Ac DestinationPvc (DstPvc)

Groups	"GROUP Rtr Vrf If AtmMpe Ac DstPvc Operational (Oper)"
Scope	Application
Description	*AtmMpe/n Ac/m DstPvc* *Rtr/<string> If/<IP addr> AtmMpe Ac/m DstPvc* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m DstPvc*

The *DestinationPvc* component represents the called endpoint of an SPVC connection.

Mib: AtmMpeSpvc

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB Clear (Clr) Rtr Vrf If AtmMpe Ac DstPvc

Impact: Service

Description:
Clear AtmMpe/n Ac/m DstPvc
Clear Rtr/<string> If/<IP addr> AtmMpe Ac/m DstPvc
Clear Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m DstPvc
This command tears down the active SPVC connection under the *Ac* component and attempts to reestablish it.

If there is no active SPVC, the clear command has no effect.

GROUP Rtr Vrf If AtmMpe Ac DstPvc Operational (Oper)

Properties: Operational

Description: This attribute group contains the operational attributes for the *DstPvc* component.

Mib: AtmMpeSpvc

ATTRIBUTE Rtr Vrf If AtmMpe Ac DstPvc state

Access: Read: All
Write: Illegal

Description: This attribute indicates the status of the connection.

Mib: AtmMpeSpvc

Values: active
inactive

Default: No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac DstPvc remoteAddress (raddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the NSAP address of the remote (calling) endpoint. If a connection is not established, *remoteAddress* is an ***empty string***.
Mib	AtmMpeSpvc
Values	String (0..20, Hex)
Default	""

ATTRIBUTE Rtr Vrf If AtmMpe Ac DstPvc remoteConnectionIdentifier (rci)

Access	Read: All Write: Illegal
Description	This attribute indicates the remote connection identifier of the remote (calling) SPVC endpoint (that is, the *Ac* instance of the remote *AtmMpe Ac* component). If the connection is not established, the *remoteConnectionIdentifier* is an ***empty string***.
Mib	AtmMpeSpvc
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Rtr Vrf If AtmMpe Ac DstPvc lastClearCause (cause)

Access	Read: All Write: Illegal
Description	This attribute indicates the last clear cause signalled by the connection due to a release. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The set of possible values and their meaning can be found in the ATM Forum Private Network-Network Interface Specification Version 1.0, Section 6.4.5.19.
Mib	AtmMpeSpvc
Values	Decimal (0..255)

Default	No default

COMPONENT Rtr Vrf If AtmMpe Ac AtmConnection (AtmCon)

Groups	"GROUP Rtr Vrf If AtmMpe Ac AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	AtmMpeSpvc
Common Verbs	Help List Display

GROUP Rtr Vrf If AtmMpe Ac AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr Vrf If AtmMpe Ac AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	AtmMpeSpvc
Values	The name of the component
Default	No default

COMPONENT Rtr Vrf If BootpPort (BootpP)

Groups	"GROUP Rtr Vrf If BootpP Provisioned (Prov)" "GROUP Rtr Vrf If BootpP AdministrativeControl (AdminControl)"

"GROUP Rtr Vrf If BootpP OperationalStatus (OperStatus)"
"GROUP Rtr Vrf If BootpP OsiState (State)"
"GROUP Rtr Vrf If BootpP Statistics (Stats)"

Scope: Application

Description: *Vr/<string> Pp/<string> IpPort BootpPort*
Rtr/<string> Interface/<string> BootpPort
Rtr/<string> Vrf/<string> Interface/<string> BootpPort
An *BootpPort* component must be provisioned for each *IpPort* or *Interface* where BOOTP request messages will be received. Each *BootpPort* component can be provisioned with a set of relay addresses. Each BOOTP request message received on this port will be sent to the provisioned set of relay addresses.

Mib: no_mib

Common Verbs:
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Rtr Vrf If BootpP Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisionable attributes for the *BootpPort* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf If BootpP relayForwardStatus (status)

Access: Read and write

Description: This attribute controls how BOOTP request packets, received on another port, will be flooded out this port. If *relayForwardStatus* is ***enabled***, BOOTP requests received on another port will be broadcast out this port. When *relayForwardStatus* is ***disabled***, BOOTP requests will not be broadcast out this port. If ***auto*** is used, the bridge spanning tree database is used to determine if

BOOTP requests should be broadcast out this port.

Note that when using ***enabled***, it is possible to create misconfigurations which will result in broadcast storms. When using this feature with multiple routers, make sure there are no broadcast forwarding loops. Using ***auto*** with bridge spanning tree is safer to use if the network is running bridge spanning tree.

Note that for ***auto*** to have effect, bridge spanning tree must be running on the corresponding *VirtualRouter ProtocolPort* or *Rtr Interface* or *Rtr Vrf Interface*.

Mib	no_mib
Values	enabled disabled auto
Default	disabled

ATTRIBUTE Rtr Vrf If BootpP bootpLogicalInterface (portIf)

Access	Read and write
Description	This attribute identifies the logical interface whose address is to be the GIADDR of this BOOTP port. If not set, the address of the first logical port or Interface is chosen.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf If BootpP relayAddress (addr)

Access	Read and write
Description	This attribute identifies a list of relay addresses. When a BOOTP request message is received on this port, the request will be forwarded to the IP addresses provisioned in *relayAddress*. Note that BOOTP requests are also broadcast out all other *BootpPort*'s according to the *relayForwardStatus* of the outgoing port.

Mib	no_mib
List of	IP address
List Size	3
Default	No default

GROUP Rtr Vrf If BootpP AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If BootpP snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf If BootpP OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If BootpP snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf If BootpP OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If BootpP adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

	The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf If BootpP operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf If BootpP usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf If BootpP Statistics (Stats)

Properties	Operational
Description	This group contains *BootpPortEntry* component statistics.
Mib	no_mib

ATTRIBUTE Rtr Vrf If BootpP inRequests

Access	Read only
Description	This attribute counts the total number of BOOTP Request messages received on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If BootpP inReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages received on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If BootpP outRequests

Access	Read only
Description	This attribute counts total the number of BOOTP Request messages broadcast out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If BootpP outReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages sent out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If BootpP inRequestErrors

Access	Read only
Description	This attribute counts the number of BOOTP Request messages received on this port but not forwarded due to an error. An error occurs if the BOOTP hop limit has been exceeded.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If BootpP inReplyErrors

Access	Read only
Description	This attribute counts the number of BOOTP Reply messages received on this port but not forwarded due to an error. An error occurs if the giaddr field in the BOOTP reply does not match an IP address assigned to this *VirtualRouter* or *Rtr* or *Rtr Vrf*, or if

	the output *IpPort* or *Interface* for the BOOTP reply is not provisioned for BOOTP.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf If OspfInterface (OspfIf)

Groups	"GROUP Rtr Vrf If OspfIf Provisioned (Prov)" "GROUP Rtr Vrf If OspfIf Operational (Oper)" "GROUP Rtr Vrf If OspfIf Metric"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf* *Rtr/<string> Interface/<Ip Address> OspfIf* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf* An OspfIf component can be created under each *logicalIf* or *Interface* to run OSPF protocol.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf If OspfIf Md5KeyId (KeyId)" "COMPONENT Rtr Vrf If OspfIf TypeOfService (TOS)" "COMPONENT Rtr Vrf If OspfIf Neighbor (Nbr)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If OspfIf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes identifies a provisionable set of attributes.
Mib	no_mib

ATTRIBUTE Rtr Vrf If OspfIf areaId

Access	Read and write
Description	The area Id this Ospf interface belongs to.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr Vrf If OspfIf ifType

Access	Read and write
Description	This attribute specifies the type of this *OspfInterface*. Neighbors are dynamically discovered using the Hello protocol for an *ifType* of ***broadcast***, ***pointToPoint***, or ***pointToMultipoint*** when *pointToMultiPointMode* is set to ***broadcast***. A *Neighbor* component must be configured for an *ifType of* ***nbma*** or ***pointToMultiPoint***, when *pointToMultiPointMode* is set to ***nonBroadcast***. When *ifType* is set to ***passive***, neighbors are not required.
Mib	no_mib
Values	broadcast nbma pointToPoint passive pointToMultiPoint (ptmp)
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf snmpAdminStatus

Access	Read and write
Description	The administrative status of this Ospf interface.
Mib	no_mib
Values	up down
Default	up

ATTRIBUTE Rtr Vrf If OspfIf rtrPriority (rtrPri)

Access	Read and write
Description	The priority of this interface. Used in multi-access networks, this field is used in the designated router election algorithm. The value 0 signifies that the router is not eligible to become the designated router on this particular protocol port. In the event of a tie in this value, routers will use their *routerId* as a tie breaker.
Mib	no_mib
Values	Decimal (0..255)
Default	1

ATTRIBUTE Rtr Vrf If OspfIf transitDelay

Access	Read and write
Description	The estimated number of seconds it takes to transmit a link-state update packet over this interface.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	1

ATTRIBUTE Rtr Vrf If OspfIf retransInterval (retransInt)

Access	Read and write
Description	The number of seconds between link-state advertisements retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	5

ATTRIBUTE Rtr Vrf If OspfIf helloInterval (helloInt)

Access	Read and write
Description	The length of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for all routers attached to a common network.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Rtr Vrf If OspfIf rtrDeadInterval (rtrDeadInt)

Access	Read and write
Description	The number of seconds that a router's hello packets have not been seen before it's neighbors declare the router down. This should be some multiple of the *helloIntereval*. This value must be the same for all routers attached to a common network.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	40

ATTRIBUTE Rtr Vrf If OspfIf pollInterval (pollInt)

Access	Read and write
Description	The largest time interval, in seconds, between the hello packets sent to an inactive non-broadcast multi-access neighbor.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	120

ATTRIBUTE Rtr Vrf If OspfIf authKey

Access	Write only
Description	The Authentication Key. If the value of the attribute *authType* of an *AreaEntry* is ***simplePassword***, and the *authKey* length is shorter than 8 octets, then the value of *authKey* will be left adjusted zero-filled to 8 octets.
Mib	no_mib
Values	String (1..8, Hex)
Default	0000000000000000

ATTRIBUTE Rtr Vrf If OspfIf multicastForwarding (multicastFwd)

Access	Read and write
Description	The way multicasts should be forwarded on this interface; non forwarded, forwarded as data-link multicasts, or forwarded as data-link unicasts. Data-link multicasting is not meaningful on point-to-point and NBMA(No Broadcast Multi Access) interfaces, and setting this attribute to blocked effectively disables all multicast forwarding.
Mib	no_mib
Values	blocked
Default	blocked

ATTRIBUTE Rtr Vrf If OspfIf pointToMultiPointMode (ptmpmode)

Access	Read and write
Description	This attribute specifies the Point-to-Multipoint mode to use when the *ifType* of this *OspfInterface* is ***pointToMultipoint***. A value of ***nonBroadcast*** restricts this interface to only send unicast packets, Hence, a *Neighbor* component must be configured. A value of ***broadcast*** enables sending multicast OSPF Hello packets to dynamically discover neighbors.
Mib	no_mib
Values	nonBroadcast (nbc) broadcast (bc)

Default	nonBroadcast

ATTRIBUTE Rtr Vrf If OspfIf authType

Access	Read and write
Description	The authentication type specified for this *Ospf* interface.
Mib	no_mib
Values	none simplePassword md5 SameAsArea
Default	SameAsArea

GROUP Rtr Vrf If OspfIf Operational (Oper)

Properties	Operational
Description	This group of attributes identifies operational state that this interface is performing.
Mib	no_mib

ATTRIBUTE Rtr Vrf If OspfIf state

Access	Read only
Description	The state of the OSPF interface.
Mib	no_mib
Values	down loopback waiting pointToPoint designatedRouter backupDesignatedRouter otherDesignatedRouter
Default	designatedRouter

ATTRIBUTE Rtr Vrf If OspfIf designatedRouter

Access	Read only

Description	The Ip address of the designated router.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf backupDesignatedRouter

Access	Read only
Description	The Ip address of the backup designated router
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf events

Access	Read only
Description	The number of times this OSPF interface has changed its state or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr Vrf If OspfIf Metric

Properties	Operational
Description	This group contains the operational metric attribute of this interface.
Mib	no_mib

ATTRIBUTE Rtr Vrf If OspfIf metric

Access	Read only
Description	This attribute indicates the metric being used by this *OspfIf*. The metric is derived in one of two ways: 1. If there is a *TypeOfService* component provisioned under this

OspfIf component, then the value of the *metric* attribute is copied from the provisionable attribute *tosMetric*.
2. Otherwise, the metric is computed based on the interface speed. If the interface speed is greater than 100 Mbit/s, then the *metric* is 1. If the interface speed is less than 100 Mbit/s, then the metric is 100 Mbit/s divided by the interface speed. If the interface speed is unknown, then it is treated as 1.54 Mbit/s during the calculation.
The value of interface speed is available by displaying the *ifSpeed* attribute of the corresponding *IfTableEntry* component.

Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf If OspfIf Md5KeyId (KeyId)

Instance	Decimal (1..255)
Groups	"GROUP Rtr Vrf If OspfIf KeyId Provisioned (Prov)" "GROUP Rtr Vrf If OspfIf KeyId Operational (Oper)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf KeyId/<ID>* *Rtr/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf KeyId/ <ID>* *Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>*

This component contains the information about various MD5 Authentication keys.

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If OspfIf KeyId Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisional attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If OspfIf KeyId md5Key (Key)

Access	Write only
Description	The MD5 authentication key for the *KeyId* component.
Mib	no_mib
Values	String (0..16, ASCII)
Default	""

GROUP Rtr Vrf If OspfIf KeyId Operational (Oper)

Properties	Operational
Description	This group describes the set of operational attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If OspfIf KeyId inUseForGeneration (inUse)

Access	Read only
Description	This attribute indicates whether the *Key* is currently in use or not. If this attribute is equal to ***true***, it indicates the *Key* is active.

Mib	no_mib
Values	true false
Default	false

COMPONENT Rtr Vrf If OspfIf TypeOfService (TOS)

Instance	Decimal (0..0)
Groups	"GROUP Rtr Vrf If OspfIf TOS Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>* *Rtr/<string> If/<Ip Address> ospfIf OspfIfTypeOfService/ <Decimal>* *Rtr/<string> Vrf/<string> If/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>* This component describes the metrics to be advertised for a specified interface at various types-of-service.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If OspfIf TOS Provisioned (Prov)

Properties	Provisioned
Description	Identifies a provisionable set of attributes.
Mib	no_mib

ATTRIBUTE Rtr Vrf If OspfIf TOS tosMetric

Access	Read and write
Description	The metric using this typeOfService on this interface.

Mib	no_mib
Values	Decimal (0..65535)
Default	1

COMPONENT Rtr Vrf If OspfIf Neighbor (Nbr)

Instance	IP address
Groups	"GROUP Rtr Vrf If OspfIf Nbr Provisioned (Prov)" "GROUP Rtr Vrf If OspfIf Nbr Operational (Oper)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>* *Rtr/<string> If/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>* *Rtr/<string> Vrf/<string> If/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>* This component represents a neighbor on a multi-access non-broadcast *OspfInterface* configured with its *ifType* attribute set to one of the following: - ***nbma*** and the *rtrPriority* attribute is set to non-zero or - ***pointToMultiPoint*** and *pointToMultiPointMode* is set to ***nonBroadcast***. The operational attributes for this component can also be viewed from: *Vr/<string> Ip Ospf NbrEntry/<Ip Address>,<Decimal>* or *Rtr/<string> Ospf NbrEntry/<Ip Address>,<Decimal>* or *Rtr/<string> Vrf/<string> Ospf NbrEntry/<Ip Address>,<Decimal>*
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If OspfIf Nbr Provisioned (Prov)

Properties	Provisioned
Description	Identifies a group of Provisionable attributes.
Mib	no_mib

ATTRIBUTE Rtr Vrf If OspfIf Nbr priority

Access	Read and write
Description	The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network. The higher the number, the better are the chances of being a designated router.
Mib	no_mib
Values	Decimal (0..255)
Default	1

GROUP Rtr Vrf If OspfIf Nbr Operational (Oper)

Properties	Operational
Description	Contains the Operational set of attributes for the Neighbor.
Mib	no_mib

ATTRIBUTE Rtr Vrf If OspfIf Nbr rtrId

Access	Read only
Description	An Ip Address uniquely identifying the neighboring router in the Autonomous System.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf Nbr options

Access	Read only

Description	A bit mask corresponding to the neighbor's options field. Bit 0, if set, indicates that the area accepts and operates on external information, if zero, it is a stub area. Bit 1, if set, indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	no_mib
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf Nbr state

Access	Read only
Description	The state of the relationship with this neighbor.
Mib	no_mib
Values	down attempt init twoWay exchangeStart exchange loading full
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf Nbr events

Access	Read only
Description	The number of times this neighbor relationship has changed state, or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf Nbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf Nbr exchangeStatus

Access	Read only
Description	Indicates the exchange status for a neighbor Entry.
Mib	no_mib
Values	master slave
Default	No default

ATTRIBUTE Rtr Vrf If OspfIf Nbr permanance

Access	Read only
Description	This attribute displays how the neighbor became an entry.
Mib	no_mib
Values	permanent dynamic
Default	permanent

COMPONENT Rtr Vrf If IsisInterface (IsisIf)

Groups	"GROUP Rtr Vrf If IsisIf Provisioned (Prov)" "GROUP Rtr Vrf If IsisIf Operational (Oper)" "GROUP Rtr Vrf If IsisIf Statistics (Stats)" "GROUP Rtr Vrf If IsisIf ErrorStatistics (Errors)"
Scope	Application
Description	*Rtr/<string> Interface/<Ip Address> IsisInterface* An *IsisIf* component can be created under each *Interface*

component to run the ISIS protocol.

This component requires an associated *Isis* component to be provisioned.

This component requires at least one *Level* subcomponent to be provisioned.

If the underlying media is ATM based, this component requires an *AtmConn* subcomponent to be provisioned.

Mib: no_mib

Opt. Subcomp.: "COMPONENT Rtr Vrf If IsisIf IsisIfLevel (Level)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Vrf If IsisIf Provisioned (Prov)

Properties: Provisioned

Description: This group contains the set of attributes used to configure an ISIS Interface.

Mib: no_mib

ATTRIBUTE Rtr Vrf If IsisIf snmpAdminStatus

Access: Read: All
Write: All

Description: This attribute specifies the administrative status of this *IsisInterface* component on this *Router*.

Mib: no_mib

Values:
- up
- down
- testing

Default	up

ATTRIBUTE Rtr Vrf If IsisIf passive

Access	Read: All Write: All
Description	This attribute specifies whether the *IsisInterface* should be passive. A passive interface is one whose IP address is advertised in the LSP, but is not involved in ISIS protocol activities (for example, transmitting LSPs and establishing adjacencies).
Mib	no_mib
Values	no yes
Default	no

ATTRIBUTE Rtr Vrf If IsisIf lspInterval

Access	Read: All Write: All
Description	This attribute specifies, in milliseconds, the minimum time between transmission of successive LSPs on this interface. This minimum time applies to any LSP, whether it is the LSP of this *Router*, or another router's LSP that is being retransmitted.
Mib	no_mib
Values	Decimal (33..65535)
Units	msec
Default	100

ATTRIBUTE Rtr Vrf If IsisIf lspRetransmitInterval

Access	Read: All Write: All
Description	This attribute specifies, in seconds, the minimum time to wait before retransmitting this *Router's* LSP on this interface. An LSP retransmission occurs if a previously transmitted LSP is not acknowledged. Retransmissions only occur on point-to-point links.

Mib	no_mib
Values	Decimal (1..300)
Units	seconds
Default	5

GROUP Rtr Vrf If IsisIf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes associated with the ISIS protocol running on this interface.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IsisIf upTime

Access	Read: All Write: Illegal
Description	This attribute indicates the time, in seconds, that the ISIS protocol has been operational on this interface.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf adjacencyChanges (adjChanges)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that an adjacency on this interface has changed state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf operState (state)

Access	Read: All Write: Illegal
Description	This attribute indicates the operational state of the ISIS Interface.
Mib	no_mib
Values	adminDown down up
Default	No default

GROUP Rtr Vrf If IsisIf Statistics (Stats)

Properties	Operational
Description	The attributes in this group are statistics associated with the normal operation of this *IsisInterface* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IsisIf txLsps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSPs transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf rxLsps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSPs received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf txPtpHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of point-to-point hellos transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf rxPtpHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of point-to-point hellos received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf txBroadcastHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of broadcast hellos transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf rxBroadcastHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of broadcast hellos received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf txCsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Complete Sequence Number PDUs (CSNPs) transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf rxCsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Complete Sequence Number PDUs (CSNPs) received on this interface since the last time this *Isis*If component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf txPsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Partial Sequence Number PDUs (PSNPs) transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf rxPsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Partial Sequence Number PDUs (PSNPs) received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf totalPacketsTxd

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of packets transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf totalPacketsRxd

Access	Read: All Write: Illegal

Description	This attribute indicates the total number of packets received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr Vrf If IsisIf ErrorStatistics (Errors)

Properties	Operational
Description	The attributes in this group are statistics associated with the operation of this *IsisInterface* component. Each attribute counts a specific abnormal event that has occurred since this component was last enabled.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IsisIf initFails

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that initialization of this ISIS interface has failed.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf adjRejects

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that an attempt to form an adjacency on this interface has failed.
Mib	no_mib
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Rtr Vrf If IsisIf rxUnknownPacketTypes

Access	Read: All Write: Illegal
Description	This attribute indicates the number of packets of unknown type that were received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr Vrf If IsisIf IsisIfLevel (Level)

Instance	Decimal (1..1)
Groups	"GROUP Rtr Vrf If IsisIf Level Provisioned (Prov)" "GROUP Rtr Vrf If IsisIf Level Operational (Oper)"
Scope	Application
Description	*Rtr/<string> Interface/<Ip Address> IsisIf Level/<1..2>* The ISIS routing protocol supports a two-level routing hierarchy. This component represents ISIS routing aspects that are specific to each routing level for this ISIS interface. In the current release, only *Level/1* is supported.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If IsisIf Level Provisioned (Prov)

Properties	Provisioned

Description	This group contains the attributes used to independently configure each ISIS interface routing level.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IsisIf Level metric

Access	Read: All Write: All
Description	This attribute specifies the cost of this interface, which is used by the SPF algorithm in this and other routers. This value is advertised in the LSP.
Mib	no_mib
Values	Decimal (0..63)
Default	10

ATTRIBUTE Rtr Vrf If IsisIf Level helloInterval

Access	Read: All Write: All
Description	This attribute specifies the time, in seconds, between transmission of successive hello messages (IIH PDU).
Mib	no_mib
Values	Decimal (1..20000)
Units	seconds
Default	10

ATTRIBUTE Rtr Vrf If IsisIf Level helloMultiplier

Access	Read: All Write: All
Description	This attribute specifies the factor by which the *helloInterval* attribute is multiplied in order to create the hold time value transmitted in the hello packets (IIH PDU). The hold time value is used by the receiving router to determine how long it should maintain the adjacency if a subsequent hello packet is not received.

Mib	no_mib
Values	Decimal (2..100)
Default	3

ATTRIBUTE Rtr Vrf If IsisIf Level csnpInterval

Access	Read: All Write: All
Description	This attribute specifies the time interval, in seconds, between successive transmissions of the CSNP PDUs.
Mib	no_mib
Values	Decimal (1..600)
Units	seconds
Default	10

ATTRIBUTE Rtr Vrf If IsisIf Level priority

Access	Read: All Write: All
Description	This attribute specifies the DIS priority for this router. On a multi-access LAN, the router with the highest DIS priority is elected to represent the LAN. The elected router transmits an LSP for the pseudonode representing the LAN.
Mib	no_mib
Values	Decimal (0..127)
Default	64

GROUP Rtr Vrf If IsisIf Level Operational (Oper)

Properties	Operational
Description	This group contains attributes representing the operational state of this *IsisIf Level* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IsisIf Level disId

Access	Read: All Write: Illegal
Description	This attribute indicates the system ID of the ISIS router acting as DIS for the LAN to which this interface is attached. For non-LAN interfaces, the value of this attribute is ***N/A***.
Mib	no_mib
Values	String (1..14, ASCII)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf Level disChanges

Access	Read: All Write: Illegal
Description	This attribute indicates the number of DIS changes that have occurred on this interface for this level.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf Level adjacencies

Access	Read: All Write: Illegal
Description	This attribute indicates the number of active adjacencies that exist on this interface for this level.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IsisIf Level timeToNextTxHello

Access	Read: All Write: Illegal
Description	This attribute indicates the time, in seconds, until the next Hello message is to be transmitted on this interface for this level.

Mib	no_mib
Values	Decimal (0..600)
Units	seconds
Default	No default

COMPONENT Rtr Vrf If IngressServices (IS)

Groups	"GROUP Rtr Vrf If IS IngressServicesLinks (IsLinks)" "GROUP Rtr Vrf If IS ServiceSpecification (Sp)" "GROUP Rtr Vrf If IS InterfaceServices (IntServ)"
Scope	Application
Description	*Vr/<string> Pp/<string> Ip IngressServices* *Rtr/<string> Vrf/<string> If/<x.x.x.x> IngressServices* This component and its subcomponents represent various traffic management services applied to IP traffic entering an interface.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr Vrf If IS MeterStatistics (Meter)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If IS IngressServicesLinks (IsLinks)

Properties	Provisioned
Description	This group contains links to various components for traffic management services applied to IP traffic entering an interface.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IS linkToDiffServProfile (dsLink)

Access	Read and write

Description	This attribute specifies the *DiffServProfile* component applied to IP traffic entering an interface.
Mib	no_mib
Values	Link (Service, linkToDiffServUsers)
Default	No default

ATTRIBUTE Rtr Vrf If IS linkToPolicerProfile (policerLink)

Access	Read and write
Description	This attribute specifies the *PolicerProfile* component applied to IP traffic entering an interface.
Mib	no_mib
Values	Link (Service, linkToPolicerUsers)
Default	No default

GROUP Rtr Vrf If IS ServiceSpecification (Sp)

Properties	Provisioned
Description	This group contains provisionable attributes of the *IngressServices* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IS discardPriorityMode (dpMode)

Access	Read and write
Description	This attribute specifies how drop precedence is assigned to IP traffic entering an interface. If this attribute is set to ***mapPhbToDp*** then drop precedence is assigned to IP traffic entering the interface as explained in the description of the *DifferentiatedServicesDomain* component. If this attribute is set to ***mapLayer2ToDp*** then the drop precedence assigned to IP traffic entering the interface is determined by the ingress Layer 2 media. For an IP packet arriving on *AtmMpe* the cell loss priority (CLP) bit in the ingress

cell header is mapped to drop precedence value according to ATM traffic management provisioning. For an IP packet arriving on *FrDte or IpDlciGroup* the discard eligible (DE) bit in the ingress frame header is mapped to drop precedence value according to Frame Relay traffic management provisioning. For IP traffic arriving on other media ***high*** drop precedence is assigned.

The *Rtr Interface IngressServices dpMode* and *Rtr Vrf Interface IngressServices dpMode* attributes must be set to ***mapPhbToDp***.

The *IpPort IngressServices dpMode* attribute must be set to ***mapPhbToDp*** if the *linkToPolicerProfile* attribute is set or if the *IpPort* is associated with IP tunnel media.

The *IpPort IngressServices dpMode* attribute has no effect if either of the following two conditions is true:
1) the *VirtualRouter* component does not have *DifferentiatedServicesDomain* subcomponent (see the description of the *CosPolicyGroup* component for more information about drop precedence in this case);
2) the IP packet leaves an interface where the *IpPort EgressServices linkToPolicerProfile* attribute is set (see the description of the *PolicerProfile Meter PolicedPhb outOfProfile* attribute for more information about drop precedence in this case).

Mib	no_mib
Values	mapPhbToDp mapLayer2ToDp
Default	mapPhbToDp

GROUP Rtr Vrf If IS InterfaceServices (IntServ)

Properties	Provisioned
Description	This group contains provisionable attributes that are common to both *IngressServices* and *EgressServices* components..
Mib	no_mib

ATTRIBUTE Rtr Vrf If IS policerStatsSpooling (spool)

Access	Read and write
Description	This attribute specifies whether spooling of IP traffic meter statistics at an interface is enabled or disabled. This attribute is applicable at at an ingress interface only if the *IngressServices linkToPolicerProfile* attribute is set. This attribute is applicable at at an egress interface only if the *EgressServices linkToPolicerProfile* attribute is set.
Mib	no_mib
Values	off on
Default	off

COMPONENT Rtr Vrf If IS MeterStatistics (Meter)

Instance	String (1..20, ASCII)
Groups	"GROUP Rtr Vrf If IS Meter Operational (Oper)" "GROUP Rtr Vrf If IS Meter Statistics (Stats)"

"COLLECTED STATS Router VpnRouteForwarder Interface IngressServices MeterStatistics"

Scope	Application
Description	*Vr/<string> Pp/<string> Ip Is MeterStatistics/<string>* *Vr/<string> Pp/<string> Ip Es MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Is MeterStatistics/ <string>* *Rtr/<string> Vrf<string> If<ipAddress> Es MeterStatistics/ <string>* This component represents operational data for a *Meter* component that has been activated at an interface. One *MeterStatistics* component is created dynamically under the *Is* component for each *Meter* subcomponent of a *PolicerProfile*

that is assigned to the *Is* component; likewise, one *MeterStatistics* subcomponent is created dynamically under the *Es* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Es* component.

Mib: no_mib

Common Verbs: Help, List, Display

GROUP Rtr Vrf If IS Meter Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *MeterStatistics* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf If IS Meter committedInformationRate (cir)

Access: Read only

Description: This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.

The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Mib: no_mib

Values: Decimal (0..50000000)

Units: bit/s

Default: No default

ATTRIBUTE Rtr Vrf If IS Meter excessInformationRate (eir)

Access: Read only

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).
Mib	no_mib
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter excessBurstSize (be)

Access	Read only
Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..50000000)

Units	bits
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter measurmentInterval (t)

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	No default

GROUP Rtr Vrf If IS Meter Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the *MeterStatistics* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IS Meter packetsReceived

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter. It includes packets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter octetsReceived

Access	Read only

Description	This attribute counts the number of octets received by the traffic meter. It includes octets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter eirPacketsReceived (excessPackets)

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter eirOctetsReceived (excessOctets)

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter packetsRemarked

Access	Read only
Description	This attribute counts the number of packets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib

Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter octetsRemarked

Access	Read only
Description	This attribute counts the number of octets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter packetsDiscarded

Access	Read only
Description	This attribute counts the number of packets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If IS Meter octetsDiscarded

Access	Read only
Description	This attribute counts the number of octets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

Default	COLLECTED STATS Router VpnRouteForwarder Interface IngressServices MeterStatistics
Description	The statistics record generated by the Router VpnRouteForwarder Interface IngressServices MeterStatistics component.

ATTRIBUTE Rtr Vrf If IS Meter committedInformationRate (cir)

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If IS Meter excessInformationRate (eir)

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).
Values	Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If IS Meter committedBurstSize (bc)

Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If IS Meter excessBurstSize (be)

Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies

the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If IS Meter measurmentInterval (t)

Description This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*.
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values Decimal (0..4294967295)

ATTRIBUTE Rtr Vrf If IS Meter packetsReceived

Description This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values Long Integer

ATTRIBUTE Rtr Vrf If IS Meter octetsReceived

Description This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values Long Integer

ATTRIBUTE Rtr Vrf If IS Meter eirPacketsReceived (excessPackets)

Description This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr Vrf If IS Meter eirOctetsReceived (excessOctets)

Description This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr Vrf If IS Meter packetsRemarked

Description	This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If IS Meter octetsRemarked

Description	This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If IS Meter packetsDiscarded

Description	This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If IS Meter octetsDiscarded

Description	This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .
Values	Long Integer

COMPONENT Rtr Vrf If EgressServices (ES)

Groups	"GROUP Rtr Vrf If ES EgressServicesLinks (EsLinks)" "GROUP Rtr Vrf If ES InterfaceServices (IntServ)"
Scope	Application
Description	*Vr/<string> Pp/<string> Ip EgressServices* *Rtr/<string> Vrf/<string> If/<x.x.x.x> EgressServices*

	This component and its subcomponents represent various traffic management services applied to IP traffic leaving an interface.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr Vrf If ES MeterStatistics (Meter)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If ES EgressServicesLinks (EsLinks)

Properties	Provisioned
Description	This group contains links to various components for traffic management services applied to IP traffic leaving an interface.
Mib	no_mib

ATTRIBUTE Rtr Vrf If ES linkToDiffServProfile (dsLink)

Access	Read and write
Description	This attribute specifies the *DiffServProfile* component applied to IP traffic leaving an interface.
Mib	no_mib
Values	Link (Service, linkToDiffServUsers)
Default	No default

ATTRIBUTE Rtr Vrf If ES linkToPolicerProfile (policerLink)

Access	Read and write
Description	This attribute specifies the *PolicerProfile* component applied to IP traffic leaving an interface.
Mib	no_mib
Values	Link (Service, linkToPolicerUsers)

Default	No default

GROUP Rtr Vrf If ES InterfaceServices (IntServ)

Properties	Provisioned
Description	This group contains provisionable attributes that are common to both *IngressServices* and *EgressServices* components..
Mib	no_mib

ATTRIBUTE Rtr Vrf If ES policerStatsSpooling (spool)

Access	Read and write
Description	This attribute specifies whether spooling of IP traffic meter statistics at an interface is enabled or disabled. This attribute is applicable at at an ingress interface only if the *IngressServices linkToPolicerProfile* attribute is set. This attribute is applicable at at an egress interface only if the *EgressServices linkToPolicerProfile* attribute is set.
Mib	no_mib
Values	off on
Default	off

COMPONENT Rtr Vrf If ES MeterStatistics (Meter)

Instance	String (1..20, ASCII)
Groups	"GROUP Rtr Vrf If ES Meter Operational (Oper)" "GROUP Rtr Vrf If ES Meter Statistics (Stats)"

"COLLECTED STATS Router VpnRouteForwarder Interface EgressServices MeterStatistics"

Scope	Application
Description	*Vr/<string> Pp/<string> Ip Is MeterStatistics/<string>* *Vr/<string> Pp/<string> Ip Es MeterStatistics/<string>*

Rtr/<string> Vrf<string> If<ipAddress> Is MeterStatistics/<string>
Rtr/<string> Vrf<string> If<ipAddress> Es MeterStatistics/<string>

This component represents operational data for a *Meter* component that has been activated at an interface.

One *MeterStatistics* component is created dynamically under the *Is* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Is* component; likewise, one *MeterStatistics* subcomponent is created dynamically under the *Es* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Es* component.

Mib: no_mib

Common Verbs:
- Help
- List
- Display

GROUP Rtr Vrf If ES Meter Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *MeterStatistics* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf If ES Meter committedInformationRate (cir)

Access: Read only

Description: This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.

The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Mib: no_mib

Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter excessInformationRate (eir)

Access	Read only
Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).
Mib	no_mib
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter excessBurstSize (be)

Access	Read only

Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter measurmentInterval (t)

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	No default

GROUP Rtr Vrf If ES Meter Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the *MeterStatistics* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If ES Meter packetsReceived

Access	Read only

Description	This attribute counts the number of packets received by the traffic meter. It includes packets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter octetsReceived

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter. It includes octets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter eirPacketsReceived (excessPackets)

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter eirOctetsReceived (excessOctets)

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib

Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter packetsRemarked

Access	Read only
Description	This attribute counts the number of packets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter octetsRemarked

Access	Read only
Description	This attribute counts the number of octets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter packetsDiscarded

Access	Read only
Description	This attribute counts the number of packets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If ES Meter octetsDiscarded

Access	Read only

Description	This attribute counts the number of octets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default
Default	COLLECTED STATS Router VpnRouteForwarder Interface EgressServices MeterStatistics
Description	The statistics record generated by the Router VpnRouteForwarder Interface EgressServices MeterStatistics component.

ATTRIBUTE Rtr Vrf If ES Meter committedInformationRate (cir)

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If ES Meter excessInformationRate (eir)

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).
Values	Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If ES Meter committedBurstSize (bc)

Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If ES Meter excessBurstSize (be)

Description This attribute indicates the excess burst size (be) in bits for the *Meter*.
The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Rtr Vrf If ES Meter measurmentInterval (t)

Description This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*.
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values Decimal (0..4294967295)

ATTRIBUTE Rtr Vrf If ES Meter packetsReceived

Description This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values Long Integer

ATTRIBUTE Rtr Vrf If ES Meter octetsReceived

Description This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values Long Integer

ATTRIBUTE Rtr Vrf If ES Meter eirPacketsReceived (excessPackets)

Description This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr Vrf If ES Meter eirOctetsReceived (excessOctets)

Description	This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter packetsRemarked

Description	This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter octetsRemarked

Description	This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter packetsDiscarded

Description	This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr Vrf If ES Meter octetsDiscarded

Description	This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .
Values	Long Integer

COMPONENT Rtr Vrf If RipInterface (RipIf)

Groups	"GROUP Rtr Vrf If RipIf Provisioned (Prov)" "GROUP Rtr Vrf If RipIf Operational (Stat)"
Scope	Application
Description	*Vr/<X> Pp/<X> IpPort LogicalIf/<Ip Address> RipInterface* *Rtr/<X> Interface/<X> RipInterface* *Rtr/<X> Vrf/<X> Interface/<X> RipInterface*

	This component is used to configure a *LogicalIf* or an *Interface* to run RIP protocol.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Vrf If RipIf Neighbor (Nbr)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If RipIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *RipIf* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If RipIf snmpAdminStatus

Access	Read and write
Description	Identifies the administrative status of this *RipInterface*. Setting this value to ***disabled*** will have the effect of rendering it inactive.
Mib	no_mib
Values	up down
Default	up

ATTRIBUTE Rtr Vrf If RipIf metric

Access	Read and write
Description	This attribute is the RIP metric for this logical interface.
Mib	no_mib
Values	Decimal (1..16)

Default	1

ATTRIBUTE Rtr Vrf If RipIf poisonReverseFlag (poison)

Access	Read and write
Description	If the value of this attribute is set to ***true***, then poison reverse algorithm is used when sending out the updates otherwise use split horizon only.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr Vrf If RipIf flashUpdateFlag

Access	Read and write
Description	This attribute when set to ***true*** will send updates when updates are received; otherwise RIP will wait till the next update period.
Mib	no_mib
Values	true false
Default	true

ATTRIBUTE Rtr Vrf If RipIf networkRouteStatus

Access	Read and write
Description	This attribute determines what type of network routes will be sent and whether a default route will be generated for this *RipInterface*. Generated default routes will not go into the routing table, but are sent in the updates going out on the interface. The possible values for this attribute are: ***naturalNetWithOutDefaultRoute*** - This value will cause normal RIP network routes to be put in the update. This means that the address of *logicalIf* or *Interface* pertaining to this *RipInterface* knowledge is taken into account in determining if the subnetted

network or the natural network is sent for any route going into this update.

naturalNetWithDefaultRoute - Selecting this value will cause a default route to be generated with the value of the metric selected for the attribute *defaultRouteMetric*.

defaultRouteOnly - Selection of this value causes the default route to be generated with the value of the metric selected for the attribute *defaultRouteMetric*.
NOTE: No other routes will go in the update.

subnetsOnly - selection of this value will cause only subnet information to be put in the update. No default routes will be generated or passed on. Only subnetted routes that are part of the same subnetted network that this *logicalInterface* or *Interface* is on will be put in the update.
NOTE: this also effects receiving of updates on this interface. Only subnetted routes that are part of the same subnetted network that this *logicalInterface* or *Interface* is on will be accepted on a received RIP update on this *RipInterface*.

Mib	no_mib
Values	naturalNetWithOutDefaultRoute (noDefault) naturalNetWithDefaultRoute (withDefault) defaultRouteOnly (defaultOnly) subnetsOnly (subnets)
Default	naturalNetWithOutDefaultRoute

ATTRIBUTE Rtr Vrf If RipIf defaultRouteMetric

Access	Read and write
Description	This attribute identifies the metric value for the default route. This value is only used if the attribute *networkRouteStatus* is configured with a value of either ***naturalNetWithDefaultRoute*** or ***defaultRouteOnly***
Mib	no_mib
Values	Decimal (1..16)

Default	1

ATTRIBUTE Rtr Vrf If RipIf acceptDefault

Access	Read and write
Description	If this attribute is set to true, then accept the default route from this interface.
Mib	no_mib
Values	true false
Default	true

ATTRIBUTE Rtr Vrf If RipIf ifConfSend

Access	Read and write
Description	This attribute identifies what the router sends on this *RipIf*. ***ripVersion1*** implies sending RIP updates compliant with RFC 1058. ***rip1Compatible*** implies broadcasting RIP-2 updates according to RFC 1058. ***ripVersion2*** implies multicasting RIP-2 updates.
Mib	no_mib
Values	doNotSend (silent) ripVersion1 (v1) rip1Compatible (v2b) ripVersion2 (v2)
Default	rip1Compatible

ATTRIBUTE Rtr Vrf If RipIf ifConfReceive

Access	Read and write
Description	This attribute identifies which version of RIP updates are to be accepted on this *RipIf*. Note that ***rip2*** and ***rip1OrRip2*** implies reception of multicast packets.
Mib	no_mib
Values	rip1 (v1) rip2 (v2)

	rip1OrRip2 (both) doNotReceive (reject)
Default	rip1OrRip2

GROUP Rtr Vrf If RipIf Operational (Stat)

Properties	Operational
Description	This group contains operational attributes of the *RipIf* component. These attributes are statistical data corresponding to the RIP-2 standard MIB (rfc 1724) rip2Status table.
Mib	no_mib

ATTRIBUTE Rtr Vrf If RipIf ifBadPacketRcv

Access	Read only
Description	This attribute counts the number of RIP response packets recieved by the RIP process which were subsequently discarded for any reason.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If RipIf ifBadRouteRcv

Access	Read only
Description	This attribute counts how many routes, in valid RIP packets, were ignored for any reason.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr Vrf If RipIf ifTriggeredUpdates

Access	Read only

Description	This attribute counts the number of triggered updates actually sent on this interface. This explicitly does NOT include full updates sent containing new information.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Vrf If RipIf Neighbor (Nbr)

Instance	IP address
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> RipIf Neighbor/<Ip address>* *Rtr/<string> Interface/<Ip Address> RipIf Neighbor/<Ip address>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> RipIf Neighbor/<Ip address>* This component is used to configure the Ip Address of the non broadcast multi access (NBMA) neighbor.
Mib	no_mib
Common Verbs	Help List Display Add DELete

COMPONENT Rtr Vrf If VrrpPort

Instance	Decimal (1..255)
Groups	"GROUP Rtr Vrf If VrrpPort Provisioned (Prov)" "GROUP Rtr Vrf If VrrpPort Operational (Oper)" "GROUP Rtr Vrf If VrrpPort AdministrativeControl (AdminControl)" "GROUP Rtr Vrf If VrrpPort OperationalStatus (OperStatus)" "GROUP Rtr Vrf If VrrpPort OsiState (State)"

Scope	Application
Description	*Vr/<string> Pp/<string> IpPort VrrpPort/<n> Rtr/<string> Vrf/<string> Interface VrrpPort/<n>* This component contains attributes that define a VRRP virtual router instance associated with this *IpPort*. The component instance (n) is the VRRP virtual router VRID.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf If VrrpPort Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the VrrpPort component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If VrrpPort priority

Access	Read and write
Description	This attribute specifies the priority of *VrrpPort* during election of a master VRRP virtual router. A priority of 0 (zero) is reserved for the master to indicate it is releasing responsibility for the VRRP virtual router. A priority of 255 is reserved for the VRRP virtual router that owns (has as real interfaces) the IP addresses associated with this *VrrpPort*.
Mib	no_mib
Values	Decimal (1..255)
Default	100

ATTRIBUTE Rtr Vrf If VrrpPort advertisementInterval

Access	Read and write
Description	This attribute specifies the time interval between VRRP advertisements which will be sent by the master VRRP virtual router.
Mib	no_mib
Values	Decimal (1..255)
Units	seconds
Default	1

ATTRIBUTE Rtr Vrf If VrrpPort listLinkToCriticalIp (listLinkToCIp)

Access	Read and write
Description	This attribute specifies the *CriticalIp* instance to which the *VrrpPort* instance is linked. If the *IpPort* associated with this *CriticalIp* instance becomes disabled, the *VrrpPort* becomes disabled..
Mib	no_mib
Values	Link (Service, listLinkToVrrp)
Default	No default

ATTRIBUTE Rtr Vrf If VrrpPort ipAddresses

Access	Read and write
Description	This attribute specifies one or more IP addresses associated with this *VrrpPort* instance (VRID). All VRRP virtual routers with this VRID must have the same set of IP addresses configured. Each of the IP addresses in the list must be on the same subnet as an *IpLogicalInterface* for the *IpPort*. All the IP addresses in the list must be owned by this VRRP virtual router or by other VRRP virtual routers but not a combination.
Mib	no_mib
List of	IP address
Default	No default

GROUP Rtr Vrf If VrrpPort Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *VrrpPort* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If VrrpPort virtualRouterState

Access	Read only
Description	This attribute indicates the state of this *VrrpPort* instance. It will be one of three states: initialize, backup and master.
Mib	no_mib
Values	initialize backup master
Default	initialize

ATTRIBUTE Rtr Vrf If VrrpPort virtualRouterPhysicalAddress

Access	Read only
Description	This attributes indicates the physcial address of the *VrrpPort*. The address is a virtual physical address of the form “00-00-5e-00-01-VRID” where the VRID is the instance value of the *VrrpPort*.
Mib	no_mib
Values	String (6, Dashed Hex)
Default	No default

GROUP Rtr Vrf If VrrpPort AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If VrrpPort snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf If VrrpPort OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If VrrpPort snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf If VrrpPort OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If VrrpPort adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf If VrrpPort operationalState (osiOper)

Access	Read only

Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf If VrrpPort usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

COMPONENT Rtr Vrf If Loopback (Lb)

Groups	"GROUP Rtr Vrf If Lb IfEntryProv (IfEntry)" "GROUP Rtr Vrf If Lb Provisioned (Prov)" "GROUP Rtr Vrf If Lb OsiState (State)" "GROUP Rtr Vrf If Lb OperationalStatus (OperStatus)"
Scope	Application
Description	*Rtr/<string> Interface/<string> Loopback* *Rtr/<string> Vrf/<string> Interface/<string> Loopback* The *Loopback* component represents an instance of a logical media. *Loopback* provides IP connectivity between routers on the same module, and supports an ‘always-up IP interface’ concept; i.e interface stays up unless it is administratively disabled or the hardware goes down.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If Lb IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Rtr Vrf If Lb ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib

Values	up down testing
Default	up

ATTRIBUTE Rtr Vrf If Lb ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Rtr Vrf If Lb Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Loopback* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If Lb mode

Access	Read and write
Criticality	Component
Description	This attribute specifies the mode of operation of the *Loopback*. The following modes are supported: ***alwaysUpInterface***, and ***primaryLoopback***. ***alwaysUpInterface***: This mode limits the *Loopback* to provide the functionality of an ‘always up interface’ only. Inter router communication is not possible when this mode is selected. Memory consumption by the *Loopback If* is significantly less on the FP when this mode is selected. Hence this mode should be

used when the sole purpose of the *Loopback If* is to provide an always up interface for an application like BGP4.

primaryLoopback: Only supported under *Router*; a router can have only one Interface which has a *Loopback* component with mode primaryLoopback.

Mib: no_mib

Values: alwaysUpInterface
primaryLoopback

Default: alwaysUpInterface

GROUP Rtr Vrf If Lb OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: no_mib

ATTRIBUTE Rtr Vrf If Lb adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr Vrf If Lb operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Vrf If Lb usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has

spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values:
idle
active (activ)
busy

Default: idle

GROUP Rtr Vrf If Lb OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: no_mib

ATTRIBUTE Rtr Vrf If Lb snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

Default: up

COMPONENT Rtr Vrf If RsvpTeIf

Groups:
"GROUP Rtr Vrf If RsvpTeIf Provisioned (Prov)"
"GROUP Rtr Vrf If RsvpTeIf OsiState (State)"
"GROUP Rtr Vrf If RsvpTeIf Operational (Op)"

"GROUP Rtr Vrf If RsvpTeIf InboundStatistics (InStats)"
"GROUP Rtr Vrf If RsvpTeIf OutboundStatistics (OutStats)"

Scope: Application

Description: *Rtr/<s> Interface/<IP Address> RsvpTeIf*
This component represents an instance of the RSVP-TE protocol running over the interface.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Rtr Vrf If RsvpTeIf Provisioned (Prov)

Properties: Provisioned

Description:
This group contains attributes for MPLS RSVP-TE configurable capability on a per interface basis.

Mib: no_mib

ATTRIBUTE Rtr Vrf If RsvpTeIf adminStatus (status)

Access: Read: All
Write: All

Description: This attribute specifies the administrative status of this RSVP-TE interface. It is used to maintain the admin state over FP and nodal restarts.

Mib: no_mib

Values:
null
enabled
disabled
testing

Default	enabled

ATTRIBUTE Rtr Vrf If RsvpTeIf reservableFactor (resFactor)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the percentage of media bandwidth available for LSP Tunnel reservations over this interface. A value of 0 prevents any bandwidth allocation for LSPs. A value of 100 allows RSVP-TE exclusive use of available bandwidth. Intermediate values allow distribution of bandwidth amongst RSVP-TE and other applications.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	50

ATTRIBUTE Rtr Vrf If RsvpTeIf overbookingFactor (overBook)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the percentage of the total bandwidth pool that is not sharable between LSP connections. The percentage ranges from 0% to 1000%. This allows for both under and over subscription of the bandwidth. A value of 100 results in absolute allocations--signaled bandwidth is exactly that allocated. A value < 100 allows under subscription of the link. A value > 100 allows over subscription of the link.
Mib	no_mib
Values	Decimal (0..1000)
Units	%

Default	100

ATTRIBUTE Rtr Vrf If RsvpTeIf mediaCapacity (mediaCap)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the capacity in kbits/sec of the underlying media link for the interface. For GigE links, the default can be retained. For ATM links, this attribute should be set to the sum of the bandwidth provisioned for the underlying VCC(s) linked to the associated *Rtr/<s> Interface/<IP Address> AtmMpe*.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	kbit/s
Default	860000

ATTRIBUTE Rtr Vrf If RsvpTeIf refreshInterval (rInt)

Access	Read: All Write: All
Description	This attribute specifies the interval between refresh messages sent by this LSR on this interface. This value is sent in the TIME_VALUES object of the PATH/RESV message to the next hop and is used in calculation of the lifetime of the PATH/RESV state block at the next hop. Setting this value will override the *refreshInterval* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (1..1800) sameAsRsvpTe
Units	seconds
Default	sameAsRsvpTe

ATTRIBUTE Rtr Vrf If RsvpTelf refreshKeepMultiplier (rKeep)

Access	Read: All Write: All
Description	This attribute specifies the default minimum number of refresh intervals that must pass before a PATH or a RESV state which is not being refreshed is aged out. This value is used in calculating the lifetime of the Path State Blocks (PSB) and Reservation State Blocks (RSB) for this interface; it prevents premature loss of these states. Setting this value will override the *refreshKeepMultiplier* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (1..50) sameAsRsvpTe
Default	sameAsRsvpTe

ATTRIBUTE Rtr Vrf If RsvpTelf slewMax (slew)

Access	Read: All Write: All
Description	This value specifies the rate at which an increase in the *refreshInterval* is introduced on the LSR. When a new *refreshInterval* value is provisioned to a higher value, the refresh interval is increased at *slewMax* percentage of the previous interval at each PATH/RESV cycle. In another words, the ratio of two successive refresh interval values do not exceed 1 + (Slew Max/100). Setting this value will override the *slewMax* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (1..200) sameAsRsvpTe
Units	%
Default	sameAsRsvpTe

ATTRIBUTE Rtr Vrf If RsvpTelf helloInterval (hInt)

Access	Read: All Write: All
Description	This attribute specifies the interval between HELLO messages sent by this LSR on this interface. A value of ***disabled*** indicates that the Hello mechanism is not enabled. Setting this value will override the *helloInterval* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (0.1..100.0) disabled sameAsRsvpTe
Units	seconds
Default	sameAsRsvpTe

ATTRIBUTE Rtr Vrf If RsvpTelf helloMultiplier (hMult)

Access	Read: All Write: All
Description	This attribute specifies the minimum number of HELLO intervals that must pass before the RSVP-TE connection is considered down. Setting this value will override the *helloMultiple* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (2.0; 2.5; 3.0; 3.5; 4.0; 4.5; 5.0; 5.5; 6.0; 6.5; 7.0; 7.5; 8.0; 8.5; 9.0; 9.5; 10.0) sameAsRsvpTe
Default	sameAsRsvpTe

GROUP Rtr Vrf If RsvpTelf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies

about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib no_mib

ATTRIBUTE Rtr Vrf If RsvpTelf adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib no_mib

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Rtr Vrf If RsvpTelf operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for

operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Vrf If RsvpTelf usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values: idle
active (activ)
busy

Default: idle

GROUP Rtr Vrf If RsvpTelf Operational (Op)

Properties: Operational

Description: This group contains the attributes that comprise the control statistics collected by the *RsvpTeIf* component.

Mib	no_mib

ATTRIBUTE Rtr Vrf If RsvpTelf bandwidthTotal (bwTot)

Access	Read: All Write: Illegal
Description	This attribute indicates the bandwidth pool size for this component.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If RsvpTelf admittedBandwidth (admBw)

Access	Read: All Write: Illegal
Description	This attribute indicates the bandwidth currently reserved for LSP connections.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If RsvpTelf availableBandwidth (availBw)

Access	Read: All Write: Illegal
Description	This attribute indicates the remaining reservable bandwidth.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If RsvpTelf helloState (hState)

Access	Read: All Write: Illegal

Description	This attribute indicates if a hello adjacency is being maintained with the RSVP-TE neighbor for this interface.
Mib	no_mib
Values	disabled (dis) down up
Default	No default

GROUP Rtr Vrf If RsvpTelf InboundStatistics (InStats)

Properties	Operational
Description	This group contains the attributes that comprise the incoming datapath statistics collected by this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If RsvpTelf inFrames

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frames received for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If RsvpTelf inOctets

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of octets received for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer

Default	No default

ATTRIBUTE Rtr Vrf If RsvpTelf inFrameDiscards (inDisc)

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frame discards received and discarded for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

GROUP Rtr Vrf If RsvpTelf OutboundStatistics (OutStats)

Properties	Operational
Description	This group contains the attributes that comprise the outgoing datapath statistics collected by this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If RsvpTelf outFrames

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frames sent for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If RsvpTelf outOctets

Access	Read: All Write: Illegal

Description	This attribute indicates the accumulated number of octets sent for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If RsvpTeIf outFrameDiscards (outDisc)

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frame discards sent and discarded for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr Vrf If LabelDistributionProtocolIf (LdpIf)

Groups	"GROUP Rtr Vrf If LdpIf Provisioned (Prov)" "GROUP Rtr Vrf If LdpIf OsiState (State)" "GROUP Rtr Vrf If LdpIf InStatistics (InStats)" "GROUP Rtr Vrf If LdpIf OutStatistics (OutStats)"
Scope	Application
Description	*Rtr/<s> If/<s> LdpIf* This component represents the fact that the Label Distribution Protocol is to run over the associated interface.

A provisioning check is made to ensure that a *Rtr Ldp* component exists.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Rtr Vrf If LdpIf Provisioned (Prov)

Properties: Provisioned

Description: This group contains the attributes for configuring LDP use over the interface.

Mib: no_mib

ATTRIBUTE Rtr Vrf If LdpIf adminStatus (admin)

Access: Read: All
Write: All

Description: This attribute specifies the administrative status of this LDP Interface. It is used to maintain “locks” and “unlocks” over FP and nodal restarts.

Mib: no_mib

Values:
- null
- enabled
- disabled
- testing

Default: enabled

GROUP Rtr Vrf If LdpIf OsiState (State)

Properties: Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If LdpIf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf If LdpIf operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr Vrf If Ldplf usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values: idle
active (activ)
busy

Default: idle

GROUP Rtr Vrf If Ldplf InStatistics (InStats)

Properties: Operational

Description	This group contains the operational statistics for incoming traffic of the *InwRtrLdpIf* component on the ingress side of a tandem or destination switch.
Mib	no_mib

ATTRIBUTE Rtr Vrf If LdpIf inOctets

Access	Read: All Write: Illegal
Description	This attribute counts the octets received from terminating or incoming tandem MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If LdpIf inFrames

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from terminating or incoming tandem MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If LdpIf inFramesDiscards

Access	Read: All Write: Illegal
Description	This attribute counts the frames received but discarded from terminating or incoming tandem MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib

Values	Long Integer
Default	No default

GROUP Rtr Vrf If LdpIf OutStatistics (OutStats)

Properties	Operational
Description	This group contains the operational statistics for outgoing traffic of *InwRtrLdpIf* component on the egress side of an originating or tandem switch.
Mib	no_mib

ATTRIBUTE Rtr Vrf If LdpIf outOctets

Access	Read: All Write: Illegal
Description	This attribute counts the octets transmitted for originating or outgoing transit MPLS data. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If LdpIf outFrames

Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted for originating or outgoing transit MPLS data. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If LdpIf outFramesDiscards

Access	Read: All Write: Illegal

Description	This attribute counts the frames transmitted that were discarded. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr Vrf If IpoDlci

Groups	"GROUP Rtr Vrf If IpoDlci CustomerIdentifierData (CidData)" "GROUP Rtr Vrf If IpoDlci IfEntryProv (IfEntry)" "GROUP Rtr Vrf If IpoDlci Provisioned (Prov)" "GROUP Rtr Vrf If IpoDlci OsiState (State)" "GROUP Rtr Vrf If IpoDlci OperationalStatus (OperStatus)"
Scope	Application
Description	*IpoDlci* This component represents a logical interface between a *Router Vrf Interface* and a *FrameRelay* Interface (*FrUni*). An *IpoDlci* associates multiple frame relay *DataLinkConnectionIdentifers (Dlci)* with a single *Router Vrf Interface*. The *IpoDlci* component is associated with a frame relay Dlcis using the *linkToFrDlci* attribute in each *FrConnection* subcomponent.
Mib	no_mib
Subcomponents	"COMPONENT Rtr Vrf If IpoDlci FrConnection (Frc)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf If IpoDlci CustomerIdentifierData (CidData)

Properties	Provisioned

Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IpoDlci customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Rtr Vrf If IpoDlci IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IpoDlci ifAdminStatus (ifState)

Access	Read and write

Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr Vrf If IpoDlci ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Rtr Vrf If IpoDlci Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *IpDlciGroup* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IpoDlci maxTransmissionUnit (mtuSize)

Access	Read and write
Description	This attribute specifies the size of the largest datagram (including the frame relay header) which can be sent on the interface.
Mib	no_mib

Values	Decimal (262..9190)
Units	octets
Default	1604

GROUP Rtr Vrf If IpoDlci OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IpoDlci adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE Rtr Vrf If IpoDlci operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf If IpoDlci usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy

Default	idle

GROUP Rtr Vrf If IpoDlci OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IpoDlci snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr Vrf If IpoDlci FrConnection (Frc)

Instance	Decimal (1..255)
Groups	"GROUP Rtr Vrf If IpoDlci Frc Provisioned (Prov)" "GROUP Rtr Vrf If IpoDlci Frc OsiState (State)" "GROUP Rtr Vrf If IpoDlci Frc Statistics (Stats)"
Scope	Application

Description	*IpDlciGrp/n FrConnection/n* This component represents a virtual connection over which internetworking frames are relayed between IP and frame relay.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If IpoDlci Frc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *FrConnection* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IpoDlci Frc linkToFrDlci (frDlci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the frame relay *Dlci IpConn* component that this connection is associated with.
Mib	no_mib
Values	Link (Hardware, linkToIpDlciGrp)
Default	No default

ATTRIBUTE Rtr Vrf If IpoDlci Frc ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the Frame Relay connection. This value is used to distinguish the connection from others for the purpose of IP forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to

four connections to be distinguished on each next hop between routers.

If an IP packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one Frame Relay connection, then one of the connections is selected for transmitting the packet. The selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet.

DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component. Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component.

Modifying this attribute will reset the *FrConnection*.

If the *FrConnection* is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the Frame Relay connection. See the description of *Vr Ip CosPolicyGroup* for more information.

Mib	no_mib
Values	Decimal (0..3)
Default	0

ATTRIBUTE Rtr Vrf If IpoDlci Frc linkToIpLogicalInterface (ipIf)

Access	Read and write
Description	This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ipAddress*, that this connection is associated with. When set, the value of this attribute must be consistent with the *linkToProtocolPort* attribute value of the parent *IpDlciGroup* component. That is, they must both point to the same *ProtocolPort* component.

Mib	no_mib
Values	Link (Service, linkToMediaConnection)
Default	No default

GROUP Rtr Vrf If IpoDlci Frc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IpoDlci Frc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE Rtr Vrf If IpoDlci Frc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf If IpoDlci Frc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy

Default	idle

GROUP Rtr Vrf If IpoDlci Frc Statistics (Stats)

Properties	Operational
Description	This group contains the packet based statistics maintained for the *FrConnection* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If IpoDlci Frc inUnknownProtocol

Access	Read only
Description	This attribute counts the packets received on this connection which are discarded because they contain an unknown protocol. This counter wraps around to ***0*** when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IpoDlci Frc inUnsupportedProtocol

Access	Read only
Description	This attribute counts the packets received on this connection which are discarded because they contain an unsupported protocol. This includes packets received for protocols not currently bound to the associated *ProtocolPort* component. This counter wraps around to ***0*** when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf If IpoDlci Frc inLastDiscardedProtocolHeader

Access	Read only

Description	This attribute indicates the first eight octets of the most recent packet that was received from the interface with an unknown or unsupported protocol.
Mib	no_mib
Values	String (1..8, Hex)
Default	No default

COMPONENT Rtr Vrf If EnetApplication (Enet)

Groups	"GROUP Rtr Vrf If Enet CustomerIdentifierData (CidData)" "GROUP Rtr Vrf If Enet OsiState (State)" "GROUP Rtr Vrf If Enet OperationalStatus (OperStatus)" "GROUP Rtr Vrf If Enet Provisioned (Prov)" "GROUP Rtr Vrf If Enet Provisioned (Prov)" "GROUP Rtr Vrf If Enet Operational (Oper)"
Scope	Application
Description	*EnetApplication* The *EnetApplication* component is used to provide the interface between the *Interface* component and a LAN component such as *Ethernet*.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Vrf If Enet CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib	no_mib

ATTRIBUTE Rtr Vrf If Enet customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Rtr Vrf If Enet OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf If Enet adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf If Enet operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf If Enet usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Vrf If Enet OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If Enet snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr Vrf If Enet Provisioned (Prov)

Properties	Provisioned
Description	This group contains the link to the *EnetIf* application
Mib	no_mib

ATTRIBUTE Rtr Vrf If Enet linkToEnetIf (enetIf)

Access	Read: All Write: All
Criticality	Component
Description	This attribute associates a *EnetIf* application with a *Interface* component.
Mib	no_mib
Values	Link (Service, enetConnection)
Default	No default

GROUP Rtr Vrf If Enet Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for *Enet*Application.
Mib	no_mib

ATTRIBUTE Rtr Vrf If Enet encap

Access	Read: All Write: All
Description	This attribute indicates the encapsulation type to be used when sending packets out the corresponding *Interface*. The the default encapsulation is ethernet.

Mib	no_mib
Values	ieee8023 ethernet
Default	ethernet

GROUP Rtr Vrf If Enet Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for *EnetApplication.*
Mib	no_mib

ATTRIBUTE Rtr Vrf If Enet operEncap

Access	Read only
Description	This attribute indicates the current operational encapsulation type.
Mib	no_mib
Values	ieee8023 ethernet
Default	ethernet

COMPONENT Rtr Vrf If MplsBgpInterface (MplsBgpIf)

Groups	"GROUP Rtr Vrf If MplsBgpIf InStatistics (InStats)" "GROUP Rtr Vrf If MplsBgpIf OutStatistics (OutStats)"
Scope	Application
Description	*Rtr/<s> If/<s> MplsBgpIf* This component represents the interface that BGP uses to carry MPLS label information.

There is a maximum of one *MplsBgpIf* component under each *Interface* component.

Mib: no_mib

Common Verbs:
- Help
- List
- Display

GROUP Rtr Vrf If MplsBgpIf InStatistics (InStats)

Properties: Operational

Description: This group contains the operational statistics for incoming labelled MPLS data traffic of the *MplsBgpIf* component on the ingress side of a tandem or destination switch.

Mib: no_mib

ATTRIBUTE Rtr Vrf If MplsBgpIf inOctets

Access: Read: All
Write: Illegal

Description: This attribute counts the octets received from terminating or incoming tandem labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.

Mib: no_mib

Values: Long Integer

Default: No default

ATTRIBUTE Rtr Vrf If MplsBgpIf inFrames

Access: Read: All
Write: Illegal

Description: This attribute counts the frames received from terminating or incoming tandem labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.

Mib: no_mib

Values: Long Integer

Default	No default

ATTRIBUTE Rtr Vrf If MplsBgpIf inFrameDiscards

Access	Read: All Write: Illegal
Description	This attribute counts the frames received but discarded from terminating or incoming tandem labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

GROUP Rtr Vrf If MplsBgpIf OutStatistics (OutStats)

Properties	Operational
Description	This group contains the operational statistcs for outgoing labelled MPLS data traffic of the *MplsBgpIf* component on the egress side of an originating or tandem switch.
Mib	no_mib

ATTRIBUTE Rtr Vrf If MplsBgpIf outOctets

Access	Read: All Write: Illegal
Description	This attribute counts the octets transmitted for originating or outgoing transit labelled MPLS data traffic. The counter wraps to zero when is maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If MplsBgpIf outFrames

Access	Read: All Write: Illegal

Description	This attribute counts the frames transmitted for originating or outgoing transit labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr Vrf If MplsBgpIf outFramesDiscards

Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted for labelled MPLS data traffic that were discarded. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr Vrf If PppApplication (Ppp)

Groups	"GROUP Rtr Vrf If Ppp Provisioned (Prov)"
Scope	Application
Description	*Rtr/n Vrf/y If/x.x.x.x PppApplication* This component provides a *PppApplication* component name that is used as an interface to the network.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf If Ppp Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisioning data for the *PppApplication* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf If Ppp linkToMedia (media)

Access	Read and write
Criticality	Component
Description	This attribute contains a *Ppp* link level protocol component name. The attribute associates the *PppApplication* component with a *Ppp* link level protocol component.
Mib	no_mib
Values	Link (Service, linkToApplication)
Default	No default

COMPONENT Rtr Vrf ControlPlaneProtection (Cpp)

Groups	"GROUP Rtr Vrf Cpp Provisioned (Prov)" "GROUP Rtr Vrf Cpp Operational (Oper)" "GROUP Rtr Vrf Cpp OsiState (State)"

"COLLECTED STATS Router VpnRouteForwarder ControlPlaneProtection"

Scope	Application
Description	*Vr/<string> Ip ControlPlaneProtection* *Rtr/<string> ControlPlaneProtection* *Rtr/<string> Vrf/<string> ControlPlaneProtection* This component represents the IP Control Plane Protection mechanism. The *CPP* helps prevent control traffic from the current Virtural Router, Router, or vrForwarder (VR/VRF) receiving excessive traffic from adversely affecting the control processing of others. If the rate of packets received by the local-destined address is greater than the provisioned value, CPP is notified. This component does not protect locally destined IP traffic

including IP options, IPv6, TTL of 0 or 1 which includes OSPF, and unsupported protocols (in hardware) such as ISIS.

Mib: no_mib

Dyn. Subcomp.: "COMPONENT Rtr Vrf Cpp IsolatedDa"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

VERB Clear Rtr Vrf Cpp

Impact: Service

Description:
clear Vr/<string> Ip Cpp
clear Rtr/<string> Cpp
clear Rtr/<string> Vrf/<string> Cpp
This command is intended for manually clearing all isolated addresses from the current *Cpp* component, and resume traffic to the locally destined addresses on all the FPs.

GROUP Rtr Vrf Cpp Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the *Cpp* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Cpp packetsPerSecond (pps)

Access: Read and write

Description: This attribute specifies the maximum number of packets per second a locally destined address on the VR/VRF can receive before being monitored by the *CPP* feature.

Mib: no_mib

Values	Decimal (100; 200; 300; 400; 500; 600; 700; 800; 900; 1000; 1100; 1200)
Default	1200

ATTRIBUTE Rtr Vrf Cpp isolationTime (isolation)

Access	Read and write
Description	This attribute specifies the amount of time a locally destined address will remain in isolation after exceeding the *packetsPerSecond* rate. If *gracePeriod* is non-zero, isolation will not occur until the conclusion of the grace period. A value of 0 indicates that a locally destined address which is isolated can only be cleared using the *CLEAR* command. If the traffic to the address is still excessive after the isolationTime expires, this locally destined address will remain in isolation for *IsolationTime* * 2 period. If the traffic to the address is still excessive after 3 times of the above step, the address will be permanently isolated until it is cleared by the *CLEAR* verb. The minimum value of *IsolationTime* other than zero is 30.
Mib	no_mib
Values	Decimal (0; 30..3600)
Units	seconds
Default	30

ATTRIBUTE Rtr Vrf Cpp gracePeriod (grace)

Access	Read and write
Description	This attribute specifies period of time used to sample the flow rate before the packets are discarded. The intent of the grace period is to measure the average flow rate during this period to ensure that the exceeded traffic flow rate was not due to bursty traffic.

If *mode* is ***study***, a list of static record are generated every 15 minutes including a list of locally-destined addresses having excessive flow and its avarage flow rates during the gracePeriod.

If *gracePeriod* is non-zero, isolation will not occur until the conclusion of the grace period.

A value of 0 of this attribute when *mode* is ***protected*** indicates that no monitoring of the address will be performed after an excessive flow is detected and isolation occurs immediately.

It is an error to have *mode* set to ***study*** and *gracePeriod* set to zero.

Mib	no_mib
Values	Decimal (0..300)
Units	seconds
Default	5

ATTRIBUTE Rtr Vrf Cpp mode

Access	Read and write
Description	This attribute specifies whether we are simply monitoring excessive traffic (***study***), or will ***protect*** the VR by discarding traffic during excessive traffic flows, or the feature is ***disabled***. It is an error to have *mode* set to ***study*** and *gracePeriod* set to zero.
Mib	no_mib
Values	study protect disabled
Default	disabled

GROUP Rtr Vrf Cpp Operational (Oper)

Properties	Operational

Description	This group contains the operational attributes for the *Cpp* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Cpp operationalStatus

Access	Read only
Description	This attribute indicates the current operational state of the *Cpp* component on this VR The following states are the valid states of the *Cpp* component: ***inactive***: there are currently no addresses on the VR/VRF being monitored or isolated. ***disabled***: the *Cpp* feature is currently disabled on the VR/VRF. ***monitoring***: there are currently addresses on the VR/VRF being monitored, but none are currently isolated. If the *mode* is set to ***study***, this state indicates there are currently addresses on the VR/VRF having excessive traffic. ***isolating***: there are currently addresses being isolated for this VR/VRF.
Mib	no_mib
Values	inactive disabled monitoring isolating
Default	No default

ATTRIBUTE Rtr Vrf Cpp isolatedDaCount

Access	Read only
Description	This attritute counts the total number of addresses currently being isolated for this VR.
Mib	no_mib
Values	Decimal (0..4096)
Default	No default

GROUP Rtr Vrf Cpp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Vrf Cpp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Vrf Cpp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Vrf Cpp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

COLLECTED STATS Router VpnRouteForwarder ControlPlaneProtection

Description — The statistics record generated by the Router VpnRouteForwarder ControlPlaneProtection component.

ATTRIBUTE Rtr Vrf Cpp isolatedDa

Description — This attribute indicates the ip address of the isolated locally destined DA.

Values — IP address

ATTRIBUTE Rtr Vrf Cpp isolatedLp

Description — This attribute indicates the LP number on which the locally destined address is being isolated.

Values — Decimal (0..15)

ATTRIBUTE Rtr Vrf Cpp isolatedCounts

Description — This attribute indicates the number of counts that the isolated DA encountered during the last 15 minutes.

Values — Decimal (0..65535)

ATTRIBUTE Rtr Vrf Cpp averageFlowRate

Description — This attribute indicates the average flow rate of the isolated DA during the isolation period.

Values — Decimal (0..65535)

COMPONENT Rtr Vrf Cpp IsolatedDa

Instance — address [IP address]
lp [Decimal (0..15)]

Groups — "GROUP Rtr Vrf Cpp IsolatedDa Operational (Oper)"

Scope — Application

Description

Vr/<string> Ip Cpp IsolatedLocalAddress/<ipAddress>,<lp>
Rtr/<string> Cpp IsolatedLocalAddress/<ipAddress>,<lp>
Rtr/<string> Vrf/<string> Cpp IsolatedLocalAddress/

<ipAddress>,<lp>

Each entry of this component represents a locally destined address being isolated. There is one instance of this component per isolated address per lp.

Mib: no_mib

Common Verbs: Help, List, Display

VERB Clear Rtr Vrf Cpp IsolatedDa

Impact: Service

Description:
Clear Vr/<string> Ip Cpp IsolatedDa/< ipAddress>
Clear Rtr/<string> Cpp IsolatedDa/<ipAddress>
Clear Rtr/<string> Vrf/<string> Cpp IsolatedDa/<ipAddress>

This command is intended for manually clearing the isolated address and resume traffic to the local address for all FPs.

GROUP Rtr Vrf Cpp IsolatedDa Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the *IsolatedLocalAddress* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Cpp IsolatedDa averageFlowRate

Access: Read only

Description: This attribute indicates the average flow rate calculated over the grace period.

Mib: no_mib

Values: Decimal (0..65535)

Default: No default

COMPONENT Rtr Vrf MemoryManagement (Mm)

Groups	"GROUP Rtr Vrf Mm Provisioned (Prov)" "GROUP Rtr Vrf Mm Operational (Oper)"
Scope	Application
Description	*Vr/<string> MemoryManagement* *Rtr/<string> MemoryManagement* *Rtr/<string> Vrf/<string> MemoryManagement* This component represents a mechanism to control and monitor dynamic memory usage within a *VirtualRouter*, *Router*, or *VpnRouteForwarder*.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Vrf Mm Provisioned (Prov)

Properties	Provisioned
Description	This group contains all provisioned attributes for the *MemoryManagement* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Mm vrMaxHeapSpace (vrMax)

Access	Read and write
Description	This attribute specifies the maximum percentage of the total system heap space that is allowed for use by this *VirtualRouter*, *Router*, or *VpnRouteForwarder*. Attempted memory allocation beyond this limit will cause a *VirtualRouter* or *VpnRouteForwarder* to automatically lock. If memory allocation for a *Router* exceeds this limit, an alarm is raised but the component is not locked.
Mib	no_mib

Values	Decimal (0..100)
Units	%
Default	100

GROUP Rtr Vrf Mm Operational (Oper)

Properties	Operational
Description	This group contains all operational attributes for the *MemoryManagement* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Mm vrHeapSpaceBytesAllocated (vrBytesAlloc)

Access	Read only
Description	This attribute indicates the number of bytes of system dynamic memory which has been allocated to this *VirtualRouter*, *Router*, or *VpnRouteForwarder* component.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Vrf Mm vrHeapSpaceAllocated (vrAlloc)

Access	Read only
Description	This attribute indicates the percentage of the maximum permitted heap space for this *VirtualRouter*, *Router*, or *VpnRouteForwarder* component (as specified by *vrMaxHeapSpace* attribute) which is currently allocated.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Rtr Vrf DifferentiatedServicesDomain (Dsd)

Instance	multiservice (ms) classSelector (cs) assuredForwarding (af) packetVoice (pv) wirelessUmts (umts) custom (cu)
Groups	"GROUP Rtr Vrf Dsd LocalSourcePackets (Local)"
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum>* *Rtr/<string> DifferentiatedServicesDomain/<enum>* *Rtr/<string> Vrf/<string> DifferentiatedServicesDomain/<enum>* This component and its supcomponents represent a Differentiated Services administration domain for traffic management and congestion control. The *DifferentiatedServicesDomain* component instance identifies the domain type. The following domain types are available: *Multiservice (ms)* *ClassSelector (cs)* *AssuredForwarding (af)* *PacketVoice (pv)* *WirelessUmts (umts)* *Custom (cu)* The *DifferentiatedServicesDomain* component is an optional subcomponent of the *Router*, *VpnRouteForwarder* and *VirtualRouter* components. The *Router*, *VpnRouteForwarder*, and *VirtualRouter* components can have at most one *DifferentiatedServicesDomain* subcomponent. If a *Router* component does not have a *DifferentiatedServicesDomain* subcomponent, then the *Router*

operates as by default as follows. IP packets with Differentiated ServiceCode Point (DSCP) field value 48, and MPLS packets with Experimental Bits (EXP) field value 6, are treated with Per Hop Behavior (PHB) CS6; other IP and MPLS packets are treated with PHB DF for default forwarding. Locally generated routing control packets are treated with PHB CS6; other locally generated packets are treated with PHB DF. Per Hop Behaviors CS6 and DF are configured to provide the following values of scheduling class for 8, 4, 3, 2 queues, drop precedence, and EXP for MPLS encapsulation: (5, 2, 2, 0, low, 6) and (0, 0, 0, 0,, high, 0), respectively. This is equivalent to the default the configuration of the *DifferentiatedServicesDomain/custom* component instance.

If a *VpnRouteForwarder* component does not have a *DifferentiatedServicesDomain* subcomponent, then the *VpnRouteForwarder* component uses the *DifferentiatedServicesDomain* configuration of the *Router*.

Mib: no_mib

Opt. Subcomp.:
"COMPONENT Rtr Vrf Dsd MplsServiceMap (MplsMap)"
"COMPONENT Rtr Vrf Dsd VpnDscpMap (VpnDscpMap)"
"COMPONENT Rtr Vrf Dsd VpnCosMap (VpnCosMap)"
"COMPONENT Rtr Vrf Dsd PerHopBehavior (Phb)"
"COMPONENT Rtr Vrf Dsd TrafficClass (Tc)"

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr Vrf Dsd LocalSourcePackets (Local)

Properties: Provisioned

Description: This group contains provisioned attributes of the *DifferentiatedServicesDomain* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Dsd phbGeneralSource (phbG)

Access	Read and write
Description	This attribute indicates the *PerHopBehavior* component instance that controls the forwarding behavior of each locally generated packet that is not used for network routing control. For a locally-generated IP packet that is not used for network routing control, the Differentiated Services Code Point (DSCP) field of the packet is set equal to this attribute value. For a locally-generated ICMP echo request packet, the DSCP field is overridden by the *-tos* or *-dscp* option of the *Ping* command. For a locally-generated ICMP echo reply packet, the DSCP field is set to the DSCP value contained in the IP header of the received request packet. In any case, the forwarding behavior of the ICMP packet controlled by the *PerHopBehavior* component instance that is equal to value of the DSCP field.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4

cs5
cs6
cs7

Default df

ATTRIBUTE Rtr Vrf Dsd phbRoutingSource (phbR)

Access Read and write

Description This attribute indicates the *PerHopBehavior* component instance that controls the forwarding behavior of each locally generated packet that is used for network routing control.

For a locally generated IP packet that is used for network routing control, the Differentiated Services Code Point (DSCP) field of the packet is set equal to this attribute value.

Mib no_mib

Values Decimal (0..63)
df
ef
af11
af12
af13
af21
af22
af23
af31
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Default	cs6

ATTRIBUTE Rtr Vrf Dsd linkToVpnDscpMap (vpnMap)

Access	Read and write
Description	This attribute specifies a *VpnDscpMap* component instance that is used to translate the value of the DSCP field in an IP packet forwarded by a customer Virtual Router (cVr) to the value of the DSCP field in the IP header that encapsulates the packet when it is forwarded by a Virtual Connection Gateway (VCG). If no *VpnDscpMap* component is specified, then the value of the DSCP field in the carrier IP header is set equal to the value of the DSCP field in the customer IP header. This attribute is relevant only to a VR configured as a customer router in an IP VPN (RFC2764) network.
Mib	no_mib
Values	Link (Service, linkToVpnDscpMapUsers)
Default	No default

COMPONENT Rtr Vrf Dsd MplsServiceMap (MplsMap)

Instance	0
Scope	Application
Description	*Vr/<string> Dsd/<enum> MplsServiceMap/<n>* *Rtr/<string> Dsd/<enum> MplsServiceMap/<n>* The subcomponents of the *MplsServiceMap* component specify mappings used to control how MPLS packets are forwarded over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The *MpslServiceMap/0* subcomponent instance is added automatically to a *DifferentiatedServicesDomain* subcomponent being added to a *Router* component where the *Ldp* subcomponent is already activated.

The *MpslServiceMap/0* subcomponent instance is not allowed under a *DifferentiatedServicesDomain* component whose immediate parent is a *VirtualRouter* component or a *VirtualRouteForwarder* component.

Mib: no_mib

Opt. Subcomp.: "COMPONENT Rtr Vrf Dsd MplsMap ExperimentalBitsMap (ExpMap)"
"COMPONENT Rtr Vrf Dsd MplsMap PerHopBehaviorMap (PhbMap)"
"COMPONENT Rtr Vrf Dsd MplsMap MarkingPerformance"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT Rtr Vrf Dsd MplsMap ExperimentalBitsMap (ExpMap)

Instance:
- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7

Groups: "GROUP Rtr Vrf Dsd MplsMap ExpMap Provisioned (Prov)"
"GROUP Rtr Vrf Dsd MplsMap ExpMap Operational (Oper)"

Scope: Application

Description: *Vr/<string> Dsd/<enum> MplsMap/<n> ExperimentalBitsMap/<exp>*
Rtr/<string> Dsd/<enum> MplsMap/<n> ExperimentalBitsMap/<exp>

This component specifies a mapping from a three-bit

Experimental (EXP) field value in an MPLS label to a *DifferentiatedServicesDomain PerHopBehavior* component instance value.

This mapping controls how an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value is treated when the packet is forwarded by a Label Switched Router (LSR) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The *MplsServiceMap* component must have eight *ExperimentalBitMap* subcomponents, each with a unique instance value in the range from **0** to **7**. These subcomponents are added automatically when the *MplsServiceMap* component is created.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Vrf Dsd MplsMap ExpMap Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioned attributes of the *ExperimentalBitsMap* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Dsd MplsMap ExpMap perHopBehavior (phb)

Access: Read and write

Description: This attribute specifies the *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the

packet is forwarded by a Label Switch Router (LSR) over an Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The value of this attribute must be equal to an exisiting *DifferentiatedServicesDomain PerHopBehavior* component instance value. A default value is set automatically according to a function of the *ExperimentalBitsMap* and *DifferentiatedServicesDomain* component instance values when the *ExperimentalBitsMap* component is created.

Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af31 af23 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Default	No default

GROUP Rtr Vrf Dsd MplsMap ExpMap Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *ExperimentalBitsMap* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd MplsMap ExpMap operPerHopBehavior (operPhb)

Access	Read only
Description	This attribute indicates the *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The value of this attribute is equal to the *perHopBehavior* provisioned attribute value.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af31 af23 af32 af33 af41 af42 af43 cs0 cs1 cs2

cs3
cs4
cs5
cs6
cs7

Default: No default

ATTRIBUTE Rtr Vrf Dsd MplsMap ExpMap trafficClass (tc)

Access: Read only

Description: This attribute indicates the *TrafficClass* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *trafficClass* provisioned attribute value of the *DifferentiatedServices PerHopBehavior* component instance that is equal to the *ExperimentalBitsMap perHopBehavior* provisioned attribute value.

Mib: no_mib

Values:
critical
network
premium
platinum
gold
silver
bronze
standard

Default: No default

ATTRIBUTE Rtr Vrf Dsd MplsMap ExpMap dropPrecedence (dp)

Access: Read only

Description: This attribute indicates the drop precedence value used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value

when the packet is forwarded by a Label Switch Router (LSR) over an LSP where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *dropPrecedence* provisioned attribute value of *DifferentiatedServices PerHopBehavior* component instance that is equal to the *ExperimentalBitsMap perHopBehavior* provisioned attribute value.

Mib	no_mib
Values	low medium high
Default	No default

COMPONENT Rtr Vrf Dsd MplsMap PerHopBehaviorMap (PhbMap)

Instance	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

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63
df
ef
af11
af12
af13
af21
af22
af31
af23
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups

"GROUP Rtr Vrf Dsd MplsMap PhbMap Provisioned (Prov)"
"GROUP Rtr Vrf Dsd MplsMap PhbMap Operational (Oper)"

Scope

Application

Description

Vr/<string> Dsd/<enum> MplsMap/<n> PerHopBehaviorMap/<phb>
Rtr/<string> Dsd/<enum> MplsMap/<n> PerHopBehaviorMap/<phb>

This component specifies a mapping from a *PerHopBehavior* component instance value to a three-bit Experimental (EXP) field value.

This mapping controls how the EXP field in an MPLS label is marked when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat the packet prior to label encapsulation is used to select the EXP value for the label. If the *PerHopBehavior* component instance value used to treat the packet is not included among the existing *PerHopBehaviorMap* component instances, then the EXP value indicated by the *PerHopBehaviorMap* component whose instance is equal to 0 is used.

Each *PerHopBehaviorMap* component instance is equal to a decimal value in the range from 0 to 63. The following pairs of *PerHopBehaviorMap* component instances values are equal:
AF11 = 10,
AF12 =12,
AF13 =14,
AF31 = 26,
AF32 = 28,
AF33 = 30,
AF21 = 18,
AF22 = 20,
AF23 = 22,
AF41 = 34,
AF42 =36,
AF43 = 38
CS0 = 0,
CS1 = 8,
CS2 =16,
CS3 = 24,
CS4 =32 ,
CS5 = 40,
CS6 = 48,
CS7 = 56,
DF = 0,
EF = 46.

The first item in each pair above is a Per Hop Behavior designation identified in one of following IETF standards: RFC 2764 (“DiffServ Field Definition in IPv4 and IPv6 Headers”), RFC 2597 (“Assured Forwarding PHB Group”) or RFC 3246 (“An Expedited Forwarding PHB”). The the second item in each pair is the IETF recommended Differentiated Services Code

Point (DSCP) value.

Each *PerHopBehaviorMap* subcomponent of the *MplsServiceMap* must have a unique instance value. A *PerHopBehaviorMap* subcomponent whose instance value is equal to 0 must exist.

A set of *PerHopBehaviorMap* subcomponents with instance values equal to the *DifferentiatedServicesDomain PerHopBehavior* subcomponent instance values is added automatically when the *MplsServiceMap* component is created.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Vrf Dsd MplsMap PhbMap Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioned attributes of the *PerHopBehaviorMap* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Dsd MplsMap PhbMap experimentalBits (exp)

Access: Read and write

Description: This attribute specifies a three-bit Experimental (EXP) field value in the range from ***0*** to ***7*** that is marked into the MPLS label when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The EXP value is selected according to the *PerHopBehaviorMap* component whose instance value is equal to the instance value of the *DifferentiatedServicesDomain PerHopBehavior* component

used to treat the packet prior to label encapsulation.

This attribute is set automatically to a default value according to a function of the *PerHopBehaviorMap* and *DifferentiatedServicesDomain* component instance values when the *PerHopBehaviorMap* component is created.

Mib	no_mib
Values	Decimal (0..7)
Default	No default

GROUP Rtr Vrf Dsd MplsMap PhbMap Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *PerHopBehaviorMap* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd MplsMap PhbMap operExperimentalBits (operExp)

Access	Read only
Description	This attribute indicates a three-bit Experimental (EXP) field value in the range from ***0*** to ***7*** that is marked into the MPLS label when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The EXP value is selected according to the *PerHopBehaviorMap* component whose instance value is equal to the instance value of the *DifferentiatedServicesDomain PerHopBehavior* component used to treat the packet prior to label encapsulation. The value of this attribute is equal to the *experimentalBits* provisioned attribute.
Mib	no_mib
Values	Decimal (0..7)

Default	No default

ATTRIBUTE Rtr Vrf Dsd MplsMap PhbMap operExperimentalBitsAlternative (operExpAlt)

Access	Read only
Description	This attribute is similar to the *operExperimentalBits* operational attribute, except that it used only on PQC-based access FPs with ASIC Version 2.0 when an IP packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) via a PQC-based trunk FP. In such situations only, the value of this attribute, instead of the *operExperimentalBits* operational attribute value, is used to mark the Experimental (EXP) field of the MPLS label. If the *MplsServiceMap* does not have a *MarkingPerformance* subcomponent, then the value of this attribute is equal to the *experimentalBits* provisioned attribute; otherwise the value of this attribute is determined as explained in the next paragraph. If "***x***" is the *schedulingClass4Queues* operational attribute value of the *DifferentiatedServicesDomain PerHopBehavior* component whose instance value is equal to the *PerHopBehaviorMap* component instance value, then the *PerHopBehaviorMap experimentalBitsAlternative* operational attribute value is equal to the "***x***th" element of the *MarkingPerformance experimentalBitsAlternative* provisioned attribute.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

COMPONENT Rtr Vrf Dsd MplsMap MarkingPerformance

Groups	"GROUP Rtr Vrf Dsd MplsMap MarkingPerformance Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Dsd/<enum> MplsMap/<n> MarkingPerformance* *Rtr/<string> Dsd/<enum> MplsMap/<n> MarkingPerformance*

This subcomponent is added to the *MplsServiceMap* component to enable high performance MPLS label encapsulation on some PQC-based ingress access FPs .

IP packets that are forwarded from access FPs with PQC-ASIC Version 2.0 via PQC-based trunk FPs (any ASIC version) over an MPLS Label Switched Path (LSP) where the *MplsServiceMap* is applied are affected.

Adding this component to the *MplsServiceMap* improves IP packet throughput on the affected access FPs but restricts how the three-bit Experimental (EXP) field of MPLS labels are marked, as explained in the description of the *operExperiementalBitsAlternative* operational attribute of the *MplsServiceMap PerHopBehaviorMap* component.

Without the *MarkingPerformance* subcomponent, IP packets after being routed in hardware are encapsulated with MPLS labels by a software-assisted datapath that does not restrict how the EXP field of MPLS labels are marked.

The *MarkingPerformance* subcomponent is added automatically to a *MpslServiceMap* subcomponent being added to a *DifferentiatedServicesDomain* component. This ensures that the high performance MPLS label encapsulation data path is used by default.

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Dsd MplsMap MarkingPerformance Provisioned (Prov)

Properties	Provisioned

Description This group contains the provisioned attributes of the *MarkingPerformance* component.

Mib no_mib

ATTRIBUTE Rtr Vrf Dsd MplsMap MarkingPerformance expermentalBitsAlternative (expAlt)

Access Read and write

Description This attribute is an array of four values that specifies a mapping of scheduling class values for four queues to three-bit Experimental (EXP) field values for marking MPLS labels.

This array controls the value of the *operExperimentalBitsAlternative* operational attribute of the *MplsServiceMap PerHopBehaviorMap* components, as explained in the description of that attribute.

Each element of this attribute is set automatically to a default value according to a function of the *DifferentiatedServicesDomain* component instance value and the element index when the *MarkingPerformance* component is created. The default values are listed below.

Default values for all domains, except *assuredForwarding (af)* and *custom(cu)* :

--
schedulingClass4Queues *experimentalBitsAlternative*

-- *3* ***5***
2 ***6***
1 ***1***
0 ***0***

Default values for *assuredForwarding (af)* domain:

--
schedulingClass4Queues *experimentalBitsAlternative*

-- *3* ***7***

2 ***5***
1 ***3***
0 ***0***

Default values for *custom(cu)* domain:

--
schedulingClass4Queues *experimentalBitsAlternative*

-- *3* ***0***
2 ***6***
1 ***0***
0 ***0***

Mib	no_mib
Vector of	Decimal (0..7)
Index	Decimal (0..3)
Default	No default

COMPONENT Rtr Vrf Dsd VpnDscpMap (VpnDscpMap)

Instance	String (1..20, ASCII)
Groups	"GROUP Rtr Vrf Dsd VpnDscpMap Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum> VpnDscpMap/<string>* This component provides a mapping of customer DSCP values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. When an IP packet is forwarded from a customer Virtual Router (cVr) to a Virtual Connection Gateway (VCG) the customer IP header is encapsulated with a carrier IP header for transmission through the carrier network.

If the customer virtual router (cVr) has a *DifferentiatedServicesDomain* subcomponent where the *linkToVpnDscpMap* attribute is set, then the value of DSCP field in the IP packet forwarded by the customer Virtual Router (cVr) is translated by the mapping specified by the *assignedPhb* attribute of the associated *VpnDscpMap* to a DSCP value that is marked in the carrier IP header. If the customer *DifferentiatedServicesDomain linkToVpnDscpMap* attribute is not set, then the value of the DSCP field in the carrier IP header is set equal to the value of the DSCP field in the customer IP header.

The encapsulated IP packet is treated by the Virtual Connection Gateway (VCG) as specified by the *DifferentiatedServicesDomain PerHopBehavior* component instance associated with the carrier header DSCP value. If the carrier header DSCP value does not correspond to a *PerHopBehavior* subcomponent of the VCG's *DifferentiatedServicesDomain* component, then the IP packet is treated as specified by the *PerHopBehavior* component instance associated with DSCP ***0***.

The *VpnDscpMap* component can be added only to the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***carrier***. It can be linked only to the *linkToVpnDscpMap* attribute of the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***customer***.

The component instance is an arbitrary text string to allow the operator to assign a meaningful name for easy reference.

The *DiffServDomain* component is not allowed to have more than eight *VpnDscpMap* subcomponents.

	No more than one *DiffServDomain* component instance is allowed to have *VpnDscpMap* subcomponents
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Dsd VpnDscpMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *VpnDscpMap* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd VpnDscpMap linkToVpnDscpMapUsers (users)

Access	Read and write
Description	This attribute specifies all the customer virtual routers that use the *VpnDscpMap* component.
Mib	no_mib
List of	Link (Service, linkToVpnDscpMap)
List Size	256
Default	No default

ATTRIBUTE Rtr Vrf Dsd VpnDscpMap assignedPhb (phb)

Access	Read and write
Description	This attribute specifies a mapping of customer DSCP values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. See the description of the *VpnDscpMap* component for more information.

Mib	no_mib
Vector of	Decimal (0..63)
Index	Decimal (0..63)
Default	([1] 0, [63] 0)

COMPONENT Rtr Vrf Dsd VpnCosMap (VpnCosMap)

Groups	"GROUP Rtr Vrf Dsd VpnCosMap Provisioned (Prov)" "GROUP Rtr Vrf Dsd VpnCosMap Operational (Oper)"
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum> VpnCosMap* This component provides a mapping of customer CoS values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. When an IP packet is forwarded from a customer Virtual Router (cVr) to a Virtual Connection Gateway (VCG) the customer IP header is encapsulated with a carrier IP header for transmission through the carrier network. If the customer virtual router (cVr) does not have a *DifferentiatedServicesDomain* subcomponent and the Virtual Connection Gateway (VCG) has a *DifferentiatedServicesDomain VpnCosMap* component, then the IP CoS value assigned to the packet by the customer virtual router is translated by the mapping specified by the *assignedPhb* attribute of the *VpnCosMap* to a DSCP value that is marked in the carrier IP header. If the *DifferentiatedServicesDomain* of the Virtual Connection Gateway (VCG) does not have a *VpnCosMap* subcomponent, then the value of the DSCP field in the carrier IP header is set to ***0*** unless the customer header DSCP value is ***48*** (which corresponds to PHB CS6 for IP network control packets). In the latter case the carrier header DSCP value is set to ***48*** also. The encapsulated IP packet is treated by the Virtual Connection Gateway (VCG) as specified by the

DifferentiatedServicesDomain PerHopBehavior component instance associated with the carrier header DSCP value. If the carrier header DSCP value does not correspond to a *PerHopBehavior* subcomponent of the VCG's *DifferentiatedServicesDomain* component, then the IP packet is treated as specified by the *PerHopBehavior* component instance associated with DSCP ***0***.

The *VpnCosMap* component can be added only to the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***carrier***.

The *VpnCosMap* component is used to assist the migration of an IP VPN network without *DifferentiatedServicesDomain* components to an IP VPN network where every customer Virtual Router (cVr) and Virtual Connection Gateway (VCG) has a *DifferentiatedServicesDomain* component. The *VpnCosMap* components can be removed once the CoS to DiffServ network migration is completed.

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Vrf Dsd VpnCosMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *VpnCosMap* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd VpnCosMap assignedPhb (phb)

Access	Read and write

Description	This attribute specifies a mapping of customer CoS values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. See the description of the *VpnCosMap* component for more information.
Mib	no_mib
Vector of	Decimal (0..63)
Index	Decimal (0..3)
Default	(0: 0, 1: 0, 2: 0, 3: 0)

GROUP Rtr Vrf Dsd VpnCosMap Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *VpnCosMap* component.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd VpnCosMap users (users)

Access	Read only
Description	This attribute indicates the customer virtual routers that use the *VpnCosMap* component. This is the list of all customer virtual routers (cVRs) without a *DifferentiatedServicesDomain* subcomponent that forward IP packets to the Virtual Connection Gateway (VCG).
Mib	no_mib
List of	The name of the component
List Size	256
Default	No default

COMPONENT Rtr Vrf Dsd PerHopBehavior (Phb)

Instance	0
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62
63
df
ef
af11
af12
af13
af21
af22
af23
af31
af32

af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups

"GROUP Rtr Vrf Dsd Phb Provisioned (Prov)"
"GROUP Rtr Vrf Dsd Phb Operational (Oper)"
"GROUP Rtr Vrf Dsd Phb IpOperational (IpOper)"

Scope

Application

Description

Vr/<string> Dsd/<enum> PerHopBehavior/<phb>
Rtr/<string> Dsd/<enum> PerHopBehavior/<phb>
Rtr/<string> Vrf/<string> Dsd/<enum> PerHopBehavior/<phb>

The attributes of the *PerHopBehavior* component specify per-packet traffic management parameters that control how individual packets are forwarded.

A packet is associated with a *PerHopBehavior* component instance by a packet classification mechanism. For IP packets, the associated *PerHopBehavior* component instance is equal to the value of the six-bit Differentiated Services Code Point (DSCP) field in the IP header. For MPLS packets forwarded by a Label Switched Router (LSR) over a Label Switched Path (LSP) where an *MplsServiceMap* component is applied, the associated *PerHopBehavior* component instance is equal to value of the *perHopBehavior* attribute of the *MplsServiceMap ExperimentalBitsMap* component whose instance is equal to the value of the three-bit Experimental (EXP) field of the MPLS label.

If the *PerHopBehavior* component instance associated with a

packet is not included among the existing *PerHopBehavior* subcomponents of the *DifferentiatedServicesDomain*, then the packet is treated according to the *PerHopBehavior* component whose instance is equal to 0.

Each *PerHopBehavior* component instance is equal to a decimal value in the range from 0 to 63. The following pairs of *PerHopBehavior* component instances values are equal:
AF11 = 10,
AF12 =12,
AF13 =14,
AF31 = 26,
AF32 = 28,
AF33 = 30,
AF21 = 18,
AF22 = 20,
AF23 = 22,
AF41 = 34,
AF42 =36,
AF43 = 38
CS0 = 0,
CS1 = 8,
CS2 =16,
CS3 = 24,
CS4 =32,
CS5 = 40,
CS6 = 48,
CS7 = 56,
DF = 0,
EF = 46.

The first item in each pair above is a Per Hop Behavior designation identified in one of following IETF standards: RFC 2764 (“DiffServ Field Definition in IPv4 and IPv6 Headers”), RFC 2597 (“Assured Forwarding PHB Group”) or RFC 3246 (“An Expedited Forwarding PHB”). The the second item in each pair is the IETF recommended Differentiated Services Code Point (DSCP) value.

Each *PerHopBehavior* subcomponent of the *DifferentiatedServicesDomain* must have a unique instance value.

A *PerHopBehavior* subcomponent whose instance value is equal to 0 must exist.

A set of *PerHopBehavior* subcomponents is added automatically when the *DifferentiatedServicesDomain* component is created. The members of this set is a function of the *DifferentiatedServicesDomain* component instance as indicated below.

Multiservice (ms):
CS7, CS6, CS5, CS4, CS3, CS2, CS1, EF, AF41, AF42, AF43, AF31, AF32, AF33, AF21, AF22, AF23, AF11, AF12, AF13, DF

ClassSelector (cs):
CS7, CS6, CS5, CS4, CS3, CS2, CS1, CS0

AssuredForwarding (af):
CS6, AF41, AF42, AF43, AF31, AF32, AF33, AF21, AF22 AF23, AF11, AF12, AF13, DF

Packet Voice (pv):
CS7, CS6, CS5, CS1, EF, AF11, AF12, AF13, DF

WirelessUmts (umts):
CS7, CS6, CS1, EF, AF31, AF32, AF33, AF21, AF22, AF23, DF

Custom (cu):
CS6, DF

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Vrf Dsd Phb Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioned attributes of the *PerHopBehavior* component.

Mib no_mib

ATTRIBUTE Rtr Vrf Dsd Phb trafficClass (tc)

Access Read and write

Description This attribute specifies the *TrafficClass* component instance associated with the *PerHopBehavior* component instance. This attribute allows *PerHopBehavior* component instances to be aggregated into groups that specify the same packet scheduling characteristics.

This attribute is set automatically to a default value according to a function of the *PerHopBehavior* component instance value when the *PerHopBehavior* component is created. The default values are listed below.

```
-----------------------------------------------------------------------------
--
PeHopBehavior     trafficClass
-----------------------------------------------------------------------------
--CS7 (56)          critical
CS6 (48)           network
EF   (46)           premium
CS5 (40)           premium
CS4 (32)           platinum
AF41 (34)           platinum
AF42 (36)           platinum
AF43 (38)           platinum
CS3 (24)           gold
AF31 (26)           gold
AF32 (28)           gold
AF33 (30)           gold
CS2 (16)           silver
AF21 (18)           silver
AF22 (20)           silver
AF23 (22)           silver
```

CS1 (8)	***bronze***
AF11 (10)	***bronze***
AF12 (12)	***bronze***
AF13 (14)	***bronze***
CS0, DF (0)	***standard***
all others	***standard***

The value of this attribute must be equal to an existing *TrafficClass* subcomponent instance of the *DifferentiatedServicesDomain*.

If the *PerHopBehavior* component instance is ***0***, ***cs0***, or ***df***, then the value of this attribute must be ***standard***.

Mib: no_mib

Values:
critical
network
premium
platinum
gold
silver
bronze
standard

Default: No default

ATTRIBUTE Rtr Vrf Dsd Phb dropPrecedence (dp)

Access: Read and write

Description: This attribute specifies the drop precedence value given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a congestion threshold when the packet is placed on a queue that supports multiple congestion thresholds.

A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being

forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

This attribute is set automatically to a default value according to a function of the *PerHopBehavior* component instance value when the *PerHopBehavior* component is created. The default values are listed below.

PerHopBehavior	*dropPrecedence*
CS7 (56)	***low***
CS6 (48)	***low***
EF (46)	***low***
CS5 (40)	***low***
CS4 (32)	***low***
AF41 (34)	***low***
AF42 (36)	***medium***
AF43 (38)	***high***
CS3 (24)	***low***
AF31 (26)	***low***
AF32 (28)	***medium***
AF33 (30)	***high***
CS2 (16)	***low***
AF21 (18)	***low***
AF22 (20)	***medium***
AF23 (22)	***high***
CS1 (8)	***low***
AF11 (10)	***low***
AF12 (12)	***medium***
AF13 (14)	***high***
CS0, DF (0)	***high***
all others	***high***

Mib no_mib

Values low
medium
high

Default	No default

GROUP Rtr Vrf Dsd Phb Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *PerHopBehavior* component that control the relative forwarding behaviors of packets.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd Phb operTrafficClass (operTc)

Access	Read only
Description	This attribute indicates the *TrafficClass* component instance associated with the *PerHopBehavior* component instance. This attribute allows *PerHopBehavior* component instances to be aggregated into groups that indicate the same packet scheduling characteristics. The value of this attribute is equal to value of the *trafficClass* provisioned attribute of the *PerHopBehavior* component.
Mib	no_mib
Values	critical network premium platinum gold silver bronze standard
Default	No default

ATTRIBUTE Rtr Vrf Dsd Phb schedulingClass8Queues (sc8q)

Access	Read only

Description

This attribute indicates a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass8Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib

no_mib

Values

Decimal (0..7)

Default

No default

ATTRIBUTE Rtr Vrf Dsd Phb schedulingClass4Queues (sc4q)

Access

Read only

Description

This attribute indicates a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be

delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This value is also used to select a one of up to four Layer 2 connections at ATM and Frame Relay interfaces where the packet is transmitted. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information.

The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib: no_mib

Values: Decimal (0..3)

Default: No default

ATTRIBUTE Rtr Vrf Dsd Phb schedulingClass3Queues (sc3q)

Access: Read only

Description: This attribute indicates a logical scheduling class value in the range from ***0*** to ***2*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports three queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass3Queues* operational attribute of the *TrafficClass*

component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib: no_mib

Values: Decimal (0..2)

Default: No default

ATTRIBUTE Rtr Vrf Dsd Phb schedulingClass2Queues (sc2q)

Access: Read only

Description: This attribute indicates a logical scheduling class value in the range from ***0*** to ***1*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports two queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass2Queues* operational attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib: no_mib

Values: Decimal (0..1)

Default: No default

ATTRIBUTE Rtr Vrf Dsd Phb connectionClass (cos)

Access: Read only

Description	This attribute indicates the connection class value in the range from ***0*** to ***3*** that is associated with the Layer 2 connection used to forward a packet that uses the *PerHopBehavior* component instance when it is transmitted at an ATM or Frame Relay interface that has four Layer 2 connections, each with a different connection class value, to the next hop router. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information per-packet selection of egress connections. The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.
Mib	no_mib
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Rtr Vrf Dsd Phb operDropPrecedence (operDp)

Access	Read only
Description	This attribute indicates the drop precedence value given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a congestion threshold when the packet is placed on a queue that supports multiple congestion thresholds. A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue. The value of this attribute is equal to value of the *dropPrecedence* provisioned attribute of the *PerHopBehavior* component.

Mib	no_mib
Values	low medium high
Default	No default

GROUP Rtr Vrf Dsd Phb IpOperational (IpOper)

Properties	Operational
Description	This group contains *PerHopBehavior* operational attributes that pertain to IP packets only.
Mib	no_mib

ATTRIBUTE Rtr Vrf Dsd Phb dscpDecimal (dscp)

Access	Read only
Description	This attribute indicates the decimal value of the six-bit Differentiated Services Code Point (DSCP) field of an IP packet that uses the *PerHopBehavior* component instance.
Mib	no_mib
Values	Decimal (0..63)
Default	No default

ATTRIBUTE Rtr Vrf Dsd Phb tosDecimal (tos)

Access	Read only
Description	This attribute indicates the decimal value of the eight-bit Type Of Service (ToS) field of an IP packet that uses the *PerHopBehavior* component instance when the two least significant bits are set to zero. The six most significant bits of the ToS field are the same six bits of the Differentiated Services Code Point (DSCP) field. Only these six bits are used to select the *PerHopBehavior* component instance for treating the packet.
Mib	no_mib
Values	Decimal (0..255)

Default	No default

ATTRIBUTE Rtr Vrf Dsd Phb typeOfServiceFieldHex (hex)

Access	Read only
Description	This attribute indicates the hexadecimal value of the eight-bit Type Of Service (ToS) field of an IP packet that uses the *PerHopBehavior* component instance when the two least significant bits are set to zero. The six most significant bits of the ToS field are the same six bits of the Differentiated Services Code Point (DSCP) field. Only these six bits are used to select the *PerHopBehavior* component instance for treating the packet.
Mib	no_mib
Values	Hex (H.0..H.ff)
Default	No default

COMPONENT Rtr Vrf Dsd TrafficClass (Tc)

Instance	critical network premium platinum gold silver bronze standard
Groups	"GROUP Rtr Vrf Dsd Tc Provisioned (Prov)" "GROUP Rtr Vrf Dsd Tc Operational (Oper)"
Scope	Application
Description	*Vr/<string> Dsd/<enum> TrafficClass/<tc>* *Rtr/<string> Dsd/<enum> TrafficClass/<tc>* *Rtr/<string> Vrf/<string> Dsd/<enum> TrafficClass/<tc>* The attributes of the *TrafficClass* component specify per-packet traffic management parameters that control how individual packets are forwarded. A packet is associated with a *TrafficClass* component instance

according to the *trafficClass* provisioned attribute of the *PerHopBehavior* component instance the packet is using. See the description of the *PerHopBehavior* component for an explanation of how *PerHopBehavior* component instances are associated with packets.

The *DifferentiatedServicesDomain* must have a *TrafficClass/standard* subcomponent instance.

Each of the *TrafficClass* component instances should be referenced by at least one of the *DifferentiatedServicesDomain PerHopBehavior* component instances.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Vrf Dsd Tc Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioned attributes of the *TrafficClass* component.

Mib: no_mib

ATTRIBUTE Rtr Vrf Dsd Tc schedulingClass8Queues (sc8q)

Access: Read and write

Description: This attribute specifies a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically

higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This attribute is set automatically to a default value according to a function of the *TrafficClass*component instance value when the *TrafficClass* component is created. The default values are listed below. If the *TrafficClass* component instance is ***standard***, then this attribute must be set to ***0***.

TrafficClass	*schedulingClass8Queues*
critical	***7***
premium	***6***
network	***5***
platinum	***4***
gold	***3***
silver	***2***
bronze	***1***
standard	***0***

Mib — no_mib

Values — Decimal (0..7)

Default — No default

ATTRIBUTE Rtr Vrf Dsd Tc schedulingClass4Queues (sc4q)

Access — Read and write

Description — This attribute specifies a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. It may also be used to select one of up to four link layer connections at interfaces where per-packet selection of egress connections is supported.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This value is also used to select a one of up to four Layer 2 connections at the interface where the packet is transmitted. Per-packet selection of egress connections is supported only if these conditions are all true:

i) for the *Vr* component, the value of the associated *mediaType* attribute under the *IpPort* component is ***frameRelay***, ***atmMpeLlcEncap***, or ***atmMpeVcEncap***; for *Router* and *Vrf*, the media associated with the interface is *AtmMpe* or *IpoDlci*.
ii) more than one Layer 2 connection is configured to the next hop IP router, and
iii) each connection is configured with a different connection class value.

Normally the packet is transmitted on the connection whose connection class is equal to the *schedulingClass4Queues* value given to the packet. If that connection does not exist, then the connection having the next lower connection class is used. If that connection does not exist also, then the connection having the next higher connection class is used.

Locally generated IP multicast and IP broadcast packets are not eligible for per-packet selection of egress connections. Each of these packets is copied and transmitted individually on each of the available connections to the next hop IP router.

For *AtmMpe*, the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte* the connection class is specified by the *ipCos* attribute of the *StaticDlci* and *DynamicDlciDef* subcomponents. For

IpDlciGroup and *IpoDlci* the connection class is specified by the *ipCos* attribute of the *FrConnection* subcomponent.

If each Layer 2 connection is configured to provide different policing and scheduling characteristics, then the forwarding behaviors of IP and MPLS packets are differentiated as they transit through the Layer 2 network. In general, the scheduling characteristics of the connections should be configured to be better for numerically greater connection class values. For example, if four *AtmConnection* components are associated with *AtmIf* components configured for ATM service classes ***UBR***, ***nrtVBR***, ***rtVBR***, and ***CBR***, then the *ipCos* attributes of the *AtmConnection* components should be either ***0***,***1***,***2***, and ***3***, respectively, or ***0***,***1***,***3***, and ***2*** respectively.

The *schedulingClass4Queues* attribute is set automatically to a default value according to a function of the *TrafficClass*component instance value when the *TrafficClass* component is created. The default values are listed below. If the *TrafficClass* component instance is ***standard***, then this attribute must be set to ***0***.

Default values for all domains, except *assuredForwarding (af)*:

TrafficClass	*schedulingClass4Queues*
--critical	***2***
premium	***3***
network	***2***
platinum	***1***
gold	***1***
silver	***1***
bronze	***1***
standard	***0***

Default values for *assuredForwarding (af)* domain only:

TrafficClass	*schedulingClass4Queues*

--critical	***2***
premium	***3***
network	***2***
platinum	***3***
gold	***2***
silver	***1***
bronze	***0***
standard	***0***

Mib no_mib

Values Decimal (0..3)

Default No default

GROUP Rtr Vrf Dsd Tc Operational (Oper)

Properties Operational

Description This group contains the operational attributes of the *TrafficClass* component.

Mib no_mib

ATTRIBUTE Rtr Vrf Dsd Tc operSchedulingClass8Queues (operSc8q)

Access Read only

Description This attribute indicates a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass8Queues* provisioned attribute of the *TrafficClass* component.

Mib: no_mib

Values: Decimal (0..7)

Default: No default

ATTRIBUTE Rtr Vrf Dsd Tc operSchedulingClass4Queues (operSc4q)

Access: Read only

Description: This attribute indicates a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. It may also be used to select one of up to four link layer connections at interfaces where per-packet selection of egress connections is supported.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This value is also used to select a one of up to four Layer 2 connections at ATM and Frame Relay interfaces where the packet is transmitted. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information.

The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component.

Mib: no_mib

Values	Decimal (0..3)
Default	No default

ATTRIBUTE Rtr Vrf Dsd Tc operSchedulingClass3Queues (operSc3q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***2*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports three queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is controlled by the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component. If the *schedulingClass4Queues* attribute value is ***3 or 2***, then the *operSchedulingClass3Queues* attribute value is ***2***; otherwise both values are equal.
Mib	no_mib
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Rtr Vrf Dsd Tc operSchedulingClass2Queues (operSc2q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***1*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when

the packet is transmitted at an interface that supports two queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is controlled by the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component. If the *schedulingClass4Queues* attribute value is ***3***, then the *operSchedulingClass2Queues* attribute value is ***1***; otherwise it is ***0***.

Mib	no_mib
Values	Decimal (0..1)
Default	No default

COMPONENT Rtr Interface (If)

Instance	IP address
Groups	"GROUP Rtr If AdministrativeControl (AdminControl)" "GROUP Rtr If Provisioned (Prov)" "GROUP Rtr If NetMaskProv" "GROUP Rtr If OperationalStatus (OperStatus)" "GROUP Rtr If OsiState (State)" "GROUP Rtr If Operational (Oper)" "GROUP Rtr If RelayBcOperational (RelayBcOper)" "GROUP Rtr If IfTable (Ift)" "GROUP Rtr If AdditionalInfo"
Scope	Application
Description	*Rtr<string> Interface/<string>* *Rtr/<string> Vrf/<string> Interface/<string>*

	The *Interface* component represents a logical interface to the Ip network. When the *Interface* component is configured under *Vrf*, ***rfc2547bis*** must be present in the *featureList* of the *SW Lpt/ <string>* component associated with this *Interface*.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr If AtmMultiprotocolEncapsulation (AtmMpe)" "COMPONENT Rtr If BootpPort (BootpP)" "COMPONENT Rtr If OspfInterface (OspfIf)" "COMPONENT Rtr If IsisInterface (IsisIf)" "COMPONENT Rtr If IngressServices (IS)" "COMPONENT Rtr If EgressServices (ES)" "COMPONENT Rtr If RipInterface (RipIf)" "COMPONENT Rtr If VrrpPort" "COMPONENT Rtr If Loopback (Lb)" "COMPONENT Rtr If RsvpTeIf" "COMPONENT Rtr If LabelDistributionProtocolIf (LdpIf)" "COMPONENT Rtr If IpoDlci" "COMPONENT Rtr If EnetApplication (Enet)" "COMPONENT Rtr If PppApplication (Ppp)"
Dyn. Subcomp.	"COMPONENT Rtr If MplsBgpInterface (MplsBgpIf)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr If AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr If snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr If Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for an Interface to the IP network.
Mib	no_mib

ATTRIBUTE Rtr If arpStatus

Access	Read and write
Description	This attribute specifies whether ARP is enabled or disabled on this *Interface*. If ***auto*** is specified, an appropriate value will be selected based on the *Interface* media type.
Mib	no_mib
Values	enabled disabled auto
Default	auto

ATTRIBUTE Rtr If proxyArpStatus

Access	Read and write

Description	This attribute specifies whether Proxy ARP is enabled or disabled for this *Interface*.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr If arpNoLearn

Access	Read and write
Description	This attribute specifies whether or not dynamic host entries will be installed in the ARP table when ARP packets are received on this *Interface*.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr If sendRedirect

Access	Read and write
Description	This attribute specifies whether or not ICMP host redirects will be sent out this *Interface*.
Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr If multicastStatus

Access	Read and write
Description	This attribute specifies whether or not IP multicast packets can be sent out this *Interface*. If ***auto*** is specified, an appropriate value will be selected based on the *Interface* media.

Mib	no_mib
Values	enabled disabled auto
Default	auto

ATTRIBUTE Rtr If relayAddress

Access	Read and write
Description	This attribute specifies a relay broadcast address for this *Interface*. Each packet, received on this *Interface*, meeting the relay broadcast criteria will be forwarded to the specified relay broadcast address. An relay address of all zero's indicates no relay broadcast address.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr If relayBroadcast

Access	Read and write
Description	This attribute specifies how packets, received on other *Interface*, meeting the relay broadcast criteria, will be forwarded out this *Interface*. The three options are described as follows: ***enabled***: packets will be forwarded out this *Interface*. ***disabled***: packets will not be forwarded out this *Interface*. ***auto***: packets will be forwarded out this *Interface* only when the bridge state is forwarding.
Mib	no_mib
Values	enabled disabled auto
Default	disabled

ATTRIBUTE Rtr If linkDestinationAddress

Access	Read and write
Description	This attribute specifies the address for the link destination for this *Interface*. This attribute is required for PPP media when the netmask of the *Interface* is 32 bit.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr If lanModel

Access	Read and write
Criticality	Component
Description	This attribute specifies the lan model to use for this *Interface*.
Mib	no_mib
Values	localAreaNetwork (lan) nonBroadcastMultipleAccess (nbma)
Default	localAreaNetwork

ATTRIBUTE Rtr If interfaceType

Access	Read and write
Description	This attribute specifies whether the interface is an access or a core interface. For Router Interfaces, the default value is ***core***. For Vrf Interfaces, the default value is ***access***.
Mib	no_mib
Values	unspecified access core
Default	unspecified

ATTRIBUTE Rtr If icmpMaskReply

Access	Read and write
Description	This attribute specifies whether or not replies will be generated in response to ICMP Address Mask Requests received on this *Interface.*
Mib	no_mib
Values	enabled disabled
Default	enabled

ATTRIBUTE Rtr If directedBroadcast

Access	Read and write
Description	This attribute specifies whether or not directed broadcast to physical broadcast translation is enabled for incoming traffic on this *Interface.* The IP router requirement (RFC1812) says this translation should be ***enabled***; however, in some network environments, setting this attribute to ***disabled*** may prevent operational problem such as broadcast storms. Note that in some configuration, setting this attribute to ***disabled*** may cause Bootp to fail.
Mib	no_mib
Values	enabled disabled
Default	enabled

GROUP Rtr If NetMaskProv

Properties	Provisioned
Description	This group contains attributes required to define a *netMask*.
Mib	no_mib

ATTRIBUTE Rtr If netMask

Access	Read and write

Description	This attribute specifies the subnet mask for this *Interface*. This attribute must be specified because the IP application will not automatically provide a default value. If the media is: 1) *Loopback* with *mode* ***primayLoopback***, then the value of the *netMask* attribute must be ***255.255.255.255***; 2) *Loopback* with *mode* ***alwaysUpInterface***, then the value of the *netMask* attribute can be any non-zero value; 3) *Ppp*, then the value of the *netMask* attribute can be any non-zero value; 3) another other media, then the value of the *netMask* attribute can be any non-zero value other than ***255.255.255.255***.
Mib	no_mib
Values	IP address
Default	0.0.0.0

GROUP Rtr If OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr If snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing

Default	up

GROUP Rtr If OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy

Default	idle

GROUP Rtr If Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for an *Interface*.
Mib	no_mib

ATTRIBUTE Rtr If operArpStatus

Access	Read only
Description	This attribute indicates the current operational ARP status. If the provisioned *arpStatus* is set to ***auto***, then the IP application automatically determines the *operArpStatus* based on the *Interface* media type.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr If operMulticastStatus

Access	Read only
Description	This attribute indicates the current operational Multicast status. If the provisioned *multicastStatus* is set to ***auto***, then the IP application automatically determines the *operMulticastStatus* based on the *Interface* media.
Mib	no_mib
Values	enabled disabled
Default	disabled

ATTRIBUTE Rtr If broadcastAddress

Access	Read only

Description	This attribute indicates the destination IP address to be used by any application which needs to broadcast on this *Interface*.
Mib	no_mib
Values	IP address
Default	No default

GROUP Rtr If RelayBcOperational (RelayBcOper)

Properties	Operational
Description	This group contains operational attributes for an *Interface*'s or *IpPort*'s RelayBc counters.
Mib	no_mib

ATTRIBUTE Rtr If relayAddressCount

Access	Read only
Description	This attribute indicates the number of frames received on this *Interface* or *IpPort* which were forwarded to the provisioned *relayAddress* for this port. This counter wraps to zero when it reaches it's maximum.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If relayBcCount

Access	Read only
Description	This attribute indicates the number of frames received on this port which were forwarded to the *broadcastAddress* on other *IpPorts* or *Interfaces*. This counter is incremented once for every frame received on this port regardless of how many other ports it was sent on. This counter wraps to zero when it reaches it's maximum.
Mib	no_mib
Values	Decimal (0..4294967295)

Default	0

GROUP Rtr If IfTable (Ift)

Properties	Operational
Description	This group represents the SNMP interface table entry.
Mib	no_mib

ATTRIBUTE Rtr If ifAdminStatus (admStatus)

Access	Read only
Description	This attribute provides the current administration status of the interface. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr If ifOperStatus (opStatus)

Access	Read only
Description	This attribute provides the current operational status of the interface. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	down

ATTRIBUTE Rtr If ifLastChange (lastChange)

Access	Read only

Description	This attribute provides the value of sysUpTime at the time the interface entered its current operational state. If the current state was entered prior to the last re- initialization of the local network management subsystem, then this object contains a zero value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifInOctets (inOctets)

Access	Read only
Description	This attribute reports the total number of octets received on the interface, including framing characters. The 64-bit version may be available in the *ifHCInOctets* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifOutOctets (outOctets)

Access	Read only
Description	This attribute reports the total number of octets transmitted out of the interface, including framing characters. The 64-bit version may be available in the *ifHCOutOctets* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifInDiscards (inDiscard)

Access	Read only
Description	This attribute reports the number of inbound packets which were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher layer protocol. One

	possible reason for discarding such a packet could be to free up buffer space.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifOutDiscards (outDiscard)

Access	Read only
Description	This attribute reports the number of outbound packets which were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free up buffer space.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifInErrors (inErr)

Access	Read only
Description	This attribute reports the number of inbound packets that contained errors preventing them from being deliverable to a higher layer protocol.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifOutErrors (outErr)

Access	Read only
Description	This attribute reports the number of outbound packets that could not be transmitted because of errors.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifInUcastPkts (inUcast)

Access	Read only
Description	This attribute reports the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer. The 64-bit version may be available in the *ifHCInUcastPkts* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifOutUcastPkts (outUcast)

Access	Read only
Description	This attribute reports the total number of packets that higher level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. The 64-bit version may be available in the *ifHCOutUcastPkts* attribute.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifInNuCastPkts (inNucast)

Access	Read only
Description	This attribute reports the number of non-unicast (i.e., subnetwork- broadcast or subnetwork-multicast) packets delivered to a higher-layer protocol. The corresponding 64-bit versions may be available in the *ifInMulticastPkts* attribute and the *ifInBroadcastPkts* attribute.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifOutNuCastPkts (outNuCast)

Access	Read only
Description	This attribute reports the total number of packets that higher level protocols request be transmitted to a non-unicast address, including those that were discarded or not sent. The corresponding 64-bit versions may be available in the *ifOutMulticastPkts* and *ifOutBroadcastPkts* attributes.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifInUnknownProtos (inUknownProt)

Access	Read only
Description	This attribute reports the number of packets received via the interface which were discarded because of an unknown or unsupported protocol.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifOutQlength (outQlen)

Access	Read only
Description	This attribute represents the length of the output packet queue (in packets).
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifDescription (desc)

Access	Read only
Description	This attribute provides a textual string containing information about the interface. This string includes the name of the manufacturer, the product name and the version of the hardware interface.
Mib	no_mib
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Rtr If ifType (type)

Access	Read only
Description	This attribute describes the type of interface, distinguished according to the physical/link protocol(s) immediately below the network layer in the protocol stack
Mib	no_mib
Values	other ddnX25 rfc877x25 ethernetCsmacd ethernet8023 tokenBus8024 tokenring8025 man802 starLan hyperChannel fddi lapb sdlc ds1 e1 basicIsdn primaryIsdn propPointToPointSerial ppp

bnx
ds3
smds
frameRelay
sonetSdh
frameRelayService
v35
hssi
sonetPath
aflane8023
aflane8025
v11
channel
atmMpeVcEncap
atmMpeLlcEncap
ilsForwarder
ipTunnel
virtualMedia
localMedia

Default: No default

ATTRIBUTE Rtr If ifMtu (mtu)

Access: Read only

Description: This attribute represents the size of the largest datagram which can be sent/received on the interface, specified in octets. For interfaces that are used for transmitting network datagrams, this is the size of the largest network datagram that can be sent on the interface.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Rtr If ifSpeed (speed)

Access: Read only

Description: This attribute provides an estimate of the interface's current bandwidth in bits per second. For interfaces which do not vary in

	bandwidth or for those where no accurate estimation can be made, this object should contain the nominal bandwidth.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If ifPhysicalAddress (phys)

Access	Read only
Description	This attribute represents the interface's address at the protocol layer immediately `below' the network layer in the protocol stack. For interfaces which do not have such an address (e.g., a serial line), this object should be an octet string of zero length.
Mib	no_mib
Values	String (0..17, ASCII)
Default	No default

GROUP Rtr If AdditionalInfo

Properties	Operational
Description	This group contains additional information associated with this ifEntry, including SNMP ifXTable entry information.
Mib	no_mib

ATTRIBUTE Rtr If ifHCInOctets (inHCOctets)

Access	Read only
Description	This attribute reports the total number of octets received on the interface, including framing characters. This High Capacity counter is a 64-bit version of the *ifInOctets* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ifHCInUcastPkts (inHCUcast)

Access	Read only
Description	This attribute reports the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer. This High Capacity counter is a 64-bit version of the *ifInUcastPkts* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ifHCOutOctets (outHCOctets)

Access	Read only
Description	This attribute reports the total number of octets transmitted out of the interface, including framing characters. This High Capacity counter is a 64-bit version of the *ifOutOctets* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ifHCOutUcastPkts (outHCUcast)

Access	Read only
Description	This attibutes reports the total number of packets that higher-level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. This High Capacity counter is a 64-bit version of the *ifOutUcastPkts* attribute.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr If AtmMultiprotocolEncapsulation (AtmMpe)

Groups	"GROUP Rtr If AtmMpe CustomerIdentifierData (CidData)" "GROUP Rtr If AtmMpe IfEntryProv (IfEntry)" "GROUP Rtr If AtmMpe Provisioned (Prov)" "GROUP Rtr If AtmMpe OsiState (State)" "GROUP Rtr If AtmMpe OperationalStatus (OperStatus)"
Scope	Application
Description	*Rtr/<string> If/<IP addr> AtmMpe* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe* This subcomponent represents a logical interface between the Router and an ATM media (*AtmIf*). Multiprotocol Encapsulation as specified in RFC1483 is used to transfer higher-layer protocol data across virtual channels in an ATM network. *AtmMpe* provides a means to associate multiple ATM virtual channel connections with a single *Router Interface*. The *AtmMpe* component is associated with virtual channel connections via a linkage attribute in each *AtmConnection* subcomponent.
Mib	no_mib
Subcomponents	"COMPONENT Rtr If AtmMpe AtmConnection (Ac)"
Opt. Subcomp.	"COMPONENT Rtr If AtmMpe SpvcTerminationPoint (Stp)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr If AtmMpe CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.

Mib	no_mib

ATTRIBUTE Rtr If AtmMpe customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Rtr If AtmMpe IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is

	not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr If AtmMpe ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Rtr If AtmMpe Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *AtmMpe* component under the Router Interface.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe maxTransmissionUnit (mtu)

Access	Read and write
Description	This attribute sets the size of the largest datagram which can be sent on the interface. This includes the size of the Logical Link Control header (if applicable) as well as the protocol data unit.
Mib	no_mib
Values	Decimal (256..9188)

Units	octets
Default	9188

ATTRIBUTE Rtr If AtmMpe encapType (etype)

Access	Read and write
Criticality	Component
Description	This attribute specifies the RFC-1483 encapsulation type to be used for the *AtmConnections* under this *AtmMpe*. Specifying ***llcEncap*** allows multiplexing of multiple protocols over the *VCCs*. The protocol of the carried PDU will be identified by an IEEE 802.2 Logical Link Control header. If Inverse ARP is to be carried over a VCC, ***llcEncap*** must be used. If the *Stp* component exists under the *AtmMpe*, ***llcEncap*** must be used. Specifying ***ipVcEncap*** indicates that all the VCCs (that is, *AtmConnection*s) under an *AtmMpe* component will use VC-based multiplexing and will carry IP PDUs only. Specifying ***llcBridgeEncap*** indicates that the VCC (that is, the *AtmConnection*) under an *AtmMpe* component will use the bridged Ethernet encapsulation format specified in RFC-1483. Note that when setting the *encapType* attribute to ***llcBridgeEncap***, the *maxTransmissionUnit* must be set within the ***[256 .. 1524]*** range.
Mib	no_mib
Values	llcEncap ipVcEncap llcBridgeEncap
Default	llcEncap

GROUP Rtr If AtmMpe OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies

about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib no_mib

ATTRIBUTE Rtr If AtmMpe adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib no_mib

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Rtr If AtmMpe operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for

operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr If AtmMpe usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values: idle
active (activ)
busy

Default: idle

GROUP Rtr If AtmMpe OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib	no_mib

ATTRIBUTE Rtr If AtmMpe snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr If AtmMpe SpvcTerminationPoint (Stp)

Groups	"GROUP Rtr If AtmMpe Stp Provisioned (Prov)" "GROUP Rtr If AtmMpe Stp Operational (Oper)"
Scope	Application
Description	*AtmMpe/n Stp* *Rtr/<string> If/<IP addr> AtmMpe Stp* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Stp* This component specifies the SPVC related provisioning for the *AtmMpe* component. Its presence identifies an *AtmMpe* component that contains one or more SPVC connections.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If AtmMpe Stp Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *SpvcTerminationPoint* component.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe Stp localAddress (laddr)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the NSAP address of this *AtmMpe* component. The default is an empty string. If no NSAP address is provisioned, a default NSAP address is provided. To view the generated default address refer to the *opLocalAddress* attribute under this component after the *act prov* command is executed.
Mib	no_mib
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Rtr If AtmMpe Stp softPvcRetryPeriod (retry)

Access	Read: All Write: All
Description	This attribute specifies the interval at which an SPVC connection attempts establishment after a failed setup attempt occurs. The *softPvcRetryPeriod* attribute applies to all connections managed by the parent *AtmMpe* component.
Mib	no_mib
Values	Decimal (10..3600)
Units	seconds
Default	20

ATTRIBUTE Rtr If AtmMpe Stp softPvcHoldOffTime (sHoldOffTime)

Access	Read: All Write: All
Description	This attribute specifies how long to hold off before attempting to reestablish a connection after an established SPVC connection is cleared/released. The *softPvcHoldOffTime* attribute applies to all connections managed by the parent *AtmMpe* component.
Mib	no_mib
Values	Decimal (0; 50..3600000)
Units	msec
Default	20000

GROUP Rtr If AtmMpe Stp Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SpvcTerminationPoint* component.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe Stp opLocalAddress (addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the NSAP address of this *AtmMpe* component. The value is the same as the provisioned *laddr*. If the *laddr* is not provisioned, the value of *addr* is automatically generated by the software.
Mib	no_mib
Values	String (0..20, Hex)
Default	""

COMPONENT Rtr If AtmMpe AtmConnection (Ac)

Instance	Decimal (1..255)
Groups	"GROUP Rtr If AtmMpe Ac Provisioned (Prov)" "GROUP Rtr If AtmMpe Ac OsiState (State)"

	"GROUP Rtr If AtmMpe Ac Operational (Oper)" "GROUP Rtr If AtmMpe Ac Statistics (Stats)" "GROUP Rtr If AtmMpe Ac IpIfLink"
Scope	Application
Description	*AtmMpe/n AtmConnection/n* *Rtr/<string> If/<IP addr> AtmMpe AtmConnection/n* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe AtmConnection/n* This component represents a virtual channel through which inter-networking frames are transported using RFC 1483 encapsulation. The *AtmConnection* component contains OSI state information, frame based statistics, and the linkage to an ATM virtual channel connection. This component's instance value is used by higher-layer protocols when referring to a specific ATM connection.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr If AtmMpe Ac SourcePvc (SrcPvc)" "COMPONENT Rtr If AtmMpe Ac DestinationPvc (DstPvc)"
Dyn. Subcomp.	"COMPONENT Rtr If AtmMpe Ac AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr If AtmMpe Ac Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *AtmConnection* component.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe Ac atmConnection (link)

Access	Read and write
Criticality	Component
Description	This attribute specifies the ATM nailed up endpoint, *AtmIf/n Vcc/vpi.vci Nep*, that this connection is associated with. It must not be provisioned for an SPVC connection.
Mib	no_mib
Values	Link (Service, applicationName)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the *AtmConnection*. This value is used to distinguish the connection from others for the purpose of IP and MPLS forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers. If a packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one *AtmConnection*, then one of the connections is selected for transmitting the packet. For IP packets the selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet. For MPLS packets the selection is based on either the DSCP field of the IP packet or the EXP field of the MPLS packet. DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component. EXP based selection of the the outgoing connection is explained in the description of the *MplsServiceMap* component. Class of Service (CoS) based selection of the outgoing connection is

explained in the description of the *Vr Ip CosPolicyGroup* component.

Modifying this attribute will reset the *AtmConnection*.

If the *AtmConnection* is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the *AtmConnection*. See the description of *Vr Ip CosPolicyGroup* for more information.

Mib	no_mib
Values	Decimal (0..3)
Default	0

ATTRIBUTE Rtr If AtmMpe Ac mplsSignaling (mplsSig)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this AtmMpe Ac is dedicated for MPLS signaling (LDP or CR-LDP), or shared between MPLS and IP. If the value is ***dedicated***, the *Ac* is dedicated for MPLS signaling; the route is not found in IP ARP. If the value is ***shared***, the *Ac* is accessible by IP. The checking of this provisionable attribute is done through semantic checking. The attribute takes on the value ***shared*** by default, and can only be ***dedicated*** if there are more than one *Ac* under the *AtmMpe*.
Mib	no_mib
Values	shared dedicated
Default	shared

GROUP Rtr If AtmMpe Ac OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe Ac adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If AtmMpe Ac operationalState (osiOper)

Access	Read only

Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If AtmMpe Ac usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr If AtmMpe Ac Operational (Oper)

Properties	Operational

Description	This group contains the operational attributes for the *AtmConnection* component.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe Ac speed

Access	Read only
Description	This attribute indicates the approximate bit rate for the connection. The bit rate is determined from the cell rate provisioned for the *Vcc* linked to this connection. The cell rate is multiplied by 53 bytes per cell and 8 bits per byte to obtain the bit rate. The *ifSpeed* of the entry in the ifTable corresponding to the *AtmMpe* component is the lowest speed of all the connections associated with the *AtmMpe* component. This attribute is always equal to 0 for an SPVC.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

GROUP Rtr If AtmMpe Ac Statistics (Stats)

Properties	Operational
Description	This group contains the frame based statistics maintained for the *AtmConnection* component. For cell based statistics, see the *Vcc* component.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe Ac outPackets

Access	Read only
Description	This attribute counts the total number of packets sent on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac outOctets

Access	Read only
Description	This attribute counts the total number of octets sent on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac outDiscards

Access	Read only
Description	This attribute counts the total number of packets which were supposed to be sent on this connection but were discarded due to congestion or the connection being down. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac inPackets

Access	Read only
Description	This attribute counts the total number of packets received on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac inOctets

Access	Read only
Description	The attribute counts the total number of octets received on this connection. This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac inUnknownProtos

Access	Read only
Description	This attribute counts the total number of packets received on this connection which were discarded because they contained an unknown or unsupported protocol (includes packets received for protocols not currently bound to the associated *ProtocolPort* component). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac inErrors

Access	Read only
Description	This attribute counts the total number of packets received on the connection which contained errors preventing them from being delivered to a higher-layer protocol (includes short frames). This counter will wrap around to 0 when it exceeds its maximum count.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr If AtmMpe Ac IpIfLink

Properties	Provisioned
Description	This group contains the link between this component and an *IpLogicalInterface*.
Mib	no_mib

ATTRIBUTE Rtr If AtmMpe Ac linkToIpLogicalInterface (ipIf)

Access	Read and write
Description	This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ipAddress*, that this connection is associated with. This attribute is not applicable and cannot be set when the *AtmConection* component is added under an *Rtr If AtmMpe* or an *Rtr Vrf If AtmMpe* component. When set, the value of this attribute must be consistent with the *linkToPrototocolPort* attribute value of the parent *AtmMpe* component. That is, they must both point to the same *PrototocolPort* component.
Mib	no_mib
Values	Link (Service, linkToMediaConnection)
Default	No default

COMPONENT Rtr If AtmMpe Ac SourcePvc (SrcPvc)

Groups	"GROUP Rtr If AtmMpe Ac SrcPvc Provisioned (Prov)" "GROUP Rtr If AtmMpe Ac SrcPvc Operational (Oper)"
Scope	Application
Description	*AtmMpe/n Ac/m SrcPvc* *Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc* This component contains addressing and control information used by the calling SPVC endpoint to set up an SPVC connection

to a remote called SPVC endpoint. An *Stp* component must exist under the *Ac* component if a *SrcPvc* component exists.

Mib: AtmMpeSpvc

Subcomponents: "COMPONENT Rtr If AtmMpe Ac SrcPvc TrafficManagement (Tm)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

VERB Clear (Clr) Rtr If AtmMpe Ac SrcPvc

Impact: Service

Description:
Clear AtmMpe/n Ac/m SrcPvc
Clear Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc
Clear Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc
This command tears down the active SPVC connection under the *Ac* component and attempts to reestablish it.

If there is no active SPVC, the clear command has no effect.

GROUP Rtr If AtmMpe Ac SrcPvc Provisioned (Prov)

Properties: Provisioned

Description: This attribute group contains the provisionable attributes of the *SourcePvc* component.

Mib: AtmMpeSpvc

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc remoteAddress (raddr)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies the NSAP address of the called SPVC endpoint (this must be a remote *AtmMpe* component).

Mib	AtmMpeSpvc
Values	String (20, Hex)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc remoteConnectionIdentifier (rci)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the remote connection identifier of the SPVC. It is provisioned with the *Ac* instance of the *AtmMpe Ac* component at the called SPVC endpoint.
Mib	AtmMpeSpvc
Values	Decimal (1..255)
Default	1

GROUP Rtr If AtmMpe Ac SrcPvc Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes associated with the *SrcPvc* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc state

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the connection.
Mib	AtmMpeSpvc
Values	active inactive
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc retryCount (retry)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of failed connection attempts.
Mib	AtmMpeSpvc
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc lastClearCause (cause)

Access	Read: All Write: Illegal
Description	This attribute indicates the last clear cause signalled by the connection due to a release. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The set of possible values and their meaning can be found in the ATM Forum Private Network-Network Interface Specification Version 1.0, Section 6.4.5.19.
Mib	AtmMpeSpvc
Values	Decimal (0..255)
Default	No default

COMPONENT Rtr If AtmMpe Ac SrcPvc TrafficManagement (Tm)

Groups	"GROUP Rtr If AtmMpe Ac SrcPvc Tm Provisioned (Prov)"
Scope	Application
Description	*AtmMpe/n Ac/m SrcPvc Tm* *Rtr/<string> If/<IP addr> AtmMpe Ac/m SrcPvc Tm* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m SrcPvc Tm* This component contains ATM QoS information used by the

calling endpoint of an SPVC connection to request a particular QoS from ATM.

Mib	AtmMpeSpvc
Common Verbs	Help List Display

GROUP Rtr If AtmMpe Ac SrcPvc Tm Provisioned (Prov)

Properties	Provisioned
Description	This attribute group contains the provisionable attributes of the *TrafficManagement* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc Tm atmServiceCategory (service)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the desired ATM service category for this connection.
Mib	AtmMpeSpvc
Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr) constantBitRate (cbr)
Default	unspecifiedBitRate

ATTRIBUTE Rtr If AtmMpe Ac SrcPvc Tm peakCellRate (pcr)

Access	Read: All Write: All
Criticality	Component

Description	This attribute specifies the desired peak cell rate (PCR) in both directions for this connection. Refer to NTP NN10600-705 for more information on ATM Traffic Management.
Mib	AtmMpeSpvc
Values	Decimal (0..2147483647)
Default	0

COMPONENT Rtr If AtmMpe Ac DestinationPvc (DstPvc)

Groups	"GROUP Rtr If AtmMpe Ac DstPvc Operational (Oper)"
Scope	Application
Description	*AtmMpe/n Ac/m DstPvc* *Rtr/<string> If/<IP addr> AtmMpe Ac/m DstPvc* *Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m DstPvc* The *DestinationPvc* component represents the called endpoint of an SPVC connection.
Mib	AtmMpeSpvc
Common Verbs	Help List Display Add DELete

VERB Clear (Clr) Rtr If AtmMpe Ac DstPvc

Impact	Service
Description	*Clear AtmMpe/n Ac/m DstPvc* *Clear Rtr/<string> If/<IP addr> AtmMpe Ac/m DstPvc* *Clear Rtr/<string> Vrf/<string> If/<IP addr> AtmMpe Ac/m DstPvc* This command tears down the active SPVC connection under the *Ac* component and attempts to reestablish it. If there is no active SPVC, the clear command has no effect.

GROUP Rtr If AtmMpe Ac DstPvc Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *DstPvc* component.
Mib	AtmMpeSpvc

ATTRIBUTE Rtr If AtmMpe Ac DstPvc state

Access	Read: All Write: Illegal
Description	This attribute indicates the status of the connection.
Mib	AtmMpeSpvc
Values	active inactive
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac DstPvc remoteAddress (raddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the NSAP address of the remote (calling) endpoint. If a connection is not established, *remoteAddress* is an ***empty string***.
Mib	AtmMpeSpvc
Values	String (0..20, Hex)
Default	""

ATTRIBUTE Rtr If AtmMpe Ac DstPvc remoteConnectionIdentifier (rci)

Access	Read: All Write: Illegal
Description	This attribute indicates the remote connection identifier of the remote (calling) SPVC endpoint (that is, the *Ac* instance of the remote *AtmMpe Ac* component). If the connection is not established, the *remoteConnectionIdentifier* is an ***empty string***.
Mib	AtmMpeSpvc

Values	Decimal (1..255)
Default	No default

ATTRIBUTE Rtr If AtmMpe Ac DstPvc lastClearCause (cause)

Access	Read: All Write: Illegal
Description	This attribute indicates the last clear cause signalled by the connection due to a release. It is updated only if the clear request comes from the subnet or the call is rejected locally by the VC. The set of possible values and their meaning can be found in the ATM Forum Private Network-Network Interface Specification Version 1.0, Section 6.4.5.19.
Mib	AtmMpeSpvc
Values	Decimal (0..255)
Default	No default

COMPONENT Rtr If AtmMpe Ac AtmConnection (AtmCon)

Groups	"GROUP Rtr If AtmMpe Ac AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	AtmMpeSpvc
Common Verbs	Help List Display

GROUP Rtr If AtmMpe Ac AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.

Mib	AtmMpeSpvc

ATTRIBUTE Rtr If AtmMpe Ac AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	AtmMpeSpvc
Values	The name of the component
Default	No default

COMPONENT Rtr If BootpPort (BootpP)

Groups	"GROUP Rtr If BootpP Provisioned (Prov)" "GROUP Rtr If BootpP AdministrativeControl (AdminControl)" "GROUP Rtr If BootpP OperationalStatus (OperStatus)" "GROUP Rtr If BootpP OsiState (State)" "GROUP Rtr If BootpP Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort BootpPort* *Rtr/<string> Interface/<string> BootpPort* *Rtr/<string> Vrf/<string> Interface/<string> BootpPort* An *BootpPort* component must be provisioned for each *IpPort* or *Interface* where BOOTP request messages will be received. Each *BootpPort* component can be provisioned with a set of relay addresses. Each BOOTP request message received on this port will be sent to the provisioned set of relay addresses.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr If BootpP Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *BootpPort* component.
Mib	no_mib

ATTRIBUTE Rtr If BootpP relayForwardStatus (status)

Access	Read and write
Description	This attribute controls how BOOTP request packets, received on another port, will be flooded out this port. If *relayForwardStatus* is ***enabled***, BOOTP requests received on another port will be broadcast out this port. When *relayForwardStatus* is ***disabled***, BOOTP requests will not be broadcast out this port. If ***auto*** is used, the bridge spanning tree database is used to determine if BOOTP requests should be broadcast out this port. Note that when using ***enabled***, it is possible to create misconfigurations which will result in broadcast storms. When using this feature with multiple routers, make sure there are no broadcast forwarding loops. Using ***auto*** with bridge spanning tree is safer to use if the network is running bridge spanning tree. Note that for ***auto*** to have effect, bridge spanning tree must be running on the corresponding *VirtualRouter ProtocolPort* or *Rtr Interface* or *Rtr Vrf Interface*.
Mib	no_mib
Values	enabled disabled auto
Default	disabled

ATTRIBUTE Rtr If BootpP bootpLogicalInterface (portIf)

Access	Read and write

Description	This attribute identifies the logical interface whose address is to be the GIADDR of this BOOTP port. If not set, the address of the first logical port or Interface is chosen.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr If BootpP relayAddress (addr)

Access	Read and write
Description	This attribute identifies a list of relay addresses. When a BOOTP request message is received on this port, the request will be forwarded to the IP addresses provisioned in *relayAddress*. Note that BOOTP requests are also broadcast out all other *BootpPort*'s according to the *relayForwardStatus* of the outgoing port.
Mib	no_mib
List of	IP address
List Size	3
Default	No default

GROUP Rtr If BootpP AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr If BootpP snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet

forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

Default: up

GROUP Rtr If BootpP OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: no_mib

ATTRIBUTE Rtr If BootpP snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: no_mib

Values:
up
down
testing

Default: up

GROUP Rtr If BootpP OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib no_mib

ATTRIBUTE Rtr If BootpP adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib no_mib

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Rtr If BootpP operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr If BootpP usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values: idle
active (activ)
busy

Default: idle

GROUP Rtr If BootpP Statistics (Stats)

Properties: Operational

Description: This group contains *BootpPortEntry* component statistics.

Mib: no_mib

ATTRIBUTE Rtr If BootpP inRequests

Access	Read only
Description	This attribute counts the total number of BOOTP Request messages received on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If BootpP inReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages received on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If BootpP outRequests

Access	Read only
Description	This attribute counts total the number of BOOTP Request messages broadcast out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If BootpP outReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages sent out on this port.
Mib	no_mib
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Rtr If BootpP inRequestErrors

Access	Read only
Description	This attribute counts the number of BOOTP Request messages received on this port but not forwarded due to an error. An error occurs if the BOOTP hop limit has been exceeded.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If BootpP inReplyErrors

Access	Read only
Description	This attribute counts the number of BOOTP Reply messages received on this port but not forwarded due to an error. An error occurs if the giaddr field in the BOOTP reply does not match an IP address assigned to this *VirtualRouter* or *Rtr* or *Rtr Vrf*, or if the output *IpPort* or *Interface* for the BOOTP reply is not provisioned for BOOTP.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr If OspfInterface (OspfIf)

Groups	"GROUP Rtr If OspfIf Provisioned (Prov)" "GROUP Rtr If OspfIf Operational (Oper)" "GROUP Rtr If OspfIf Metric"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf* *Rtr/<string> Interface/<Ip Address> OspfIf* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf*

	An OspfIf component can be created under each *logicalIf* or *Interface* to run OSPF protocol.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr If OspfIf Md5KeyId (KeyId)" "COMPONENT Rtr If OspfIf TypeOfService (TOS)" "COMPONENT Rtr If OspfIf Neighbor (Nbr)"
Common Verbs	Help List Display Add DELete

GROUP Rtr If OspfIf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes identifies a provisionable set of attributes.
Mib	no_mib

ATTRIBUTE Rtr If OspfIf areaId

Access	Read and write
Description	The area Id this Ospf interface belongs to.
Mib	no_mib
Values	IP address
Default	0.0.0.0

ATTRIBUTE Rtr If OspfIf ifType

Access	Read and write
Description	This attribute specifies the type of this *OspfInterface*. Neighbors are dynamically discovered using the Hello protocol for an *ifType* of ***broadcast***, ***pointToPoint***, or ***pointToMultipoint*** when *pointToMultiPointMode* is set to ***broadcast***. A *Neighbor* component must be configured for an *ifType of* ***nbma*** or ***pointToMultiPoint***, when *pointToMultiPointMode* is set to

nonBroadcast. When *ifType* is set to ***passive***, neighbors are not required.

Mib: no_mib

Values:
broadcast
nbma
pointToPoint
passive
pointToMultiPoint (ptmp)

Default: No default

ATTRIBUTE Rtr If OspfIf snmpAdminStatus

Access: Read and write

Description: The administrative status of this Ospf interface.

Mib: no_mib

Values:
up
down

Default: up

ATTRIBUTE Rtr If OspfIf rtrPriority (rtrPri)

Access: Read and write

Description: The priority of this interface. Used in multi-access networks, this field is used in the designated router election algorithm. The value 0 signifies that the router is not eligible to become the designated router on this particular protocol port. In the event of a tie in this value, routers will use their *routerId* as a tie breaker.

Mib: no_mib

Values: Decimal (0..255)

Default: 1

ATTRIBUTE Rtr If OspfIf transitDelay

Access: Read and write

Description	The estimated number of seconds it takes to transmit a link-state update packet over this interface.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	1

ATTRIBUTE Rtr If OspfIf retransInterval (retransInt)

Access	Read and write
Description	The number of seconds between link-state advertisements retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	5

ATTRIBUTE Rtr If OspfIf helloInterval (helloInt)

Access	Read and write
Description	The length of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for all routers attached to a common network.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Rtr If OspfIf rtrDeadInterval (rtrDeadInt)

Access	Read and write

Description	The number of seconds that a router's hello packets have not been seen before it's neighbors declare the router down. This should be some multiple of the *helloIntereval*. This value must be the same for all routers attached to a common network.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	40

ATTRIBUTE Rtr If OspfIf pollInterval (pollInt)

Access	Read and write
Description	The largest time interval, in seconds, between the hello packets sent to an inactive non-broadcast multi-access neighbor.
Mib	no_mib
Values	Decimal (1..3600)
Units	seconds
Default	120

ATTRIBUTE Rtr If OspfIf authKey

Access	Write only
Description	The Authentication Key. If the value of the attribute *authType* of an *AreaEntry* is ***simplePassword***, and the *authKey* length is shorter than 8 octets, then the value of *authKey* will be left adjusted zero-filled to 8 octets.
Mib	no_mib
Values	String (1..8, Hex)
Default	0000000000000000

ATTRIBUTE Rtr If OspfIf multicastForwarding (multicastFwd)

Access	Read and write

Description	The way multicasts should be forwarded on this interface; non forwarded, forwarded as data-link multicasts, or forwarded as data-link unicasts. Data-link multicasting is not meaningful on point-to-point and NBMA(No Broadcast Multi Access) interfaces, and setting this attribute to blocked effectively disables all multicast forwarding.
Mib	no_mib
Values	blocked
Default	blocked

ATTRIBUTE Rtr If OspfIf pointToMultiPointMode (ptmpmode)

Access	Read and write
Description	This attribute specifies the Point-to-Multipoint mode to use when the *ifType* of this *OspfInterface* is ***pointToMultipoint***. A value of ***nonBroadcast*** restricts this interface to only send unicast packets, Hence, a *Neighbor* component must be configured. A value of ***broadcast*** enables sending multicast OSPF Hello packets to dynamically discover neighbors.
Mib	no_mib
Values	nonBroadcast (nbc) broadcast (bc)
Default	nonBroadcast

ATTRIBUTE Rtr If OspfIf authType

Access	Read and write
Description	The authentication type specified for this *Ospf* interface.
Mib	no_mib
Values	none simplePassword md5 SameAsArea
Default	SameAsArea

GROUP Rtr If OspfIf Operational (Oper)

Properties	Operational
Description	This group of attributes identifies operational state that this interface is performing.
Mib	no_mib

ATTRIBUTE Rtr If OspfIf state

Access	Read only
Description	The state of the OSPF interface.
Mib	no_mib
Values	down loopback waiting pointToPoint designatedRouter backupDesignatedRouter otherDesignatedRouter
Default	designatedRouter

ATTRIBUTE Rtr If OspfIf designatedRouter

Access	Read only
Description	The Ip address of the designated router.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr If OspfIf backupDesignatedRouter

Access	Read only
Description	The Ip address of the backup designated router
Mib	no_mib

Values	IP address
Default	No default

ATTRIBUTE Rtr If OspfIf events

Access	Read only
Description	The number of times this OSPF interface has changed its state or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr If OspfIf Metric

Properties	Operational
Description	This group contains the operational metric attribute of this interface.
Mib	no_mib

ATTRIBUTE Rtr If OspfIf metric

Access	Read only
Description	This attribute indicates the metric being used by this *OspfIf*. The metric is derived in one of two ways: 1. If there is a *TypeOfService* component provisioned under this *OspfIf* component, then the value of the *metric* attribute is copied from the provisionable attribute *tosMetric*. 2. Otherwise, the metric is computed based on the interface speed. If the interface speed is greater than 100 Mbit/s, then the *metric* is 1. If the interface speed is less than 100 Mbit/s, then the metric is 100 Mbit/s divided by the interface speed. If the interface speed is unknown, then it is treated as 1.54 Mbit/s during the calculation. The value of interface speed is available by displaying the *ifSpeed* attribute of the corresponding *IfTableEntry* component.
Mib	no_mib

Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr If Ospfif Md5KeyId (KeyId)

Instance	Decimal (1..255)
Groups	"GROUP Rtr If OspfIf KeyId Provisioned (Prov)" "GROUP Rtr If OspfIf KeyId Operational (Oper)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf KeyId/<ID>* *Rtr/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf KeyId/ <ID>* *Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* This component contains the information about various MD5 Authentication keys.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If Ospfif KeyId Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisional attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr If OspfIf KeyId md5Key (Key)

Access	Write only
Description	The MD5 authentication key for the *KeyId* component.
Mib	no_mib
Values	String (0..16, ASCII)
Default	""

GROUP Rtr If OspfIf KeyId Operational (Oper)

Properties	Operational
Description	This group describes the set of operational attributes for the *KeyId* component.
Mib	no_mib

ATTRIBUTE Rtr If OspfIf KeyId inUseForGeneration (inUse)

Access	Read only
Description	This attribute indicates whether the *Key* is currently in use or not. If this attribute is equal to ***true***, it indicates the *Key* is active.
Mib	no_mib
Values	true false
Default	false

COMPONENT Rtr If OspfIf TypeOfService (TOS)

Instance	Decimal (0..0)
Groups	"GROUP Rtr If OspfIf TOS Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>* *Rtr/<string> If/<Ip Address> ospfIf OspfIfTypeOfService/ <Decimal>* *Rtr/<string> Vrf/<string> If/<Ip Address> ospfIf*

OspfIfTypeOfService/<Decimal>
This component describes the metrics to be advertised for a specified interface at various types-of-service.

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If OspfIf TOS Provisioned (Prov)

Properties	Provisioned
Description	Identifies a provisionable set of attributes.
Mib	no_mib

ATTRIBUTE Rtr If OspfIf TOS tosMetric

Access	Read and write
Description	The metric using this typeOfService on this interface.
Mib	no_mib
Values	Decimal (0..65535)
Default	1

COMPONENT Rtr If OspfIf Neighbor (Nbr)

Instance	IP address
Groups	"GROUP Rtr If OspfIf Nbr Provisioned (Prov)" "GROUP Rtr If OspfIf Nbr Operational (Oper)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>* *Rtr/<string> If/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>* *Rtr/<string> Vrf/<string> If/<Ip Address> ospfIf*

OspfIfNeighbor/<Ip Address>
This component represents a neighbor on a multi-access non-broadcast *OspfInterface* configured with its *ifType* attribute set to one of the following:
- ***nbma*** and the *rtrPriority* attribute is set to non-zero or
- ***pointToMultiPoint*** and *pointToMultiPointMode* is set to ***nonBroadcast***.

The operational attributes for this component can also be viewed from:
Vr/<string> Ip Ospf NbrEntry/<Ip Address>,<Decimal> or
Rtr/<string> Ospf NbrEntry/<Ip Address>,<Decimal> or
Rtr/<string> Vrf/<string> Ospf NbrEntry/<Ip Address>,<Decimal>

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr If OspfIf Nbr Provisioned (Prov)

Properties: Provisioned

Description: Identifies a group of Provisionable attributes.

Mib: no_mib

ATTRIBUTE Rtr If OspfIf Nbr priority

Access: Read and write

Description: The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network. The higher the number, the better are the chances of being a designated router.

Mib: no_mib

Values: Decimal (0..255)

Default	1

GROUP Rtr If OspfIf Nbr Operational (Oper)

Properties	Operational
Description	Contains the Operational set of attributes for the Neighbor.
Mib	no_mib

ATTRIBUTE Rtr If OspfIf Nbr rtrId

Access	Read only
Description	An Ip Address uniquely identifying the neighboring router in the Autonomous System.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr If OspfIf Nbr options

Access	Read only
Description	A bit mask corresponding to the neighbor's options field. Bit 0, if set, indicates that the area accepts and operates on external information, if zero, it is a stub area. Bit 1, if set, indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	no_mib
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Rtr If OspfIf Nbr state

Access	Read only
Description	The state of the relationship with this neighbor.

Mib	no_mib
Values	down attempt init twoWay exchangeStart exchange loading full
Default	No default

ATTRIBUTE Rtr If OspfIf Nbr events

Access	Read only
Description	The number of times this neighbor relationship has changed state, or an error has occurred.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If OspfIf Nbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If OspfIf Nbr exchangeStatus

Access	Read only
Description	Indicates the exchange status for a neighbor Entry.
Mib	no_mib
Values	master slave

Default	No default

ATTRIBUTE Rtr If OspfIf Nbr permanance

Access	Read only
Description	This attribute displays how the neighbor became an entry.
Mib	no_mib
Values	permanent dynamic
Default	permanent

COMPONENT Rtr If IsisInterface (IsisIf)

Groups	"GROUP Rtr If IsisIf Provisioned (Prov)" "GROUP Rtr If IsisIf Operational (Oper)" "GROUP Rtr If IsisIf Statistics (Stats)" "GROUP Rtr If IsisIf ErrorStatistics (Errors)"
Scope	Application
Description	*Rtr/<string> Interface/<Ip Address> IsisInterface* An *IsisIf* component can be created under each *Interface* component to run the ISIS protocol. This component requires an associated *Isis* component to be provisioned. This component requires at least one *Level* subcomponent to be provisioned.

	If the underlying media is ATM based, this component requires an *AtmConn* subcomponent to be provisioned.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr If IsisIf IsisIfLevel (Level)"
Common Verbs	Help List Display Add DELete

GROUP Rtr If IsisIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of attributes used to configure an ISIS Interface.
Mib	no_mib

ATTRIBUTE Rtr If IsisIf snmpAdminStatus

Access	Read: All Write: All
Description	This attribute specifies the administrative status of this *IsisInterface* component on this *Router.*
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr If IsisIf passive

Access	Read: All Write: All
Description	This attribute specifies whether the *IsisInterface* should be passive. A passive interface is one whose IP address is advertised

	in the LSP, but is not involved in ISIS protocol activities (for example, transmitting LSPs and establishing adjacencies).
Mib	no_mib
Values	no yes
Default	no

ATTRIBUTE Rtr If IsisIf lspInterval

Access	Read: All Write: All
Description	This attribute specifies, in milliseconds, the minimum time between transmission of successive LSPs on this interface. This minimum time applies to any LSP, whether it is the LSP of this *Router*, or another router's LSP that is being retransmitted.
Mib	no_mib
Values	Decimal (33..65535)
Units	msec
Default	100

ATTRIBUTE Rtr If IsisIf lspRetransmitInterval

Access	Read: All Write: All
Description	This attribute specifies, in seconds, the minimum time to wait before retransmitting this *Router's* LSP on this interface. An LSP retransmission occurs if a previously transmitted LSP is not acknowledged. Retransmissions only occur on point-to-point links.
Mib	no_mib
Values	Decimal (1..300)
Units	seconds
Default	5

GROUP Rtr If IsisIf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes associated with the ISIS protocol running on this interface.
Mib	no_mib

ATTRIBUTE Rtr If IsisIf upTime

Access	Read: All Write: Illegal
Description	This attribute indicates the time, in seconds, that the ISIS protocol has been operational on this interface.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Rtr If IsisIf adjacencyChanges (adjChanges)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that an adjacency on this interface has changed state.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf operState (state)

Access	Read: All Write: Illegal
Description	This attribute indicates the operational state of the ISIS Interface.
Mib	no_mib

Values	adminDown down up
Default	No default

GROUP Rtr If IsisIf Statistics (Stats)

Properties	Operational
Description	The attributes in this group are statistics associated with the normal operation of this *IsisInterface* component.
Mib	no_mib

ATTRIBUTE Rtr If IsisIf txLsps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSPs transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf rxLsps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSPs received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf txPtpHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of point-to-point hellos transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf rxPtpHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of point-to-point hellos received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf txBroadcastHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of broadcast hellos transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf rxBroadcastHellos

Access	Read: All Write: Illegal

Description	This attribute indicates the number of broadcast hellos received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf txCsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Complete Sequence Number PDUs (CSNPs) transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf rxCsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Complete Sequence Number PDUs (CSNPs) received on this interface since the last time this *Isis*If component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf txPsnps

Access	Read: All Write: Illegal

Description	This attribute indicates the number of Partial Sequence Number PDUs (PSNPs) transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf rxPsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Partial Sequence Number PDUs (PSNPs) received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf totalPacketsTxd

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of packets transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf totalPacketsRxd

Access	Read: All Write: Illegal

Description	This attribute indicates the total number of packets received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

GROUP Rtr If IsisIf ErrorStatistics (Errors)

Properties	Operational
Description	The attributes in this group are statistics associated with the operation of this *IsisInterface* component. Each attribute counts a specific abnormal event that has occurred since this component was last enabled.
Mib	no_mib

ATTRIBUTE Rtr If IsisIf initFails

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that initialization of this ISIS interface has failed.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf adjRejects

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that an attempt to form an adjacency on this interface has failed.
Mib	no_mib
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Rtr If IsisIf rxUnknownPacketTypes

Access	Read: All Write: Illegal
Description	This attribute indicates the number of packets of unknown type that were received on this interface since the last time this *IsisIf* component became enabled.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Rtr If IsisIf IsisIfLevel (Level)

Instance	Decimal (1..1)
Groups	"GROUP Rtr If IsisIf Level Provisioned (Prov)" "GROUP Rtr If IsisIf Level Operational (Oper)"
Scope	Application
Description	*Rtr/<string> Interface/<Ip Address> IsisIf Level/<1..2>* The ISIS routing protocol supports a two-level routing hierarchy. This component represents ISIS routing aspects that are specific to each routing level for this ISIS interface. In the current release, only *Level/1* is supported.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If IsisIf Level Provisioned (Prov)

Properties	Provisioned

Description	This group contains the attributes used to independently configure each ISIS interface routing level.
Mib	no_mib

ATTRIBUTE Rtr If IsisIf Level metric

Access	Read: All Write: All
Description	This attribute specifies the cost of this interface, which is used by the SPF algorithm in this and other routers. This value is advertised in the LSP.
Mib	no_mib
Values	Decimal (0..63)
Default	10

ATTRIBUTE Rtr If IsisIf Level helloInterval

Access	Read: All Write: All
Description	This attribute specifies the time, in seconds, between transmission of successive hello messages (IIH PDU).
Mib	no_mib
Values	Decimal (1..20000)
Units	seconds
Default	10

ATTRIBUTE Rtr If IsisIf Level helloMultiplier

Access	Read: All Write: All
Description	This attribute specifies the factor by which the *helloInterval* attribute is multiplied in order to create the hold time value transmitted in the hello packets (IIH PDU). The hold time value is used by the receiving router to determine how long it should maintain the adjacency if a subsequent hello packet is not received.

Mib	no_mib
Values	Decimal (2..100)
Default	3

ATTRIBUTE Rtr If IsisIf Level csnpInterval

Access	Read: All Write: All
Description	This attribute specifies the time interval, in seconds, between successive transmissions of the CSNP PDUs.
Mib	no_mib
Values	Decimal (1..600)
Units	seconds
Default	10

ATTRIBUTE Rtr If IsisIf Level priority

Access	Read: All Write: All
Description	This attribute specifies the DIS priority for this router. On a multi-access LAN, the router with the highest DIS priority is elected to represent the LAN. The elected router transmits an LSP for the pseudonode representing the LAN.
Mib	no_mib
Values	Decimal (0..127)
Default	64

GROUP Rtr If IsisIf Level Operational (Oper)

Properties	Operational
Description	This group contains attributes representing the operational state of this *IsisIf Level* component.
Mib	no_mib

ATTRIBUTE Rtr If IsisIf Level disId

Access	Read: All Write: Illegal
Description	This attribute indicates the system ID of the ISIS router acting as DIS for the LAN to which this interface is attached. For non-LAN interfaces, the value of this attribute is ***N/A***.
Mib	no_mib
Values	String (1..14, ASCII)
Default	No default

ATTRIBUTE Rtr If IsisIf Level disChanges

Access	Read: All Write: Illegal
Description	This attribute indicates the number of DIS changes that have occurred on this interface for this level.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf Level adjacencies

Access	Read: All Write: Illegal
Description	This attribute indicates the number of active adjacencies that exist on this interface for this level.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IsisIf Level timeToNextTxHello

Access	Read: All Write: Illegal
Description	This attribute indicates the time, in seconds, until the next Hello message is to be transmitted on this interface for this level.

Mib	no_mib
Values	Decimal (0..600)
Units	seconds
Default	No default

COMPONENT Rtr If IngressServices (IS)

Groups	"GROUP Rtr If IS IngressServicesLinks (IsLinks)" "GROUP Rtr If IS ServiceSpecification (Sp)" "GROUP Rtr If IS InterfaceServices (IntServ)"
Scope	Application
Description	*Vr/<string> Pp/<string> Ip IngressServices* *Rtr/<string> Vrf/<string> If/<x.x.x.x> IngressServices* This component and its subcomponents represent various traffic management services applied to IP traffic entering an interface.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr If IS MeterStatistics (Meter)"
Common Verbs	Help List Display Add DELete

GROUP Rtr If IS IngressServicesLinks (IsLinks)

Properties	Provisioned
Description	This group contains links to various components for traffic management services applied to IP traffic entering an interface.
Mib	no_mib

ATTRIBUTE Rtr If IS linkToDiffServProfile (dsLink)

Access	Read and write

Description	This attribute specifies the *DiffServProfile* component applied to IP traffic entering an interface.
Mib	no_mib
Values	Link (Service, linkToDiffServUsers)
Default	No default

ATTRIBUTE Rtr If IS linkToPolicerProfile (policerLink)

Access	Read and write
Description	This attribute specifies the *PolicerProfile* component applied to IP traffic entering an interface.
Mib	no_mib
Values	Link (Service, linkToPolicerUsers)
Default	No default

GROUP Rtr If IS ServiceSpecification (Sp)

Properties	Provisioned
Description	This group contains provisionable attributes of the *IngressServices* component.
Mib	no_mib

ATTRIBUTE Rtr If IS discardPriorityMode (dpMode)

Access	Read and write
Description	This attribute specifies how drop precedence is assigned to IP traffic entering an interface. If this attribute is set to ***mapPhbToDp*** then drop precedence is assigned to IP traffic entering the interface as explained in the description of the *DifferentiatedServicesDomain* component. If this attribute is set to ***mapLayer2ToDp*** then the drop precedence assigned to IP traffic entering the interface is determined by the ingress Layer 2 media. For an IP packet arriving on *AtmMpe* the cell loss priority (CLP) bit in the ingress

cell header is mapped to drop precedence value according to ATM traffic management provisioning. For an IP packet arriving on *FrDte or IpDlciGroup* the discard eligible (DE) bit in the ingress frame header is mapped to drop precedence value according to Frame Relay traffic management provisioning. For IP traffic arriving on other media ***high*** drop precedence is assigned.

The *Rtr Interface IngressServices dpMode* and *Rtr Vrf Interface IngressServices dpMode* attributes must be set to ***mapPhbToDp***.

The *IpPort IngressServices dpMode* attribute must be set to ***mapPhbToDp*** if the *linkToPolicerProfile* attribute is set or if the *IpPort* is associated with IP tunnel media.

The *IpPort IngressServices dpMode* attribute has no effect if either of the following two conditions is true:
1) the *VirtualRouter* component does not have *DifferentiatedServicesDomain* subcomponent (see the description of the *CosPolicyGroup* component for more information about drop precedence in this case);
2) the IP packet leaves an interface where the *IpPort EgressServices linkToPolicerProfile* attribute is set (see the description of the *PolicerProfile Meter PolicedPhb outOfProfile* attribute for more information about drop precedence in this case).

Mib: no_mib

Values: mapPhbToDp
mapLayer2ToDp

Default: mapPhbToDp

GROUP Rtr If IS InterfaceServices (IntServ)

Properties: Provisioned

Description: This group contains provisionable attributes that are common to both *IngressServices* and *EgressServices* components..

Mib: no_mib

ATTRIBUTE Rtr If IS policerStatsSpooling (spool)

Access	Read and write
Description	This attribute specifies whether spooling of IP traffic meter statistics at an interface is enabled or disabled. This attribute is applicable at at an ingress interface only if the *IngressServices linkToPolicerProfile* attribute is set. This attribute is applicable at at an egress interface only if the *EgressServices linkToPolicerProfile* attribute is set.
Mib	no_mib
Values	off on
Default	off

COMPONENT Rtr If IS MeterStatistics (Meter)

Instance	String (1..20, ASCII)
Groups	"GROUP Rtr If IS Meter Operational (Oper)" "GROUP Rtr If IS Meter Statistics (Stats)"

"COLLECTED STATS Router Interface IngressServices MeterStatistics"

Scope	Application
Description	*Vr/<string> Pp/<string> Ip Is MeterStatistics/<string>* *Vr/<string> Pp/<string> Ip Es MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Is MeterStatistics/ <string>* *Rtr/<string> Vrf<string> If<ipAddress> Es MeterStatistics/ <string>* This component represents operational data for a *Meter* component that has been activated at an interface. One *MeterStatistics* component is created dynamically under the *Is* component for each *Meter* subcomponent of a *PolicerProfile*

that is assigned to the *Is* component; likewise, one *MeterStatistics* subcomponent is created dynamically under the *Es* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Es* component.

Mib: no_mib

Common Verbs:
- Help
- List
- Display

GROUP Rtr If IS Meter Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *MeterStatistics* component.

Mib: no_mib

ATTRIBUTE Rtr If IS Meter committedInformationRate (cir)

Access: Read only

Description: This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.

The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Mib: no_mib

Values: Decimal (0..50000000)

Units: bit/s

Default: No default

ATTRIBUTE Rtr If IS Meter excessInformationRate (eir)

Access: Read only

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).
Mib	no_mib
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE Rtr If IS Meter committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Rtr If IS Meter excessBurstSize (be)

Access	Read only
Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib

Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Rtr If IS Meter measurmentInterval (t)

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	No default

GROUP Rtr If IS Meter Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the *MeterStatistics* component.
Mib	no_mib

ATTRIBUTE Rtr If IS Meter packetsReceived

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter. It includes packets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter octetsReceived

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter. It includes octets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter eirPacketsReceived (excessPackets)

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter eirOctetsReceived (excessOctets)

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter packetsRemarked

Access	Read only

Description	This attribute counts the number of packets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter octetsRemarked

Access	Read only
Description	This attribute counts the number of octets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter packetsDiscarded

Access	Read only
Description	This attribute counts the number of packets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If IS Meter octetsDiscarded

Access	Read only
Description	This attribute counts the number of octets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer

Default	No default
Default	COLLECTED STATS Router Interface IngressServices MeterStatistics
Description	The statistics record generated by the Router Interface IngressServices MeterStatistics component.

ATTRIBUTE Rtr If IS Meter committedInformationRate (cir)

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr If IS Meter excessInformationRate (eir)

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).
Values	Decimal (0..50000000)

ATTRIBUTE Rtr If IS Meter committedBurstSize (bc)

Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr If IS Meter excessBurstSize (be)

Description	This attribute indicates the excess burst size (be) in bits for the *Meter*.

The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Rtr If IS Meter measurmentInterval (t)

Description This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*.
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values Decimal (0..4294967295)

ATTRIBUTE Rtr If IS Meter packetsReceived

Description This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values Long Integer

ATTRIBUTE Rtr If IS Meter octetsReceived

Description This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values Long Integer

ATTRIBUTE Rtr If IS Meter eirPacketsReceived (excessPackets)

Description This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If IS Meter eirOctetsReceived (excessOctets)

Description This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values	Long Integer

ATTRIBUTE Rtr If IS Meter packetsRemarked

Description	This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr If IS Meter octetsRemarked

Description	This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr If IS Meter packetsDiscarded

Description	This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.
Values	Long Integer

ATTRIBUTE Rtr If IS Meter octetsDiscarded

Description	This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .
Values	Long Integer

COMPONENT Rtr If EgressServices (ES)

Groups	"GROUP Rtr If ES EgressServicesLinks (EsLinks)" "GROUP Rtr If ES InterfaceServices (IntServ)"
Scope	Application
Description	*Vr/<string> Pp/<string> Ip EgressServices* *Rtr/<string> Vrf/<string> If/<x.x.x.x> EgressServices*

	This component and its subcomponents represent various traffic management services applied to IP traffic leaving an interface.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr If ES MeterStatistics (Meter)"
Common Verbs	Help List Display Add DELete

GROUP Rtr If ES EgressServicesLinks (EsLinks)

Properties	Provisioned
Description	This group contains links to various components for traffic management services applied to IP traffic leaving an interface.
Mib	no_mib

ATTRIBUTE Rtr If ES linkToDiffServProfile (dsLink)

Access	Read and write
Description	This attribute specifies the *DiffServProfile* component applied to IP traffic leaving an interface.
Mib	no_mib
Values	Link (Service, linkToDiffServUsers)
Default	No default

ATTRIBUTE Rtr If ES linkToPolicerProfile (policerLink)

Access	Read and write
Description	This attribute specifies the *PolicerProfile* component applied to IP traffic leaving an interface.
Mib	no_mib
Values	Link (Service, linkToPolicerUsers)

Default	No default

GROUP Rtr If ES InterfaceServices (IntServ)

Properties	Provisioned
Description	This group contains provisionable attributes that are common to both *IngressServices* and *EgressServices* components..
Mib	no_mib

ATTRIBUTE Rtr If ES policerStatsSpooling (spool)

Access	Read and write
Description	This attribute specifies whether spooling of IP traffic meter statistics at an interface is enabled or disabled. This attribute is applicable at at an ingress interface only if the *IngressServices linkToPolicerProfile* attribute is set. This attribute is applicable at at an egress interface only if the *EgressServices linkToPolicerProfile* attribute is set.
Mib	no_mib
Values	off on
Default	off

COMPONENT Rtr If ES MeterStatistics (Meter)

Instance	String (1..20, ASCII)
Groups	"GROUP Rtr If ES Meter Operational (Oper)" "GROUP Rtr If ES Meter Statistics (Stats)"

"COLLECTED STATS Router Interface EgressServices MeterStatistics"

Scope	Application
Description	*Vr/<string> Pp/<string> Ip Is MeterStatistics/<string>* *Vr/<string> Pp/<string> Ip Es MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Is MeterStatistics/*

<string>
Rtr/<string> Vrf<string> If<ipAddress> Es MeterStatistics/ <string>

This component represents operational data for a *Meter* component that has been activated at an interface.

One *MeterStatistics* component is created dynamically under the *Is* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Is* component; likewise, one *MeterStatistics* subcomponent is created dynamically under the *Es* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Es* component.

Mib: no_mib

Common Verbs: Help, List, Display

GROUP Rtr If ES Meter Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *MeterStatistics* component.

Mib: no_mib

ATTRIBUTE Rtr If ES Meter committedInformationRate (cir)

Access: Read only

Description: This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions.

The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Mib: no_mib

Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE Rtr If ES Meter excessInformationRate (eir)

Access	Read only
Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).
Mib	no_mib
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE Rtr If ES Meter committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Rtr If ES Meter excessBurstSize (be)

Access	Read only

Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	no_mib
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Rtr If ES Meter measurmentInterval (t)

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	msec
Default	No default

GROUP Rtr If ES Meter Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the *MeterStatistics* component.
Mib	no_mib

ATTRIBUTE Rtr If ES Meter packetsReceived

Access	Read only

Description	This attribute counts the number of packets received by the traffic meter. It includes packets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter octetsReceived

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter. It includes octets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter eirPacketsReceived (excessPackets)

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter eirOctetsReceived (excessOctets)

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib

Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter packetsRemarked

Access	Read only
Description	This attribute counts the number of packets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter octetsRemarked

Access	Read only
Description	This attribute counts the number of octets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter packetsDiscarded

Access	Read only
Description	This attribute counts the number of packets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If ES Meter octetsDiscarded

Access	Read only
Description	This attribute counts the number of octets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	no_mib
Values	Long Integer
Default	No default
Default	COLLECTED STATS Router Interface EgressServices MeterStatistics
Description	The statistics record generated by the Router Interface EgressServices MeterStatistics component.

ATTRIBUTE Rtr If ES Meter committedInformationRate (cir)

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Rtr If ES Meter excessInformationRate (eir)

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).
Values	Decimal (0..50000000)

ATTRIBUTE Rtr If ES Meter committedBurstSize (bc)

Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the

upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Rtr If ES Meter excessBurstSize (be)

Description This attribute indicates the excess burst size (be) in bits for the *Meter.*
The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Rtr If ES Meter measurmentInterval (t)

Description This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter.*
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values Decimal (0..4294967295)

ATTRIBUTE Rtr If ES Meter packetsReceived

Description This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values Long Integer

ATTRIBUTE Rtr If ES Meter octetsReceived

Description This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values Long Integer

ATTRIBUTE Rtr If ES Meter eirPacketsReceived (excessPackets)

Description This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If ES Meter eirOctetsReceived (excessOctets)

Description This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If ES Meter packetsRemarked

Description This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If ES Meter octetsRemarked

Description This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If ES Meter packetsDiscarded

Description This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Rtr If ES Meter octetsDiscarded

Description This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values Long Integer

COMPONENT Rtr If RipInterface (RipIf)

Groups "GROUP Rtr If RipIf Provisioned (Prov)"
"GROUP Rtr If RipIf Operational (Stat)"

Scope Application

Description	*Vr/<X> Pp/<X> IpPort LogicalIf/<Ip Address> RipInterface* *Rtr/<X> Interface/<X> RipInterface* *Rtr/<X> Vrf/<X> Interface/<X> RipInterface* This component is used to configure a *LogicalIf* or an *Interface* to run RIP protocol.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr If RipIf Neighbor (Nbr)"
Common Verbs	Help List Display Add DELete

GROUP Rtr If RipIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *RipIf* component.
Mib	no_mib

ATTRIBUTE Rtr If RipIf snmpAdminStatus

Access	Read and write
Description	Identifies the administrative status of this *RipInterface*. Setting this value to ***disabled*** will have the effect of rendering it inactive.
Mib	no_mib
Values	up down
Default	up

ATTRIBUTE Rtr If RipIf metric

Access	Read and write
Description	This attribute is the RIP metric for this logical interface.

Mib	no_mib
Values	Decimal (1..16)
Default	1

ATTRIBUTE Rtr If RipIf poisonReverseFlag (poison)

Access	Read and write
Description	If the value of this attribute is set to ***true***, then poison reverse algorithm is used when sending out the updates otherwise use split horizon only.
Mib	no_mib
Values	true false
Default	false

ATTRIBUTE Rtr If RipIf flashUpdateFlag

Access	Read and write
Description	This attribute when set to ***true*** will send updates when updates are received; otherwise RIP will wait till the next update period.
Mib	no_mib
Values	true false
Default	true

ATTRIBUTE Rtr If RipIf networkRouteStatus

Access	Read and write
Description	This attribute determines what type of network routes will be sent and whether a default route will be generated for this *RipInterface*. Generated default routes will not go into the routing table, but are sent in the updates going out on the interface. The possible values for this attribute are:

naturalNetWithOutDefaultRoute - This value will cause normal RIP network routes to be put in the update. This means that the address of *logicalIf* or *Interface* pertaining to this *RipInterface* knowledge is taken into account in determining if the subnetted network or the natural network is sent for any route going into this update.

naturalNetWithDefaultRoute - Selecting this value will cause a default route to be generated with the value of the metric selected for the attribute *defaultRouteMetric*.

defaultRouteOnly - Selection of this value causes the default route to be generated with the value of the metric selected for the attribute *defaultRouteMetric*.
NOTE: No other routes will go in the update.

subnetsOnly - selection of this value will cause only subnet information to be put in the update. No default routes will be generated or passed on. Only subnetted routes that are part of the same subnetted network that this *logicalInterface* or *Interface* is on will be put in the update.
NOTE: this also effects receiving of updates on this interface. Only subnetted routes that are part of the same subnetted network that this *logicalInterface* or *Interface* is on will be accepted on a received RIP update on this *RipInterface*.

Mib	no_mib
Values	naturalNetWithOutDefaultRoute (noDefault) naturalNetWithDefaultRoute (withDefault) defaultRouteOnly (defaultOnly) subnetsOnly (subnets)
Default	naturalNetWithOutDefaultRoute

ATTRIBUTE Rtr If RipIf defaultRouteMetric

Access	Read and write
Description	This attribute identifies the metric value for the default route. This value is only used if the attribute *networkRouteStatus* is configured with a value of either ***naturalNetWithDefaultRoute*** or ***defaultRouteOnly***

Mib	no_mib
Values	Decimal (1..16)
Default	1

ATTRIBUTE Rtr If RipIf acceptDefault

Access	Read and write
Description	If this attribute is set to true, then accept the default route from this interface.
Mib	no_mib
Values	true false
Default	true

ATTRIBUTE Rtr If RipIf ifConfSend

Access	Read and write
Description	This attribute identifies what the router sends on this *RipIf*. ***ripVersion1*** implies sending RIP updates compliant with RFC 1058. ***rip1Compatible*** implies broadcasting RIP-2 updates according to RFC 1058. ***ripVersion2*** implies multicasting RIP-2 updates.
Mib	no_mib
Values	doNotSend (silent) ripVersion1 (v1) rip1Compatible (v2b) ripVersion2 (v2)
Default	rip1Compatible

ATTRIBUTE Rtr If RipIf ifConfReceive

Access	Read and write
Description	This attribute identifies which version of RIP updates are to be accepted on this *RipIf*. Note that ***rip2*** and ***rip1OrRip2*** implies reception of multicast packets.

Mib	no_mib
Values	rip1 (v1) rip2 (v2) rip1OrRip2 (both) doNotReceive (reject)
Default	rip1OrRip2

GROUP Rtr If RipIf Operational (Stat)

Properties	Operational
Description	This group contains operational attributes of the *RipIf* component. These attributes are statistical data corresponding to the RIP-2 standard MIB (rfc 1724) rip2Status table.
Mib	no_mib

ATTRIBUTE Rtr If RipIf ifBadPacketRcv

Access	Read only
Description	This attribute counts the number of RIP response packets recieved by the RIP process which were subsequently discarded for any reason.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If RipIf ifBadRouteRcv

Access	Read only
Description	This attribute counts how many routes, in valid RIP packets, were ignored for any reason.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr If RipIf ifTriggeredUpdates

Access	Read only
Description	This attribute counts the number of triggered updates actually sent on this interface. This explicitly does NOT include full updates sent containing new information.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr If RipIf Neighbor (Nbr)

Instance	IP address
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> RipIf Neighbor/<Ip address>* *Rtr/<string> Interface/<Ip Address> RipIf Neighbor/<Ip address>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> RipIf Neighbor/<Ip address>* This component is used to configure the Ip Address of the non broadcast multi access (NBMA) neighbor.
Mib	no_mib
Common Verbs	Help List Display Add DELete

COMPONENT Rtr If VrrpPort

Instance	Decimal (1..255)
Groups	"GROUP Rtr If VrrpPort Provisioned (Prov)" "GROUP Rtr If VrrpPort Operational (Oper)" "GROUP Rtr If VrrpPort AdministrativeControl (AdminControl)"

	"GROUP Rtr If VrrpPort OperationalStatus (OperStatus)" "GROUP Rtr If VrrpPort OsiState (State)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort VrrpPort/<n>* *Rtr/<string> Vrf/<string> Interface VrrpPort/<n>* This component contains attributes that define a VRRP virtual router instance associated with this *IpPort*. The component instance (n) is the VRRP virtual router VRID.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr If VrrpPort Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the VrrpPort component.
Mib	no_mib

ATTRIBUTE Rtr If VrrpPort priority

Access	Read and write
Description	This attribute specifies the priority of *VrrpPort* during election of a master VRRP virtual router. A priority of 0 (zero) is reserved for the master to indicate it is releasing responsibility for the VRRP virtual router. A priority of 255 is reserved for the VRRP virtual router that owns (has as real interfaces) the IP addresses associated with this *VrrpPort*.
Mib	no_mib
Values	Decimal (1..255)

Default	100

ATTRIBUTE Rtr If VrrpPort advertisementInterval

Access	Read and write
Description	This attribute specifies the time interval between VRRP advertisements which will be sent by the master VRRP virtual router.
Mib	no_mib
Values	Decimal (1..255)
Units	seconds
Default	1

ATTRIBUTE Rtr If VrrpPort listLinkToCriticalIp (listLinkToCIp)

Access	Read and write
Description	This attribute specifies the *CriticalIp* instance to which the *VrrpPort* instance is linked. If the *IpPort* associated with this *CriticalIp* instance becomes disabled, the *VrrpPort* becomes disabled..
Mib	no_mib
Values	Link (Service, listLinkToVrrp)
Default	No default

ATTRIBUTE Rtr If VrrpPort ipAddresses

Access	Read and write
Description	This attribute specifies one or more IP addresses associated with this *VrrpPort* instance (VRID). All VRRP virtual routers with this VRID must have the same set of IP addresses configured. Each of the IP addresses in the list must be on the same subnet as an *IpLogicalInterface* for the *IpPort*. All the IP addresses in the list must be owned by this VRRP virtual router or by other VRRP virtual routers but not a combination.

Mib	no_mib
List of	IP address
Default	No default

GROUP Rtr If VrrpPort Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *VrrpPort* component.
Mib	no_mib

ATTRIBUTE Rtr If VrrpPort virtualRouterState

Access	Read only
Description	This attribute indicates the state of this *VrrpPort* instance. It will be one of three states: initialize, backup and master.
Mib	no_mib
Values	initialize backup master
Default	initialize

ATTRIBUTE Rtr If VrrpPort virtualRouterPhysicalAddress

Access	Read only
Description	This attributes indicates the physcial address of the *VrrpPort*. The address is a virtual physical address of the form “00-00-5e-00-01-VRID” where the VRID is the instance value of the *VrrpPort*.
Mib	no_mib
Values	String (6, Dashed Hex)
Default	No default

GROUP Rtr If VrrpPort AdministrativeControl (AdminControl)

Properties	Provisioned

Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	no_mib

ATTRIBUTE Rtr If VrrpPort snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr If VrrpPort OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr If VrrpPort snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib

Values	up down testing
Default	up

GROUP Rtr If VrrpPort OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If VrrpPort adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If VrrpPort operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If VrrpPort usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	no_mib
Values	idle active (activ) busy
Default	idle

COMPONENT Rtr If Loopback (Lb)

Groups	"GROUP Rtr If Lb IfEntryProv (IfEntry)" "GROUP Rtr If Lb Provisioned (Prov)" "GROUP Rtr If Lb OsiState (State)" "GROUP Rtr If Lb OperationalStatus (OperStatus)"
Scope	Application
Description	*Rtr/<string> Interface/<string> Loopback* *Rtr/<string> Vrf/<string> Interface/<string> Loopback* The *Loopback* component represents an instance of a logical media. *Loopback* provides IP connectivity between routers on the same module, and supports an ‘always-up IP interface’ concept; i.e interface stays up unless it is administratively disabled or the hardware goes down.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If Lb IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Rtr If Lb ifAdminStatus (ifState)

Access	Read and write

Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr If Lb ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Rtr If Lb Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Loopback* component.
Mib	no_mib

ATTRIBUTE Rtr If Lb mode

Access	Read and write
Criticality	Component
Description	This attribute specifies the mode of operation of the *Loopback*. The following modes are supported: ***alwaysUpInterface***, and ***primaryLoopback***.

alwaysUpInterface: This mode limits the *Loopback* to provide the functionality of an 'always up interface' only. Inter router communication is not possible when this mode is selected. Memory consumption by the *Loopback If* is significantly less on the FP when this mode is selected. Hence this mode should be used when the sole purpose of the *Loopback If* is to provide an always up interface for an application like BGP4.

primaryLoopback: Only supported under *Router*; a router can have only one Interface which has a *Loopback* component with mode primaryLoopback.

Mib	no_mib
Values	alwaysUpInterface primaryLoopback
Default	alwaysUpInterface

GROUP Rtr If Lb OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If Lb adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr If Lb operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr If Lb usageState (osiUsage)

Access: Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr If Lb OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr If Lb snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr If RsvpTeIf

Groups	"GROUP Rtr If RsvpTeIf Provisioned (Prov)" "GROUP Rtr If RsvpTeIf OsiState (State)" "GROUP Rtr If RsvpTeIf Operational (Op)" "GROUP Rtr If RsvpTeIf InboundStatistics (InStats)" "GROUP Rtr If RsvpTeIf OutboundStatistics (OutStats)"
Scope	Application
Description	*Rtr/<s> Interface/<IP Address> RsvpTeIf* This component represents an instance of the RSVP-TE protocol running over the interface.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr If RsvpTeIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains attributes for MPLS RSVP-TE configurable capability on a per interface basis.
Mib	no_mib

ATTRIBUTE Rtr If RsvpTeIf adminStatus (status)

Access	Read: All Write: All
Description	This attribute specifies the administrative status of this RSVP-TE interface. It is used to maintain the admin state over FP and nodal restarts.
Mib	no_mib

Values	null enabled disabled testing
Default	enabled

ATTRIBUTE Rtr If RsvpTelf reservableFactor (resFactor)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the percentage of media bandwidth available for LSP Tunnel reservations over this interface. A value of 0 prevents any bandwidth allocation for LSPs. A value of 100 allows RSVP-TE exclusive use of available bandwidth. Intermediate values allow distribution of bandwidth amongst RSVP-TE and other applications.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	50

ATTRIBUTE Rtr If RsvpTelf overbookingFactor (overBook)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the percentage of the total bandwidth pool that is not sharable between LSP connections. The percentage ranges from 0% to 1000%. This allows for both under and over subscription of the bandwidth. A value of 100 results in absolute allocations--signaled bandwidth is exactly that allocated. A value < 100 allows under subscription of the link. A value > 100 allows over subscription of the link.

Mib	no_mib
Values	Decimal (0..1000)
Units	%
Default	100

ATTRIBUTE Rtr If RsvpTelf mediaCapacity (mediaCap)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the capacity in kbits/sec of the underlying media link for the interface. For GigE links, the default can be retained. For ATM links, this attribute should be set to the sum of the bandwidth provisioned for the underlying VCC(s) linked to the associated *Rtr/<s> Interface/<IP Address> AtmMpe*.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	kbit/s
Default	860000

ATTRIBUTE Rtr If RsvpTelf refreshInterval (rInt)

Access	Read: All Write: All
Description	This attribute specifies the interval between refresh messages sent by this LSR on this interface. This value is sent in the TIME_VALUES object of the PATH/RESV message to the next hop and is used in calculation of the lifetime of the PATH/RESV state block at the next hop. Setting this value will override the *refreshInterval* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib

Values	Decimal (1..1800) sameAsRsvpTe
Units	seconds
Default	sameAsRsvpTe

ATTRIBUTE Rtr If RsvpTelf refreshKeepMultiplier (rKeep)

Access	Read: All Write: All
Description	This attribute specifies the default minimum number of refresh intervals that must pass before a PATH or a RESV state which is not being refreshed is aged out. This value is used in calculating the lifetime of the Path State Blocks (PSB) and Reservation State Blocks (RSB) for this interface; it prevents premature loss of these states. Setting this value will override the *refreshKeepMultiplier* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (1..50) sameAsRsvpTe
Default	sameAsRsvpTe

ATTRIBUTE Rtr If RsvpTelf slewMax (slew)

Access	Read: All Write: All
Description	This value specifies the rate at which an increase in the *refreshInterval* is introduced on the LSR. When a new *refreshInterval* value is provisioned to a higher value, the refresh interval is increased at *slewMax* percentage of the previous interval at each PATH/RESV cycle. In another words, the ratio of two successive refresh interval values do not exceed 1 + (Slew Max/100). Setting this value will override the *slewMax* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib

Values	Decimal (1..200) sameAsRsvpTe
Units	%
Default	sameAsRsvpTe

ATTRIBUTE Rtr If RsvpTelf helloInterval (hInt)

Access	Read: All Write: All
Description	This attribute specifies the interval between HELLO messages sent by this LSR on this interface. A value of ***disabled*** indicates that the Hello mechanism is not enabled. Setting this value will override the *helloInterval* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (0.1..100.0) disabled sameAsRsvpTe
Units	seconds
Default	sameAsRsvpTe

ATTRIBUTE Rtr If RsvpTelf helloMultiplier (hMult)

Access	Read: All Write: All
Description	This attribute specifies the minimum number of HELLO intervals that must pass before the RSVP-TE connection is considered down. Setting this value will override the *helloMultiple* attribute value under *Rtr/<s> RsvpTe*.
Mib	no_mib
Values	Decimal (2.0; 2.5; 3.0; 3.5; 4.0; 4.5; 5.0; 5.5; 6.0; 6.5; 7.0; 7.5; 8.0; 8.5; 9.0; 9.5; 10.0) sameAsRsvpTe
Default	sameAsRsvpTe

GROUP Rtr If RsvpTelf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If RsvpTelf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If RsvpTelf operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If RsvpTelf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr If RsvpTelf Operational (Op)

Properties	Operational
Description	This group contains the attributes that comprise the control statistics collected by the *RsvpTeIf* component.
Mib	no_mib

ATTRIBUTE Rtr If RsvpTelf bandwidthTotal (bwTot)

Access	Read: All Write: Illegal
Description	This attribute indicates the bandwidth pool size for this component.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If RsvpTelf admittedBandwidth (admBw)

Access	Read: All Write: Illegal
Description	This attribute indicates the bandwidth currently reserved for LSP connections.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If RsvpTelf availableBandwidth (availBw)

Access	Read: All Write: Illegal
Description	This attribute indicates the remaining reservable bandwidth.
Mib	no_mib
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Rtr If RsvpTelf helloState (hState)

Access	Read: All Write: Illegal
Description	This attribute indicates if a hello adjacency is being maintained with the RSVP-TE neighbor for this interface.
Mib	no_mib
Values	disabled (dis) down up
Default	No default

GROUP Rtr If RsvpTelf InboundStatistics (InStats)

Properties	Operational
Description	This group contains the attributes that comprise the incoming datapath statistics collected by this component.
Mib	no_mib

ATTRIBUTE Rtr If RsvpTelf inFrames

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frames received for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If RsvpTelf inOctets

Access	Read: All Write: Illegal

Description	This attribute indicates the accumulated number of octets received for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If RsvpTelf inFrameDiscards (inDisc)

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frame discards received and discarded for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

GROUP Rtr If RsvpTelf OutboundStatistics (OutStats)

Properties	Operational
Description	This group contains the attributes that comprise the outgoing datapath statistics collected by this component.
Mib	no_mib

ATTRIBUTE Rtr If RsvpTelf outFrames

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frames sent for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer

Default	No default

ATTRIBUTE Rtr If RsvpTelf outOctets

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of octets sent for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If RsvpTelf outFrameDiscards (outDisc)

Access	Read: All Write: Illegal
Description	This attribute indicates the accumulated number of frame discards sent and discarded for the Rsvp-Te LSPs on this interface. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr If LabelDistributionProtocolIf (LdpIf)

Groups	"GROUP Rtr If LdpIf Provisioned (Prov)" "GROUP Rtr If LdpIf OsiState (State)" "GROUP Rtr If LdpIf InStatistics (InStats)" "GROUP Rtr If LdpIf OutStatistics (OutStats)"
Scope	Application
Description	*Rtr/<s> If/<s> LdpIf* This component represents the fact that the Label Distribution Protocol is to run over the associated interface.

A provisioning check is made to ensure that a *Rtr Ldp* component exists.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Rtr If Ldplf Provisioned (Prov)

Properties: Provisioned

Description: This group contains the attributes for configuring LDP use over the interface.

Mib: no_mib

ATTRIBUTE Rtr If Ldplf adminStatus (admin)

Access: Read: All
Write: All

Description: This attribute specifies the administrative status of this LDP Interface. It is used to maintain “locks” and “unlocks” over FP and nodal restarts.

Mib: no_mib

Values:
- null
- enabled
- disabled
- testing

Default: enabled

GROUP Rtr If Ldplf OsiState (State)

Properties: Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If Ldplf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If Ldplf operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr If Ldplf usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values: idle
active (activ)
busy

Default: idle

GROUP Rtr If Ldplf InStatistics (InStats)

Properties: Operational

Description	This group contains the operational statistics for incoming traffic of the *InwRtrLdpIf* component on the ingress side of a tandem or destination switch.
Mib	no_mib

ATTRIBUTE Rtr If LdpIf inOctets

Access	Read: All Write: Illegal
Description	This attribute counts the octets received from terminating or incoming tandem MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If LdpIf inFrames

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from terminating or incoming tandem MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If LdpIf inFramesDiscards

Access	Read: All Write: Illegal
Description	This attribute counts the frames received but discarded from terminating or incoming tandem MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib

Values	Long Integer
Default	No default

GROUP Rtr If LdpIf OutStatistics (OutStats)

Properties	Operational
Description	This group contains the operational statistics for outgoing traffic of *InwRtrLdpIf* component on the egress side of an originating or tandem switch.
Mib	no_mib

ATTRIBUTE Rtr If LdpIf outOctets

Access	Read: All Write: Illegal
Description	This attribute counts the octets transmitted for originating or outgoing transit MPLS data. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If LdpIf outFrames

Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted for originating or outgoing transit MPLS data. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If LdpIf outFramesDiscards

Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted that were discarded. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr If IpoDlci

Groups	"GROUP Rtr If IpoDlci CustomerIdentifierData (CidData)" "GROUP Rtr If IpoDlci IfEntryProv (IfEntry)" "GROUP Rtr If IpoDlci Provisioned (Prov)" "GROUP Rtr If IpoDlci OsiState (State)" "GROUP Rtr If IpoDlci OperationalStatus (OperStatus)"
Scope	Application
Description	*IpoDlci* This component represents a logical interface between a *Router Vrf Interface* and a *FrameRelay* Interface (*FrUni*). An *IpoDlci* associates multiple frame relay *DataLinkConnectionIdentifers (Dlci)* with a single *Router Vrf Interface*. The *IpoDlci* component is associated with a frame relay Dlcis using the *linkToFrDlci* attribute in each *FrConnection* subcomponent.
Mib	no_mib
Subcomponents	"COMPONENT Rtr If IpoDlci FrConnection (Frc)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr If IpoDlci CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Rtr If IpoDlci customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Rtr If IpoDlci IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	no_mib

ATTRIBUTE Rtr If IpoDlci ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

ATTRIBUTE Rtr If IpoDlci ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	no_mib
Values	Decimal (1..65535)
Default	No default

GROUP Rtr If IpoDlci Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *IpDlciGroup* component.
Mib	no_mib

ATTRIBUTE Rtr If IpoDlci maxTransmissionUnit (mtuSize)

Access	Read and write

Description	This attribute specifies the size of the largest datagram (including the frame relay header) which can be sent on the interface.
Mib	no_mib
Values	Decimal (262..9190)
Units	octets
Default	1604

GROUP Rtr If IpoDlci OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr If IpoDlci adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If IpoDlci operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If IpoDlci usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr If IpoDlci OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	no_mib

ATTRIBUTE Rtr If IpoDlci snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

COMPONENT Rtr If IpoDlci FrConnection (Frc)

Instance	Decimal (1..255)
Groups	"GROUP Rtr If IpoDlci Frc Provisioned (Prov)" "GROUP Rtr If IpoDlci Frc OsiState (State)" "GROUP Rtr If IpoDlci Frc Statistics (Stats)"

Scope	Application
Description	*IpDlciGrp/n FrConnection/n* This component represents a virtual connection over which internetworking frames are relayed between IP and frame relay.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If IpoDlci Frc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *FrConnection* component.
Mib	no_mib

ATTRIBUTE Rtr If IpoDlci Frc linkToFrDlci (frDlci)

Access	Read and write
Criticality	Component
Description	This attribute specifies the frame relay *Dlci IpConn* component that this connection is associated with.
Mib	no_mib
Values	Link (Hardware, linkToIpDlciGrp)
Default	No default

ATTRIBUTE Rtr If IpoDlci Frc ipCos

Access	Read and write
Criticality	Component
Description	This attribute specifies the connection class of the Frame Relay connection. This value is used to distinguish the connection from

others for the purpose of IP forwarding and accounting. Connection class values vary in range from ***0*** to ***3*** allowing up to four connections to be distinguished on each next hop between routers.

If an IP packet is forwarded by a *ProtocolPort* or *Interface* configured to use more than one Frame Relay connection, then one of the connections is selected for transmitting the packet. The selection is based on either the Differentiated Services Code Point (DSCP) field of the IP packet or the Class of Service (CoS) assigned to the packet.

DSCP based selection of the outgoing connection is explained in the description of the *DifferentiatedServicesDomain* component. Class of Service (CoS) based selection of the outgoing connection is explained in the description of the *Vr Ip CosPolicyGroup* component.

Modifying this attribute will reset the *FrConnection*.

If the *FrConnection* is used by a *VirtualRouter ProtocolPort* and the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* also specifies the initial Class of Service (CoS) value assigned to an IP packet received on the Frame Relay connection. See the description of *Vr Ip CosPolicyGroup* for more information.

Mib	no_mib
Values	Decimal (0..3)
Default	0

ATTRIBUTE Rtr If IpoDlci Frc linkToIpLogicalInterface (ipIf)

Access	Read and write
Description	This attribute specifies the IP logical interface, *Vr/m Pp/n IpPort LogicalIf/ipAddress*, that this connection is associated with. When set, the value of this attribute must be consistent with the *linkToProtocolPort* attribute value of the parent *IpDlciGroup*

component. That is, they must both point to the same *ProtocolPort* component.

Mib: no_mib

Values: Link (Service, linkToMediaConnection)

Default: No default

GROUP Rtr If IpoDlci Frc OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: no_mib

ATTRIBUTE Rtr If IpoDlci Frc adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If IpoDlci Frc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr If IpoDlci Frc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib

Values	idle active (activ) busy
Default	idle

GROUP Rtr If IpoDlci Frc Statistics (Stats)

Properties	Operational
Description	This group contains the packet based statistics maintained for the *FrConnection* component.
Mib	no_mib

ATTRIBUTE Rtr If IpoDlci Frc inUnknownProtocol

Access	Read only
Description	This attribute counts the packets received on this connection which are discarded because they contain an unknown protocol. This counter wraps around to ***0*** when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IpoDlci Frc inUnsupportedProtocol

Access	Read only
Description	This attribute counts the packets received on this connection which are discarded because they contain an unsupported protocol. This includes packets received for protocols not currently bound to the associated *ProtocolPort* component. This counter wraps around to ***0*** when it exceeds its maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr If IpoDlci Frc inLastDiscardedProtocolHeader

Access	Read only
Description	This attribute indicates the first eight octets of the most recent packet that was received from the interface with an unknown or unsupported protocol.
Mib	no_mib
Values	String (1..8, Hex)
Default	No default

COMPONENT Rtr If EnetApplication (Enet)

Groups	"GROUP Rtr If Enet CustomerIdentifierData (CidData)" "GROUP Rtr If Enet OsiState (State)" "GROUP Rtr If Enet OperationalStatus (OperStatus)" "GROUP Rtr If Enet Provisioned (Prov)" "GROUP Rtr If Enet Provisioned (Prov)" "GROUP Rtr If Enet Operational (Oper)"
Scope	Application
Description	*EnetApplication* The *EnetApplication* component is used to provide the interface between the *Interface* component and a LAN component such as *Ethernet*.
Mib	no_mib
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr If Enet CustomerIdentifierData (CidData)

Properties	Provisioned

Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	no_mib

ATTRIBUTE Rtr If Enet customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	no_mib
Values	Decimal (0; 1..8191)
Default	0

GROUP Rtr If Enet OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	no_mib

ATTRIBUTE Rtr If Enet adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr If Enet operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr If Enet usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: no_mib

Values: idle
active (activ)
busy

Default: idle

GROUP Rtr If Enet OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: no_mib

ATTRIBUTE Rtr If Enet snmpOperStatus

Access: Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	no_mib
Values	up down testing
Default	up

GROUP Rtr If Enet Provisioned (Prov)

Properties	Provisioned
Description	This group contains the link to the *EnetIf* application
Mib	no_mib

ATTRIBUTE Rtr If Enet linkToEnetIf (enetIf)

Access	Read: All Write: All
Criticality	Component
Description	This attribute associates a *EnetIf* application with a *Interface* component.
Mib	no_mib
Values	Link (Service, enetConnection)
Default	No default

GROUP Rtr If Enet Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for *Enet*Application.
Mib	no_mib

ATTRIBUTE Rtr If Enet encap

Access	Read: All Write: All
Description	This attribute indicates the encapsulation type to be used when sending packets out the corresponding *Interface*. The the default encapsulation is ethernet.
Mib	no_mib
Values	ieee8023 ethernet
Default	ethernet

GROUP Rtr If Enet Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for *EnetApplication.*
Mib	no_mib

ATTRIBUTE Rtr If Enet operEncap

Access	Read only
Description	This attribute indicates the current operational encapsulation type.
Mib	no_mib
Values	ieee8023 ethernet
Default	ethernet

COMPONENT Rtr If MplsBgpInterface (MplsBgpIf)

Groups	"GROUP Rtr If MplsBgpIf InStatistics (InStats)" "GROUP Rtr If MplsBgpIf OutStatistics (OutStats)"
Scope	Application
Description	*Rtr/<s> If/<s> MplsBgpIf* This component represents the interface that BGP uses to carry MPLS label information.

There is a maximum of one *MplsBgpIf* component under each *Interface* component.

Mib: no_mib

Common Verbs:
Help
List
Display

GROUP Rtr If MplsBgpIf InStatistics (InStats)

Properties: Operational

Description: This group contains the operational statistics for incoming labelled MPLS data traffic of the *MplsBgpIf* component on the ingress side of a tandem or destination switch.

Mib: no_mib

ATTRIBUTE Rtr If MplsBgpIf inOctets

Access: Read: All
Write: Illegal

Description: This attribute counts the octets received from terminating or incoming tandem labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.

Mib: no_mib

Values: Long Integer

Default: No default

ATTRIBUTE Rtr If MplsBgpIf inFrames

Access: Read: All
Write: Illegal

Description: This attribute counts the frames received from terminating or incoming tandem labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.

Mib: no_mib

Values	Long Integer
Default	No default

ATTRIBUTE Rtr If MplsBgpIf inFrameDiscards

Access	Read: All Write: Illegal
Description	This attribute counts the frames received but discarded from terminating or incoming tandem labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

GROUP Rtr If MplsBgpIf OutStatistics (OutStats)

Properties	Operational
Description	This group contains the operational statistcs for outgoing labelled MPLS data traffic of the *MplsBgpIf* component on the egress side of an originating or tandem switch.
Mib	no_mib

ATTRIBUTE Rtr If MplsBgpIf outOctets

Access	Read: All Write: Illegal
Description	This attribute counts the octets transmitted for originating or outgoing transit labelled MPLS data traffic. The counter wraps to zero when is maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If MplsBgpIf outFrames

Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted for originating or outgoing transit labelled MPLS data traffic. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

ATTRIBUTE Rtr If MplsBgpIf outFramesDiscards

Access	Read: All Write: Illegal
Description	This attribute counts the frames transmitted for labelled MPLS data traffic that were discarded. The counter wraps to zero when its maximum value is exceeded.
Mib	no_mib
Values	Long Integer
Default	No default

COMPONENT Rtr If PppApplication (Ppp)

Groups	"GROUP Rtr If Ppp Provisioned (Prov)"
Scope	Application
Description	*Rtr/n Vrf/y If/x.x.x.x PppApplication* This component provides a *PppApplication* component name that is used as an interface to the network.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr If Ppp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data for the *PppApplication* component.
Mib	no_mib

ATTRIBUTE Rtr If Ppp linkToMedia (media)

Access	Read and write
Criticality	Component
Description	This attribute contains a *Ppp* link level protocol component name. The attribute associates the *PppApplication* component with a *Ppp* link level protocol component.
Mib	no_mib
Values	Link (Service, linkToApplication)
Default	No default

COMPONENT Rtr MultiprotocolLabelSwitching (Mpls)

Groups	"GROUP Rtr Mpls Provisioned (Prov)" "GROUP Rtr Mpls Operational (Oper)" "GROUP Rtr Mpls FecAlarm"
Scope	Application
Description	*Rtr/<s> MultiprotocolLabelSwitching* This component and its subcomponents define a router capable of supporting Multiprotocol Label Switching (MPLS) origination of provisioned Label Switched Paths (LSPs). The switch is referred to as a Label Switching Router (LSR). This component specifies that--if one or more LSPs requested by the RFC2547 application are down--one alarm will be generated indicating that at least one LSP has gone down. The number of LSPs that are down is indicated by the attribute *unreachableAppFecCount*. This alarm will only be cleared when all LSPs requested by the RFC2547 application come back up.

	Deleting this component from provision will result in the set alarm being cleared even when not all LSPs have come back up.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Mpls Path" "COMPONENT Rtr Mpls LabelSwitchedPath (Lsp)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Mpls Provisioned (Prov)

Properties	Provisioned
Description	This group contains generic provisionable attributes for MPLS.
Mib	no_mib

ATTRIBUTE Rtr Mpls mplsRoutePreference (mplsRtePref)

Access	Read and write
Description	This attribute specifies the route preference of all *Rtr/<s> Mpls Lsp/n*. It is used by IP RTM to select the most preferred route from multiple available routes discovered by different protocols such as OSPF, RIP, BGP, and MPLS. More specifically, when an incoming IP packet has more than one best-destAddress-match routes (provided by different protocols) in the IP RTM, the route with higher preference (smaller route preference value) wins.
Mib	no_mib
Values	Decimal (1..63)
Default	10

GROUP Rtr Mpls Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for MPLS.

Mib	no_mib

ATTRIBUTE Rtr Mpls lsrId

Access	Read only
Description	This attribute indicates the IP address for this Label Switch Router (LSR).
Mib	no_mib
Values	IP address
Default	No default

GROUP Rtr Mpls FecAlarm

Properties	Operational
Description	This group contains operational attributes to indicate those FECs that are not reachable but are requested by the RFC 2547 application.
Mib	no_mib

ATTRIBUTE Rtr Mpls unreachableAppFecCount

Access	Read only
Description	This attribute indicates the number of FECs that are not reachable but are requested by the RFC 2547 application.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Mpls unreachableFec

Access	Read only
Description	This attribute indicates at most the first 25 FECs that are not reachable but are requested by the RFC 2547 application.

Mib	no_mib
List of	IP address
List Size	25
Default	No default

COMPONENT Rtr Mpls Path

Instance	Decimal (1..10000)
Scope	Application
Description	*Rtr/<s> Mpls Path/n* This component represents a list of hops that specifies a route to be taken by the Label Switched Path. The instance values for this list of hops specifies the hop sequence for the path. This can be a partial path. A *Path* component must have at least one *Hop* subcomponent provisioned. The maximum total number of *Path* components allowed per *Mpls* component is 4000.
Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Mpls Path Hop"
Common Verbs	Help List Display Add DELete

COMPONENT Rtr Mpls Path Hop

Instance	Decimal (1..50)
Groups	"GROUP Rtr Mpls Path Hop Provisioned (Prov)"
Scope	Application

Description	*Rtr/<s> Mpls Path/m Hop/n* This component is used to define a specific hop in a *Path*. The order of these components within a Path component instance is the order which is used to set up the path. The *ipv4address* attribute of a *Hop* component must be a valid class A, B or C non-reserved address. The maximum number of hops per path is 20.
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Mpls Path Hop Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for *Rtr/<s> Mpls Path/m Hop/n* component. The *Hop* component can be provisioned as strict or loose. A Hop must be an Ipv4 address.
Mib	no_mib

ATTRIBUTE Rtr Mpls Path Hop ipv4Address (address)

Access	Read and write
Description	This attribute specifies the Ipv4 address of this *Hop* component. It must be a valid class A, B or C non-reserved address.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr Mpls Path Hop ipv4PrefixLen (prefix)

Access	Read and write

Description	This attribute specifies the prefix length of the Ipv4 address for this *Hop* component. If the length is 32, then the Ipv4 address is treated as a host address, otherwise it is treated as a network prefix.
Mib	no_mib
Values	Decimal (8..32)
Default	No default

ATTRIBUTE Rtr Mpls Path Hop hopMode (mode)

Access	Read and write
Description	This attribute specifies if the *Hop* component is treated as strict or loose. The value ***strict*** means that the address specified in the *Ipv4Address* attribute of this *Hop* component must be adjacent to the node on which Ipv4Address of the previous *Hop* component resides. For a single strict hop, the originating node must be adjacent to the Ipv4 address specified in the *Ipv4Address* attribute of the *Hop* component. The value ***loose*** means that *Ipv4Address* attribute of this hop is not necessarily adjacent to the previous hop. The LSR should determine a next hop which is in the same direction as the specified hop.
Mib	no_mib
Values	strict loose
Default	strict

COMPONENT Rtr Mpls LabelSwitchedPath (Lsp)

Instance	Decimal (1..65535)
Groups	"GROUP Rtr Mpls Lsp Provisioned (Prov)" "GROUP Rtr Mpls Lsp OsiState (State)" "GROUP Rtr Mpls Lsp Operational (Oper)"
Scope	Application
Description	*Rtr/<s> Mpls LabelSwitchedPath/n* This component represents a Label Switched Path (LSP) that originates from this Label Switching Router (LSR).

When a *Rtr/<s> Mpls Lsp/n IpV4RA/<IP Address>,<IP Prefix Length>* component is provisioned under the LSP, it will act as the Forwarding Equivalency Class (FEC) and must be inherited by the standby LSPs from the primary LSP.

Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Mpls Lsp IpV4ReachableAddr (RAddr)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Rtr Mpls Lsp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the configurable parameters for the *LSP* component.
Mib	no_mib

ATTRIBUTE Rtr Mpls Lsp ipv4EndPointAddress (epa)

Access	Read and write
Criticality	Component
Description	This attribute specifies the Ipv4 End Point Address for the LSP. For standby LSPs, a value of ***0.0.0.0*** specifies that the value should inherit from the *ipv4EndPointAddress* attribute of the primary LSP. If the *addToIpRoutingDatabase* attribute is set to ***enabled***, then this endpoint address is installed into the IP routing table as a Forwarding Equivalency Class (FEC).
Mib	no_mib
Values	IP address

Default	0.0.0.0

ATTRIBUTE Rtr Mpls Lsp bandwidth (bw)

Access	Read and write
Criticality	Component
Description	This attribute specifies the requested bandwidth for the LSP. This attribute can have a numeric value between ***0*** and ***4294967293*** (2^32 - 2), ***nsNoBandwidth (nsNoBw)***, ***clsNoBandwidth (clsNoBw)*** or ***sameAsPrimaryLsp*** (***sameAsPLsp***). If a numeric value is specified, then the value is signaled as the peak and sustained data rate in Kbit/sec as part of the label request and used in the bandwidth reservation. If ***nsNoBandwidth*** is used, then the Integrated Services (IntServ) Null Service (NS) type is signaled for the LSP setup, and no bandwidth is reserved. If ***clsNoBandwidth*** is used, then the IntServ Controlled Load Service (CLS) type is signaled for the LSP setup with the peak and sustained rate as 0 and no bandwidth is reserved. If this LSP is configured to be the standby LSP, then the value ***sameAsPrimaryLsp*** specifies that this LSP will inherit the value of the *bandwidth* attribute from the primary LSP. The value ***sameAsPrimaryLsp*** is not valid when this LSP is configured to be the primary LSP. The default value is ***1***.
Mib	no_mib
Values	Decimal (1..4294967292) nsNoBandwidth (nsNoBw) clsNoBandwidth (clsNoBw) sameAsPrimaryLsp (sameAsPLsp)
Units	kbit/s

Default	1

ATTRIBUTE Rtr Mpls Lsp primaryLsp (pLsp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the instance number of the *Lsp* component that is assigned as primary LSP for a single FEC.
Mib	no_mib
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Rtr Mpls Lsp pathName

Access	Read and write
Criticality	Component
Description	This attribute specifies the path *Rtr/<s> Mpls Path/n* to be used by this LSP. The *pathName* attribute must point to a valid *Path*. If no path name is specified, then the *ipv4EndPointAddress* attribute value is used as a loose path.
Mib	no_mib
Values	The name of the component
Default	No default

ATTRIBUTE Rtr Mpls Lsp alarmControl

Access	Read and write
Description	This attribute specifies the control of the generation of alarms for this LSP. If the value is ***none***, no alarms are generated. If the value is ***major*** or ***critical***, the alarms are generated with the specified severity on events affecting the LSP status. If the value is ***sameAsPrimaryLsp***, then this LSP will inherit the value of the *alarmControl* attribute for the primary LSP. The primary LSP cannot have a value of ***sameAsPrimaryLsp***.

Mib	no_mib
Values	none critical (crit) major (maj) sameAsPrimaryLsp (sameAsPLsp)
Default	none

ATTRIBUTE Rtr Mpls Lsp addToIpRoutingDatabase (addToIpRdb)

Access	Read and write
Description	This attribute specifies whether or not this LSP should be installed into the IP Routing Database. To carry native IP traffic over the LSP on establishment, this attribute must be set to ***true***. Standby LSPs inherit the primary value and so this attribute must be set to ***sameAsPrimaryLsp***. The default value is ***true***.
Mib	no_mib
Values	false true sameAsPrimaryLsp (sameAsPLsp)
Default	true

ATTRIBUTE Rtr Mpls Lsp bestMatchOverride

Access	Read and write
Description	This attribute specifies if an MPLS LSP should subsume more specific routes to carry IP traffic. What IP normally does when making next-hop route decision for incoming IP packets is to find the longest match on destination address in the routing table and use such a route. If multiple routes (from different protocols) are found to have same best destination address match, other criteria (such as route

preference, metric) are used for further selection.

The best-match on destination address is the most important factor in traditional IP route selection. On the Nortel Networks Multiservice Switch, the *bestMatchOverride* attribute allows network operators to override this IP tradition by enabling MPLS forced subsume functionality. In many situations, using subsume can help to achieve better traffic engineering goals.

Setting this attribute to ***true*** instructs IP to select this MPLS LSP to forward IP packets that matches the FEC of the LSP, even though other routes have a better or longer destination address match for these IP packets.

The value ***false*** is used when traditional IP route selection behavior (longest address match first) is chosen.

For example, say OSPF has different routes to 2 sets of destinations (100.200.100.0/24 and 100.200.200.0/24). Then, an LSP is setup with FEC (reachable address) 100.200.0.0/16. If we set this attribute to ***false***, IP traffic for destination 100.200.100.xxx and 100.200.200.xxx will take the corresponding OSPF routes due to better address match than the MPLS LSP. However, if the value of this attribute is ***true***, all IP traffic for destination 100.200.xxx.xxx (including 100.200.100.xxx and 100.200.200.xxx) will take the MPLS LSP. In such a situation, the two OSPF routes have been subsumed by the more generic route - MPLS LSP and the IP best-match rule has been overridden.

This attribute is only used when the *addToIPRoutingDatabase* attribute is set to ***true*** and the RA is used as the FEC

Standby LSPs will inherit the value of the primary LSP and so this attribute must be set to sameAsPrimaryLsp.

The default value is ***true***.

Mib no_mib

Values	false true sameAsPrimaryLsp (sameAsPLsp)
Default	true

ATTRIBUTE Rtr Mpls Lsp signalingProtocol

Access	Read and write
Description	The MPLS signaling protocol used to setup the LSP. Currently the only valid value is ***rsvpTe***.
Mib	no_mib
Values	rsvpTe
Default	rsvpTe

ATTRIBUTE Rtr Mpls Lsp standbyLsp (sLsp)

Access	Read and write
Description	This attribute specifies the ordered list of the *Lsp* component instance(s) assigned as standby to this primary LSP. The first *Lsp* component instance in the list becomes operational if the primary LSP fails, the second Lsp component instance in the list becomes operational if the primary and first standby fail, and so on. For a standby LSP, this attribute should be left as an empty list. The default is an empty list.
Mib	no_mib
List of	Decimal (0..65535)
List Size	7
Default	No default

GROUP Rtr Mpls Lsp OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Mpls Lsp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Mpls Lsp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Mpls Lsp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy
Default	idle

GROUP Rtr Mpls Lsp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of this MPLS LSP.

Mib	no_mib

ATTRIBUTE Rtr Mpls Lsp status

Access	Read only
Description	This attribute indicates the status of an LSP. In the description that follows, "upstream" refers to a peer LSR from which an label request message is received and from which traffic is received. "Downstream" refers to a peer LSR to which traffic will be sent from this LSR. A value of ***idle*** indicates that the LSR has not set up the LSP. A value of ***responseAwaited*** indicates that the LSR has received and processed a label request message from an upstream LSR or it has received an internal setup request. It has sent a new label request message towards a downstream LSR. The LSR is waiting for the label mapping message from the downstream LSR. A value of ***established*** indicates that the LSR has received the label mapping message from the downstream LSR and the LSP is up and operational.
Mib	no_mib
Values	idle responseAwaited established
Default	No default

ATTRIBUTE Rtr Mpls Lsp retryCount (rCount)

Access	Read only
Description	This attribute counts the attempts to set up this LSP. This counter wraps around to zero when the maximum value is exceeded.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Mpls Lsp failureCount (fCount)

Access	Read only
Description	This attribute counts the times this LSP fails to establish. This counter wraps around to zero when the maximum value is exceeded.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Mpls Lsp lastTearDownReason (tearDown)

Access	Read only
Description	This attribute indicates why this LSP was torn down.
Mib	no_mib
Values	notApplicable rsvpRoutingProblem rsvpPathSetupTimeout rsvpLocked rsvpLostPeer rsvpLostLabel rsvpResourceUnavailable rsvpSystemError rsvpAdminCtrl rsvpRcvResvTear rsvpRcvUnsupportedStyle rsvpRcvConflictingStyle rsvpRcvErrNotify rsvpRcvErrRsvpSystem rsvpRcvErrTrafficCtrl rsvpRcvErrTrafficCtrlSys rsvpRcvErrUnknownObjClass rsvpRcvErrUnknownObjCType rsvpRcvErrAdminCtrl rsvpRcvErrPolicyCtrl rsvpRcvErrDestPortConflict rsvpRcvErrSendPortConflict

	rsvpRcvErrApi rsvpRcvErrRoutingProblem
Default	No default

ATTRIBUTE Rtr Mpls Lsp establishedTimeStamp (estTS)

Access	Read only
Description	This attribute indicates the time when this LSP was established.
Mib	no_mib
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rtr Mpls Lsp maxTransmissionUnit (mtu)

Access	Read only
Description	This attribute indicates the actual maximum transmission unit (MTU) supported on this LSP Tunnel. This is the smallest common denominator MTU of all MPLS capable interfaces on the route of the LSP tunnel. The value of this attribute is expressed in octets.
Mib	no_mib
Values	Decimal (1..4294967295)
Units	octets
Default	No default

ATTRIBUTE Rtr Mpls Lsp tunnelComponentName

Access	Read only
Description	This attribute specifies the corresponding *Rtr/<s> RsvpTe Tunnel/<Src Lsp Tunnel Address>,<Dest Lsp Tunnel Address>,<tunnel ID>,<Lsp ID>* that is associated with this LSP.
Mib	no_mib
Values	The name of the component

Default	No default

COMPONENT Rtr Mpls Lsp IpV4ReachableAddr (RAddr)

Instance	ipV4Element (ipv4Elem) [IP address] ipV4Prefix (ipv4Pref) [Decimal (1..32)]
Scope	Application
Description	*Rtr/<s> Mpls Lsp/n Ipv4ReachableAddr/<IP address>,<IP address length>* The *Ipv4ReachableAddr* component represents a destination IP address that acts as the FEC for the LSPs. Only the *Lsp* that has been provisioned to be the primary LSP can have *IpV4RA* subcomponents. There may be multiple instances of the *Ipv4ReachableAddr* component for each primary LSP. The addresses provisioned must be unique across all LSPs on this router. 1) The <IP address> index indicates the destination address. It is a host address if the second index <IP address length> has the value 32; otherwise it is a network address. 2) The <IP address length> index represents the length of the IP address given in the first index <IP address>.
Mib	no_mib
Common Verbs	Help List Display Add DELete

COMPONENT Rtr RsvpTe

Groups	"GROUP Rtr RsvpTe OsiState (State)" "GROUP Rtr RsvpTe Provisioned (Prov)" "GROUP Rtr RsvpTe Statistics (Stats)"
Scope	Application
Description	*Rtr/<s> RsvpTe* This component represents the MPLS ReSerVation Protocol (RSVP-TE) for Label Switched Path (LSP) tunnels. RSVP-TE is

a signaling protocol used by Label Switched Routers (LSRs) to establish LSPs through a network by mapping network-layer routing information directly to data-link layer switched paths. There is only one instance of RSVP-TE per Nortel Networks Multiservice Switch.

Mib: no_mib

Dyn. Subcomp.:
"COMPONENT Rtr RsvpTe Neighbor (Nbr)"
"COMPONENT Rtr RsvpTe Tunnel"
"COMPONENT Rtr RsvpTe InterfaceStatistics (IfStats)"

Common Verbs:
Help
List
Display
Add
DELete

GROUP Rtr RsvpTe OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: no_mib

ATTRIBUTE Rtr RsvpTe adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: no_mib

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Rtr RsvpTe operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: no_mib

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Rtr RsvpTe usageState (osiUsage)

Access: Read only

Description

This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib

no_mib

Values

idle
active (activ)
busy

Default

idle

GROUP Rtr RsvpTe Provisioned (Prov)

Properties

Provisioned

Description

This group of attributes configures the RSVP-TE capabilities for this LSR.
These attributes are shelf-wide attributes that apply to all *Rtr/<s> Interface/<IP Address> RsvpTeIf* components. Any of the *RsvpTeIf* components can override any of these shelf-wide attributes.

Mib

no_mib

ATTRIBUTE Rtr RsvpTe refreshInterval (rInt)

Access

Read: All
Write: All

Description

This attribute specifies the interval between refresh messages sent by this LSR.
This value is sent to the next hop in the TIME_VALUES object of the PATH/RESV message and is used in calculation of the lifetime of the PATH/RESV state block at the next hop.

Mib	no_mib
Values	Decimal (1..1800)
Units	seconds
Default	30

ATTRIBUTE Rtr RsvpTe refreshKeepMultiplier (rKeep)

Access	Read: All Write: All
Description	This attribute specifies the default minimum number of refresh intervals that must pass before a PATH or a RESV state which is not being refreshed will be aged out. This value is used in calculating the lifetime of Path State Block (PSB) and Reservation State Block (RSB) for this interface; it prevents the premature loss of these states.
Mib	no_mib
Values	Decimal (1..50)
Default	3

ATTRIBUTE Rtr RsvpTe slewMax (slew)

Access	Read: All Write: All
Description	This attribute specifies the default rate on how fast the *refreshInterval* can increase on the LSR. When a new *refreshInterval* value is provisioned to a higher value, the refresh interval will be increased at *slewMax* percentage of the previous interval at each PATH/RESV cycle. In another words, the ratio of two successive refresh interval values will not exceed 1 + (Slew Max/100).
Mib	no_mib
Values	Decimal (1..200)
Units	%
Default	30

ATTRIBUTE Rtr RsvpTe helloInterval (hInt)

Access	Read: All Write: All
Description	This attribute specifies the default interval between HELLO messages sent by this LSR. A value of ***disabled*** indicates that the Hello mechanism is not enabled.
Mib	no_mib
Values	Decimal (0.1..100.0) disabled
Units	seconds
Default	0.5

ATTRIBUTE Rtr RsvpTe helloMultiplier (hMult)

Access	Read: All Write: All
Description	This attribute specifies the default minimum number of hello intervals that must pass before the RSVP-TE connection is considered down.
Mib	no_mib
Values	Decimal (2.0; 2.5; 3.0; 3.5; 4.0; 4.5; 5.0; 5.5; 6.0; 6.5; 7.0; 7.5; 8.0; 8.5; 9.0; 9.5; 10.0)
Default	3.5

GROUP Rtr RsvpTe Statistics (Stats)

Properties	Operational
Description	This group contains the attributes that indicate the aggregation of the control statistics from all of the *Rtr/<s> RsvpTe InterfaceStatistics/<IP Address>* and from any RSVP-TE control messages that were collected from any interfaces that were not configured with an *RsvpTeIf*. All of these attributes represent messages sent and received from this LSR. For those attributes within this group that count the

	number of messages sent and received, these attributes will rollover to 0 when the maximum value is exceeded.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe pathMessages (path)

Access	Read: All Write: Illegal
Description	This attribute counts the number of PATH messages sent and received. This value is a snapshot of the FP-based real time counter and therefore may be up to 30 seconds out of date.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe pathErrorMessages (pathError)

Access	Read: All Write: Illegal
Description	This attribute counts the number of PATH ERROR messages sent and received.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe lastPathErrorInfo (lastPathErr)

Access	Read: All Write: Illegal
Description	This attribute indicates information regarding the last PATH ERROR message sent and received. This attribute is a vector of

	strings containing the following information: error code, error value, a time stamp indicating when this message was sent or received and the IP address indicating which interface the message was on. If there are no PATH ERROR messages, then these values will be blank.
Mib	no_mib
Vector of	String (0..35, ASCII)
Index	sentCode sentValue sentTime sentInterface rcvdCode rcvdValue rcvdTime rcvdInterface
Default	([8] "")

ATTRIBUTE Rtr RsvpTe pathTearMessages (pathTear)

Access	Read: All Write: Illegal
Description	This attribute counts the number of PATH TEAR messages sent and received.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe resvMessages (resv)

Access	Read: All Write: Illegal

Description	This attribute counts the number of RESV messages sent and received. This value is a snapshot of the FP-based real time counter and therefore may be up to 30 seconds out of date.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe resvConfirmMessages (resvConf)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RESV CONFIRM messages sent and received.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe resvErrorMessages (resvErr)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RESV ERROR messages sent and received.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe lastResvErrorInfo (lastResvErr)

Access	Read: All Write: Illegal
Description	This attribute indicates information regarding the last RESV ERROR message sent and received. This attribute is a vector of strings containing the following information: error code, error value, a time stamp indicating when this message was sent or received and the IP address indicating which interface the message was on. If there are no RESV ERROR messages, then these values will be blank.
Mib	no_mib
Vector of	String (0..35, ASCII)
Index	sentCode sentValue sentTime sentInterface rcvdCode rcvdValue rcvdTime rcvdInterface
Default	([8] "")

ATTRIBUTE Rtr RsvpTe resvTearMessages (resvTear)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RESV TEAR messages sent and received.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe helloMessages (hello)

Access	Read: All Write: Illegal
Description	This attribute counts the number of HELLO messages sent and received. This statistic may be 30 seconds out of date as it is a snapshot of an FP-based real time counter.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe rsvpDiscards (discard)

Access	Read: All Write: Illegal
Description	This attribute counts the number of sent and received RSVP-TE messages that were discarded. This statistic may be 30 seconds out of date as it is a snapshot of a FP-based real time counter.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent rcvd
Default	No default

ATTRIBUTE Rtr RsvpTe lastRsvpDiscardInfo (lastDiscard)

Access	Read: All Write: Illegal
Description	This attribute indicates information regarding the last RSVP-TE message discard sent and received. This attribute is a vector of strings containing the following information: message type, a time stamp indicating when this message was sent or received and the IP address indicating which interface the message was on.

	If there are no RSVP-TE messages discarded, then these values will be blank.
Mib	no_mib
Vector of	String (0..35, ASCII)
Index	sentMsgType sentTime sentInterface rcvdMsgType rcvdTime rcvdInterface
Default	([6] "")

COMPONENT Rtr RsvpTe Neighbor (Nbr)

Instance	IP address
Groups	"GROUP Rtr RsvpTe Nbr Operational (Oper)"
Scope	Application
Description	*Rtr/<s> RsvpTe Neighbor/<IP Address>* This component represents a view of an immediate neighbor connected on a *Rtr/<s> Interface/<IP Address> RsvpTeIf*. The *Neighbor* instance value is the IP address of the remote interface.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr RsvpTe Nbr LabelIn (LblIn)" "COMPONENT Rtr RsvpTe Nbr LabelOut (LblOut)"
Common Verbs	Help List Display

GROUP Rtr RsvpTe Nbr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of this *Rtr/<s> RsvpTe Neighbor*/<IP Address>.

Mib	no_mib

ATTRIBUTE Rtr RsvpTe Nbr localInterfaceAddress (localIf)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the local *Rtr/<s> Interface/<IP Address>* that is connected to this neighbor.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr RsvpTe Nbr connectionsToInterface (connToIf)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSP connections configured towards the neighbor (i.e. number of *LabelOut* instances for this *Neighbor*)
Mib	no_mib
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE Rtr RsvpTe Nbr connectionsFromInterface (connFromIf)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSP connections configured from the neighbor (i.e. number of *LabelIn* instances for this *Neighbor*)
Mib	no_mib
Values	Decimal (0..1048575)
Default	No default

COMPONENT Rtr RsvpTe Nbr LabelIn (LblIn)

Instance	Decimal (0..1048575)
Scope	Application
Description	*Rtr/<s> RsvpTe Nbr/<IP Address> LabelIn/n* This component represents a label associated with an LSP routed from the neighbor. The “In” in the component name reflects the datapath direction. The label is generated locally on receipt of a PATH label request and then sent upstream through RESV label mapping.
Mib	no_mib
Common Verbs	Help List Display

COMPONENT Rtr RsvpTe Nbr LabelOut (LblOut)

Instance	Decimal (0..1048575)
Scope	Application
Description	*Rtr/<s> RsvpTe Nbr/<IP Address> LabelOut/n* This component represents a label associated with an LSP routed to the neighbor. “Out” in the component name reflects the data path direction. The label is supplied by the downstream neighbor through RESV label mapping.
Mib	no_mib
Common Verbs	Help List Display

COMPONENT Rtr RsvpTe Tunnel

Instance	srcLspTunnelAddr [IP address] destLspTunnelAddr [IP address] tunnelId [Decimal (0..65535)] lspId [Decimal (0..65535)]

Groups	"GROUP Rtr RsvpTe Tunnel TunnelOperational (TunOp)" "GROUP Rtr RsvpTe Tunnel TimeStamp (Ts)" "GROUP Rtr RsvpTe Tunnel TunnelDescription" "GROUP Rtr RsvpTe Tunnel IncomingTunnelOper (InOp)" "GROUP Rtr RsvpTe Tunnel OutgoingTunnelOper (OutOp)"
Scope	Application
Description	*Rtr/<s> RsvpTe Tunnel/<Src Lsp IP Address>,<Dest Lsp IP Address>,<Tunnel ID>, <LSP ID>* This component represents an LSP tunnel routed through this node using the RSVP-TE signaling protocol.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr RsvpTe Tunnel TunnelOperational (TunOp)

Properties	Operational
Description	This group contains the operational attributes for this LSP tunnel.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe Tunnel operationalState (op)

Access	Read: All Write: Illegal
Description	This attribute indicates the operational state of this LSP tunnel.
Mib	no_mib
Values	disabled enabled
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel rsvpSessionName (sessName)

Access	Read: All Write: Illegal
Description	This attribute indicates the SessionName for the LSP signaled in the PATH label request. This attribute may be null. When the LSP tunnel is originated by a Nortel Networks Multiservice Switch node, the *rsvpSessionName* is the node name followed by the provisioned *Rtr/<s> Mpls Lsp/n* component name.
Mib	no_mib
Values	String (0..128, ASCII)
Default	No default

GROUP Rtr RsvpTe Tunnel TimeStamp (Ts)

Properties	Operational
Description	This group contains the attributes that specify the time stamps marking the initial PATH and RESV message processing.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe Tunnel initialPathTimeStamp (initPathTs)

Access	Read: All Write: Illegal
Description	This attribute indicates when this tunnel was created based on the initial PATH message processing.
Mib	no_mib
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel initialResvTimeStamp (initResvTs)

Access	Read: All Write: Illegal
Description	This attribute indicates when this LSP tunnel was established based on the initial RESV message processing.
Mib	no_mib

Values	Time (DHMS)
Default	No default

GROUP Rtr RsvpTe Tunnel TunnelDescription

Properties	Operational
Description	This group contains the signaled attributes which describe the LSP Tunnel.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe Tunnel bandwidth (bw)

Access	Read: All Write: Illegal
Description	This attribute indicates the bandwidth reserved by this LSP tunnel.
Mib	no_mib
Values	Decimal (0..4294967295)
Units	kbit/s
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel extendedTeTunnelId (extId)

Access	Read: All Write: Illegal
Description	This attribute indicates the extended tunnel identifier of this LSP tunnel. In most cases, it is the originating nodes IP address, but it may be zero.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel teTunnelResvStyle (style)

Access	Read: All Write: Illegal
Description	This attribute indicates the RESV style used by this LSP tunnel. There are two styles that are supported: Fixed Filter (ff) and Shared Explicit (se).
Mib	no_mib
Values	fixedFilter (ff) sharedExplicit (se)
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel pathRecordRouteObject (pathRro)

Access	Read: All Write: Illegal
Description	This attribute indicates the Record Route Object (RRO) if provided in the PATH message. It is a vector of strings where each string specifies a hop address and optionally, the label that was used at that hop. The Nortel Networks Multiservice Switch does not include the label in the PATH RRO for its hops.
Mib	no_mib
Vector of	String (11..28, ASCII)
Index	Decimal (0..19)
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel resvRecordRouteObject (resvRro)

Access	Read: All Write: Illegal
Description	This attribute indicates the Record Route Object (RRO) if provided in the RESV message. It is a vector of strings where each string specifies a hop address and optionally the label used at that hop. When the signaled session attribute indicates that labels can be included, the Nortel Networks Multiservice Switch will encode the label for its hops in the RESV RRO.

Mib	no_mib
Vector of	String (11..28, ASCII)
Index	Decimal (0..19)
Default	No default

GROUP Rtr RsvpTe Tunnel IncomingTunnelOper (InOp)

Properties	Operational
Description	This group contains the attributes that describe the incoming interface and label for this tunnel.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe Tunnel incomingInterface (inIf)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the local interface used for the LSPs incoming connection. This value is only valid on the Egress LER and the Tandem LSR.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel labelIn

Access	Read: All Write: Illegal
Description	This attribute indicates the incoming label for this LSP tunnel. This value is only valid on the Egress LER and the Tandem LSR.
Mib	no_mib
Values	Decimal (0..1048575)
Default	No default

GROUP Rtr RsvpTe Tunnel OutgoingTunnelOper (OutOp)

Properties	Operational
Description	This group contains the attributes that describe the outgoing interface and label for this tunnel.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe Tunnel outgoingInterface (outIf)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the local interface used for the LSPs outgoing connection. This value will only be valid for the Ingress LER and the Tandem LSR.
Mib	no_mib
Values	IP address
Default	No default

ATTRIBUTE Rtr RsvpTe Tunnel labelOut

Access	Read: All Write: Illegal
Description	This attribute indicates the outgoing label for this LSP tunnel. This value will only be valid for the Ingress LER and the Tandem LSR.
Mib	no_mib
Values	Decimal (0..1048575)
Default	No default

COMPONENT Rtr RsvpTe InterfaceStatistics (IfStats)

Instance	IP address
Groups	"GROUP Rtr RsvpTe IfStats Statistics (Stats)"
Scope	Application

Description	*Rtr/<s> RsvpTe InterfaceStatistics/<IP Address>* This component represents the RSVP-TE signaling statistics for a particular *RsvpTeInterface*. The *InterfaceStatistics* instance value is the IP address of the local interface.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr RsvpTe IfStats Statistics (Stats)

Properties	Operational
Description	This group contains statistics attributes of the *VoFr* component.
Mib	no_mib

ATTRIBUTE Rtr RsvpTe IfStats fragmentedHighestPriorityFrames

Access	Read: All Write: Illegal
Description	This attribute counts egress frames with the highest priority, which had to be fragmented because they were larger than *maximumFrameSize*. This could happen when a data call is setup to use the highest emission priority, or MPA is provisioned with too low maximum frame size. When the maximum is reached the count wraps to zero.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr RsvpTe IfStats lostFragmentsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts lost VoFr fragments from the interface. Presence of lost fragments indicates a link problem. Note that lost

	whole frames cannot be detected. When the maximum is reached the count wraps to zero.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Rtr RsvpTe IfStats protocolViolationsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts VoFr protocol violations detected in the data from the interface. When the maximum is reached the count wraps to zero.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	0

COMPONENT Rtr Ldp (Ldp)

Groups	"GROUP Rtr Ldp LdpPolicy (Policy)" "GROUP Rtr Ldp Loop (Loop)"
Scope	Application
Description	*Rtr/<s> Ldp* This component represents the Label Distribution Protocol (LDP). LDP is a signaling protocol used by Label Switched Routers (LSRs) to establish Label Switched Paths (LSPs) through a network by mapping network-layer routing information directly to data-link layer switched paths.

	There is only one instance of the *Ldp* component for each *Rtr* component.
Mib	no_mib
Dyn. Subcomp.	"COMPONENT Rtr Ldp Binding (Bind)"
Dyn. Subcomp.	"COMPONENT Rtr Ldp Neighbor (Nbr)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Ldp LdpPolicy (Policy)

Properties	Provisioned
Description	This group contains the attributes which describe the characteristics of remote LSRs that are allowed to establish LDP peers with this LSR.
Mib	no_mib

ATTRIBUTE Rtr Ldp keepAliveHoldTimer (kaTimer)

Access	Read: All Write: All
Description	This attribute specifies the interval for keep alive hold timer in seconds for a session.
Mib	no_mib
Values	Decimal (1..600)
Units	seconds
Default	30

ATTRIBUTE Rtr Ldp helloTimer (helloTimer)

Access	Read: All Write: All

Description	This attribute specifies the interval for hello timer in seconds for a given LDP adjacency.
Mib	no_mib
Values	Decimal (1..600)
Units	seconds
Default	15

ATTRIBUTE Rtr Ldp failedInitThreshold

Access	Read: All Write: All
Description	This attribute specifies that the *failedInitSessionThresholdExceeded* notification is generated whenever the value is exceeded.
Mib	no_mib
Values	Decimal (1..20)
Default	10

ATTRIBUTE Rtr Ldp signaledPenultimateHopPop (php)

Access	Read: All Write: All
Description	This attribute specifies whether Penultimate Hop Pop is signaled out from this node. When the attribute value is ***on***, this LSR will assign and distribute “Implicit Null Label (3)” for its own loopback address to all neighboring LSRs. When the attribute value is ***off***, this LSR will distribute label values outside the reserved label values. Default is ***on***.
Mib	no_mib

Values	on off
Default	on

ATTRIBUTE Rtr Ldp acceptNonProvisionedNeighbor (aNpNbr)

Access	Read: All Write: All
Description	This attribute specifies if non provisioned Ldp session can be established.
Mib	no_mib
Values	disabled enabled
Default	enabled

ATTRIBUTE Rtr Ldp defaultKeyTransitionDelay (ktDelay)

Access	Read: All Write: All
Description	This attribute specifies the default delay time, in minute, for a new MD5 key to take affect. Each LDP neighbor uses this value by default and can be overridden by their corresponding *Rtr/<s> Ldp Nbr/<s> Cfg keyTransitionDelay* attribute.
Mib	no_mib
Values	Decimal (1..20160)
Units	minutes
Default	10

GROUP Rtr Ldp Loop (Loop)

Properties	Provisioned
Description	This group contains parameters that handle loop detection.
Mib	no_mib

ATTRIBUTE Rtr Ldp loopDetection (loopDet)

Access	Read: All Write: All
Description	This attribute specifies a mechanism for finding looping LSPs. When the attribute value is ***on***, messages related to the set up of LSPs are checked to see if the path being setup has a loop. There is also a limit on the number of hops, which is used when loop detection is ***on***. This length is specified in the *hopCountLimit* attribute.
Mib	no_mib
Values	on off
Default	No default

ATTRIBUTE Rtr Ldp hopCountLimit (hcLimit)

Access	Read: All Write: All
Description	This attribute specifies a limit on the number of hops allowed for each LSP. It is used when setting up LSPs to detect loops. When enabling detection of loops with the *loopDetection* attribute, this attribute should be specified.
Mib	no_mib
Values	Decimal (2..40)
Default	10

COMPONENT Rtr Ldp Binding (Bind)

Instance	fecString (fec) [String (9..19, ASCII)] ldpIdString (ldpId) [String (9..21, ASCII)]
Groups	"GROUP Rtr Ldp Bind InOperational (In)" "GROUP Rtr Ldp Bind OutOperational (Out)"
Scope	Application

Description	*Rtr/<s> Ldp Binding/<s>,<s>* This component indicates an LSP through a unique Fec and remote Ldp identifier binding. The LSP in question is always referenced in terms of the relationship to the data path. The *Binding* component is recommended as a good way to view the Transport level LSPs. The instance identifier of the *Binding* components is the Fec and the remote Ldp identifier, where the Fec is “IP Address[Fec Prefix Length]”, and the remote Ldp identifier is “IP Address-Label Space Identifier”.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ldp Bind InOperational (In)

Properties	Operational
Description	This group contains the attributes bound to a unique Fec and Ldp identifier for the labels generated locally.
Mib	no_mib

ATTRIBUTE Rtr Ldp Bind inLabel

Access	Read: All Write: Illegal
Description	This attribute indicates the transport label bound to the unique pairing of Fec and remote Ldp identifier. This is the locally generated label.
Mib	no_mib
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE Rtr Ldp Bind inUsageState (inUsage)

Access	Read: All Write: Illegal
Description	This attribute indicates the usage state of the *inLabel* attribute under the *Binding* component. The three possible states are: ***idle***, ***active***, and ***busy***. ***idle***: Indicates labels that are supplied but are not used to represent the LSP. ***active***: Indicates labels that are supplied and are selected for use to represent the LSP. Active labels can accept more users. ***busy***: Indicates labels that are supplied and are selected for use to represent the LSP. Busy labels cannot accept more users.
Mib	no_mib
Values	idle active busy
Default	No default

ATTRIBUTE Rtr Ldp Bind inOperationalState (inOp)

Access	Read: All Write: Illegal
Description	This attribute indicates the operational state of the *inLabel* attribute under the *Binding* component. The two possible states are: ***enabled*** and ***disabled***. ***enabled***: Indicates labels that are installed in the hardware for data path use. ***disabled***: Indicates labels that are not installed in the hardware.
Mib	no_mib
Values	disabled enabled
Default	No default

GROUP Rtr Ldp Bind OutOperational (Out)

Properties	Operational
Description	This group contains the attributes bound to a unique Fec and Ldp identifier for the labels supplied by the downstream neighbor.
Mib	no_mib

ATTRIBUTE Rtr Ldp Bind outLabel

Access	Read: All Write: Illegal
Description	This attribute indicates the transport label bound to the unique pairing of Fec and remote Ldp identifier. This label value is supplied by the downstream neighbor.
Mib	no_mib
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE Rtr Ldp Bind outUsageState (outUsage)

Access	Read: All Write: Illegal
Description	This attribute indicates the usage state of the *outLabel* attribute under the *Binding* component. The three possible states are: ***idle***, ***active***, and ***busy***. ***idle***: Indicates labels that are supplied but are not used to represent the LSP. ***active***: Indicates labels that are supplied and are selected for use to represent the LSP. Active labels can accept more users. ***busy***: Indicates labels that are supplied and are selected for use to represent the LSP. Busy labels cannot accept more users.
Mib	no_mib

Values	idle active busy
Default	No default

ATTRIBUTE Rtr Ldp Bind outOperationalState (outOp)

Access	Read: All Write: Illegal
Description	This attribute indicates the operational state of the *outLabel* attribute under the *Binding* component. The two possible states are: ***enabled*** and ***disabled***. ***enabled***: Indicates labels that are installed in the hardware for data path use. ***disabled***: Indicates labels that are not installed in the hardware.
Mib	no_mib
Values	disabled enabled
Default	No default

COMPONENT Rtr Ldp Neighbor (Nbr)

Instance	remoteRtrIpAddr (addr) [IP address] labelSpaceId (lsId) [Decimal (0..65535)]
Groups	"GROUP Rtr Ldp Nbr NbrOp (Op)" "GROUP Rtr Ldp Nbr Statistics (Stats)"
Scope	Application
Description	*Rtr/<s> Ldp Neighbor/<Ip Address>,*<labelSpaceId> This component represents a view of the remote neighbor for the *LDP* component. There is a 1:1 mapping between the *Neighbor* component and an LDP session. The instance identifier of the *Neighbor* component is composed of the neighbor's IP address and the label space identifier. For

provisioned components, the label space identifier must be zero (0).

Mib	no_mib
Subcomponents	"COMPONENT Rtr Ldp Nbr Descriptor (Desc)"
Dyn. Subcomp.	"COMPONENT Rtr Ldp Nbr Adjacency (Adj)" "COMPONENT Rtr Ldp Nbr LabelIn" "COMPONENT Rtr Ldp Nbr LabelOut"
Common Verbs	Help List Display Add DELete

GROUP Rtr Ldp Nbr NbrOp (Op)

Properties	Operational
Description	This group contains the operational attributes of the *Neighbor* component.
Mib	no_mib

ATTRIBUTE Rtr Ldp Nbr sessionId

Access	Read: All Write: Illegal
Description	This attribute indicates the session identifier for the *Neighbor* component. The session identifier is formed by concatenating the local LDP identifier with the remote LDP identifier.
Mib	no_mib
Values	String (22..46, ASCII)
Default	No default

ATTRIBUTE Rtr Ldp Nbr sessionState

Access	Read: All Write: Illegal

Description

This attribute indicates the current state of the session represented by the *Neighbor* component. The session can be in any of the following five states:

Non-existent - No Adjacencies: Indicates that there are no adjacencies for this session.

Non Existent - Require Provisioning: Indicates that a dynamic session has at least one adjacency, but the *Rtr/<s> Ldp* ***acceptNonProvisionedNeighbor*** attribute is disabled. The dynamic TCP session is not being established. There are two ways to move this neighbor out of this state and attempt to establish a TCP session. Either set the *Rtr/<s> Ldp acceptNonProvisionedNeighbor* attribute to enabled or add a corresponding *Rtr/<s> Ldp Neighbor/<s>* component. If connectivity with this neighbor is not required in, then remove the corresponding *Rtr/<s> If/<x> LdpIf* from the current provisioning view.

Non Existent - Throttling: Indicates that a session has at least one adjacency, but is currently throttling it is session setup with exponential back-off.

Non Existent - Establishing TCP: Indicates that the session is currently attempting to setup a TCP connection (either active or passive).

Initialized: Indicates the transmission of an initialization message in the active role, or the receiving of an acceptable initialization message in the passive role. In the passive role, receiving any other LDP message will cause a state change to ***Non Existent***.

Opensent: Indicates that an acceptable initialization message was received and a KeepAlive message is sent in response. Receiving any other LDP message will cause the value of the *sessionState* attribute to change to ***Non-Existent.***

Openrecv: Indicates that an acceptable KeepAlive message has been received. Receiving any other LDP message will cause the value of the *sessionState* attribute to change to ***Non-Existent***.

	Operational: Indicates that the session is operational and is receiving other LDP messages.
Mib	no_mib
Values	nonExistent-NoAdjacencies nonExistent-RequireProvisioning nonExistent-Throttling nonExistent-EstablishingTCP initialized opensent openrecv operational
Default	No default

ATTRIBUTE Rtr Ldp Nbr ldpMode

Access	Read: All Write: Illegal
Description	This attribute indicates the negotiated LDP Mode. The attribute can have a value of Downstream Unsolicited (***du***) or Downstream On Demand (***dod***).
Mib	no_mib
Values	dod du
Default	No default

ATTRIBUTE Rtr Ldp Nbr keepAliveHoldTime

Access	Read: All Write: Illegal
Description	This attribute indicates the current hold time (in seconds) for the session.
Mib	no_mib
Values	Decimal (0..65535)
Units	seconds

Default	No default

ATTRIBUTE Rtr Ldp Nbr nextKeepAlive

Access	Read: All Write: Illegal
Description	This attribute indicates the time (in seconds) left before the next keep alive message is sent to its remote neighbor.
Mib	no_mib
Values	Decimal (0..65535)
Units	seconds
Default	No default

ATTRIBUTE Rtr Ldp Nbr keepAliveInterval

Access	Read: All Write: Illegal
Description	This attribute indicates (in seconds) the keep alive interval time. The interval represents how often a keep alive message is sent to its remote neighbor.
Mib	no_mib
Values	Decimal (0..65535)
Units	seconds
Default	No default

ATTRIBUTE Rtr Ldp Nbr tcpUpTime

Access	Read: All Write: Illegal
Description	This attribute indicates when the TCP connection first became active.
Mib	no_mib
Values	Time (DHMS)

Default	No default

ATTRIBUTE Rtr Ldp Nbr numberOfAdjacencies

Access	Read: All Write: Illegal
Description	This attribute counts the number of adjacencies managed by the *Neighbor* component.
Mib	no_mib
Values	Decimal (1..8)
Default	No default

ATTRIBUTE Rtr Ldp Nbr remoteTcpAddress

Access	Read: All Write: Illegal
Description	This attribute indicates the remote transport address coupled with the TCP port. If the neighbor fails to provide a value for the *remoteTcpAddress* attribute, then the source address from the Hello message is used in its place. The port number will be zero until the TCP session is operational.
Mib	no_mib
Values	String (9..21, ASCII)
Default	No default

ATTRIBUTE Rtr Ldp Nbr localTcpAddress

Access	Read: All Write: Illegal
Description	This attribute indicates the local transport address coupled with the TCP port. The port number will be zero until the TCP session is operational.
Mib	no_mib

Values	String (9..21, ASCII)
Default	No default

ATTRIBUTE Rtr Ldp Nbr localLdpId

Access	Read: All Write: Illegal
Description	This attribute indicates the local Ldp identifier.
Mib	no_mib
Values	String (9..21, ASCII)
Default	No default

ATTRIBUTE Rtr Ldp Nbr lastFailureReason

Access	Read: All Write: Illegal
Description	This attribute indicates the last failure reason of the session. The value of this attribute is only displayed in case of a failure event. The ***rxNot*** failure reasons mean that the session received a critical teardown notification from the remote end.
Mib	no_mib
Values	noError internalError userClear userLock userCriticalProvChange localTcpSocketFailure remoteTcpSocketClosure tcpSocketConnectionTimeout tcpSocketCreationFailed unexpectedTcpSocket txOverTcpFailed lastAdjacencyDownHoldTimeExpired lastAdjacencyDown noAdjacency bothSessionsActive

rxInitializationMsgInWrongState
rxKeepAliveMessageInWrongState
rxUnexpectedMessageInWrongState
rxPduWithInvalidLength
tlvLengthMismatchWithMsgSize
msgLengthMismatchWithPduSize
rejectPduWithBadProtocolVersion
rejectPduWithBadRemoteLdpId
rejectInitMsgWithBadLocalLdpId
rejectInitMsgMaxPduLength
sessionInitialisationTimeout
keepAliveTimeOutForRxTraffic
rxNot-BadLdpIdentifier
rxNot-BadProtocolVersion
rxNot-BadPduLength
rxNot-BadMessageLength
rxNot-BadTlvLength
rxNot-MalformedTlvValue
rxNot-HoldTimeExpired
rxNot-Shutdown
rxNot-Reject-NoHello
rxNot-Reject-ParamAdvMode
rxNot-Reject-ParamMaxPdu
rxNot-Reject-ParamLabelRange
rxNot-KeepAliveTimeOut
rxNot-Reject-BadKeepAliveTime
rxNot-RemoteInternalError
rxNot-UnrecognizedStatusCode
anInvalidTlvValueWasReceived
rejectInitMsgWithBadLabelRange

Default — No default

ATTRIBUTE Rtr Ldp Nbr authenticationType

Access — Read: All
Write: Illegal

Description — This attribute indicates the authentication type of the *Neighbor*. If the *md5Key* attribute under the *Rtr Ldp Neighbor Descriptor* component is set to a null string, this neighbor's authentication type is ***none***; otherwise, if the *md5Key* attribute is set to a valid

non-null string, this neighbor's authentication type is ***md5***.

For the non-provisioned *Neighbor*, its authentication type is always ***none***.

Mib: no_mib

Values: none
md5

Default: No default

ATTRIBUTE Rtr Ldp Nbr noAuthenticationPkts

Access: Read: All
Write: Illegal

Description: This attribute indicates the number of packets received on this LDP session's underlying TCP connection, which do not contain the MD5 authentication information, but MD5 authentication is provisioned on the neighbor. This type of authentication failure occurs when the *md5Key* attribute under the *Rtr Ldp Neighbor Descriptor* component is set to a valid non-null string, but the remote neighbor does not use MD5 authentication, or when a hacker is spoofing packets from a legitimate neighbor. This counter wraps to zero when it exceeds the maximum value.

Mib: no_mib

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Rtr Ldp Nbr badAuthenticationPkts

Access: Read: All
Write: Illegal

Description: This attribute indicates the number of packets received on this LDP session's underlying TCP connection, which fail the MD5 authentication. This type of authentication failure occurs when the *md5Key* attribute set under the *Rtr Ldp Neighbor Descriptor* component does not match the MD5 key used by the remote neighbor, or when a hacker is spoofing packets from a legitimate

	neighbor. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ldp Nbr unexpectedAuthenticationPkts

Access	Read: All Write: Illegal
Description	This attribute indicates the number of packets received on this LDP session's underlying TCP connection, which contain the MD5 authentication information, but MD5 authentication is not provisioned on the neighbor. This type of authentication failure occurs when the *md5Key* attribute under the *Rtr Ldp Neighbor Descriptor* component is set to a null string, but the remote neighbor uses MD5 authentication, or when a hacker is spoofing packets from a legitimate neighbor. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Ldp Nbr nextHopAddressReceived

Access	Read: All Write: Illegal
Description	This attribute indicates a complete list of the next hop addresses received on the session.
Mib	no_mib
List of	IP address
Default	No default

GROUP Rtr Ldp Nbr Statistics (Stats)

Properties	Operational
Description	This group contains the message statistics related to the neighbor component
Mib	no_mib

ATTRIBUTE Rtr Ldp Nbr initializationMessages (init)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Initialization messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr keepAliveMessages (keepAlive)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Keep Alive messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr notificationMessages (notif)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Notification messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr addressMessages (addr)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Address messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr addressWithdrawMessages (addrWith)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Address Withdraw messages sent and received. The value of the counter is a snapshot of the

	real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr labelMappingMessages (labelMap)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Label Mapping messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr labelRequestMessages (labelReq)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Label Request messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.

Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr labelWithdrawMessages (labelWith)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Label Withdraw messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr labelReleaseMessages (labelRel)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Label Release messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

ATTRIBUTE Rtr Ldp Nbr labelAbortMessages (labelAbort)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Label Abort messages sent and received. The value of the counter is a snapshot of the real time counter and can be off by up to 5 seconds. This counter wraps to zero when it exceeds the maximum value.
Mib	no_mib
Vector of	Decimal (0..4294967295)
Index	sent received (rcvd)
Default	No default

COMPONENT Rtr Ldp Nbr Adjacency (Adj)

Instance	localIfAddress (local) [IP address] remoteIfAddress (remote) [IP address]
Groups	"GROUP Rtr Ldp Nbr Adj Operational (Op)"
Scope	Application
Description	*Rtr/<s> Ldp Neighbor/<s> Adjacency/<s>,<s>* This component represents a Hello Adjacency for an *InwRouter Ldp Neighbor* component. There can be multiple adjacencies per *Neighbor* component. The *Neighbor* component instance is maintained for as long as there is one adjacency.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ldp Nbr Adj Operational (Op)

Properties	Operational

Description	This group contains the operational attributes for the *Adjacency* component.
Mib	no_mib

ATTRIBUTE Rtr Ldp Nbr Adj ldpIfName

Access	Read: All Write: Illegal
Description	This attribute indicates the interface that the adjacency is currently active on. It relates to the LDP interface component name which is associated with the media over which the LDP adjacency occurs.
Mib	no_mib
Values	The name of the component
Default	No default

ATTRIBUTE Rtr Ldp Nbr Adj timeStamp (time)

Access	Read: All Write: Illegal
Description	This attribute indicates when the adjacency was first created.
Mib	no_mib
Values	Time (DHMS)
Default	No default

COMPONENT Rtr Ldp Nbr LabelIn

Instance	Decimal (0..1048575)
Groups	"GROUP Rtr Ldp Nbr LabelIn Operational (Op)"
Scope	Application
Description	*Rtr/<s> Ldp Neighbor/<s> LabelIn/<n>* This component indicates the label received for a given *Neighbor* component. The “In” in the component name reflects the data

	path direction. In this case, it represents the label that is generated locally.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ldp Nbr LabelIn Operational (Op)

Properties	Operational
Description	This group contains the operational attributes for the *LabelIn* dynamic component.
Mib	no_mib

ATTRIBUTE Rtr Ldp Nbr LabelIn fec

Access	Read: All Write: Illegal
Description	This attribute indicates the Fec associated to the *Label* component.
Mib	no_mib
Values	String (9..19, ASCII)
Default	No default

ATTRIBUTE Rtr Ldp Nbr LabelIn timeStamp

Access	Read: All Write: Illegal
Description	This attribute indicates when the label was allocated by the session.
Mib	no_mib
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rtr Ldp Nbr LabelIn adjacencyList

Access	Read: All Write: Illegal
Description	This attribute indicates a list of interfaces associated with the adjacency that the incoming label is configured on. It relates to the *LDP* interface component name associated with the media over which the LDP adjacency occurs. This attribute includes the usage state and operational state information associated with the *Label* component, to highlight the interface that the label is currently active on. The usage state information in the attribute indicates the usage state of the *Label* component. The three possible states are: ***idle***, ***active***, and ***busy***. ***idle***: Indicates labels that are supplied but are not used to represent the LSP. ***active***: Indicates labels that are supplied and are selected for use to represent the LSP. Active labels can accept more users. ***busy***: Indicates labels that are supplied and are selected for use to represent the LSP. Busy labels cannot accept more users. The operational state information in the attribute indicates the operational state of the *Label*. The two possible states are: ***enabled*** and ***disabled***. ***enabled***: Indicates labels that are installed in the hardware for data path use. ***disabled***: Indicates labels that are not installed in the hardware.
Mib	no_mib
List of	String (30..76, ASCII)
List Size	8
Default	No default

COMPONENT Rtr Ldp Nbr LabelOut

Instance	Decimal (0..1048575)
Groups	"GROUP Rtr Ldp Nbr LabelOut Operational (Op)"
Scope	Application
Description	*Rtr/<s> Ldp Neighbor/<s> LabelOut/<n>* This component indicates the label sent for a given session. “Out” in the component name reflects the data path direction. In this case it represents the label received from the remote peer.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ldp Nbr LabelOut Operational (Op)

Properties	Operational
Description	This group contains the operational attributes for the *LabelOut* dynamic component.
Mib	no_mib

ATTRIBUTE Rtr Ldp Nbr LabelOut fec

Access	Read: All Write: Illegal
Description	This attribute indicates the Fec associated to the *Label* component.
Mib	no_mib
Values	String (9..19, ASCII)
Default	No default

ATTRIBUTE Rtr Ldp Nbr LabelOut timeStamp

Access	Read: All Write: Illegal

Description	This attribute indicates when the label was allocated by the session.
Mib	no_mib
Values	Time (DHMS)
Default	No default

ATTRIBUTE Rtr Ldp Nbr LabelOut adjacencyList

Access	Read: All Write: Illegal
Description	This attribute indicates the list of interfaces associated with the adjacency that the outgoing label can be active on. It relates to the LDP interface component name associated with the media over which the LDP adjacency occurs. This attribute includes the usage state and operational state information associated with the *Label* component, to highlight the interface that the label is currently active on. The usage state information in the attribute indicates the usage state of the *Label* component. The three possible states are: ***idle***, ***active***, and ***busy***. ***idle***: Indicates labels that are supplied but are not used to represent the LSP. ***active***: Indicates labels that are supplied and are selected for use to represent the LSP. Active labels can accept more users. ***busy***: Indicates labels that are supplied and are selected for use to represent the LSP. Busy labels cannot accept more users. The operational state information in the attribute indicates the operational state of the *Label*. The two possible states are: ***enabled*** and ***disabled***. ***enabled***: Indicates labels that are installed in the hardware for data path use.

	disabled: Indicates labels that are not installed in the hardware.
Mib	no_mib
List of	String (30..76, ASCII)
List Size	8
Default	No default

COMPONENT Rtr Ldp Nbr Descriptor (Desc)

Groups	"GROUP Rtr Ldp Nbr Desc Authentication (Auth)"
Scope	Application
Description	*Rtr/<s> Ldp Nbr/<s> descriptor* This component represents the provisionable data for the *Neighbor*. This component is created automatically when the *Neighbor* is provisioned.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Ldp Nbr Desc Authentication (Auth)

Properties	Provisioned
Description	This group contains the attributes which specify the MD5 authentication data for the *Neighbor*.
Mib	no_mib

ATTRIBUTE Rtr Ldp Nbr Desc md5Key

Access	Read: Illegal Write: All
Description	This attribute specifies the MD5 authentication key for the *Neighbor*. The default value of this attribute is a null string, which tells that MD5 authentication is not applied. Any ASCII character is valid except double quotes.

Mib	no_mib
Values	String (0..69, ASCII)
Default	No default

ATTRIBUTE Rtr Ldp Nbr Desc keyTransitionDelay (ktDelay)

Access	Read: All Write: All
Description	This attribute specifies the delay time, in minutes, for the new key to take effect when the value of ***md5Key*** attribute is changed. The default value of this attribute is the value of the *Rtr/<s> Ldp* ***defaultKeyTransitionDelay*** attribute.
Mib	no_mib
Values	Decimal (1..20160) useLdpDefault
Units	minutes
Default	useLdpDefault

COMPONENT Rtr ControlPlaneProtection (Cpp)

Groups	"GROUP Rtr Cpp Provisioned (Prov)" "GROUP Rtr Cpp Operational (Oper)" "GROUP Rtr Cpp OsiState (State)"

"COLLECTED STATS Router ControlPlaneProtection"

Scope	Application
Description	*Vr/<string> Ip ControlPlaneProtection* *Rtr/<string> ControlPlaneProtection* *Rtr/<string> Vrf/<string> ControlPlaneProtection* This component represents the IP Control Plane Protection mechanism. The *CPP* helps prevent control traffic from the current Virtural Router, Router, or vrForwarder (VR/VRF) receiving excessive traffic from adversely affecting the control processing of others. If the rate of packets received by the local-destined address is greater than the provisioned value, CPP is notified.

This component does not protect locally destined IP traffic including IP options, IPv6, TTL of 0 or 1 which includes OSPF, and unsupported protocols (in hardware) such as ISIS.

Mib: no_mib

Dyn. Subcomp.: "COMPONENT Rtr Cpp IsolatedDa"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

VERB Clear Rtr Cpp

Impact: Service

Description:
clear Vr/<string> Ip Cpp
clear Rtr/<string> Cpp
clear Rtr/<string> Vrf/<string> Cpp
This command is intended for manually clearing all isolated addresses from the current *Cpp* component, and resume traffic to the locally destined addresses on all the FPs.

GROUP Rtr Cpp Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the *Cpp* component.

Mib: no_mib

ATTRIBUTE Rtr Cpp packetsPerSecond (pps)

Access: Read and write

Description: This attribute specifies the maximum number of packets per second a locally destined address on the VR/VRF can receive before being monitored by the *CPP* feature.

Mib	no_mib
Values	Decimal (100; 200; 300; 400; 500; 600; 700; 800; 900; 1000; 1100; 1200)
Default	1200

ATTRIBUTE Rtr Cpp isolationTime (isolation)

Access	Read and write
Description	This attribute specifies the amount of time a locally destined address will remain in isolation after exceeding the *packetsPerSecond* rate. If *gracePeriod* is non-zero, isolation will not occur until the conclusion of the grace period. A value of 0 indicates that a locally destined address which is isolated can only be cleared using the *CLEAR* command. If the traffic to the address is still excessive after the isolationTime expires, this locally destined address will remain in isolation for *IsolationTime* * 2 period. If the traffic to the address is still excessive after 3 times of the above step, the address will be permanently isolated until it is cleared by the *CLEAR* verb. The minimum value of *IsolationTime* other than zero is 30.
Mib	no_mib
Values	Decimal (0; 30..3600)
Units	seconds
Default	30

ATTRIBUTE Rtr Cpp gracePeriod (grace)

Access	Read and write
Description	This attribute specifies period of time used to sample the flow rate before the packets are discarded. The intent of the grace period is to measure the average flow rate during this period to ensure that the exceeded traffic flow rate was not due to bursty traffic.

If *mode* is ***study***, a list of static record are generated every 15 minutes including a list of locally-destined addresses having excessive flow and its avarage flow rates during the gracePeriod.

If *gracePeriod* is non-zero, isolation will not occur until the conclusion of the grace period.

A value of 0 of this attribute when *mode* is ***protected*** indicates that no monitoring of the address will be performed after an excessive flow is detected and isolation occurs immediately.

It is an error to have *mode* set to ***study*** and *gracePeriod* set to zero.

Mib	no_mib
Values	Decimal (0..300)
Units	seconds
Default	5

ATTRIBUTE Rtr Cpp mode

Access	Read and write
Description	This attribute specifies whether we are simply monitoring excessive traffic (***study***), or will ***protect*** the VR by discarding traffic during excessive traffic flows, or the feature is ***disabled***. It is an error to have *mode* set to ***study*** and *gracePeriod* set to zero.
Mib	no_mib
Values	study protect disabled
Default	disabled

GROUP Rtr Cpp Operational (Oper)

Properties	Operational

Description	This group contains the operational attributes for the *Cpp* component.
Mib	no_mib

ATTRIBUTE Rtr Cpp operationalStatus

Access	Read only
Description	This attribute indicates the current operational state of the *Cpp* component on this VR The following states are the valid states of the *Cpp* component: ***inactive***: there are currently no addresses on the VR/VRF being monitored or isolated. ***disabled***: the *Cpp* feature is currently disabled on the VR/VRF. ***monitoring***: there are currently addresses on the VR/VRF being monitored, but none are currently isolated. If the *mode* is set to ***study***, this state indicates there are currently addresses on the VR/VRF having excessive traffic. ***isolating***: there are currently addresses being isolated for this VR/VRF.
Mib	no_mib
Values	inactive disabled monitoring isolating
Default	No default

ATTRIBUTE Rtr Cpp isolatedDaCount

Access	Read only
Description	This attritute counts the total number of addresses currently being isolated for this VR.
Mib	no_mib
Values	Decimal (0..4096)
Default	No default

GROUP Rtr Cpp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	no_mib

ATTRIBUTE Rtr Cpp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	no_mib
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Rtr Cpp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	no_mib
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Rtr Cpp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	no_mib
Values	idle active (activ) busy

Default idle

COLLECTED STATS Router ControlPlaneProtection

Description The statistics record generated by the Router ControlPlaneProtection component.

ATTRIBUTE Rtr Cpp isolatedDa

Description This attribute indicates the ip address of the isolated locally destined DA.

Values IP address

ATTRIBUTE Rtr Cpp isolatedLp

Description This attribute indicates the LP number on which the locally destined address is being isolated.

Values Decimal (0..15)

ATTRIBUTE Rtr Cpp isolatedCounts

Description This attribute indicates the number of counts that the isolated DA encountered during the last 15 minutes.

Values Decimal (0..65535)

ATTRIBUTE Rtr Cpp averageFlowRate

Description This attribute indicates the average flow rate of the isolated DA during the isolation period.

Values Decimal (0..65535)

COMPONENT Rtr Cpp IsolatedDa

Instance address [IP address]
lp [Decimal (0..15)]

Groups "GROUP Rtr Cpp IsolatedDa Operational (Oper)"

Scope Application

Description

Vr/<string> Ip Cpp IsolatedLocalAddress/<ipAddress>,<lp>
Rtr/<string> Cpp IsolatedLocalAddress/<ipAddress>,<lp>

Rtr/<string> Vrf/<string> Cpp IsolatedLocalAddress/ <ipAddress>,<lp>

Each entry of this component represents a locally destined address being isolated. There is one instance of this component per isolated address per lp.

Mib: no_mib

Common Verbs: Help, List, Display

VERB Clear Rtr Cpp IsolatedDa

Impact: Service

Description:
Clear Vr/<string> Ip Cpp IsolatedDa/< ipAddress>
Clear Rtr/<string> Cpp IsolatedDa/<ipAddress>
Clear Rtr/<string> Vrf/<string> Cpp IsolatedDa/<ipAddress>

This command is intended for manually clearing the isolated address and resume traffic to the local address for all FPs.

GROUP Rtr Cpp IsolatedDa Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the *IsolatedLocalAddress* component.

Mib: no_mib

ATTRIBUTE Rtr Cpp IsolatedDa averageFlowRate

Access: Read only

Description: This attribute indicates the average flow rate calculated over the grace period.

Mib: no_mib

Values: Decimal (0..65535)

Default: No default

COMPONENT Rtr MemoryManagement (Mm)

Groups	"GROUP Rtr Mm Provisioned (Prov)" "GROUP Rtr Mm Operational (Oper)"
Scope	Application
Description	*Vr/<string> MemoryManagement* *Rtr/<string> MemoryManagement* *Rtr/<string> Vrf/<string> MemoryManagement* This component represents a mechanism to control and monitor dynamic memory usage within a *VirtualRouter*, *Router*, or *VpnRouteForwarder*.
Mib	no_mib
Common Verbs	Help List Display

GROUP Rtr Mm Provisioned (Prov)

Properties	Provisioned
Description	This group contains all provisioned attributes for the *MemoryManagement* component.
Mib	no_mib

ATTRIBUTE Rtr Mm vrMaxHeapSpace (vrMax)

Access	Read and write
Description	This attribute specifies the maximum percentage of the total system heap space that is allowed for use by this *VirtualRouter*, *Router*, or *VpnRouteForwarder*. Attempted memory allocation beyond this limit will cause a *VirtualRouter* or *VpnRouteForwarder* to automatically lock. If memory allocation for a *Router* exceeds this limit, an alarm is raised but the component is not locked.
Mib	no_mib

Values	Decimal (0..100)
Units	%
Default	100

GROUP Rtr Mm Operational (Oper)

Properties	Operational
Description	This group contains all operational attributes for the *MemoryManagement* component.
Mib	no_mib

ATTRIBUTE Rtr Mm vrHeapSpaceBytesAllocated (vrBytesAlloc)

Access	Read only
Description	This attribute indicates the number of bytes of system dynamic memory which has been allocated to this *VirtualRouter*, *Router*, or *VpnRouteForwarder* component.
Mib	no_mib
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Rtr Mm vrHeapSpaceAllocated (vrAlloc)

Access	Read only
Description	This attribute indicates the percentage of the maximum permitted heap space for this *VirtualRouter*, *Router*, or *VpnRouteForwarder* component (as specified by *vrMaxHeapSpace* attribute) which is currently allocated.
Mib	no_mib
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Rtr DifferentiatedServicesDomain (Dsd)

Instance	multiservice (ms) classSelector (cs) assuredForwarding (af) packetVoice (pv) wirelessUmts (umts) custom (cu)
Groups	"GROUP Rtr Dsd LocalSourcePackets (Local)"
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum>* *Rtr/<string> DifferentiatedServicesDomain/<enum>* *Rtr/<string> Vrf/<string> DifferentiatedServicesDomain/<enum>* This component and its supcomponents represent a Differentiated Services administration domain for traffic management and congestion control. The *DifferentiatedServicesDomain* component instance identifies the domain type. The following domain types are available: *Multiservice (ms)* *ClassSelector (cs)* *AssuredForwarding (af)* *PacketVoice (pv)* *WirelessUmts (umts)* *Custom (cu)* The *DifferentiatedServicesDomain* component is an optional subcomponent of the *Router*, *VpnRouteForwarder* and *VirtualRouter* components. The *Router*, *VpnRouteForwarder*, and *VirtualRouter* components can have at most one *DifferentiatedServicesDomain* subcomponent. If a *Router* component does not have a *DifferentiatedServicesDomain* subcomponent, then the *Router*

operates as by default as follows. IP packets with Differentiated ServiceCode Point (DSCP) field value 48, and MPLS packets with Experimental Bits (EXP) field value 6, are treated with Per Hop Behavior (PHB) CS6; other IP and MPLS packets are treated with PHB DF for default forwarding. Locally generated routing control packets are treated with PHB CS6; other locally generated packets are treated with PHB DF. Per Hop Behaviors CS6 and DF are configured to provide the following values of scheduling class for 8, 4, 3, 2 queues, drop precedence, and EXP for MPLS encapsulation: (5, 2, 2, 0, low, 6) and (0, 0, 0, 0,, high, 0), respectively. This is equivalent to the default the configuration of the *DifferentiatedServicesDomain/custom* component instance.

If a *VpnRouteForwarder* component does not have a *DifferentiatedServicesDomain* subcomponent, then the *VpnRouteForwarder* component uses the *DifferentiatedServicesDomain* configuration of the *Router*.

Mib	no_mib
Opt. Subcomp.	"COMPONENT Rtr Dsd MplsServiceMap (MplsMap)" "COMPONENT Rtr Dsd VpnDscpMap (VpnDscpMap)" "COMPONENT Rtr Dsd VpnCosMap (VpnCosMap)" "COMPONENT Rtr Dsd PerHopBehavior (Phb)" "COMPONENT Rtr Dsd TrafficClass (Tc)"
Common Verbs	Help List Display Add DELete

GROUP Rtr Dsd LocalSourcePackets (Local)

Properties	Provisioned
Description	This group contains provisioned attributes of the *DifferentiatedServicesDomain* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd phbGeneralSource (phbG)

Access	Read and write
Description	This attribute indicates the *PerHopBehavior* component instance that controls the forwarding behavior of each locally generated packet that is not used for network routing control. For a locally-generated IP packet that is not used for network routing control, the Differentiated Services Code Point (DSCP) field of the packet is set equal to this attribute value. For a locally-generated ICMP echo request packet, the DSCP field is overridden by the *-tos* or *-dscp* option of the *Ping* command. For a locally-generated ICMP echo reply packet, the DSCP field is set to the DSCP value contained in the IP header of the received request packet. In any case, the forwarding behavior of the ICMP packet controlled by the *PerHopBehavior* component instance that is equal to value of the DSCP field.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4

	cs5 cs6 cs7
Default	df

ATTRIBUTE Rtr Dsd phbRoutingSource (phbR)

Access	Read and write
Description	This attribute indicates the *PerHopBehavior* component instance that controls the forwarding behavior of each locally generated packet that is used for network routing control. For a locally generated IP packet that is used for network routing control, the Differentiated Services Code Point (DSCP) field of the packet is set equal to this attribute value.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7

Default	cs6

ATTRIBUTE Rtr Dsd linkToVpnDscpMap (vpnMap)

Access	Read and write
Description	This attribute specifies a *VpnDscpMap* component instance that is used to translate the value of the DSCP field in an IP packet forwarded by a customer Virtual Router (cVr) to the value of the DSCP field in the IP header that encapsulates the packet when it is forwarded by a Virtual Connection Gateway (VCG). If no *VpnDscpMap* component is specified, then the value of the DSCP field in the carrier IP header is set equal to the value of the DSCP field in the customer IP header. This attribute is relevant only to a VR configured as a customer router in an IP VPN (RFC2764) network.
Mib	no_mib
Values	Link (Service, linkToVpnDscpMapUsers)
Default	No default

COMPONENT Rtr Dsd MplsServiceMap (MplsMap)

Instance	0
Scope	Application
Description	*Vr/<string> Dsd/<enum> MplsServiceMap/<n>* *Rtr/<string> Dsd/<enum> MplsServiceMap/<n>* The subcomponents of the *MplsServiceMap* component specify mappings used to control how MPLS packets are forwarded over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The *MpslServiceMap/0* subcomponent instance is added automatically to a *DifferentiatedServicesDomain* subcomponent being added to a *Router* component where the *Ldp* subcomponent is already activated.

The *MpslServiceMap/0* subcomponent instance is not allowed under a *DifferentiatedServicesDomain* component whose immediate parent is a *VirtualRouter* component or a *VirtualRouteForwarder* component.

Mib: no_mib

Opt. Subcomp.:
"COMPONENT Rtr Dsd MplsMap ExperimentalBitsMap (ExpMap)"
"COMPONENT Rtr Dsd MplsMap PerHopBehaviorMap (PhbMap)"
"COMPONENT Rtr Dsd MplsMap MarkingPerformance"

Common Verbs:
Help
List
Display
Add
DELete

COMPONENT Rtr Dsd MplsMap ExperimentalBitsMap (ExpMap)

Instance:
0
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6
7

Groups:
"GROUP Rtr Dsd MplsMap ExpMap Provisioned (Prov)"
"GROUP Rtr Dsd MplsMap ExpMap Operational (Oper)"

Scope: Application

Description:
Vr/<string> Dsd/<enum> MplsMap/<n> ExperimentalBitsMap/<exp>
Rtr/<string> Dsd/<enum> MplsMap/<n> ExperimentalBitsMap/<exp>

This component specifies a mapping from a three-bit

Experimental (EXP) field value in an MPLS label to a *DifferentiatedServicesDomain PerHopBehavior* component instance value.

This mapping controls how an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value is treated when the packet is forwarded by a Label Switched Router (LSR) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The *MplsServiceMap* component must have eight *ExperimentalBitMap* subcomponents, each with a unique instance value in the range from **0** to **7**. These subcomponents are added automatically when the *MplsServiceMap* component is created.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Dsd MplsMap ExpMap Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioned attributes of the *ExperimentalBitsMap* component.

Mib: no_mib

ATTRIBUTE Rtr Dsd MplsMap ExpMap perHopBehavior (phb)

Access: Read and write

Description: This attribute specifies the *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the

packet is forwarded by a Label Switch Router (LSR) over an Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The value of this attribute must be equal to an exisiting *DifferentiatedServicesDomain PerHopBehavior* component instance value. A default value is set automatically according to a function of the *ExperimentalBitsMap* and *DifferentiatedServicesDomain* component instance values when the *ExperimentalBitsMap* component is created.

Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af31 af23 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Default	No default

GROUP Rtr Dsd MplsMap ExpMap Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *ExperimentalBitsMap* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd MplsMap ExpMap operPerHopBehavior (operPhb)

Access	Read only
Description	This attribute indicates the *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The value of this attribute is equal to the *perHopBehavior* provisioned attribute value.
Mib	no_mib
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af31 af23 af32 af33 af41 af42 af43 cs0 cs1 cs2

cs3
cs4
cs5
cs6
cs7

Default: No default

ATTRIBUTE Rtr Dsd MplsMap ExpMap trafficClass (tc)

Access: Read only

Description: This attribute indicates the *TrafficClass* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *trafficClass* provisioned attribute value of the *DifferentiatedServices PerHopBehavior* component instance that is equal to the *ExperimentalBitsMap perHopBehavior* provisioned attribute value.

Mib: no_mib

Values:
critical
network
premium
platinum
gold
silver
bronze
standard

Default: No default

ATTRIBUTE Rtr Dsd MplsMap ExpMap dropPrecedence (dp)

Access: Read only

Description: This attribute indicates the drop precedence value used to treat an MPLS packet whose three-bit Experimental (EXP) field value is

equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an LSP where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *dropPrecedence* provisioned attribute value of *DifferentiatedServices PerHopBehavior* component instance that is equal to the *ExperimentalBitsMap perHopBehavior* provisioned attribute value.

Mib	no_mib
Values	low medium high
Default	No default

COMPONENT Rtr Dsd MplsMap PerHopBehaviorMap (PhbMap)

Instance	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

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df
ef
af11
af12
af13
af21
af22
af31
af23
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups

"GROUP Rtr Dsd MplsMap PhbMap Provisioned (Prov)"
"GROUP Rtr Dsd MplsMap PhbMap Operational (Oper)"

Scope

Application

Description

Vr/<string> Dsd/<enum> MplsMap/<n> PerHopBehaviorMap/<phb>
Rtr/<string> Dsd/<enum> MplsMap/<n> PerHopBehaviorMap/<phb>

This component specifies a mapping from a *PerHopBehavior* component instance value to a three-bit Experimental (EXP) field value.

This mapping controls how the EXP field in an MPLS label is marked when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the

MplsServiceMap component is applied.

The *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat the packet prior to label encapsulation is used to select the EXP value for the label. If the *PerHopBehavior* component instance value used to treat the packet is not included among the existing *PerHopBehaviorMap* component instances, then the EXP value indicated by the *PerHopBehaviorMap* component whose instance is equal to 0 is used.

Each *PerHopBehaviorMap* component instance is equal to a decimal value in the range from 0 to 63. The following pairs of *PerHopBehaviorMap* component instances values are equal:
AF11 = 10,
AF12 =12,
AF13 =14,
AF31 = 26,
AF32 = 28,
AF33 = 30,
AF21 = 18,
AF22 = 20,
AF23 = 22,
AF41 = 34,
AF42 =36,
AF43 = 38
CS0 = 0,
CS1 = 8,
CS2 =16,
CS3 = 24,
CS4 =32 ,
CS5 = 40,
CS6 = 48,
CS7 = 56,
DF = 0,
EF = 46.

The first item in each pair above is a Per Hop Behavior designation identified in one of following IETF standards: RFC 2764 (“DiffServ Field Definition in IPv4 and IPv6 Headers”), RFC 2597 (“Assured Forwarding PHB Group”) or RFC 3246 (“An Expedited Forwarding PHB”). The the second item in each

pair is the IETF recommended Differentiated Services Code Point (DSCP) value.

Each *PerHopBehaviorMap* subcomponent of the *MplsServiceMap* must have a unique instance value. A *PerHopBehaviorMap* subcomponent whose instance value is equal to 0 must exist.

A set of *PerHopBehaviorMap* subcomponents with instance values equal to the *DifferentiatedServicesDomain PerHopBehavior* subcomponent instance values is added automatically when the *MplsServiceMap* component is created.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Dsd MplsMap PhbMap Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioned attributes of the *PerHopBehaviorMap* component.

Mib: no_mib

ATTRIBUTE Rtr Dsd MplsMap PhbMap experimentalBits (exp)

Access: Read and write

Description: This attribute specifies a three-bit Experimental (EXP) field value in the range from ***0*** to ***7*** that is marked into the MPLS label when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The EXP value is selected according to the *PerHopBehaviorMap* component whose instance value is equal to the instance value of

the *DifferentiatedServicesDomain PerHopBehavior* component used to treat the packet prior to label encapsulation.

This attribute is set automatically to a default value according to a function of the *PerHopBehaviorMap* and *DifferentiatedServicesDomain* component instance values when the *PerHopBehaviorMap* component is created.

Mib	no_mib
Values	Decimal (0..7)
Default	No default

GROUP Rtr Dsd MplsMap PhbMap Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *PerHopBehaviorMap* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd MplsMap PhbMap operExperimentalBits (operExp)

Access	Read only
Description	This attribute indicates a three-bit Experimental (EXP) field value in the range from ***0*** to ***7*** that is marked into the MPLS label when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The EXP value is selected according to the *PerHopBehaviorMap* component whose instance value is equal to the instance value of the *DifferentiatedServicesDomain PerHopBehavior* component used to treat the packet prior to label encapsulation. The value of this attribute is equal to the *experimentalBits* provisioned attribute.
Mib	no_mib

Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Dsd MplsMap PhbMap operExperimentalBitsAlternative (operExpAlt)

Access	Read only
Description	This attribute is similar to the *operExperimentalBits* operational attribute, except that it used only on PQC-based access FPs with ASIC Version 2.0 when an IP packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) via a PQC-based trunk FP. In such situations only, the value of this attribute, instead of the *operExperimentalBits* operational attribute value, is used to mark the Experimental (EXP) field of the MPLS label. If the *MplsServiceMap* does not have a *MarkingPerformance* subcomponent, then the value of this attribute is equal to the *experimentalBits* provisioned attribute; otherwise the value of this attribute is determined as explained in the next paragraph. If "***x***" is the *schedulingClass4Queues* operational attribute value of the *DifferentiatedServicesDomain PerHopBehavior* component whose instance value is equal to the *PerHopBehaviorMap* component instance value, then the *PerHopBehaviorMap experimentalBitsAlternative* operational attribute value is equal to the "***x***th" element of the *MarkingPerformance experimentalBitsAlternative* provisioned attribute.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

COMPONENT Rtr Dsd MplsMap MarkingPerformance

Groups	"GROUP Rtr Dsd MplsMap MarkingPerformance Provisioned (Prov)"
Scope	Application

Description

Vr/<string> Dsd/<enum> MplsMap/<n> MarkingPerformance
Rtr/<string> Dsd/<enum> MplsMap/<n> MarkingPerformance

This subcomponent is added to the *MplsServiceMap* component to enable high performance MPLS label encapsulation on some PQC-based ingress access FPs .

IP packets that are forwarded from access FPs with PQC-ASIC Version 2.0 via PQC-based trunk FPs (any ASIC version) over an MPLS Label Switched Path (LSP) where the *MplsServiceMap* is applied are affected.

Adding this component to the *MplsServiceMap* improves IP packet throughput on the affected access FPs but restricts how the three-bit Experimental (EXP) field of MPLS labels are marked, as explained in the description of the *operExperiementalBitsAlternative* operational attribute of the *MplsServiceMap PerHopBehaviorMap* component.

Without the *MarkingPerformance* subcomponent, IP packets after being routed in hardware are encapsulated with MPLS labels by a software-assisted datapath that does not restrict how the EXP field of MPLS labels are marked.

The *MarkingPerformance* subcomponent is added automatically to a *MpslServiceMap* subcomponent being added to a *DifferentiatedServicesDomain* component. This ensures that the high performance MPLS label encapsulation data path is used by default.

Mib

no_mib

Common Verbs

Help
List
Display
Add
DELete

GROUP Rtr Dsd MplsMap MarkingPerformance Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *MarkingPerformance* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd MplsMap MarkingPerformance expermentalBitsAlternative (expAlt)

Access	Read and write
Description	This attribute is an array of four values that specifies a mapping of scheduling class values for four queues to three-bit Experimental (EXP) field values for marking MPLS labels. This array controls the value of the *operExperimentalBitsAlternative* operational attribute of the *MplsServiceMap PerHopBehaviorMap* components, as explained in the description of that attribute. Each element of this attribute is set automatically to a default value according to a function of the *DifferentiatedServicesDomain* component instance value and the element index when the *MarkingPerformance* component is created. The default values are listed below. Default values for all domains, except *assuredForwarding (af)* and *custom(cu)* : ---------- *schedulingClass4Queues* *experimentalBitsAlternative* ---------- *3* ***5*** *2* ***6*** *1* ***1*** *0* ***0*** Default values for *assuredForwarding (af)* domain: ---------- *schedulingClass4Queues* *experimentalBitsAlternative* ----------

--	*3*	***7***
2	***5***	
1	***3***	
0	***0***	

Default values for *custom(cu)* domain:

--	*3*	***0***
2	***6***	
1	***0***	
0	***0***	

Mib	no_mib
Vector of	Decimal (0..7)
Index	Decimal (0..3)
Default	No default

COMPONENT Rtr Dsd VpnDscpMap (VpnDscpMap)

Instance	String (1..20, ASCII)
Groups	"GROUP Rtr Dsd VpnDscpMap Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum> VpnDscpMap/<string>* This component provides a mapping of customer DSCP values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. When an IP packet is forwarded from a customer Virtual Router (cVr) to a Virtual Connection Gateway (VCG) the customer IP header is encapsulated with a carrier IP header for transmission through the carrier network.

If the customer virtual router (cVr) has a *DifferentiatedServicesDomain* subcomponent where the *linkToVpnDscpMap* attribute is set, then the value of DSCP field in the IP packet forwarded by the customer Virtual Router (cVr) is translated by the mapping specified by the *assignedPhb* attribute of the associated *VpnDscpMap* to a DSCP value that is marked in the carrier IP header. If the customer *DifferentiatedServicesDomain linkToVpnDscpMap* attribute is not set, then the value of the DSCP field in the carrier IP header is set equal to the value of the DSCP field in the customer IP header.

The encapsulated IP packet is treated by the Virtual Connection Gateway (VCG) as specified by the *DifferentiatedServicesDomain PerHopBehavior* component instance associated with the carrier header DSCP value. If the carrier header DSCP value does not correspond to a *PerHopBehavior* subcomponent of the VCG's *DifferentiatedServicesDomain* component, then the IP packet is treated as specified by the *PerHopBehavior* component instance associated with DSCP ***0***.

The *VpnDscpMap* component can be added only to the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***carrier***. It can be linked only to the *linkToVpnDscpMap* attribute of the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***customer***.

The component instance is an arbitrary text string to allow the operator to assign a meaningful name for easy reference.

The *DiffServDomain* component is not allowed to have more than eight *VpnDscpMap* subcomponents.

	No more than one *DiffServDomain* component instance is allowed to have *VpnDscpMap* subcomponents
Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Dsd VpnDscpMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *VpnDscpMap* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd VpnDscpMap linkToVpnDscpMapUsers (users)

Access	Read and write
Description	This attribute specifies all the customer virtual routers that use the *VpnDscpMap* component.
Mib	no_mib
List of	Link (Service, linkToVpnDscpMap)
List Size	256
Default	No default

ATTRIBUTE Rtr Dsd VpnDscpMap assignedPhb (phb)

Access	Read and write
Description	This attribute specifies a mapping of customer DSCP values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. See the description of the *VpnDscpMap* component for more information.

Mib	no_mib
Vector of	Decimal (0..63)
Index	Decimal (0..63)
Default	([1] 0, [63] 0)

COMPONENT Rtr Dsd VpnCosMap (VpnCosMap)

Groups	"GROUP Rtr Dsd VpnCosMap Provisioned (Prov)" "GROUP Rtr Dsd VpnCosMap Operational (Oper)"
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum> VpnCosMap* This component provides a mapping of customer CoS values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. When an IP packet is forwarded from a customer Virtual Router (cVr) to a Virtual Connection Gateway (VCG) the customer IP header is encapsulated with a carrier IP header for transmission through the carrier network. If the customer virtual router (cVr) does not have a *DifferentiatedServicesDomain* subcomponent and the Virtual Connection Gateway (VCG) has a *DifferentiatedServicesDomain VpnCosMap* component, then the IP CoS value assigned to the packet by the customer virtual router is translated by the mapping specified by the *assignedPhb* attribute of the *VpnCosMap* to a DSCP value that is marked in the carrier IP header. If the *DifferentiatedServicesDomain* of the Virtual Connection Gateway (VCG) does not have a *VpnCosMap* subcomponent, then the value of the DSCP field in the carrier IP header is set to ***0*** unless the customer header DSCP value is ***48*** (which corresponds to PHB CS6 for IP network control packets). In the latter case the carrier header DSCP value is set to ***48*** also. The encapsulated IP packet is treated by the Virtual Connection Gateway (VCG) as specified by the

DifferentiatedServicesDomain PerHopBehavior component instance associated with the carrier header DSCP value. If the carrier header DSCP value does not correspond to a *PerHopBehavior* subcomponent of the VCG's *DifferentiatedServicesDomain* component, then the IP packet is treated as specified by the *PerHopBehavior* component instance associated with DSCP ***0***.

The *VpnCosMap* component can be added only to the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***carrier***.

The *VpnCosMap* component is used to assist the migration of an IP VPN network without *DifferentiatedServicesDomain* components to an IP VPN network where every customer Virtual Router (cVr) and Virtual Connection Gateway (VCG) has a *DifferentiatedServicesDomain* component. The *VpnCosMap* components can be removed once the CoS to DiffServ network migration is completed.

Mib	no_mib
Common Verbs	Help List Display Add DELete

GROUP Rtr Dsd VpnCosMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *VpnCosMap* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd VpnCosMap assignedPhb (phb)

Access	Read and write

Description	This attribute specifies a mapping of customer CoS values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. See the description of the *VpnCosMap* component for more information.
Mib	no_mib
Vector of	Decimal (0..63)
Index	Decimal (0..3)
Default	(0: 0, 1: 0, 2: 0, 3: 0)

GROUP Rtr Dsd VpnCosMap Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *VpnCosMap* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd VpnCosMap users (users)

Access	Read only
Description	This attribute indicates the customer virtual routers that use the *VpnCosMap* component. This is the list of all customer virtual routers (cVRs) without a *DifferentiatedServicesDomain* subcomponent that forward IP packets to the Virtual Connection Gateway (VCG).
Mib	no_mib
List of	The name of the component
List Size	256
Default	No default

COMPONENT Rtr Dsd PerHopBehavior (Phb)

Instance	0
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df
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af11
af12
af13
af21
af22
af23
af31
af32

af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups

"GROUP Rtr Dsd Phb Provisioned (Prov)"
"GROUP Rtr Dsd Phb Operational (Oper)"
"GROUP Rtr Dsd Phb IpOperational (IpOper)"

Scope

Application

Description

Vr/<string> Dsd/<enum> PerHopBehavior/<phb>
Rtr/<string> Dsd/<enum> PerHopBehavior/<phb>
Rtr/<string> Vrf/<string> Dsd/<enum> PerHopBehavior/<phb>

The attributes of the *PerHopBehavior* component specify per-packet traffic management parameters that control how individual packets are forwarded.

A packet is associated with a *PerHopBehavior* component instance by a packet classification mechanism. For IP packets, the associated *PerHopBehavior* component instance is equal to the value of the six-bit Differentiated Services Code Point (DSCP) field in the IP header. For MPLS packets forwarded by a Label Switched Router (LSR) over a Label Switched Path (LSP) where an *MplsServiceMap* component is applied, the associated *PerHopBehavior* component instance is equal to value of the *perHopBehavior* attribute of the *MplsServiceMap ExperimentalBitsMap* component whose instance is equal to the value of the three-bit Experimental (EXP) field of the MPLS label.

If the *PerHopBehavior* component instance associated with a

packet is not included among the existing *PerHopBehavior* subcomponents of the *DifferentiatedServicesDomain*, then the packet is treated according to the *PerHopBehavior* component whose instance is equal to 0.

Each *PerHopBehavior* component instance is equal to a decimal value in the range from 0 to 63. The following pairs of *PerHopBehavior* component instances values are equal:
AF11 = 10,
AF12 =12,
AF13 =14,
AF31 = 26,
AF32 = 28,
AF33 = 30,
AF21 = 18,
AF22 = 20,
AF23 = 22,
AF41 = 34,
AF42 =36,
AF43 = 38
CS0 = 0,
CS1 = 8,
CS2 =16,
CS3 = 24,
CS4 =32,
CS5 = 40,
CS6 = 48,
CS7 = 56,
DF = 0,
EF = 46.

The first item in each pair above is a Per Hop Behavior designation identified in one of following IETF standards: RFC 2764 (“DiffServ Field Definition in IPv4 and IPv6 Headers”), RFC 2597 (“Assured Forwarding PHB Group”) or RFC 3246 (“An Expedited Forwarding PHB”). The the second item in each pair is the IETF recommended Differentiated Services Code Point (DSCP) value.

Each *PerHopBehavior* subcomponent of the *DifferentiatedServicesDomain* must have a unique instance value.

A *PerHopBehavior* subcomponent whose instance value is equal to 0 must exist.

A set of *PerHopBehavior* subcomponents is added automatically when the *DifferentiatedServicesDomain* component is created. The members of this set is a function of the *DifferentiatedServicesDomain* component instance as indicated below.

Multiservice (ms):
CS7, CS6, CS5, CS4, CS3, CS2, CS1, EF, AF41, AF42, AF43, AF31, AF32, AF33, AF21, AF22, AF23, AF11, AF12, AF13, DF

ClassSelector (cs):
CS7, CS6, CS5, CS4, CS3, CS2, CS1, CS0

AssuredForwarding (af):
CS6, AF41, AF42, AF43, AF31, AF32, AF33, AF21, AF22 AF23, AF11, AF12, AF13, DF

Packet Voice (pv):
CS7, CS6, CS5, CS1, EF, AF11, AF12, AF13, DF

WirelessUmts (umts):
CS7, CS6, CS1, EF, AF31, AF32, AF33, AF21, AF22, AF23, DF

Custom (cu):
CS6, DF

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Dsd Phb Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *PerHopBehavior* component.
Mib	no_mib

ATTRIBUTE Rtr Dsd Phb trafficClass (tc)

Access	Read and write
Description	This attribute specifies the *TrafficClass* component instance associated with the *PerHopBehavior* component instance. This attribute allows *PerHopBehavior* component instances to be aggregated into groups that specify the same packet scheduling characteristics. This attribute is set automatically to a default value according to a function of the *PerHopBehavior* component instance value when the *PerHopBehavior* component is created. The default values are listed below.

```
-------------------------------------------------------------------------------
--
PeHopBehavior     trafficClass
-------------------------------------------------------------------------------
--CS7 (56)          critical
CS6 (48)           network
EF   (46)           premium
CS5 (40)           premium
CS4 (32)           platinum
AF41 (34)           platinum
AF42 (36)           platinum
AF43 (38)           platinum
CS3 (24)           gold
AF31 (26)           gold
AF32 (28)           gold
AF33 (30)           gold
CS2 (16)           silver
AF21 (18)           silver
```

AF22 (20)	***silver***
AF23 (22)	***silver***
CS1 (8)	***bronze***
AF11 (10)	***bronze***
AF12 (12)	***bronze***
AF13 (14)	***bronze***
CS0, DF (0)	***standard***
all others	***standard***

The value of this attribute must be equal to an existing *TrafficClass* subcomponent instance of the *DifferentiatedServicesDomain*.

If the *PerHopBehavior* component instance is ***0***, ***cs0***, or ***df***, then the value of this attribute must be ***standard***.

Mib: no_mib

Values:
critical
network
premium
platinum
gold
silver
bronze
standard

Default: No default

ATTRIBUTE Rtr Dsd Phb dropPrecedence (dp)

Access: Read and write

Description: This attribute specifies the drop precedence value given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a congestion threshold when the packet is placed on a queue that supports multiple congestion thresholds.

A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high***

value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

This attribute is set automatically to a default value according to a function of the *PerHopBehavior* component instance value when the *PerHopBehavior* component is created. The default values are listed below.

PerHopBehavior	*dropPrecedence*
CS7 (56)	***low***
CS6 (48)	***low***
EF (46)	***low***
CS5 (40)	***low***
CS4 (32)	***low***
AF41 (34)	***low***
AF42 (36)	***medium***
AF43 (38)	***high***
CS3 (24)	***low***
AF31 (26)	***low***
AF32 (28)	***medium***
AF33 (30)	***high***
CS2 (16)	***low***
AF21 (18)	***low***
AF22 (20)	***medium***
AF23 (22)	***high***
CS1 (8)	***low***
AF11 (10)	***low***
AF12 (12)	***medium***
AF13 (14)	***high***
CS0, DF (0)	***high***
all others	***high***

Mib no_mib

Values	low medium high
Default	No default

GROUP Rtr Dsd Phb Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *PerHopBehavior* component that control the relative forwarding behaviors of packets.
Mib	no_mib

ATTRIBUTE Rtr Dsd Phb operTrafficClass (operTc)

Access	Read only
Description	This attribute indicates the *TrafficClass* component instance associated with the *PerHopBehavior* component instance. This attribute allows *PerHopBehavior* component instances to be aggregated into groups that indicate the same packet scheduling characteristics. The value of this attribute is equal to value of the *trafficClass* provisioned attribute of the *PerHopBehavior* component.
Mib	no_mib
Values	critical network premium platinum gold silver bronze standard
Default	No default

ATTRIBUTE Rtr Dsd Phb schedulingClass8Queues (sc8q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is equal to value of the *schedulingClass8Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.
Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Dsd Phb schedulingClass4Queues (sc4q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This

traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This value is also used to select a one of up to four Layer 2 connections at ATM and Frame Relay interfaces where the packet is transmitted. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information.

The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib	no_mib
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Rtr Dsd Phb schedulingClass3Queues (sc3q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***2*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports three queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass3Queues* operational attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib: no_mib

Values: Decimal (0..2)

Default: No default

ATTRIBUTE Rtr Dsd Phb schedulingClass2Queues (sc2q)

Access: Read only

Description: This attribute indicates a logical scheduling class value in the range from ***0*** to ***1*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports two queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass2Queues* operational attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib: no_mib

Values: Decimal (0..1)

Default: No default

ATTRIBUTE Rtr Dsd Phb connectionClass (cos)

Access	Read only
Description	This attribute indicates the connection class value in the range from ***0*** to ***3*** that is associated with the Layer 2 connection used to forward a packet that uses the *PerHopBehavior* component instance when it is transmitted at an ATM or Frame Relay interface that has four Layer 2 connections, each with a different connection class value, to the next hop router. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information per-packet selection of egress connections. The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.
Mib	no_mib
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Rtr Dsd Phb operDropPrecedence (operDp)

Access	Read only
Description	This attribute indicates the drop precedence value given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a congestion threshold when the packet is placed on a queue that supports multiple congestion thresholds. A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

The value of this attribute is equal to value of the *dropPrecedence* provisioned attribute of the *PerHopBehavior* component.

Mib: no_mib

Values:
low
medium
high

Default: No default

GROUP Rtr Dsd Phb IpOperational (IpOper)

Properties: Operational

Description: This group contains *PerHopBehavior* operational attributes that pertain to IP packets only.

Mib: no_mib

ATTRIBUTE Rtr Dsd Phb dscpDecimal (dscp)

Access: Read only

Description: This attribute indicates the decimal value of the six-bit Differentiated Services Code Point (DSCP) field of an IP packet that uses the *PerHopBehavior* component instance.

Mib: no_mib

Values: Decimal (0..63)

Default: No default

ATTRIBUTE Rtr Dsd Phb tosDecimal (tos)

Access: Read only

Description: This attribute indicates the decimal value of the eight-bit Type Of Service (ToS) field of an IP packet that uses the *PerHopBehavior* component instance when the two least significant bits are set to zero. The six most significant bits of the ToS field are the same six bits of the Differentiated Services Code Point (DSCP) field. Only these six bits are used to select the *PerHopBehavior* component instance for treating the packet.

Mib	no_mib
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Rtr Dsd Phb typeOfServiceFieldHex (hex)

Access	Read only
Description	This attribute indicates the hexadecimal value of the eight-bit Type Of Service (ToS) field of an IP packet that uses the *PerHopBehavior* component instance when the two least significant bits are set to zero. The six most significant bits of the ToS field are the same six bits of the Differentiated Services Code Point (DSCP) field. Only these six bits are used to select the *PerHopBehavior* component instance for treating the packet.
Mib	no_mib
Values	Hex (H.0..H.ff)
Default	No default

COMPONENT Rtr Dsd TrafficClass (Tc)

Instance	critical network premium platinum gold silver bronze standard
Groups	"GROUP Rtr Dsd Tc Provisioned (Prov)" "GROUP Rtr Dsd Tc Operational (Oper)"
Scope	Application
Description	*Vr/<string> Dsd/<enum> TrafficClass/<tc>* *Rtr/<string> Dsd/<enum> TrafficClass/<tc>* *Rtr/<string> Vrf/<string> Dsd/<enum> TrafficClass/<tc>* The attributes of the *TrafficClass* component specify per-packet

traffic management parameters that control how individual packets are forwarded.

A packet is associated with a *TrafficClass* component instance according to the *trafficClass* provisioned attribute of the *PerHopBehavior* component instance the packet is using. See the description of the *PerHopBehavior* component for an explanation of how *PerHopBehavior* component instances are associated with packets.

The *DifferentiatedServicesDomain* must have a *TrafficClass/ standard* subcomponent instance.

Each of the *TrafficClass* component instances should be referenced by at least one of the *DifferentiatedServicesDomain PerHopBehavior* component instances.

Mib: no_mib

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Rtr Dsd Tc Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioned attributes of the *TrafficClass* component.

Mib: no_mib

ATTRIBUTE Rtr Dsd Tc schedulingClass8Queues (sc8q)

Access: Read and write

Description: This attribute specifies a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This attribute is set automatically to a default value according to a function of the *TrafficClass*component instance value when the *TrafficClass* component is created. The default values are listed below. If the *TrafficClass* component instance is ***standard***, then this attribute must be set to ***0***.

TrafficClass	*schedulingClass8Queues*
critical	***7***
premium	***6***
network	***5***
platinum	***4***
gold	***3***
silver	***2***
bronze	***1***
standard	***0***

Mib: no_mib

Values: Decimal (0..7)

Default: No default

ATTRIBUTE Rtr Dsd Tc schedulingClass4Queues (sc4q)

Access: Read and write

Description: This attribute specifies a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when

the packet is transmitted at an interface that supports four queues per connection. It may also be used to select one of up to four link layer connections at interfaces where per-packet selection of egress connections is supported.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This value is also used to select a one of up to four Layer 2 connections at the interface where the packet is transmitted. Per-packet selection of egress connections is supported only if these conditions are all true:

i) for the *Vr* component, the value of the associated *mediaType* attribute under the *IpPort* component is ***frameRelay***, ***atmMpeLlcEncap***, or ***atmMpeVcEncap***; for *Router* and *Vrf*, the media associated with the interface is *AtmMpe* or *IpoDlci*.
ii) more than one Layer 2 connection is configured to the next hop IP router, and
iii) each connection is configured with a different connection class value.

Normally the packet is transmitted on the connection whose connection class is equal to the *schedulingClass4Queues* value given to the packet. If that connection does not exist, then the connection having the next lower connection class is used. If that connection does not exist also, then the connection having the next higher connection class is used.

Locally generated IP multicast and IP broadcast packets are not eligible for per-packet selection of egress connections. Each of these packets is copied and transmitted individually on each of the available connections to the next hop IP router.

For *AtmMpe*, the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte* the connection class is specified by the *ipCos* attribute of the *StaticDlci* and *DynamicDlciDef* subcomponents. For *IpDlciGroup* and *IpoDlci* the connection class is specified by the *ipCos* attribute of the *FrConnection* subcomponent.

If each Layer 2 connection is configured to provide different policing and scheduling characteristics, then the forwarding behaviors of IP and MPLS packets are differentiated as they transit through the Layer 2 network. In general, the scheduling characteristics of the connections should be configured to be better for numerically greater connection class values. For example, if four *AtmConnection* components are associated with *AtmIf* components configured for ATM service classes ***UBR***, ***nrtVBR***, ***rtVBR***, and ***CBR***, then the *ipCos* attributes of the *AtmConnection* components should be either ***0***,***1***,***2***, and ***3***, respectively, or ***0***,***1***,***3***, and ***2*** respectively.

The *schedulingClass4Queues* attribute is set automatically to a default value according to a function of the *TrafficClass*component instance value when the *TrafficClass* component is created. The default values are listed below. If the *TrafficClass* component instance is ***standard***, then this attribute must be set to ***0***.

Default values for all domains, except *assuredForwarding (af)*:

TrafficClass	*schedulingClass4Queues*
critical	***2***
premium	***3***
network	***2***
platinum	***1***
gold	***1***
silver	***1***
bronze	***1***
standard	***0***

Default values for *assuredForwarding (af)* domain only:

TrafficClass	*schedulingClass4Queues*
--critical	***2***
premium	***3***
network	***2***
platinum	***3***
gold	***2***
silver	***1***
bronze	***0***
standard	***0***

Mib no_mib

Values Decimal (0..3)

Default No default

GROUP Rtr Dsd Tc Operational (Oper)

Properties Operational

Description This group contains the operational attributes of the *TrafficClass* component.

Mib no_mib

ATTRIBUTE Rtr Dsd Tc operSchedulingClass8Queues (operSc8q)

Access Read only

Description This attribute indicates a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be

delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass8Queues* provisioned attribute of the *TrafficClass* component.

Mib	no_mib
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Rtr Dsd Tc operSchedulingClass4Queues (operSc4q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. It may also be used to select one of up to four link layer connections at interfaces where per-packet selection of egress connections is supported. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. This value is also used to select a one of up to four Layer 2 connections at ATM and Frame Relay interfaces where the packet is transmitted. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information. The value of this attribute is equal to value of the

schedulingClass4Queues provisioned attribute of the *TrafficClass* component.

Mib: no_mib

Values: Decimal (0..3)

Default: No default

ATTRIBUTE Rtr Dsd Tc operSchedulingClass3Queues (operSc3q)

Access: Read only

Description: This attribute indicates a logical scheduling class value in the range from ***0*** to ***2*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports three queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is controlled by the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component. If the *schedulingClass4Queues* attribute value is ***3 or 2***, then the *operSchedulingClass3Queues* attribute value is ***2***; otherwise both values are equal.

Mib: no_mib

Values: Decimal (0..2)

Default: No default

ATTRIBUTE Rtr Dsd Tc operSchedulingClass2Queues (operSc2q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***1*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports two queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is controlled by the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component. If the *schedulingClass4Queues* attribute value is ***3***, then the *operSchedulingClass2Queues* attribute value is ***1***; otherwise it is ***0***.
Mib	no_mib
Values	Decimal (0..1)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Rtr

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component SaalNni

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component SaalNni

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COMPONENT SaalNni (SaalNni)

Instance	Decimal (0..255)
Groups	"GROUP SaalNni Provisioned (Prov)" "GROUP SaalNni SscopProv (Sscop)" "GROUP SaalNni SscfProv (Sscf)" "GROUP SaalNni OsiState (State)" "GROUP SaalNni Operational (Oper)" "GROUP SaalNni WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS SaalNni"

Scope	Application
Description	*SaalNni/n* This component represents the SAAL-NNI layer that provides an adaptation layer to run signalling traffic over ATM using AAL5.
Mib	SaalNni
Subcomponents	"COMPONENT SaalNni NailedupAdaptationPoint (Nap)"
Common Verbs	Help List Display Add DELete

GROUP SaalNni Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes of this component.
Mib	SaalNni

ATTRIBUTE SaalNni linkToPort (lToPort)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies a link to *Gips IpAddr UDP Port* component on an IP Server. This determines the Ip Address and UDP port that the SAAL NNI user uses to address the *SaalNni* component. Changing this value will cause the ATM link to be restarted.
Mib	SaalNni
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE SaalNni layer3IpAddress (l3IpAddr)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the IP address of the SAAL-NNI user. This address must match the IP address provisioned in the corresponding *Mtp3/n* component specified by its *linkToPort* attribute. Changing this attribute will cause the ATM link to be restarted.
Mib	SaalNni
Values	IP address
Default	No default

ATTRIBUTE SaalNni layer3Port (l3Port)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the remote UDP port of the SAAL-NNI user. This value must match the port provisioned in the corresponding *Mtp3/n* component specified by its *linkToPort* attribute. Changing this attribute will cause the ATM link to be restarted.
Mib	SaalNni
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE SaalNni linkToApplications

Access	Read: All Write: Illegal
Description	This attribute specifies a list of components started on the same hardware as this *Saal* instance. The specified components are started on all *Lp* instances with which this *Saal* instance is associated via the *atmConnection* attribute of its *Nap* subcomponent. At this time, this attribute is used to specify the *Gips* component that will serve this *Saal* instance. In the future up to 10 components can be linked to a *Saal* instance and thereby started on its hardware.
Mib	SaalNni
List of	Link
List Size	10
Default	No default

GROUP SaalNni SscopProv (Sscop)

Properties	Provisioned
Description	This group contains the provisionable attributes needed by the SSCOP sub-layer of SAAL-NNI.
Mib	SaalNni

ATTRIBUTE SaalNni maxPdusBetweenPolls (maxPdus)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of Signalling Data PDUs that can be sent without sending a POLL PDU, as defined in ITU-T recommendation Q.2110.
Mib	SaalNni
Values	Decimal (1..1000)
Default	500

ATTRIBUTE SaalNni ccTimer (cc)

Access	Read: All Write: All
Description	This attribute specifies the time between transmissions of ‘BGN’, ‘END’, ‘RS’ and ‘ER’ PDUs, as defined in ITU-T recommendation Q.2110. The timer is started when any one of these PDUs is transmitted. The timer is stopped when a proper acknowledgement is received (e.g. BGNAK, ENDAK, RSACK, or ERACK). Upon timer expiry the PDU will be retransmitted. The PDU is transmitted a maximum of *maxCc* times. If the timer expires *maxCc* times, the link will be released, and the and the number of times this happens will be indicated by the attribute *maxCcReached.*

Layer 3 will attempt to bring the link back up.

Mib	SaalNni
Values	Decimal (100..1000)
Units	msec
Default	200

ATTRIBUTE SaalNni maxCc

Access	Read: All Write: All
Description	This attribute specifies the maximum number of allowed unacknowledged transmissions of ‘BGN’, ‘END’, ‘ER’ or ‘RS’ Protocol Data Units (PDUs) as defined in ITU-T recommendation Q.2110. If the number of unacknowledged transmissions exceeds this value, the link will be released, and the number of times this happens will be indicated by the attribute *maxCcReached*.
Mib	SaalNni
Values	Decimal (1..1000)
Default	4

ATTRIBUTE SaalNni keepAliveTimer (tKeepAl)

Access	Read: All Write: All
Description	This attribute specifies the time between sending of POLL PDUs when there is no activity on the link, as defined in ITU-T recommendation Q.2110. The timer is started when either the *pollTimer* or the *keepAliveTimer* expires and there are no PDUs queued for sending. The timer is stopped when a data request (SD PDU) is ready to

be sent.

Upon expiry this timer sends a POLL PDU.

The value of *keepAliveTimer* should be set to a value greater that *pollTimer* and greater than the round-trip delay of a PDU.

Mib	SaalNni
Values	Decimal (100..1000)
Units	msec
Default	100

ATTRIBUTE SaalNni noResponseTimer (noResp)

Access	Read: All Write: All
Description	This attribute specifies the time interval during which at least one STAT PDU should be received. The timer is started when a POLL PDU is sent. The timer is stopped when a STAT PDU is received. Upon timer expiry, the link is released, that is, brought out of service. Layer 3 will then attempt to bring it back to service. The value of the *noResponseTimer* must not be less than the sum of the *keepAliveTimer* and one round-trip delay of a Protocol Data Unit (PDU). The number of expiries of this timer is indicated by the attribute *noResponseTimeouts*.
Mib	SaalNni
Values	Decimal (500..2000)
Units	msec
Default	1500

ATTRIBUTE SaalNni pollTimer

Access	Read: All Write: All
Description	This attribute specifies the time between sending of POLL PDUs when the link has traffic, as defined in ITU-T recommendation Q.2110. The timer is started when the link enters the Data Transfer Ready State. The timer is stopped when the link is released. Upon expiry, a POLL PDU is sent and *pollTimer* is restarted if the link has traffic.
Mib	SaalNni
Values	Decimal (100..1000)
Units	msec
Default	100

ATTRIBUTE SaalNni idleTimer

Access	Read: All Write: All
Description	This attribute specifies the idle time after receipt of a STAT PDU, as defined in ITU-T recommendation Q.2110. The timer is started when a STAT PDU is received. The timer is stopped when data is sent or received on the link. Upon expiry, a POLL PDU is sent and the *noResponseTimer* is started. The value of the *idleTimer* must be greater that the sum of the *pollTimer* and the maximum round trip delay of a PDU.
Mib	SaalNni

Values	Decimal (100..1000)
Units	msec
Default	100

GROUP SaalNni SscfProv (Sscf)

Properties	Provisioned
Description	This group contains provisionable attributes needed by the SSCF sub layer of SAAL-NNI.
Mib	SaalNni

ATTRIBUTE SaalNni provingMode

Access	Read: All Write: All
Description	This attribute allows the operator to place the link into one of the link proving modes defined in ITU-T recommendation Q.2140. ***normal*** - This mode corresponds to the MAAL-FORCE_PROVING-request. It forces the SAAL-NNI layer to utilize proving when bringing up the link. ***neutral*** - This mode corresponds to the MAAL-CLEAR_FORCE_MODES-request.It specifies that the layer using SAAL-NNI will select the proving mode. ***emergency*** - This mode corresponds to the MAAL-FORCE_EMERGENCY-request. It causes proving to be skipped. When this attribute is set to ***neutral,*** the layer that uses SAAL_NNI (MTP3) selects the proving mode, but when the attribute is set to ***normal*** or ***emergency***, instructions from the entity which uses SAAL-NNI are ignored.
Mib	SaalNni

Values	normal neutral emergency
Default	neutral

ATTRIBUTE SaalNni linkReEstablishTimer (t1)

Access	Read: All Write: All
Description	This attributes specifies the time between the link release action and the next link re-establish action during alignment, as defined in ITU-T recommendation Q.2140. This timer is started when a release indication or confirmation is received while the link is in the Alignment or InService state. This timer is stopped in one of two cases: If the SAAL-NNI layer successfully receives an establish request or establish confirm from the peer SAAL-NNI layer. If the SAAL_NNI layer receives a stop indication or release request from the layer 3 user or layer management respectively. Upon timer expiration, link alignment and proving is re-started.
Mib	SaalNni
Values	Decimal (0..30)
Units	seconds
Default	5

ATTRIBUTE SaalNni alignmentAcceptTimer (t2)

Access	Read: All Write: All
Description	This attributes specifies the total time to attempt alignment and is defined in ITU-T recommendation Q.2140. This timer is started when a start request is received. If the link is

	put in service before the expiry of this timer, no action is performed. This timer is stopped in one of two cases. If the SAAL-NNI layer successfully passes from the link proving state to the InService state. If the SAAL-NNI layer receives a stop indication from the layer 3, or a release request from layer management. Upon timer expiration, link establishment is cancelled and link is taken out of service. Layer 3 will attempt to bring the link back in service. The value of this timer can be adjusted if link proving fails due to an inability to send the target number proving PDUs indicated by the attribute *targetProvingPdus*. The current number of proving PDUs sent successfully is indicated by the attribute *currentProvingPdus*.
Mib	SaalNni
Values	Decimal (5..150)
Units	seconds
Default	30

GROUP SaalNni OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SaalNni

ATTRIBUTE SaalNni adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	SaalNni
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SaalNni operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	SaalNni

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SaalNni usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	SaalNni
Values	idle active (activ) busy
Default	idle

GROUP SaalNni Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of this component.
Mib	SaalNni

ATTRIBUTE SaalNni state (provSt)

Access	Read: All Write: Illegal
Description	This attribute indicates the proving state of the link. The different states are: ***notStarted*** **-** Proving has not started. ***incomplete*** **-** Proving is in progress, but not completed yet.

***completeSuccess* -** Proving has been completed successfully.
***completeFailed* -** This proving attempt failed.

Mib: SaalNni

Values:
notStarted
inComplete
completeSuccess
completeFailed

Default: No default

ATTRIBUTE SaalNni targetProvingPdus (n1)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the target number of proving PDUs to be sent across the link during the proving period.

The current number of proving PDUs that have been sent is indicated by the attribute *currentProvingPdus*.

Mib: SaalNni

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE SaalNni currentProvingPdus (c1)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the number of proving PDUs that have been sent across the link during this proving period.

The target number of proving PDUs that must be sent is indicated by the attribute *targetProvingPdus*

Mib: SaalNni

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE SaalNni inSrvDuration (inSrvDur)

Access	Read: All Write: Illegal
Description	This attribute indicates the time that the signalling link has remained in the in-service state since it was most recently brought in service.
Mib	SaalNni
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE SaalNni maxCcReached (maxCcR)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the signalling link has been released because the number of unacknowledeged transmissions of ‘BGN’, ‘END’, ‘ER’ or ‘RS’ Protocol Data Units (PDUs) has exceeded the value provisioned in the attribute *maxCc*. The counter wraps to zero when it exceeds its maximum value.
Mib	SaalNni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SaalNni noResponseTimeouts (noRespTo)

Access	Read: All Write: Illegal
Description	This attribute counts the expiries of the No Response timer, specified by the attribute *noResponseTimer.* The counter wraps to zero when it exceeds the maximum value.

Mib	SaalNni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SaalNni pdusTx (pduTx)

Access	Read: All Write: Illegal
Description	This attribute counts the protocol data units transmitted. The counter wraps to zero when it exceeds the maximum value.
Mib	SaalNni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SaalNni pdusRx (pduRx)

Access	Read: All Write: Illegal
Description	This attribute counts the protocol data units received. The counter wraps to zero when it exceeds the maximum value.
Mib	SaalNni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SaalNni pduOctetsTx (pduOctTx)

Access	Read: All Write: Illegal
Description	This attribute counts the payload PDU octets transmitted. The counter wraps to zero when it exceeds the maximum value.
Mib	SaalNni

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SaalNni pduOctetsRx (pduOctRx)

Access	Read: All Write: Illegal
Description	This attribute counts the payload PDU octets received over the collection interval.
Mib	SaalNni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SaalNni insvFailures (insvFail)

Access	Read: All Write: Illegal
Description	This attribute counts the in-service link outages. It does not include failures which occur during the alignment process. The counter wraps to zero when it exceeds the maximum value.
Mib	SaalNni
Values	Decimal (0..4294967295)
Default	No default

GROUP SaalNni WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	SaalNni

ATTRIBUTE SaalNni customCounter1 (customCntr1)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SaalNni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SaalNni customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SaalNni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SaalNni customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SaalNni
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS SaalNni

Description	The statistics record generated by the SaalNni component.

ATTRIBUTE SaalNni insvFailures

Description	This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.
Values	Decimal (0..4294967295)

ATTRIBUTE SaalNni pdusTx

Description	This attribute indicates the number of protocol data units transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SaalNni pdusRx

Description	This attribute indicates the number of protocol data units received over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SaalNni pduOctetsTx

Description	This attribute indicates the number of payload PDU octets transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SaalNni pduOctetsRx

Description	This attribute indicates the number of payload PDU octets received over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT SaalNni NailedupAdaptationPoint (Nap)

Groups	"GROUP SaalNni Nap Provisioned (Prov)" "GROUP SaalNni Nap WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*SaalNni/n NailedupAdaptationPoint*

	This component is used to provide access to a nailed-up ATM connection (an *Atmif/n Vcc/n Nep*).
Mib	SaalNni
Common Verbs	Help List Display

GROUP SaalNni Nap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of this component.
Mib	SaalNni

ATTRIBUTE SaalNni Nap atmConnection (atmConn)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies a link to an *AtmIf Vcc Nep* component which provides access to an ATM network. The *SaalNni* process is started on the *Lp* or *Lp* pair associated with the *AtmIf* that is the parent of the specified *Nep* component.
Mib	SaalNni
Values	Link (Hardware, applicationName)
Default	No default

GROUP SaalNni Nap WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	SaalNni

ATTRIBUTE SaalNni Nap customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SaalNni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SaalNni Nap customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SaalNni
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SaalNni Nap customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SaalNni
Values	Decimal (0..4294967295)

Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component SaalNni

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Sas

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Sas

Publication: NN10600-060
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COMPONENT SgsnAccountingServer (Sas)

Instance	Decimal (1..15)
Groups	"GROUP Sas Provisioned (Prov)" "GROUP Sas Statistics (Stats)" "GROUP Sas OsiState (State)" "GROUP Sas DiskInfo (DskInfo)" "GROUP Sas WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS SgsnAccountingServer"

Scope	Application
Description	*SgsnAccountingServer* This component represents the Billing functionality of the Serving GPRS Support Node (SGSN). This component must be provisioned if billing is to be supported by the SGSN.
Mib	WirelessSas
Dyn. Subcomp.	"COMPONENT Sas RemoteApplicationConnection (RaConn)"
Common Verbs	Help List Display Add DELete

GROUP Sas Provisioned (Prov)

Properties	Provisioned

Description	This group contains provisionable attributes of the *SgsnAccountingServer (Sas)* component.
Mib	WirelessSas

ATTRIBUTE Sas linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor (LP) that the *SgsnAccountingServer (Sas)* component and its subcomponents are provisioned on.
Mib	WirelessSas
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Sas linkToPort (lToPort)

Access	Read: All Write: All
Description	This attribute specifies the IP address and UDP port number that the *SgsnAccountingServer (Sas)* component uses to communicate with the Charging Gateway Functionality (CGF).
Mib	WirelessSas
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Sas cdrCapture (cdrCap)

Access	Read: All Write: All
Description	This attribute specifies which of the following Call Detail Records (CDRs) are generated: ***sgsn*** **-** Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) CDRs (S-CDR) ***mobility*** **-** Mobility CDRs (M-CDR)

smo - SGSN Short Message Origination CDRs (Smo CDRs)
smt - SGSN Short Message Termination CDRs (Smt CDRs).

The value of this attribute needs to be the same on all other *Sas* components on the shelf.

Mib: WirelessSas

Set of:
sgsn
mobility
smo
smt

Default: No default

ATTRIBUTE Sas locationBasedBilling (lbb)

Access:
Read: All
Write: All

Description: This attribute specifies whether location-based billing for the generation of partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) upon routing area changes is ***enabled*** or ***disabled***.

When set to ***enabled***, every S-CDR will only contain the traffic data volume counts for a single routing area, allowing the operator to bill based on the geographic location.

When set to ***disabled***, routing area changes do not affect S-CDRs.

The value of this attribute needs to be the same on all other *Sas* components on the shelf.

Mib: WirelessSas

Values:
disabled
enabled

Default: disabled

ATTRIBUTE Sas transferInterval (trInt)

Access	Read: All Write: All
Description	This attribute specifies the interval at which currently spooled closed Call Detail Records (CDRs) are to be transferred to the Charging Gateway Functionality (CGF). When set to ***noDelay,*** closed CDRs are transferred to the CGF with minimal delay. When set to any other value, closed CDRs on the hard disk are sent to the CGF at the time specified by the *transferTimeOfDay* attribute, and then transferred every interval of minutes as specfied by the value of the *transferInterval* attribute.
Mib	WirelessSas
Values	Decimal (15; 30; 45; 60; 90; 120; 240; 360; 480; 720; 1440) noDelay
Units	minutes
Default	30

ATTRIBUTE Sas transferTimeOfDay (ttod)

Access	Read: All Write: All
Description	This attribute specifies a time of day offset for the transfer of currently closed spooled Call Detail Records (CDRs) to the CGF. The value is defined in minutes after midnight. A transfer occurs at the time specified by this attribute and then transferred every interval of minutes as specified by the value of the *transferInterval* attribute. A minimum of one transfer will occur in every 24-hour period. The number of transfers per day depends on the value of the *transferInterval* attribute.
Mib	WirelessSas
Values	Decimal (0..1439)
Units	minutes

Default	0

ATTRIBUTE Sas cdrUpdateInterval (cdrUpdInt)

Access	Read: All Write: All
Description	This attribute specifies the interval at which Session Management (SM) is queried for traffic data volume for all open Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs). It also specifies the interval at which GPRS Mobility Management (GMM) is queried to find out if the mobile is still attached for all open Mobility Call Detail Records (M-CDRs). The value of this attribute must be less than or equal to the *scdrPartialRecordInterval* and *mcdrPartialRecordInterval* attributes.
Mib	WirelessSas
Values	Decimal (15; 30; 45; 60; 90; 120; 240; 360; 480; 720; 1440)
Units	minutes
Default	60

ATTRIBUTE Sas cdrUpdateTimeOfDay (cdrUpdTod)

Access	Read: All Write: All
Description	This attribute specifies a time of day offset for the processing of Call Detail Record (CDR) updates. The value is defined in minutes after midnight. CDR updates occur at the time specified by this attribute, and then updates every interval of minutes as specfied by the value of the *cdrUpdateInterval* attribute. A minimum of one update will occur in every 24-hour period. The number of updates per day depends on the value of the *cdrUpdateInterval* attribute.
Mib	WirelessSas
Values	Decimal (0..1439)

Units	minutes
Default	0

ATTRIBUTE Sas scdrPartialRecordInterval (scdrInt)

Access	Read: All Write: All
Description	This attribute specifies the interval at which the partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) are generated. When set to a value other than ***noPartialRecords***, S-CDRs that have been open longer than the value of the *scdrPartialRecordInterval* attribute are closed with a partial record reason of “time (duration) limit”. The value of the *scdrPartialRecordInterval* attribute must be greater than or equal to the value of the *cdrUpdateInterval* attribute. The values that can be set are ***noPartialRecords*** and multiples of 15 minutes.
Mib	WirelessSas
Values	Decimal (15..1440) noPartialRecords
Units	minutes
Default	noPartialRecords

ATTRIBUTE Sas mcdrPartialRecordInterval (mcdrInt)

Access	Read: All Write: All
Description	This attribute specifies the interval at which the partial Mobility Call Detail Records (M-CDRs) are generated. When set to a value other than ***noPartialRecords***, M-CDRs that have been open longer than the value of the

mcdrPartialRecordInterval attribute are closed with a partial record reason of “time (duration) limit”.

The value of the *mcdrPartialRecordInterval* attribute must be greater than or equal to the *cdrUpdateInterval* attribute.

The values that can be set are ***noPartialRecords*** and multiples of 15 minutes.

Mib	WirelessSas
Values	Decimal (15..1440) noPartialRecords
Units	minutes
Default	noPartialRecords

ATTRIBUTE Sas mcdrMaxContainers (mcdrMaxC)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of Change of Location containers allowed in a Mobility Call Detail Record (M-CDR). Once this number of containers is exceeded, a partial M-CDR is generated with a partial record reason of “maximum number of mobility changes”.
Mib	WirelessSas
Values	Decimal (1..10)
Default	5

ATTRIBUTE Sas scdrMaxContainers (scdrMaxC)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of Change of Charging Condition containers allowed in an Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Record (S-CDR). Once this number of containers is exceeded, a

	partial S-CDR is generated with a partial record reason of “maximum number of charging condition changes”.
Mib	WirelessSas
Values	Decimal (1..10)
Default	5

ATTRIBUTE Sas echoRequestInterval (echoReqInt)

Access	Read: All Write: All
Description	This attribute specifies the interval at which ECHO REQUEST messages are to be sent to the Charging Gateway Functionality (CGF).
Mib	WirelessSas
Values	Decimal (1..60)
Units	minutes
Default	5

ATTRIBUTE Sas primaryCgfIpAddress (priCgfIp)

Access	Read: All Write: All
Description	This attribute specifies the primary Charging Gateway Functionality (CGF) IP address for the Serving GPRS Support Node (SGSN). This is the address used by the SGSN Accounting Server (SAS) when transferring closed Call Detail Records (CDRs) to the CGF. If the primary CGF is not in service, the SGSN uses the provisioned *secondaryCgfIpAddress* attribute value. A value of ***0.0.0.0*** means that the CGF is not configured.
Mib	WirelessSas
Values	IP address
Default	0.0.0.0

ATTRIBUTE Sas secondaryCgfIpAddress (secCgfIp)

Access	Read: All Write: All
Description	This attribute specifies the secondary Charging Gateway Functionality (CGF) IP address for the Serving GPRS Support Node (SGSN). In the event of failure of the primary provisioned CGF, the SGSN tries to send Call Detail Records (CDRs) to the secondary provisioned CGF. A value of ***0.0.0.0*** means that the CGF is not configured.
Mib	WirelessSas
Values	IP address
Default	0.0.0.0

ATTRIBUTE Sas drtResponseTimeout (drtto)

Access	Read: All Write: All
Description	This attribute specifies the initial waiting time (in seconds) for the response message for a Data Record Transfer (DRT) request. The request message can contain one or more Call Detail Records (CDRs). The timer doubles after each successive retransmission of the same CDR.
Mib	WirelessSas
Values	Decimal (1..30)
Units	seconds
Default	5

ATTRIBUTE Sas drtRetries

Access	Read: All Write: All
Description	This attribute specifies the number of times the Serving GPRS Support Node (SGSN) tries to resend a Data Record Transfers

(DRTs) to the Charging Gateway Functionality (CGF) when the SGSN does not get the acknowledgment before the *drtResponseTimeout* attribute expires.

If maximum value of this attribute is reached and there is no secondary CGF, the Call Detail Records (CDRs) will be sent to the CGF whenever the CGF comes back in service. The SGSN knows that the CGF is alive either by the ECHO REQUEST message or the NODE ALIVE message.

Mib	WirelessSas
Values	Decimal (1..3)
Default	1

ATTRIBUTE Sas asn1EncoderVersion (asn1EncoderVer)

Access	Read: All Write: All
Description	This attribute specifies the ASN.1 encoder version used by all *Sas* components on the shelf. Modifying this attribute after the component is initially activated causes the new encoder version to be used on the next set of spooled closed Call Detail Records (CDRs) to be transferred to the Charging Gateway Functionality (CGF). If a *Sas* component is processing a set of CDRs when this attribute is changed the new encoder version does not take effect until the processing of the current set of CDRs is complete. The value of this attribute should be changed to ***3dot6*** when the downstream billing system is upgraded to handle the decoding of 3GPP TS 32.015 V3.6.0 encoded CDRs.
Mib	WirelessSas
Values	3dot2 3dot6
Default	3dot2

ATTRIBUTE Sas primaryCgfAsn1Encoding (priCgfAsn1Enc)

Access	Read: All Write: All
Description	This attribute specifies the encoding for the GPRS Tunnelling Protocol (GTP) communication between the Serving GPRS Support Node (SGSN) and the primary Charging Gateway Functionality (CGF). The following are the encodings supported: ***ber*** **-** Basic Encoding Rules ***per*** - Packed Encoding Rules The encoding selected must match the encoding used by the CGF.
Mib	WirelessSas
Values	ber per
Default	ber

ATTRIBUTE Sas secondaryCgfAsn1Encoding (secCgfAsn1Enc)

Access	Read: All Write: All
Description	This attribute specifies the encoding for the GPRS Tunnelling Protocol (GTP) communication between the Serving GPRS Support Node (SGSN) and the secondary Charging Gateway Functionality (CGF). The following are the encodings supported: ***ber*** - Basic Encoding Rules ***per*** **-** Packed Encoding Rules The encoding selected must match the encoding used by the CGF.
Mib	WirelessSas
Values	ber per
Default	ber

ATTRIBUTE Sas genAuditFiles (genAf)

Access	Read: All Write: All
Description	This attribute specifies whether the generation of Call Detail Record (CDR) audit files is ***enabled*** or ***disabled***. When ***enabled***, files are created which can be used to audit the closed CDRs that were generated by this Serving GPRS Support Node (SGSN) and transferred to a Charging Gateway Functionality (CGF).
Mib	WirelessSas
Values	disabled enabled
Default	disabled

ATTRIBUTE Sas auditFileLife (afLife)

Access	Read: All Write: All
Description	This attribute specifies the number of days the Call Detail Record (CDR) audit file will remain on the disk before being deleted.
Mib	WirelessSas
Values	Decimal (1..10)
Units	days
Default	5

ATTRIBUTE Sas roamerCapture (roamCap)

Access	Read: All Write: All
Description	This attribute specifies whether Call Detail Records (CDRs) should be generated for all subscribers or only roamers. ***all*** **-** CDRs are captured without regard to the mobiles home Gateway GPRS Support Node (GGSN). ***roamers*** **-** CDRs are only captured for mobile stations that are roaming outside their home GGSN.

	The value of this attribute needs to be the same on all other *Sas* components on the shelf.
Mib	WirelessSas
Values	all roamers
Default	all

GROUP Sas Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the *SgsnAccountingServer (Sas)* component.
Mib	WirelessSas

ATTRIBUTE Sas openScdrs

Access	Read: All Write: Illegal
Description	This attribute counts the Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) that have been opened by the SGSN Accounting Server (SAS).
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas openMcdrs

Access	Read: All Write: Illegal
Description	This attribute counts the Mobility Call Detail Records (M-CDRs) that have been opened by the Serving GPRS Support Node (SGSN) Accounting Server (SAS).
Mib	WirelessSas

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas closedScdrs

Access	Read: All Write: Illegal
Description	This attribute counts the Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) that have been closed by the SGSN Accounting Server (SAS). Closed S-CDRs are the CDRs which have been written to the disk.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas closedMcdrs

Access	Read: All Write: Illegal
Description	This attribute counts the Mobility Call Detail Records (M-CDRs) that have been closed by the Serving GPRS Support Node (SGSN) Accounting Server (SAS). Closed M-CDRs are the CDRs which have been written to the disk.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas scdrsUpdated

Access	Read: All Write: Illegal
Description	This attribute counts the Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) updated in the SGSN Accounting Server (SAS). Updated means that an open CDR was modified due to some external event. A S-CDR may be updated more than once, and this attribute is

	incremented for each update. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas mcdrsUpdated

Access	Read: All Write: Illegal
Description	This attribute counts the Mobility Call Detail Records (M-CDRs) updated in the Serving GPRS Support Node (SGSN) Accounting Server (SAS). Updated means that an open CDR was modified due to some external event. A M-CDR may be updated more than once, and this attribute is incremented for each update. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas smoCdrs

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Originated Short Message Service (SMS) Call Detail Records (CDRs) generated in the Serving GPRS Support Node (SGSN) Accounting Server (SAS). The SMS CDRs do not have states (such as opened or closed) like other CDR types. When SAS receives a message that a SMS CDR message is sent through the network, SAS writes the SMS CDR directly to disk, which means a SMS CDR is generated. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas smtCdrs

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Terminated Short Message Service (SMS) Call Detail Records (CDRs) generated in the Serving GPRS Support Node (SGSN) Accounting Server (SAS). The SMS CDRs do not have states (such as opened or closed) like other CDR types.When SAS receives a message that a SMS CDR message is sent through the network, SAS writes the SMS CDR directly to disk, which means a SMS CDR is generated. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas cdrsXferCgf1

Access	Read: All Write: Illegal
Description	This attribute counts the Call Detail Records (CDRs) successfully transferred from the Serving GPRS Support Node (SGSN) Accounting Server (SAS) to the primary Charging Gateway Functionality (CGF). This attribute is incremented each time a CDR is transferred to the CGF. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas cdrsXferCgf1Fail

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Call Detail Record (CDR) transfers from the Serving GPRS Support Node (SGSN) Accounting Server (SAS) to the primary Charging Gateway Functionality (CGF). This value is incremented whenever a CDR fails to get transferred to the primary CGF. Multiple attempts to send a CDR increment the statistic only once. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas cdrsXferCgf2

Access	Read: All Write: Illegal
Description	This attribute counts the Call Detail Records (CDRs) successfully transferred from the Serving GPRS Support Node (SGSN) Accounting Server (SAS) to the secondary Charging Gateway Functionality (CGF). This attribute is incremented each time a CDR is transferred to the CGF. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas cdrsXferCgf2Fail

Access	Read: All Write: Illegal

Description	This attribute counts the unsuccessful Call Detail Record (CDR) transfers from the Serving GPRS Support Node (SGSN) Accounting Server (SAS) to the secondary Charging Gateway Functionality (CGF). The value is incremented whenever a CDR fails to get transferred to the secondary CGF. Multiple attempts to send a CDR increment the statistic only once. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas gtpMsgXferCgf1

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS Tunnelling Protocol (GTP) messages successfully transferred to the primary Charging Gateway Functionality (CGF). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas gtpMsgXferCgf1Fail

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful GPRS Tunnelling Protocol (GTP) message transfers to the primary Charging Gateway Functionality (CGF). The value is incremented whenever a GTP message is rejected or unacknowledged by the primary CGF. Multiple message attempts increment the statistic only once. The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas gtpMsgXferCgf2

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS Tunnelling Protocol (GTP) messages successfully transferred to the secondary Charging Gateway Functionality (CGF).The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas gtpMsgXferCgf2Fail

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful GPRS Tunnelling Protocol (GTP) message transfers to the secondary Charging Gateway Functionality (CGF). The value is incremented whenever a GTP message is rejected or unacknowledged by the secondary CGF. Multiple attempts to send a GPT message increment the statistic only once. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas dataVolumeLimitPartialScdrs (dvlPartialScdrs)

Access	Read: All Write: Illegal

Description	This attribute counts the partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) generated in the SGSN Accounting Server (SAS) when the threshold of the *dataVolumeLimit* attribute (defined in the *Usgsn* and *Sgsn* components for UMTS and GPRS, respectively) is reached. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas timeDurationLimitPartialScdrs (timePartialScdrs)

Access	Read: All Write: Illegal
Description	This attribute counts the partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) generated in the SGSN Accounting Server (SAS) due to the expiry of the *scdrPartialRecordInterval* attribute. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas maxChargingConditionPartialScdrs (maxCondPartialScdrs)

Access	Read: All Write: Illegal
Description	This attribute counts the partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) generated in the SGSN Accounting Server (SAS) when the maximum number of charging condition changes, as specified by the *scdrMaxContainers* attribute, is reached. The counter wraps to zero when it exceeds the maximum value.

Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas qosChangeScdrContainers (qosScdrContainers)

Access	Read: All Write: Illegal
Description	This attribute counts the Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Record (S-CDR) “List of Traffic Data Volumes” containers closed in the SGSN Accounting Server (SAS) due to a QoS change. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas tariffTimeChangeScdrContainers (ttcScdrContainers)

Access	Read: All Write: Illegal
Description	This attribute counts the Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Record (S-CDR) “List of Traffic Data Volumes” containers closed in the SGSN Accounting Server (SAS) due to a tariff time change. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas timeDurationLimitPartialMcdrs (timePartialMcdrs)

Access	Read: All Write: Illegal

Description	This attribute counts the partial Mobility Call Detail Records (M-CDRs) generated in the Serving GPRS Support Node (SGSN) Accounting Server (SAS) due to the expiry of the *mcdrPartialRecordInterval* attribute. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas maxChangeConditionPartialMcdrs (maxCondPartialMcdrs)

Access	Read: All Write: Illegal
Description	This attribute counts the partial Mobility Call Detail Records (M-CDRs) generated in the Serving GPRS Support Node (SGSN) Accounting Server (SAS) when the maximum number of mobility changes, as specified by the *mcdrMaxContainers* attribute, is reached. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas mobilityChangeMcdrContainers (mobilityMcdrContainers)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobility Call Detail Record (M-CDR) “Change of Location” containers closed in the Serving GPRS Support Node (SGSN) Accounting Server (SAS) due to a mobility change. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas mgmtInterventionPartialScdrs (mgmtPartialScdrs)

Access	Read: All Write: Illegal
Description	This attribute counts the partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) generated in the SGSN Accounting Server (SAS) with a partial record reason of “management intervention”. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

GROUP Sas OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessSas

ATTRIBUTE Sas adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component.

When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: WirelessSas

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Sas operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: WirelessSas

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Sas usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	WirelessSas
Values	idle active (activ) busy
Default	idle

GROUP Sas DiskInfo (DskInfo)

Properties	Operational
Description	This group contains the operational attributes related to disk utilization.
Mib	WirelessSas

ATTRIBUTE Sas diskFreeSpace (dfs)

Access	Read: All Write: Illegal
Description	This attribute indicates the free disk space currently available on the disk.
Mib	WirelessSas
Values	Long Integer
Units	bytes

Default	No default

ATTRIBUTE Sas diskUsage

Access	Read: All Write: Illegal
Description	This attribute indicates the percentage of disk space used.
Mib	WirelessSas
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Sas diskCapacity

Access	Read: All Write: Illegal
Description	This attribute indicates the total size of the disk.
Mib	WirelessSas
Values	Long Integer
Units	bytes
Default	No default

GROUP Sas WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessSas

ATTRIBUTE Sas customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS SgsnAccountingServer

Description	The statistics record generated by the SgsnAccountingServer component.

ATTRIBUTE Sas openScdrs

Description	This attribute indicates the open Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) in the SGSN Accounting Server (SAS) during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sas openMcdrs

Description	This attribute indicates the open Mobility Call Detail Records (M-CDRs) in the Serving GPRS Support Node (SGSN) Accounting Server (SAS) during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sas closedScdrs

Description	This attribute indicates the closed Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) in the SGSN Accounting Server (SAS). Closed S-CDRs are the CDRs that are written to the disk and no longer exist in RAM. This value reported is the value at the end of the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sas closedMcdsr

Description	This attribute indicates the closed Mobility Call Detail Records (M-CDRs) in the Serving GPRS Support Node (SGSN) Accounting Server (SAS). Closed S-CDRs are the CDRs that are written to the disk and no longer exist in RAM. This value reported is the value at the end of the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sas scdrsUpdated

Description: This attribute counts the Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) updated in the SGSN Accounting Server (SAS). Updated means that an open CDR was modified due to some external event. A S-CDR may be updated more than once, and this attribute is incremented for each update.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas mcdrsUpdated

Description: This attribute counts the Mobility Call Detail Records (M-CDRs) updated in the Serving GPRS Support Node (SGSN) Accounting Server (SAS). Updated means that an open CDR was modified due to some external event. A M-CDR may be updated more than once, and this attribute is incremented for each update.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas smoCdrs

Description: This attribute counts the Mobile-Originated Short Message Service (SMS) Call Detail Records (CDRs) generated in the Serving GPRS Support Node (SGSN) Accounting Server (SAS). The SMS CDRs do not have states (for example, opened or closed) like other CDR types. When SAS receives a message that a SMS CDR message is sent through the network, SAS writes the SMS CDR directly to disk, which means a SMS CDR is generated.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas smtCdrs

Description: This attribute counts the Mobile Terminated Short Message Service (SMS) Call Detail Records (CDRs) generated in the

Serving GPRS Support Node (SGSN) Accounting Server (SAS). The SMS CDRs do not have states (for example, opened or closed) like other CDR types.When SAS receives a message that a SMS CDR message is sent through the network, SAS writes the SMS CDR directly to disk, which means a SMS CDR is generated.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas cdrsXferCgf1

Description: This attribute counts the Call Detail Records (CDRs) successfully transferred from the Serving GPRS Support Node (SGSN) Accounting Server (SAS) to the primary Charging Gateway Functionality (CGF). This attribute is incremented each time a CDR is transferred to the CGF.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas cdrsXferCgf1Fail

Description: This attribute counts the unsuccessful Call Detail Record (CDR) transferred from the Serving GPRS Support Node (SGSN) Accounting Server (SAS) to the primary Charging Gateway Functionality (CGF).

This value is incremented whenever a CDR fails to get transferred to the primary CGF. Multiple attempts to send a CDR increment the statistic only once.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas cdrsXferCgf2

Description: This attribute counts the Call Detail Records (CDRs) successfully transferred from the Serving GPRS Support Node (SGSN) Accounting Server (SAS) to the secondary Charging Gateway Functionality (CGF). This attribute is incremented each time a

CDR is transferred to the CGF.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas cdrsXferCgf2Fail

Description This attribute counts the unsuccessful Call Detail Record (CDR) transfers from the Serving GPRS Support Node (SGSN) Accounting Server (SAS) to the secondary Charging Gateway Functionality (CGF).

The value is incremented whenever a CDR fails to get transferred to the secondary CGF. Multiple attempts to send a CDR increment the statistic only once.

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas gtpMsgXferCgf1

Description This attribute counts the GPRS Tunnelling Protocol (GTP) messages successfully transferred to the primary Charging Gateway Functionality (CGF) during the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sas gtpMsgXferCgf1Fail

Description This attribute counts the unsuccessful GPRS Tunnelling Protocol (GTP) message transfers to the primary Charging Gateway Functionality (CGF) during the collection interval.

The value is incremented whenever a GTP message is rejected or unacknowledged by the primary CGF. Multiple attempts to send a GPT message increment the statistic only once.

Values Decimal (0..4294967295)

ATTRIBUTE Sas gtpMsgXferCgf2

Description	This attribute counts the GPRS Tunnelling Protocol (GTP) messages successfully transferred to the secondary Charging Gateway Functionality (CGF) during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sas gtpMsgXferCgf2Fail

Description	This attribute counts the unsuccessful GPRS Tunnelling Protocol (GTP) message transfers to the secondary Charging Gateway Functionality (CGF) during the collection interval. The value is incremented whenever a GTP message is rejected or unacknowledged by the secondary CGF. Multiple attempts to send a GPT message increment the statistic only once.
Values	Decimal (0..4294967295)

ATTRIBUTE Sas dataVolumeLimitPartialScdrs (dvlPartialScdrs)

Description	This attribute counts the partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) generated in the SGSN Accounting Server (SAS) when the threshold of the *dataVolumeLimit* attribute (defined in the *Usgsn* and *Sgsn* components for UMTS and GPRS, respectively) is reached. This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sas timeDurationLimitPartialScdrs (timePartialScdrs)

Description	This attribute counts the partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) generated in the SGSN Accounting Server (SAS) due to the expiry of the *scdrPartialRecordInterval* attribute. This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sas maxChargingConditionPartialScdrs (maxCondPartialScdrs)

Description: This attribute counts the partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) generated in the SGSN Accounting Server (SAS) when the maximum number of charging condition changes, as specified by the *scdrMaxContainers* attribute, is reached.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas qosChangeScdrContainers (qosScdrContainers)

Description: This attribute counts the Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Record (S-CDR) “List of Traffic Data Volumes” containers closed in the SGSN Accounting Server (SAS) due to a QoS change.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas tariffTimeChangeScdrContainers (ttcScdrContainers)

Description: This attribute counts the Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Record (S-CDR) “List of Traffic Data Volumes” containers closed in the SGSN Accounting Server (SAS) due to a tariff time change.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas timeDurationLimitPartialMcdrs (timePartialMcdrs)

Description: This attribute counts the partial Mobility Call Detail Records (M-CDRs) generated in the Serving GPRS Support Node (SGSN) Accounting Server (SAS) due to the expiry of the *mcdrPartialRecordInterval* attribute.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Sas maxChangeConditionPartialMcdrs (maxCondPartialMcdrs)

Description	This attribute counts the partial Mobility Call Detail Records (M-CDRs) generated in the Serving GPRS Support Node (SGSN) Accounting Server (SAS) when the maximum number of mobility changes, as specified by the *mcdrMaxContainers* attribute, is reached. This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sas mobilityChangeMcdrContainers (mobilityMcdrContainers)

Description	This attribute counts the Mobility Call Detail Record (M-CDR) “Change of Location” containers closed in the Serving GPRS Support Node (SGSN) Accounting Server (SAS) due to a mobility change. This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sas mgmtInterventionPartialScdrs (mgmtPartialScdrs)

Description	This attribute counts the partial Serving GPRS Support Node (SGSN) Packet Data Protocol (PDP) Call Detail Records (S-CDRs) generated in the SGSN Accounting Server (SAS) with a partial record reason of “management intervention”. This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Sas RemoteApplicationConnection (RaConn)

Instance	appType [String (1..8, ASCII)] shelfId [Decimal (0..50)] instance (n) [Decimal (1..15)]
Groups	"GROUP Sas RaConn OsiState (State)" "GROUP Sas RaConn WlcCustomCounters (WlcCustomCntr)"
Scope	Application

Description	*... RemoteApplicationConnection/<appType, shelfId, n>* This component represents the Remote Application Connection information of an application that talks to applications on other shelves. For each application that it can communicate with, one of these connection components is created and is instantiated with the name of the remote application, the Id of the shelf on which the application runs, and the instance number of the application. ShelfId ***0*** represents the Master shelf.
Mib	WirelessSas
Dyn. Subcomp.	"COMPONENT Sas RaConn AtmConnection (AtmCon)"
Common Verbs	Help List Display

GROUP Sas RaConn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessSas

ATTRIBUTE Sas RaConn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: WirelessSas

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Sas RaConn operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: WirelessSas

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Sas RaConn usageState (osiUsage)

Access: Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	WirelessSas
Values	idle active (activ) busy
Default	idle

GROUP Sas RaConn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessSas

ATTRIBUTE Sas RaConn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas RaConn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sas RaConn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSas
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sas RaConn AtmConnection (AtmCon)

Groups	"GROUP Sas RaConn AtmCon Operational (Oper)"
Scope	Device

Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	WirelessSas
Common Verbs	Help List Display

GROUP Sas RaConn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	WirelessSas

ATTRIBUTE Sas RaConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	WirelessSas
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Sas

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Sccp

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Sccp

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COMPONENT SignallingConnControlPart (Sccp)

Instance	Decimal (0..255)
Groups	"GROUP Sccp Provisioned (Prov)" "GROUP Sccp OsiState (State)" "GROUP Sccp Operational (Oper)" "GROUP Sccp WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS SignallingConnControlPart"

Scope	Application
Description	*SignallingConnControlPart/n* This component represents the SCCP layer of the SS7 stack.
Mib	Ss7Sccp
Subcomponents	"COMPONENT Sccp Mtp3Connection (Mtp3Conn)"
Opt. Subcomp.	"COMPONENT Sccp LocalSubsystem (Loc)" "COMPONENT Sccp RemoteSubsystem (Rem)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Sccp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of this component.
Mib	Ss7Sccp

ATTRIBUTE Sccp linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor (LP) that this component and its subcomponents are provisioned on.
Mib	Ss7Sccp
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Sccp maxConnections (maxC)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of signalling connections supported by an SCCP instance across all the local subsystems. The current number of open signalling connections is indicated by the attribute *activeConnections.* The number of times a signalling connection establishment was refused because the number of open connections has reached the maximum value is indicated by the attribute *rejectedConnections*. Changes to this attribute affect only new connections. No existing connections will be affected by any changes made to this attribute.
Mib	Ss7Sccp
Values	Decimal (1000..200000)

Default	16000

ATTRIBUTE Sccp timerConnEst (tConnEst)

Access	Read: All Write: All
Description	This attribute specifies the value of the TConnEst timer defined in the ITU-T spec Q.714. This is the period of time to wait for a CONNECTION CONFIRM message from the remote user of SCCP. This timer is started when a CONNECT REQUEST message is sent to the remote SCCP layer. This timer is stopped when either a CONNECT CONFIRM, RELEASED, or CONNECT REFUSED message is received, or when a routing failure happens. Upon timer expiration, the resources associated with the connection are released and a disconnect message is sent to the local user(s). The number of timeouts of this timer is indicated by the attribute *connEstTmouts*.
Mib	Ss7Sccp
Values	Decimal (60..120)
Units	seconds
Default	60

ATTRIBUTE Sccp timerInactivitySend (tIas)

Access	Read: All Write: All
Description	This attribute specifies the value of the Tias timer defined in Q.714. This is the period of time to wait before sending an INACTIVITY TEST message for a connection when there are no messages to send.

The timer is started when a CONNECT CONFIRM or CONNECT RESPONSE message is received.

The timer is restarted if a DATA FORM 1 message is transmitted.

This timer is stopped when a DISCONNECT, RELEASE COMPLETE or ERROR message is received, or when a routing failure occurs.

If the timer expires on an open connection, an INACTIVITY TEST message is sent.

It is recommended that the timer be set to a value that is half as long as the *tIarTimer*.

Mib	Ss7Sccp
Values	Decimal (300..600)
Units	seconds
Default	300

ATTRIBUTE Sccp timerInactivityReceive (tIar)

Access	Read: All Write: All
Description	This attribute specifies the value of the inactivity receive timer defined in Q.714. This is the period of time to wait on receiving a message for a connection, before releasing the connection. This timer is started when a CONNECT CONFIRM or CONNECT RESPONSE message is received. This timer is restarted if a DATA FORM 1 or INACTIVITY TEST message is received. This timer is stopped when a DISCONNECT, RELEASED, or ERROR message is received, or when a routing failure occurs. If this timer expires on an open connection, a DISCONNECT message is sent and the resources are released.

	It is recommended that the timer be set to a value that is twice as long as *tIasTimer*. The number of timeouts of this timer is indicated by the attribute *inactivityReceiveTimeouts*.
Mib	Ss7Sccp
Values	Decimal (660..1260)
Units	seconds
Default	660

ATTRIBUTE Sccp timerRel (tRel)

Access	Read: All Write: All
Description	This attribute specifies the value of the release timer defined in Q.714. This is the period of time to wait for a RELEASE COMPLETE message in response to the initial release attempt. This timer is started when a RELEASED message is sent. This timer is stopped when a RELEASE COMPLETE or ERROR message is received, or on a routing failure. Upon timer expiration, a RELEASE message is sent and the *tRepeatRelTimer* is started. The number of timeouts of this timer is indicated by the attribute *tRelTimeouts*.
Mib	Ss7Sccp
Values	Decimal (10..20)
Units	seconds
Default	10

ATTRIBUTE Sccp timerRepeatRel (tRepeatRel)

Access	Read: All Write: All
Description	This attribute specifies the value of the repeat release timer. This is the period of time to wait for a RELEASE COMPLETE message after *tRelTimer* has expired. This timer determines the interval between successive release retries. This timer is started when *tRelTimer* expires. This timer is stopped when a RELEASE COMPLETE or an ERROR message is received, or when a routing failure occurs. Upon timer expiration, the timer is restarted for a maximum of ten times. Upon the tenth timer expiration, the resources are released. The number of timeouts of this timer is indicated by the attribute *tRepeatRelTimeouts*.
Mib	Ss7Sccp
Values	Decimal (10..20)
Units	seconds
Default	10

ATTRIBUTE Sccp classOfService (classOfServ)

Access	Read: All Write: All
Description	This attribute specifies the type of service provided by the SCCP layer. The different service classes are: ***0*** - This class represents basic connectionless service. ***2***- This class represents basic connection-oriented service. Any combination of these classes can be provisioned by the user, but at least one class must be specified.

Mib	Ss7Sccp
Set of	0 2
Default	(0, 2)

GROUP Sccp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7Sccp

ATTRIBUTE Sccp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ss7Sccp

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Sccp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ss7Sccp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Sccp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Ss7Sccp
Values	idle active (activ) busy
Default	idle

GROUP Sccp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Sccp* component.
Mib	Ss7Sccp

ATTRIBUTE Sccp timerConnEstTimeouts (tConnEstTo)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the *tConnEstTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp timerInactivityReceiveTimeouts (tIarTo)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the timer specified by the attribute *timerInactivityReceive.* The counter wraps to zero when it exceeds the maximum value
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp timerRelTimeouts (tRelTo)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the timer specified by the attribute *tRelTimer.* The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp timerRepeatRelTimeouts (repRelTo)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the timer specified by the attribute *tRepeatRelTimer.* The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp activeConnections (actConn)

Access	Read: All Write: Illegal
Description	This attribute indicates the current open signalling connections for the *Sccp c*omponent. The maximum number of open signalling connections is set by the attribute *maxConnections.*
Mib	Ss7Sccp
Values	Decimal (0..1000000)
Default	No default

ATTRIBUTE Sccp rejectedConnections (rejConn)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times a signalling connection establishment request by the application was refused. The reasons include the subsystem being down, the number of open connections exceeding the limit specified by the attribute *maxConnections* and so on. This includes the number of rejected connections indicated by the attribute *maxConnExhausted*. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp maxConnectionsExhausted (maxConnEx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times a signalling connection establishment request by the application was refused because the number of open connections reached the limit specified by the attribute *maxConnection.* The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp lostConnections (lostConn)

Access	Read: All Write: Illegal

Description	This attribute counts the number of the open signalling connections lost due to unavailability of the SCCP Subsystem. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp unsupportedMessages (unsuppMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of unsupported (class1, class3) messages received. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp gttRequests (gttRqsts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages received that require Global Title Translation. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp segmentationRequests (segRqsts)

Access	Read: All Write: Illegal

Description	This attribute counts the number of messages received that require segmentation. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp reassemblyRequests (reassemblyRqsts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages received that require reassembly. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp localRoutingFailures (localRoutFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the routing failures to the local subsystem. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp remoteRoutingFailures (remRoutFail)

Access	Read: All Write: Illegal

Description	This attribute counts the number of the routing failures to the remote subsystem. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp messagesTx (msgsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the messages sent to layer 3. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp payloadMessagesTx (plMsgsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages transmitted. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp messagesRx (msgsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the messages received from layer 3. The counter wraps to zero when it exceeds the maximum value.

Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp payloadMessagesRx (plMsgsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages received from layer 3. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp invalidMessages (invMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of invalid (syntax error or undecodable) messages received. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp attemptedConnections (attCon)

Access	Read: All Write: Illegal
Description	This attribute counts the number of signalling connections that this *Sccp c*omponent has attempted to establish. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7Sccp

Values	Decimal (0..4294967295)
Default	No default

GROUP Sccp WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7Sccp

ATTRIBUTE Sccp customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS SignallingConnControlPart

Description	The statistics record generated by the SignallingConnControlPart component.

ATTRIBUTE Sccp activeConnections

Description	This attribute indicates the number of the current open signalling connections for the *Sccp c*omponent at the end of the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp rejectedConnections

Description	This attribute indicates the number of rejected signalling connections for the SCCP component over the collection interval. The reasons include the subsystem being down, the number of open connections exceeding the limit specified by the attribute *maxConnections* and so on, at the end of the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp maxConnectionsExhausted

Description	This attribute indicates the number of times a signalling connection establishment request by the application was refused because the number of open connections reached the limit

	specified by the attribute *maxConnections*, over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp lostConnections

Description	This attribute indicates the number of the open signalling connections lost due to unavailability of the SCCP Subsystem over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp invalidMessages

Description	This attribute indicates the number of invalid (syntax error or undecodable) messages received over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp messagesTx

Description	This attribute indicates the number of the messages sent to layer 3 over the collection interval. This includes maintenance messages.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp payloadMessagesTx

Description	This attribute indicates the number of payload messages transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp messagesRx

Description	This attribute indicates the number of the messages received from layer 3 over the collection interval. This includes maintenance messages.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp payloadMessagesRx

Description	This attribute indicates the number of payload messages received over the collection interval.

Values	Decimal (0..4294967295)

ATTRIBUTE Sccp localRoutingFailures

Description	This attribute indicates the number of the routing failures to the local subsystem over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp remoteRoutingFailures

Description	This attribute indicates the number of the routing failures to the remote subsystem over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sccp attemptedConnections (attCon)

Description	This attribute indicates the number of signalling connections that this *Sccp c*omponent has attempted to establish during the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Sccp LocalSubsystem (Loc)

Instance	Decimal (0..255)
Groups	"GROUP Sccp Loc Provisioned (Prov)" "GROUP Sccp Loc OsiState (State)" "GROUP Sccp Loc WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sccp/n LocalSubsystem*

	This component represents a local subsystem that is providing services using this *Sccp* component.
Mib	Ss7Sccp
Common Verbs	Help List Display Add DELete

GROUP Sccp Loc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of this component.
Mib	Ss7Sccp

ATTRIBUTE Sccp Loc linkToSccpConnection (lToSccpConn)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a link to the local subsystem represented by this component. This attribute must be set to ***Sg/n RncIf SccpConn*** if the parent *Sccp/n* component is part of the SS7 stack on the Iu interface. This attribute must be set to ***Sg/n CsDomain SccpConn*** if the parent *Sccp/n* component is part of the SS7 stack on the interface to the Call Server. If this attribute is changed, it will result in a loss of service for the *Loc* component.
Mib	Ss7Sccp
Values	Link (Service, linkToLocalSubsystem)

Default	No default

ATTRIBUTE Sccp Loc subsystemNumber (ssn)

Access	Read: All Write: All
Description	This attribute specifies the subsystem number of the local subsystem represented by this component.
Mib	Ss7Sccp
Values	ranap
Default	ranap

GROUP Sccp Loc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7Sccp

ATTRIBUTE Sccp Loc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ss7Sccp

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Sccp Loc operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ss7Sccp

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Sccp Loc usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

	The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ss7Sccp
Values	idle active (activ) busy
Default	idle

GROUP Sccp Loc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7Sccp

ATTRIBUTE Sccp Loc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp Loc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp Loc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sccp RemoteSubsystem (Rem)

Instance	Decimal (0..255)
Groups	"GROUP Sccp Rem Provisioned (Prov)" "GROUP Sccp Rem OsiState (State)" "GROUP Sccp Rem WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sccp/n RemoteSubsystem*

This optional component represents a remote subsystem that can be accessed by this *Sccp* component.

Mib: Ss7Sccp

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Sccp Rem Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes of this component.

Mib: Ss7Sccp

ATTRIBUTE Sccp Rem subsystemNumber (subsNum)

Access: Read: All
Write: All

Description: This attribute specifies the subsystem number of the remote subsystem represented by this component.

Mib: Ss7Sccp

Values: ranap

Default: ranap

GROUP Sccp Rem OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	Ss7Sccp

ATTRIBUTE Sccp Rem adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ss7Sccp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Sccp Rem operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ss7Sccp

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Sccp Rem usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Ss7Sccp

Values: idle
active (activ)
busy

Default: idle

GROUP Sccp Rem WlcCustomCounters (WlcCustomCntr)

Properties: Operational

Description: This group contains the spare counters that can be dynamically patched.

Mib: Ss7Sccp

ATTRIBUTE Sccp Rem customCounter1 (customCntr1)

Access: Read: All
Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp Rem customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp Rem customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sccp Mtp3Connection (Mtp3Conn)

Groups	"GROUP Sccp Mtp3Conn Provisioned (Prov)" "GROUP Sccp Mtp3Conn WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	Vmg/n Mtp3Connection Sccp/n Mtp3Connection This component represents a connection to an MTP3 layer.
Mib	Ss7Sccp
Common Verbs	Help List Display

GROUP Sccp Mtp3Conn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Mtp3Connection*component.
Mib	Ss7Sccp

ATTRIBUTE Sccp Mtp3Conn linkToServiceIndicator (lToSI)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies a link to an *Mtp3/n ServiceIndicator/n* component for MTP 3 services. Changing this attribute will cause the application using the MTP3 layer's services to be restarted.
Mib	Ss7Sccp
Values	Link (Service, linkToMtp3Connection)

Default	No default

GROUP Sccp Mtp3Conn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7Sccp

ATTRIBUTE Sccp Mtp3Conn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp Mtp3Conn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sccp Mtp3Conn customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7Sccp
Values	Decimal (0..4294967295)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Sccp

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component SgGtl

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component SgGtl

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COMPONENT SgGprsTransportLayer (SgGtl)

Instance	Decimal (1..15)
Groups	"GROUP SgGtl Provisioned (Prov)" "GROUP SgGtl WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*SgGprsTransportLayer/n* This component represents the Transport Layer functionality of the Gb interface of the Serving GPRS Support Node (SGSN). The Transport Layer includes protocol layers such as the Network Service (NS) and the BSS GPRS Protocol (BSSGP). Only one *SgGtl* Component can be provisioned on an FP card.
Mib	WirelessGtl
Opt. Subcomp.	"COMPONENT SgGtl NetworkServiceEntity (Nse)"
Dyn. Subcomp.	"COMPONENT SgGtl RemoteApplicationConnection (RaConn)"
Common Verbs	Help List Display Add DELete

GROUP SgGtl Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes of the *SgGprsTransportLayer (SgGtl).*
Mib	WirelessGtl

ATTRIBUTE SgGtl linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor that the *SgGprsTransportLayer (SgGtl)* and its subcomponents are provisioned on.
Mib	WirelessGtl
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE SgGtl bvcBlockedTimer (tBvcBlocked)

Access	Read: All Write: All
Description	This attribute specifies the time that a BSS GPRS Virtual Connection (BVC) can remain blocked without generating an alarm condition. A timer starts with the *bvcBlockedTimer* attribute value when the Serving GPRS Support Node (SGSN) receives a BVC_BLOCK Protocol Data Unit (PDU) from the Packet Control Unit (PCU). The timer stops when the SGSN receives a BVC_UNBLOCK PDU from the PCU. If the timer expires, the Network Service Entity (NSE) is notified that the BVC is unavailable. The *bvcBlockedTimeouts* attribute indicates the number of times the timer timed out.
Mib	WirelessGtl
Values	Decimal (1..200)
Units	minutes

Default	10

ATTRIBUTE SgGtl bvcBmaxTimer (tBvcBmax)

Access	Read: All Write: All
Description	This attribute specifies the time that the BSS GPRS Virtual Connection (BVC) flow control parameter Bmax can remain at value 0 without generating an alarm condition. A timer starts with the *bvcBmaxTimer* attribute value when the Serving GPRS Support Node (SGSN) receives a BVC_FLOW_CONTROL Protocol Data Unit (PDU) with a Bmax value of 0 from the Packet Control Unit (PCU). The timer stops when the SGSN receives a BVC_FLOW_CONTROL PDU from the PCU with a Bmax value greater than 0. If the timer expires, the Network Service Entity (NSE) is notified that the BVC is unavailable. The *bvcBmaxTimeouts* attribute indicates the number of times the timer timed out.
Mib	WirelessGtl
Values	Decimal (1..200)
Units	minutes
Default	10

ATTRIBUTE SgGtl bvcLeakRateTimer (tBvcLeakRate)

Access	Read: All Write: All
Description	This attribute specifies the time that the BSS GPRS Virtual Connection (BVC) Leak Rate flow control parameter can remain at value 0 without generating an alarm condition. A timer starts with the *bvcLeakRateTimer* attribute value when the Serving GPRS Support Node (SGSN) receives a BVC_FLOW_CONTROL Protocol Data Unit (PDU) with a Leak Rate value of 0 from the Packet Control Unit (PCU). The timer

stops when the SGSN receives a BVC_FLOW_CONTROL PDU from the PCU with a Leak Rate value greater than 0. If the timer expires, the Network Service Entity (NSE) is notified that the BVC is unavailable.

The *bvcLeakRateTimeouts* attribute indicates the number of times the timer timed out.

Mib	WirelessGtl
Values	Decimal (1..200)
Units	minutes
Default	10

ATTRIBUTE SgGtl bvcBlockedSetThreshold (bvcBlockedSet)

Access	Read: All Write: All
Description	This attribute specifies the threshold at which the BVC Blocked alarm is set. The value of the attribute is the number of unavailable BSS GPRS Virtual Connections (BVC) associated with a Network Service Entity (NSE) that is deemed acceptable. The Packet Control Unit (PCU) can render a BVC unavailable by sending a BVC_BLOCK Protocol Data Unit (PDU) or a BVC_FLOW_CONTROL PDU to the Serving GPRS Support Node (SGSN). When the number of unavailable BVCs exceeds the value of the *bvcBlockedSetThreshold* attribute, the BVC Blocked alarm is set. The value of the *bvcBlockedSetThreshold* attribute must be greater than or equal to the *bvcBlockedClrThreshold* attribute value.
Mib	WirelessGtl
Values	Decimal (1..600)
Default	10

ATTRIBUTE SgGtl bvcBlockedClrThreshold (bvcBlockedClr)

Access	Read: All Write: All
Description	This attribute specifies the threshold at which the BVC Blocked alarm is cleared. The Packet Control Unit (PCU) can render a BSS GPRS Virtual Connections (BVC) unavailable by sending a BVC_BLOCK Protocol Data Unit (PDU) or a BVC_FLOW_CONTROL PDU to the Serving GPRS Support Node (SGSN). If the BVC Blocked alarm is active and the number of Network Service Entity (NSE) unavailable BVCs drops below the value of the *bvcBlockedClrThreshold* attribute, the BVC Blocked alarm is cleared. The value of the *bvcBlockedClrThreshold* attribute must be less than or equal to the *bvcBlockedSetThreshold* attribute value.
Mib	WirelessGtl
Values	Decimal (1..600)
Default	5

ATTRIBUTE SgGtl associatedGtl (aGtl)

Access	Read: All Write: All
Description	This attribute specifies the paired *SgGprsTransportLayer (SgGtl)* instance used to enable load sharing. Both *SgGtl* instances must have the same *SgGtl/n Nse/<nsei>* components provisioned. If this attribute is not set, then load sharing is disabled for the Network Service Entities (NSE) on this GPRS Transport Layer (GTL).
Mib	WirelessGtl
Values	Link (Service, associatedGtl)
Default	No default

ATTRIBUTE SgGtl packetFlowContext (pfc)

Access	Read: All Write: All
Description	This attribute specifies whether the Packet Flow Context is enabled for all the Network Service Entities (NSEs) on this *SgGtl* component. If the value of this attribute is ***enabled***, then the SGSN shall send a BVC-Reset to the BSS and re-negotiate the Feature Bitmap Information Element. When set to ***enabled***, it is recommended that the *PacketFlowManagement (Pfm)* component (defined in *Gsc/n*) be provisionned as well. It is recommended that the value of the *packetFlowContext* attribute be the same across all the *SgGtl* components. Changing this value will take the traffic down. A warning is generated if either the *Gsc/n Pfm* component or this attribute value is changed.
Mib	WirelessGtl
Values	disabled enabled
Default	disabled

GROUP SgGtl WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGtl

ATTRIBUTE SgGtl customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

COMPONENT SgGtl NetworkServiceEntity (Nse)

Instance	Decimal (0..65535)
Groups	"GROUP SgGtl Nse NseStatistics (NseStats)" "GROUP SgGtl Nse OsiState (State)"

"COLLECTED STATS SgGprsTransportLayer NetworkServiceEntity"

Scope	Application
Description	*SgGtl/n NetworkServiceEntity/<nsei>* This component represents a Network Service Entity (NSE). Each NSE is associated with a single Packet Control Unit (PCU) and is identified by means of a Network Service Entity Identifier (NSEI). Load sharing on a pair of *SgGtl* components is enabled by provisioning the same NSEs on the pair and using the *associatedGtl* attribute. There may be no more than 200 unique *Nse* component instances provisioned over all *SgGtl* components and no more than 128 *Nsvc* components provisioned under any given *SgGtl/n Nse/<nsei>* component.
Mib	WirelessGtl
Subcomponents	"COMPONENT SgGtl Nse SignalingBvc (SigBvc)"
Opt. Subcomp.	"COMPONENT SgGtl Nse NetworkServiceVirtualConnection (Nsvc)"
Dyn. Subcomp.	"COMPONENT SgGtl Nse PointToPointBvc (PtpBvc)"
Common Verbs	Help List Display Add DELete

GROUP SgGtl Nse NseStatistics (NseStats)

Properties	Operational
Description	This group contains the operational attributes of the Network Service Entity (NSE).
Mib	WirelessGtl

ATTRIBUTE SgGtl Nse octetsToPcu (octsTxPcu)

Access	Read: All Write: Illegal

Description	This attribute counts the octets sent to the Packet Control Unit (PCU) by all the Network Service Virtual Connections (NS-VCs) served by this Network Service Entity (NSE). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse octetsFromPcu (octsRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the octets received from the Packet Control Unit's (PCU) Network Service Virtual Connections (NS-VCs) served by the peer Network Service Entity (NSE). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

GROUP SgGtl Nse OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessGtl

ATTRIBUTE SgGtl Nse adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	WirelessGtl
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SgGtl Nse operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	WirelessGtl
Values	enabled (ena) disabled (dis)

Default disabled

ATTRIBUTE SgGtl Nse usageState (osiUsage)

Access Read only

Description This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib WirelessGtl

Values idle
active (activ)
busy

Default idle

COLLECTED STATS SgGprsTransportLayer NetworkServiceEntity

Description The statistics record generated by the SgGprsTransportLayer NetworkServiceEntity component.

ATTRIBUTE SgGtl Nse currentBvcs (curBvcs)

Description This attribute indicates the current number of BSS GPRS Virtual Connections (BVCs) on this Network Service Entity (NSE) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse octetsToPcu (octsTxPcu)

Description This attribute counts the octets sent to the Packet Control Unit (PCU) by all the Network Service Virtual Connections (NS-VCs) served by this Network Service Entity (NSE). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse octetsFromPcu (octsRxPcu)

Description This attribute counts the octets received from the Packet Control Unit's (PCU) Network Service Virtual Connections (NS-VCs) served by the peer Network Service Entity (NSE). This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

COMPONENT SgGtl Nse PointToPointBvc (PtpBvc)

Instance Decimal (1..65535)

Groups "GROUP SgGtl Nse PtpBvc Operational (Oper)"
"GROUP SgGtl Nse PtpBvc Statistics (Stats)"

"COLLECTED STATS SgGprsTransportLayer NetworkServiceEntity PointToPointBvc"

Scope Application

Description *SgGtl/n Nse/<nsei> PointToPointBvc/<bvci>*

This component represents the Point To Point BSS GPRS Virtual Connection (BVC) protocol layer functionality of the Serving GPRS Support Node (SGSN). Each instance value represents the BSS GPRS Virtual Connection Identifier (BVCI) and is created dynamically at the SGSN upon receipt of a BVC RESET from the Packet Control Unit (PCU) with an unknown BVCI.

Mib WirelessGtl

Common Verbs
Help
List
Display

GROUP SgGtl Nse PtpBvc Operational (Oper)

Properties Operational

Description This group contains the BSS GPRS Virtual Connection (BVC) operational information.

Mib WirelessGtl

ATTRIBUTE SgGtl Nse PtpBvc state

Access	Read: All Write: Illegal
Description	This attribute indicates the current state for a BSS GPRS Virtual Connection (BVC). A BVC can be in one of the following possible states: ***blocked***, Indicates that the BVC is blocked by the Packet Control Unit (PCU). In this state it can neither send nor receive data. ***unblockedNoTx***, Indicates that the BVC can receive data from the PCU, but is not allowed to transmit data to the PCU. ***unblocked***, Indicates that the BVC is active and data can be sent and received to (and from) the PCU. ***resetReqPending***, Indicates that the BVC-RESET request was sent to the PCU and that the BVC is awaiting a BVC-RESET-ACK confirmation.
Mib	WirelessGtl
Values	blocked unblockedNoTx unblocked resetReqPending
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc flowCntlBucketSize (bmax)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum bucket size for the BSS GPRS Virtual Connection (BVC) sent by the Packet Control Unit (PCU). This parameter is used by the BVC flow control algorithm. The unit is 100 bytes.
Mib	WirelessGtl
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc leakRate (leakRt)

Access	Read: All Write: Illegal
Description	This attribute indicates the leak rate for the BSS GPRS Virtual Connection (BVC), sent by the Packet Control Unit (PCU). This parameter is used by the BVC flow control algorithm. The unit is 100 bit/s.
Mib	WirelessGtl
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc availabilityStatus (availStatus)

Access	Read: All Write: Illegal
Description	This attribute indicates the current status of a BSS GPRS Virtual Connection (BVC). The BVC availability status can either be ***bvcAvailable,*** meaning that the BVC is available, or one or more of the other three conditions listed below: A value of ***bvcBlocked*** indicates that the BVC is blocked by the Packet Control Unit (PCU) and is unavailable. The amount of time the BVC is blocked before it is marked as unavailable, is provisionable through the *bvcBlockedTimer* attribute of the *SgGtl* component. A value of ***bvcBmax0*** indicates that the maximum bucket size flow control parameter for the BVC sent by the PCU is 0 and the BVC is unavailable. The amount of time the bucket size is 0 before it is marked as unavailable, is provisionable through the *bvcBmaxTimer* attribute of the *SgGtl* component. A value of ***bvcLeakRate0*** indicates that the leak rate flow control parameter for the BVC sent by the PCU is 0 and the BVC is unavailable. The amount of time the leak rate is 0 before it is marked as unavailable, is provisionable through the *bvcLeakRateTimer* attribute of the *SgGtl* component.

Mib	WirelessGtl
Set of	bvcAvailable bvcBlocked bvcBmax0 bvcLeakRate0
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc bvcGlobalCellId (bvcCellId)

Access	Read: All Write: Illegal
Description	This attribute indicates the current Global Cell ID of the BSS GPRS Virtual Connection (BVC). The format of the Global Cell ID is “<MCC>.<MNC>.<LAC>.<RAC>.<CellID>”.
Mib	WirelessGtl
Values	String (1..30, ASCII)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc bvcBlockedTimeouts (bvcBlockedT)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the BVC has been blocked for a span of minutes defined by the *bvcBlockedTimer* attribute. The counter wraps to 0 when the maximum value is exceeded.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc bvcBmaxTimeouts (bvcBmaxT)

Access	Read: All Write: Illegal

Description	This attribute counts the number of times the BVC Bmax flow control parameter is 0 for a span of minutes defined by the *bvcBmaxTimer* attribute. The counter wraps to 0 when the maximum value is exceeded.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc bvcLeakRateTimeouts (bvcLeakRateT)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the BVC Leak Rate flow control parameter is 0 for a span of minutes defined by the *bvcLeakRateTimer* attribute. The counter wraps to 0 when the maximum value is exceeded.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc fullRatio (fullRt)

Access	Read: All Write: Illegal
Description	This attribute indicates the percentage of the bucket that is filled with data for a BSS GPRS Virtual Connection (BVC). This attribute is used by the BVC bucket flow control algorithm if the Current Bucket Level feature is negotiated between the Packet Control Unit (PCU) and the Serving GPRS Support Node (SGSN). The result of this negotiation is reflected in the *currentBucketLevelNegotiated* attribute. A value of ***0*** means that the bucket is empty, while a value of ***100*** means that the bucket is exactly full. A value greater than ***100*** means that the bucket is full and overflowing by that percentage. For example, a value of ***150*** means the bucket is full and

	overflowing by 50%. A value of ***disabled*** means that this attribute is not used by the flow control algorithm because the Current Bucket Level feature is not negotiated.
Mib	WirelessGtl
Values	Decimal (0..255) disabled
Units	%
Default	No default

GROUP SgGtl Nse PtpBvc Statistics (Stats)

Properties	Operational
Description	This group contains the BSS GPRS Virtual Connection (BVC) statistical information.
Mib	WirelessGtl

ATTRIBUTE SgGtl Nse PtpBvc pdusFromPcu (pdusRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) received from the Packet Control Unit (PCU) by the Point To Point BSS GPRS Virtual Connection (BVC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc pdusToPcu (pdusTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) transmitted to the Packet Control Unit (PCU) by the Point To Point BSS

	GPRS Virtual Connection (BVC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc octetsFromPcu (octsRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the octets received from the Packet Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc octetsToPcu (octsTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the octets transmitted to the Packet Control Unit (PCU) from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc blocksFromPcu (blksRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the BVC-BLOCK PDUs received from the Packet Control Unit (PCU) for this BSS GPRS Virtual

	Connection (BVC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc unblocksFromPcu (unblksRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the BVC-UNBLOCK PDUs received from the Packet Control Unit (PCU) for this BSS GPRS Virtual Connection (BVC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc resetsFromPcu (rstsRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the BVC-RESET PDUs received from the Packet Control Unit (PCU) for this BSS GPRS Virtual Connection (BVC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc resetsToPcu (rstsTxPcu)

Access	Read: All Write: Illegal

Description	This attribute counts the BVC-RESET PDUs sent to the Packet Control Unit (PCU) for this BSS GPRS Virtual Connection (BVC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc statusFromPcu (statusRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NM-STATUS PDUs received from the Packet Control Unit (PCU). The PCU sends an NM-STATUS PDU when it receives an invalid packet or a packet that has undergone corruption over the Gb interface in the SGSN-PCU direction. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc statusToPcu (statusTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NM-STATUS PDUs sent to the Packet Control Unit (PCU). The SGSN sends an NM-STATUS PDU when it receives an invalid packet or a packet that has undergone corruption over the Gb interface in the PCU-SGSN direction. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc bvcFlowCntlFromPcu (bvcFlRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the FLOW-CONTROL-BVC Protocol Data Units (PDUs) received for this BSS GPRS Virtual Connection (BVC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse PtpBvc msFlowCntlFromPcu (msFlRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the FLOW-CONTROL-MS Protocol Data Units (PDUs) received for this BSS GPRS Virtual Connection (BVC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS SgGprsTransportLayer NetworkServiceEntity PointToPointBvc

Description	The statistics record generated by the SgGprsTransportLayer NetworkServiceEntity PointToPointBvc component.

ATTRIBUTE SgGtl Nse PtpBvc pdusFromPcu (pdusRxPcu)

Description	This attribute counts the number of protocol data units (PDUs) received from the Packet Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse PtpBvc pdusToPcu (pdusTxPcu)

Description	This attribute counts the number of protocol data units (PDUs) transmitted to the Packet Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse PtpBvc octetsFromPcu (octsRxPcu)

Description	This attribute counts the number of octets received from the Packet Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse PtpBvc octetsToPcu (octsTxPcu)

Description	This attribute counts the number of octets transmitted to the Packet Control Unit (PCU) from the Serving GPRS Support Node (SGSN) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse PtpBvc bvcFlowCntlFromPcu (bvcFlRxPcu)

Description	This attribute counts the FLOW-CONTROL-BVC Protocol Data Units (PDUs) received for this BSS GPRS Virtual Connection (BVC) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse PtpBvc msFlowCntlFromPcu (msFlRxPcu)

Description	This attribute counts the BSSGP-FLOW-CONTROL-MS Protocol Data Units (PDUs) received for this BSS GPRS Virtual Connection (BVC) in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT SgGtl Nse NetworkServiceVirtualConnection (Nsvc)

Instance	Decimal (1..65535)

Groups	"GROUP SgGtl Nse Nsvc Provisioned (Prov)" "GROUP SgGtl Nse Nsvc Operational (Oper)" "GROUP SgGtl Nse Nsvc Statistics (Stats)"

"COLLECTED STATS SgGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection"

Scope	Application
Description	*SgGtl/n Nse/<nsei> Nsvc/<nsvci>* This component represents the Network Service Virtual Connection (NS-VC) functionality of the Network Service (NS) protocol layer. Each instance provides a virtual connection between the NS peer entities. An NS-VC is unique across all instances of this Network Service Entity Identifier (NSEI). An NS-VC is associated with a single Frame Relay Data Link Connection Identifier (DLCI). The Frame Relay port and the NS-VC must be located on the same Logical Processor.
Mib	WirelessGtl
Dyn. Subcomp.	"COMPONENT SgGtl Nse Nsvc AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete

GROUP SgGtl Nse Nsvc Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes to associate a Network Service Virtual Connection (NS-VC) with a Frame Relay Data Link Connection Identifier (DLCI). The FR interface is provided by the *FrAtm* component which must be provisioned on the same Logical Processor as this NS-VC.
Mib	WirelessGtl

ATTRIBUTE SgGtl Nse Nsvc localFrAddress (frAddr)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the local Frame Relay address (native E.164, native x.121) to be used for this connection. This is the address defined at the peer *FrAtm/n Address* component. The peer *FrAtm* component must be provisioned on the same Logical Processor as this Network Service Virtual Connection (NS-VC).
Mib	WirelessGtl
Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc localFrDlci (frDlci)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the local Frame Relay connection identifier. This identifier is a Frame Relay Data Link Connection Identifier (DLCI) logical channel number. There must be a matching DLCI value at the peer *FrAtm* component. The combination of FrAtm and DLCI value must be unique across all instances of NS-VC for this NSEI.
Mib	WirelessGtl
Values	Decimal (16..1007)
Default	No default

GROUP SgGtl Nse Nsvc Operational (Oper)

Properties	Operational
Description	This group contains Network Service Virtual Connection (NS-VC) operational information.

Mib	WirelessGtl

ATTRIBUTE SgGtl Nse Nsvc state (st)

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the Network Service Virtual Connection (NS-VC). ***idle -*** This is the initial state of the NS-VC upon activation. ***unBlocked -*** Indicates that this NS-VC is unblocked and is now available for traffic. ***localInitiatedBlocked -*** This state indicates that the NS-VC is blocked by a locally initiated Block Request. NS-UNITDATA Protocol Data Units (PDUs) received in this state are discarded. ***netInitiatedBlocked -*** This state indicates that this NS-VC has been blocked by the remote node. NS-UNITDATA PDUs received in this state are discarded. ***dead -*** This state indicates that the NS-VC is unavailable. This can be because the Frame Relay (FR) link is dead or if an operator locks the Data Link Connection Identifier (DLCI).
Mib	WirelessGtl
Values	idle unBlocked localInitiatedBlocked netInitiatedBlocked dead
Default	No default

GROUP SgGtl Nse Nsvc Statistics (Stats)

Properties	Operational
Description	This group contains the Network Service Virtual Connection (NS-VC) statistical information.
Mib	WirelessGtl

ATTRIBUTE SgGtl Nse Nsvc blocksFromPcu (blksRxPcu)

Access	Read: All Write: Illegal

Description	This attribute counts the NS-BLOCK requests received from the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc blocksToPcu (blksTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-BLOCK Protocol Data Units (PDUs) encoded to be sent to the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc blockAcksFromPcu (blkAcksRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-BLOCK ACKs received from the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc blockAcksToPcu (blkAcksTxPcu)

Access	Read: All Write: Illegal

Description	This attribute counts the NS-BLOCK ACK Protocol Data Units (PDUs) encoded to be sent to the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc unblocksFromPcu (unblksRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNBLOCK requests received from the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc unblocksToPcu (unblksTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNBLOCK Protocol Data Units (PDUs) encoded to be sent to the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc unblockAcksFromPcu (unblkAcksRxPcu)

Access	Read: All Write: Illegal

Description	This attribute counts the NS-UNBLOCK ACKs received from the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc unblockAcksToPcu (unblkAcksTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNBLOCK ACK Protocol Data Units (PDUs) encoded to be sent to the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc unitDatasFromPcu (unitDataRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) received from the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc unitDatasToPcu (unitDataTxPcu)

Access	Read: All Write: Illegal

Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) encoded to be sent to the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc alivesFromPcu (aliveRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-ALIVE requests received from the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc alivesToPcu (aliveTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-ALIVE Protocol Data Units (PDUs) encoded to be sent to the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc aliveAcksFromPcu (aliveAcksRxPcu)

Access	Read: All Write: Illegal

Description	This attribute counts the NS-ALIVE ACKs received from the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc aliveAcksToPcu (aliveAcksTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-ALIVE ACK Protocol Data Units (PDUs) encoded to be sent to the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc resetsFromPcu (rstsRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-RESET requests received from the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc resetsToPcu (rstsTxPcu)

Access	Read: All Write: Illegal

Description	This attribute counts the NS-RESET Protocol Data Units (PDUs) encoded to be sent to the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc resetAcksFromPcu (rstAcksRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-RESET ACKs received from the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc resetAcksToPcu (rstAcksTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-RESET ACK Protocol Data Units (PDUs) encoded to be sent to the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc statusFromPcu (statusRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-STATUS PDUs received from the Packet Control Unit (PCU). The PCU sends an NS-STATUS

	PDU when it receives an invalid packet or a packet that has undergone corruption over the Gb interface in the SGSN-PCU direction. The counter to zero wraps when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc statusToPcu (statusTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-STATUS PDUs sent to the Packet Control Unit (PCU). The Serving GPRS Support Node (SGSN) sends an NS-STATUS PDU when it receives an invalid packet or a packet that has undergone corruption over the Gb interface in the PCU-SGSN direction. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc statusIndications (statusInds)

Access	Read: All Write: Illegal
Description	This attribute counts the NS-STATUS Indications formatted by the Network Service (NS) for this Network Service Virtual Connection (NS-VC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc fecnBitSet (fecnBit)

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from the network that contain the Forward Explicit Congestion Notification (FECN) bit set to 1. Setting of the FECN bit to 1 indicates that frames received from the network can experience congestion.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc becnBitSet (becnBit)

Access	Read: All Write: Illegal
Description	This attribute counts the frames received from the network that contain the Backward Explicit Congestion Notification (BECN) bit set to 1. Setting of the BECN bit to 1 indicates that frames transmitted to the network may experience congestion.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc octetsFromPcu (octsRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were received from the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse Nsvc octetsToPcu (octsTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were received from the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS SgGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection

Description	The statistics record generated by the SgGprsTransportLayer NetworkServiceEntity NetworkServiceVirtualConnection component.

ATTRIBUTE SgGtl Nse Nsvc unitDatasFromPcu (unitDataRxPcu)

Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) received from the Packet Control Unit (PCU) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse Nsvc unitDatasToPcu (unitDataTxPcu)

Description	This attribute counts the NS-UNITDATA Protocol Data Units (PDUs) encoded to be sent to the Packet Control Unit (PCU) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse Nsvc octetsFromPcu (octsRxPcu)

Description	This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were received from the Packet Control Unit (PCU) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse Nsvc octetsToPcu (octsTxPcu)

Description	This attribute counts the octets the Network Service Virtual Connection (NS-VC) has processed that were sent to the Packet Control Unit (PCU) in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT SgGtl Nse Nsvc AtmConnection (AtmCon)

Groups	"GROUP SgGtl Nse Nsvc AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	WirelessGtl
Common Verbs	Help List Display

GROUP SgGtl Nse Nsvc AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	WirelessGtl

ATTRIBUTE SgGtl Nse Nsvc AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	WirelessGtl
Values	The name of the component
Default	No default

COMPONENT SgGtl Nse SignalingBvc (SigBvc)

Groups	"GROUP SgGtl Nse SigBvc Statistics (Stats)" "GROUP SgGtl Nse SigBvc Operational (Oper)"

"COLLECTED STATS SgGprsTransportLayer NetworkServiceEntity SignalingBvc"

Scope	Application
Description	*SgGtl/n Nse/<nsei> SignalingBvc* This component represents the Signaling BSS GPRS Virtual Connection (BVC) protocol layer functionality of the Serving GPRS Support Node (SGSN).
Mib	WirelessGtl
Common Verbs	Help List Display

GROUP SgGtl Nse SigBvc Statistics (Stats)

Properties	Operational
Description	This group contains signaling BSS GPRS Virtual Connection (BVC) statistical information.
Mib	WirelessGtl

ATTRIBUTE SgGtl Nse SigBvc llcDiscardedPdus (llcDiscPdus)

Access	Read: All Write: Illegal
Description	This attribute counts the LLC-DISCARDED-PDU messages received from the Packet Control Unit (PCU). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse SigBvc pdusFromPcu (pdusRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) received from the Packet Control Unit (PCU) by the signalling BSS GPRS Virtual Connection (BVC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse SigBvc pdusToPcu (pdusTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) transmitted to the Packet Control Unit (PCU) by the signalling BSS GPRS Virtual Connection (BVC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse SigBvc octetsFromPcu (octsRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the octets received from the Packet Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE SgGtl Nse SigBvc octetsToPcu (octsTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the octets transmitted to the Packet Control Unit (PCU) from the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse SigBvc blocksFromPcu (blksRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the BVC-BLOCK Protocol Data Units (PDU) received from the Packet Control Unit (PCU) for all the BSS GPRS Virtual Connections (BVC). The *blocksFromPcu* gives the total count of requests for all the Point To Point (PTP) BVCs for that Network Service Entity (NSE) recognized by this FP. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse SigBvc unblocksFromPcu (unblksRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the BVC-UNBLOCK Protocol Data Units (PDU) received from the Packet Control Unit (PCU) for all the BSS GPRS Virtual Connections (BVCs). The *unblocksFromPcu* gives the total count of requests for all the Point To Point (PTP)

	BVCs for that Network Service Entity (NSE) recognized by this FP. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse SigBvc resetsFromPcu (rstsRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the BVC-RESET Protocol Data Units (PDU) received from the Packet Control Unit (PCU) for all the BSS GPRS Virtual Connections (BVCs). The *resetsFromPcu* gives the total count of requests for all the BVCs for that Network Service Entity (NSE) recognized by this FP. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse SigBvc resetsToPcu (rstsTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the BVC-RESET Protocol Data Units (PDU) sent to the Packet Control Unit (PCU) for a particular BSSGP Virtual Connection (BVC). The *resetsToPcu* gives the total count of requests for all BVCs for that Network Service Entity (NSE) recognized by this FP. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse SigBvc statusFromPcu (statusRxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NM-STATUS PDUs received from the Packet Control Unit (PCU). The PCU sends an NM-STATUS PDU when it receives an invalid packet or a packet that has undergone corruption over the Gb interface in the SGSN-PCU direction. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl Nse SigBvc statusToPcu (statusTxPcu)

Access	Read: All Write: Illegal
Description	This attribute counts the NM-STATUS PDUs sent to the Packet Control Unit (PCU). The SGSN sends an NM-STATUS PDU when it receives an invalid packet or a packet that has undergone corruption over the Gb interface in the PCU-SGSN direction. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

GROUP SgGtl Nse SigBvc Operational (Oper)

Properties	Operational
Description	This group contains the BSS GPRS Virtual Connection (BVC) operational information.
Mib	WirelessGtl

ATTRIBUTE SgGtl Nse SigBvc packetFlowContextNegotiated (pfcNeg)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Packet Flow Context (PFC) is enabled or disabled. The PFC is negotiated during the reset of the Signalling BSS GPRS Virtual Connection (BVC) as part of the negotiation of the Feature Bitmap Information Element (IE) between the Base Station System (BSS) and the Serving GPRS Support Node (SGSN). When set to either ***enabled*** or ***disabled***, a BVC-RESET message is sent to the BSS to re-negotiate the Feature Bitmap IE.
Mib	WirelessGtl
Values	disabled enabled
Default	No default

ATTRIBUTE SgGtl Nse SigBvc currentBucketLevelNegotiated (cblNeg)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Current Bucket Level feature is enabled or disabled. The Current Bucket Level feature is negotiated during the reset of the Signalling BSS GPRS Virtual Circuit (BVC) as part of the negotiation of the Feature Bitmap Information Element between the Packet Control Unit (PCU) and the Serving GPRS Support Node (SGSN). If the value is ***enabled***, the information in the *fullRatio* attribute in the *SgGtl Nse PtpBvc* component and the *bucketFullRatio* attribute in the *Gsd Tlli Llc* component are used in the flow control algorithms for the BVC and mobile.
Mib	WirelessGtl
Values	disabled enabled
Default	No default

COLLECTED STATS SgGprsTransportLayer NetworkServiceEntity SignalingBvc

Description The statistics record generated by the SgGprsTransportLayer NetworkServiceEntity SignalingBvc component.

ATTRIBUTE SgGtl Nse SigBvc pdusFromPcu (pdusRxPcu)

Description This attribute counts the number of protocol data units (PDUs) received from the Packet Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse SigBvc pdusToPcu (pdusTxPcu)

Description This attribute counts the number of protocol data units (PDUs) transmitted to the Packet Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse SigBvc octetsFromPcu (octsRxPcu)

Description This attribute counts the number of octets received from the Packet
Control Unit (PCU) by the BSS GPRS Virtual Connection (BVC) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SgGtl Nse SigBvc octetsToPcu (octsTxPcu)

Description This attribute counts the number of octets transmitted to the Packet Control Unit (PCU) from the Serving GPRS Support Node (SGSN) in the collection interval.

Values Decimal (0..4294967295)

COMPONENT SgGtl RemoteApplicationConnection (RaConn)

Instance appType [String (1..8, ASCII)]
shelfid [Decimal (0..50)]
instance (n) [Decimal (1..15)]

Groups	"GROUP SgGtl RaConn OsiState (State)" "GROUP SgGtl RaConn WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	... *RemoteApplicationConnection/<appType, shelfId, n>* This component represents the Remote Application Connection information of an application that talks to applications on other shelves. For each application that it can communicate with, one of these connection components is created and is instantiated with the name of the remote application, the Id of the shelf on which the application runs, and the instance number of the application. ShelfId ***0*** represents the Master shelf.
Mib	WirelessGtl
Dyn. Subcomp.	"COMPONENT SgGtl RaConn AtmConnection (AtmCon)"
Common Verbs	Help List Display

GROUP SgGtl RaConn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessGtl

ATTRIBUTE SgGtl RaConn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	WirelessGtl
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SgGtl RaConn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	WirelessGtl
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SgGtl RaConn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	WirelessGtl
Values	idle active (activ) busy
Default	idle

GROUP SgGtl RaConn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessGtl

ATTRIBUTE SgGtl RaConn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGtl
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE SgGtl RaConn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SgGtl RaConn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessGtl
Values	Decimal (0..4294967295)
Default	No default

COMPONENT SgGtl RaConn AtmConnection (AtmCon)

Groups	"GROUP SgGtl RaConn AtmCon Operational (Oper)"
Scope	Device

Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	WirelessGtl
Common Verbs	Help List Display

GROUP SgGtl RaConn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	WirelessGtl

ATTRIBUTE SgGtl RaConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	WirelessGtl
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component SgGtl

Release 6.1

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7400/15000/20000

Component Sgsn

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Component Sgsn

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COMPONENT ServingGprsSupportNode (Sgsn)

Groups	"GROUP Sgsn Provisioned (Prov)" "GROUP Sgsn VolumeCounts (Vc)" "GROUP Sgsn Operational (Oper)" "GROUP Sgsn OsiState (State)"
Scope	Application
Description	*ServingGprsSupportNode* This component represents the Serving GPRS Support Node (SGSN) functionality of the GPRS. It is to be added on both the

	Master shelf (*Sgsn* with only the *Gsc* components) and the Slave shelves (*Sgsn* with only *Gsd* and *Gtl* components).
Mib	WirelessSgsn
Subcomponents	"COMPONENT Sgsn GprsSubscriberControl (Gsc)" "COMPONENT Sgsn GprsTransportLayer (Gtl)" "COMPONENT Sgsn GprsSubscriberDatapath (Gsd)" "COMPONENT Sgsn DnsAgent (DnsAg)" "COMPONENT Sgsn Shelf (Sh)"
Opt. Subcomp.	"COMPONENT Sgsn PlmnImsiRange (Pir)" "COMPONENT Sgsn MobileCountryCode (Mcc)" "COMPONENT Sgsn GprsVisitorLocationRegister (GprsVlr)" "COMPONENT Sgsn TieredSubscription (Ts)" "COMPONENT Sgsn PrepaidShortMessageService (PSms)" "COMPONENT Sgsn EquivalentPlmn (EquivPlmn)" "COMPONENT Sgsn SubscriberClass (SubsClass)"
Dyn. Subcomp.	"COMPONENT Sgsn TemporaryLogicalLinkId (Tlli)" "COMPONENT Sgsn InternationalMobileSubscriberId (Imsi)"
Common Verbs	Help List Display Add DELete

GROUP Sgsn Provisioned (Prov)

Properties	Provisioned
Description	This group contains general provisioning data for *ServingGprsSupportNode (Sgsn)* and to provide Software Optionality Control (SOC).
Mib	WirelessSgsn

ATTRIBUTE Sgsn resetTimer (rstTim)

Access	Read: All Write: All

Description	This attribute specifies the reset timer used for a *GprsSubscriberControl (Gsc)*. This timer is started when an FP on which a *Gsc* component is provisioned comes up. During the reset timer period, the *Gsc* is considered to have recently experienced a restart, and the GPRS Mobility Management (GMM) ignores and discards GMM messages from the mobile (except ATTACH Requests and ROUTING AREA UPDATE Requests). If a Session Management (SM) message is received during this period, then a GMM DETACH Request with a Detach Type of “re-attach required” is sent to the mobile. If the reset timer has expired, and the mobile subscriber has not performed a subsequent GPRS-Attach, any received messages are considered a protocol violation and responded to with the appropriate reject or a GMM STATUS message, until the mobile performs another GPRS-Attach.
Mib	WirelessSgsn
Values	Decimal (0..255)
Units	minutes
Default	No default

ATTRIBUTE Sgsn maxSubscribers (maxSubs)

Access	Read: All Write: All
Description	This attribute specifies the total number of ‘GPRS-Attached’ subscribers this Serving GPRS Support Node (SGSN) can support simultaneously. It does this by limiting the total of all the individual *maxAttachedSubscribers* attribute in all the *GprsSubscriberControl (Gsc)* components. For example, if this SGSN has two FP *GprsSubscriberControl* provisioned, the first *GprsSubscriberControl* provisioned to support ***5000*** subscribers and the second to support ***2500*** subscribers, this attribute must be provisioned with a value of ***7500*** or greater. The value of this attribute cannot be greater than the number authorized by the access code. The access code (attribute *maxSubsAccessCode*) is unique for each SGSN. Please contact your local Nortel Networks Customer Service

representative for more information.

The current number of ‘GPRS-Attached’ subscribers can be obtained from the sum of the *currentlyAttached* attribute defined in the *Gsc GprsMobilityManagement* component for all the *Gsc* instances.

Mib	WirelessSgsn
Values	Decimal (1000..5000000)
Default	1000

ATTRIBUTE Sgsn maxSubsAccessCode (mSubsCode)

Access	Read: All Write: All
Description	This attribute specifies the access code that allows the *maxSubscribers* attribute to be changed to a higher value. The access code must be obtained from an authorized Nortel Networks representative. Each Serving GPRS Support Node (SGSN) requires a unique access code for each and every increase to the *maxSubscribers* attribute.
Mib	WirelessSgsn
Values	BCD (0..18)
Default	No default

ATTRIBUTE Sgsn maxNseSupported (maxNse)

Access	Read: All Write: All
Criticality	Module
Description	This attribute specifies the maximum Network Service Entities (NSEs) supported on this SGSN. The value provisioned for *maxNseSupported* affects the allowed value for *maxBvcPerNse*, and vice versa. The higher the value for *maxNseSupported*, the lower the allowed value for *maxBvcPerNse*. The product of *maxNseSupported* and *maxBvcPerNse* should not

	exceed 51200. Changing the value of *maxNseSupported* will result in a system reload.
Mib	WirelessSgsn
Values	Decimal (1..256)
Default	256

ATTRIBUTE Sgsn maxBvcPerNse (maxBvc)

Access	Read: All Write: All
Criticality	Module
Description	This attribute specifies the maximum BSS GPRS Virtual Connections (BVCs) supported per Network Service Entity (NSE). The value provisioned for *maxNseSupported* affects the allowed value for *maxBvcPerNse*, and vice versa. The higher the value for *maxNseSupported*, the lower the allowed value for *maxBvcPerNse*. The product of *maxNseSupported* and *maxBvcPerNse* should not exceed 51200. Changing the value of *maxBvcPerNse* will result in a system reload.
Mib	WirelessSgsn
Values	Decimal (1..600)
Default	200

ATTRIBUTE Sgsn networkOpId (nwOpId)

Access	Read: All Write: All
Description	This attribute specifies the Network Operator Identity, and identifies the operator of the SGSN to external devices (for example, Lawful Intercept Gateway).
Mib	WirelessSgsn
Values	String (1..37, ASCII)

Default	"Nortel Networks"

ATTRIBUTE Sgsn longMncMccs (longMnc)

Access	Read: All Write: All
Description	This attribute specifies which Mobile Country Codes (MCC) use a three digit Mobile Network Code (MNC). All MCCs not in this list are assumed to use a two digit MNC. This information is used to construct an APN-Operator Identity in the format mnc<MNC digits>.mcc<MCC digits>.gprs for APN translations during DNS queries. An operator would need to add entries to this list, if he has roamers from another PLMN with 3 digit MNCs for whom he needs to do APN translations.
Mib	WirelessSgsn
List of	BCD (3)
Default	No default

GROUP Sgsn VolumeCounts (Vc)

Properties	Provisioned
Description	This group contains provisionable attributes for the *ServingGprsSupportNode (Sgsn)* component to provide traffic volume control.
Mib	WirelessSgsn

ATTRIBUTE Sgsn tariffTimeChangeTrigger (ttcTrig)

Access	Read: All Write: All
Description	This attribute specifies whether the Tariff Time Change Trigger (TTCT) feature is ***enabled*** or ***disabled***. When enabled, SGSN Accounting Server closes existing Change of Charging Condition containers and opens new containers in SGSN Packet Data Protocol (PDP) Call Detail Records (S-CDRs) to indicate to the

down stream billing device that a Tariff Time Change event has occurred. This enables the down stream billing system to use different billing rates for different time containers.

TTCT relies on Time of Day Accounting (TODA) for provisioning the tariff periods. Both the SGSN Accounting Server and the Subscriber Data applications register with TODA for notification of tariff time changes.

When the *tariffTimeChangeTrigger* attribute is enabled, the *collectionTimes* attribute (defined in the *Collector/Accounting* component) must not specify more than 6 periods with no period closer than 4 hours.

Mib	WirelessSgsn
Values	disabled enabled
Default	disabled

ATTRIBUTE Sgsn dataVolumeLimit (dvl)

Access	Read: All Write: All
Description	This attribute specifies when partial SGSN Packet Data Protocol (PDP) Call Detail Records (S-CDRs) are generated with a partial record reason of “data volume limit” based upon the number of combined uplink and downlink kilobytes that have been transferred by the active session. If this attribute is set to ***disabled***, then a default value of 2 gigabytes for the volume limit is used to trigger the generation of partial S-CDRs.
Mib	WirelessSgsn
Values	Decimal (128..5120) disabled
Units	kbyte
Default	disabled

GROUP Sgsn Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for this component.
Mib	WirelessSgsn

ATTRIBUTE Sgsn currentImsiMasks (imsiMasks)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of *ImsiMask* components currently provisioned on the Serving GPRS Support Node (SGSN or USGSN).
Mib	WirelessSgsn
Values	Decimal (0..500)
Default	No default

GROUP Sgsn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessSgsn

ATTRIBUTE Sgsn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or

Lock command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: WirelessSgsn

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Sgsn operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: WirelessSgsn

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Sgsn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	WirelessSgsn
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Sgsn availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: WirelessSgsn

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Sgsn proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been

initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: WirelessSgsn

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Sgsn controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: WirelessSgsn

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Sgsn alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: WirelessSgsn

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Sgsn standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	WirelessSgsn
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Sgsn unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	WirelessSgsn
Values	false true
Default	false

COMPONENT Sgsn GprsSubscriberControl (Gsc)

Groups	"GROUP Sgsn Gsc MapClientProv (Mc)" "GROUP Sgsn Gsc GmmProv (Gmm)" "GROUP Sgsn Gsc HlrCacheProv (HlrC)" "GROUP Sgsn Gsc SmProv (Sm)" "GROUP Sgsn Gsc GtpProv (Gtp)" "GROUP Sgsn Gsc GtpPathMgmtProv (GtpPm)" "GROUP Sgsn Gsc BssapProv (Bssap)" "GROUP Sgsn Gsc SmsProv (Sms)" "GROUP Sgsn Gsc BssapSccpUserInfoProv (BssapSccp)" "GROUP Sgsn Gsc SsfGlobalProv (Ssf)" "GROUP Sgsn Gsc MobileSubscriberPurge (MsPurge)"
Scope	Application

Description	*Sgsn GprsSubscriberControl* This component represents the GPRS Mobility Management (GMM), the Session Management (SM), the GPRS Tunneling Protocol (GTP) control path protocol layers of GPRS, the *MapClient* entity, and the *HlrCache* entity.
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Gsc MapClientProv (Mc)

Properties	Provisioned
Description	This group contains the common provisionable attributes for the *MapClient* subcomponents of *GprsSubscriberControl* on the FPs. The *MapClient* subcomponent provides Mobile Application Part (MAP) over SS7 to interact with the Home Location Register (HLR) via the SS7-IP Gateway.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsc mcTimer (tMc)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the *MapClient* allows for a response from the Home Location Register (HLR). The timer is started when messages MAP-SEND AUTHENTICATION INFO, stand-alone MAP-INSERT SUBSCRIBER DATA, MAP-UPDATE GPRS LOCATION, MAP-PURGE MS, or READY-FOR-SMS are sent to the HLR. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU) and greater than all the timers provisioned in the *MapStack* component for messages sent to the HLR.
Mib	WirelessSgsn

Values	Decimal (1..32)
Units	seconds
Default	27

ATTRIBUTE Sgsn Gsc uglRetries (nUgl)

Access	Read: All Write: All
Description	This attribute specifies the times the Serving GPRS Support Node (SGSN) can send the MAP-UPDATE GPRS LOCATION to the Home Location Register (HLR) upon no reception of the MAP-UPDATE GPRS LOCATION ACK.
Mib	WirelessSgsn
Values	Decimal (0..4)
Default	1

ATTRIBUTE Sgsn Gsc saiRetries (nSai)

Access	Read: All Write: All
Description	This attribute specifies the times the Serving GPRS Support Node (SGSN) can send the MAP-SEND AUTHENTICATION INFO to the Home Location Register (HLR) upon no reception of the MAP-SEND AUTHENTICATION INFO ACK.
Mib	WirelessSgsn
Values	Decimal (0..4)
Default	1

ATTRIBUTE Sgsn Gsc mcFallbackTimer (tFbMc)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Client allows to reset the MAP Client Fallback Table. The Fallback Table is used by the MAP Client to track the messaging version supported

	by each Home Location Register (HLR). If the *mcFallbackTimer* attribute changes or the timer expires, the Fallback Table is deleted and the messaging version is renegotiated with each HLR. The timer is also restarted with either the existing timeout value if the timer expired or the modified value if the value was modified. If the timer is set to ***disabled***, the timer is not started and the Fallback Table is not deleted. Message version renegotiation with the HLR does not take place until the timer is set to a value other than ***disabled***.
Mib	WirelessSgsn
Values	Decimal (1..365) disabled
Units	days
Default	30

ATTRIBUTE Sgsn Gsc mscEmulationMode (mscEmMode)

Access	Read: All Write: All
Description	This attribute specifies whether the SGSN should emulate an MSC when messaging with the Short Message Service Center (SMSC). Currently the MAP specification requires that the MSC SubSystem Number (SSN) be used in the Calling Party Address (CgPA) when the SGSN addresses an entity that does not support inter-working with the SGSN. When this attribute is set to ***on***, the SGSN emulates an MSC when messaging with the SMSC. The SMSC is either the Short Message Service Interworking MSC (SMS-IWMSC) or the Short Message Service Gateway MSC (SWS-GMSC). When this attribute is set to ***off***, the SGSN's SSN is used when messaging with the SMSC.
Mib	WirelessSgsn

Values	off on
Default	off

ATTRIBUTE Sgsn Gsc mscSubsystemNumber (mscSubsysNum)

Access	Read: All Write: All
Description	This attribute specifies the MAP SGSN SSN. This SSN is only used if the *mscEmulationMode* attribute is set to ***on***. Otherwise this attribute is ignored. If this attribute is changed after the MAP Client has registered with the MAP Stack, any outstanding MAP transactions is lost.
Mib	WirelessSgsn
Values	Decimal (1..255)
Default	8

GROUP Sgsn Gsc GmmProv (Gmm)

Properties	Provisioned
Description	This group contains system-wide provisionable attributes to provide the GPRS Mobility Management (GMM) functionality of *GprsSubscriberControl (Gsc)*.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsc readyTimer (t3314)

Access	Read: All Write: All
Description	This attribute specifies the READY Timer (T3314) for GPRS Mobility Management (GMM) state transition. The timer is restarted whenever a signaling or data Protocol Data Unit (PDU) is received from the Mobile Station (MS). In the event of *readyTimer* expiry, the *gmmState* (defined in *MobilityContext*) transitions to ***standby*** state.

The value of the READY Timer is used by both the MS and the Serving GPRS Support Node (SGSN). It is negotiated between the MS and the SGSN. There are three possible values of the READY Timer: ***useMsValue***, ***forceStandby***, and normal timer values. The normal timer values should be a multiple of 2 (seconds), 60 (1 minute) or 360 (6 minutes) which are the only units supported for READY Timer.

If the value is set to the ***useMsValue***, the value sent by the MS is used as the READY Timer. However, if the value is set to ***useMsValue*** and the MS attempts to cancel the READY Timer, the SGSN overrides the cancel attempt by using the ***forceStandby*** value. The ***forceStandby*** value causes the *gmmState* attribute to immediately transition to ***standby*** state after the Attach Complete message is received by the SGSN. For all transactions that follow, the default value for this attribute is used.

All other values of this attribute cause both the SGSN and MS to use this value. The MS cannot negotiate it. The *readyTimer* value should be at least 10% greater than the *t200RetransmitTimer* provisioned in the *SapiControl* component.,except when *readyTimer* is set to ***forceStandby*** or ***useMsValue***.

The negotiated value for the *readyTimer* for an MS can be displayed in the *MobilityContext* component.

The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).

Mib	WirelessSgsn
Values	Decimal (1..11160) useMsValue forceStandby
Units	seconds
Default	44

ATTRIBUTE Sgsn Gsc mobileReachableTimer (tReachable)

Access	Read: All Write: All
Description	This attribute specifies the MOBILE REACHABLE Timer for the GPRS Mobility Management (GMM) state transition. The timer value must be at least four minutes longer than the longest *periodicRaUpdateTimer* (defined in component *Sgsn MobileCountryCode/<Mcc> MobileNetworkCode/<Mnc> LocationAreaCode/<Lac> RoutingAreaCode/<Rac>)*. The MOBILE REACHABLE Timer is started when the Mobile Station (MS) drops from Ready state to Standby state or when the MS is forced to Standby state. In the event of *mobileReachableTimer* expiry, the GMM starts the *implicitDetachTimer.* The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (0..255)
Units	minutes
Default	58

ATTRIBUTE Sgsn Gsc implicitDetachTimer (tImplicit)

Access	Read: All Write: All
Description	This attribute specifies the timer value used by the GPRS Mobility Management (GMM) for the removal of GMM context in an implicit detach after the *mobileReachableTimer* has expired. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn

Values	Decimal (0..255)
Units	minutes
Default	0

ATTRIBUTE Sgsn Gsc pagingTimer (t3313)

Access	Read: All Write: All
Description	This attribute specifies the timer used for the GPRS Paging procedure. Upon expiry of the *pagingTimer*, if the Paging procedure is not completed, the GPRS Paging procedure is restarted for a maximum of *pagingRetries (n3313)*. The value of the attribute *rpResponseTimer* cannot be less than the sum of the maximum number of *cpResponseRetries(tc1nRet)* multiplied by the *cpResponseTimer(tc1n)* value plus the maximum number of *pagingRetries (n3313)* multiplied by the *pagingTimer (t3313)* value. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..255)
Units	seconds
Default	8

ATTRIBUTE Sgsn Gsc pagingRetries (n3313)

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the *pagingTimer (t3313)* expires. The value of the attribute *rpResponseTimer* cannot be less than the sum of the maximum number of *cpResponseRetries(tc1nRet)* multiplied by the *cpResponseTimer(tc1n)* value plus the

	maximum number of *pagingRetries (n3313)* multiplied by the *pagingTimer (t3313)* value.
Mib	WirelessSgsn
Values	Decimal (0..4)
Default	1

ATTRIBUTE Sgsn Gsc nwkInitiatedDetachTimer (t3322)

Access	Read: All Write: All
Description	This attribute specifies the timer used in the Network-Initiated Detach procedure. Upon expiry of *nwkInitiatedDetachTimer*, if the Detach procedure is not completed, the Network-Initiated Detach procedure is restarted for a maximum of *nwkInitDetachRetries (n3322)*. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..255)
Units	seconds
Default	6

ATTRIBUTE Sgsn Gsc nwkInitDetachRetries (n3322)

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the *nwkInitiatedDetachTimer (t3322)* expires.
Mib	WirelessSgsn
Values	Decimal (0..8)
Default	4

ATTRIBUTE Sgsn Gsc idRequestTimer (t3370)

Access	Read: All Write: All
Description	This attribute specifies the timer used in Identification procedure. Upon expiry of the *idRequestTimer*, if the Identification procedure is not finished, the identification procedure is restarted for a maximum of *idRequestRetries (n3370)*. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..255)
Units	seconds
Default	6

ATTRIBUTE Sgsn Gsc idRequestRetries (n3370)

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the *idRequestTimer (t3370)* expires.
Mib	WirelessSgsn
Values	Decimal (0..8)
Default	4

ATTRIBUTE Sgsn Gsc ptmsiReallocTimer (t3350)

Access	Read: All Write: All
Description	This attribute specifies the timer used in the Packet-Temporary Mobile Subscriber Identity (P-TMSI) Reallocation procedure. The P-TMSI reallocation procedure can also be performed within the Attach or Routing Area Update procedures, as well. Upon expiry of the *ptmsiReallocTimer*, if the P-TMSI

	Reallocation procedure is not finished, P-TMSI Reallocation procedure is restarted for a maximum of *ptmsiReallocRetries (n3350)*. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..255)
Units	seconds
Default	6

ATTRIBUTE Sgsn Gsc ptmsiReallocRetries (n3350)

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the *ptmsiReallocTimer (t3350)* expires.
Mib	WirelessSgsn
Values	Decimal (0..8)
Default	4

ATTRIBUTE Sgsn Gsc authCipheringTimer (t3360)

Access	Read: All Write: All
Description	This attribute specifies the timer used in Authentication and Ciphering procedure. Upon expiry of the *t3360* timer, if the Authentication and Ciphering procedure is not finished, this procedure is restarted for a maximum of *authCipheringRetries (n3360)*. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).

Mib	WirelessSgsn
Values	Decimal (1..255)
Units	seconds
Default	6

ATTRIBUTE Sgsn Gsc authCipheringRetries (n3360)

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the *authCipheringTimer (t3360)* expires.
Mib	WirelessSgsn
Values	Decimal (0..8)
Default	4

ATTRIBUTE Sgsn Gsc authEvents (authEvents)

Access	Read: All Write: All
Description	This attribute specifies the number, N, which indicates that at every Nth event requiring authentication, the Authentication procedure is initiated with the mobile subscriber. For example, when this value is set to ***never***, the Authentication procedure is never performed, when the value is set to ***1***, the Authentication procedure is performed every time an event that triggers authentication occurs. The provisioning of any other value N for this attribute indicates that every Nth event that can be authenticated undergoes this Authentication procedure. This parameter is not per Mobile Station (MS); rather, it is used to count events over all the affected procedures per *GprsSubscriberControl (Gsc)*.
Mib	WirelessSgsn

Values	Decimal (1..255) never
Default	20

ATTRIBUTE Sgsn Gsc subsRegisterRecoveryUpdateTimer (tSubsReg)

Access	Read: All Write: All
Description	This attribute specifies the maximum recovery delay time used by the SGSN to re-create the association between the Home Location Register (HLR), in the case of the HLR Reset, or VLR, in the case of VLR Reset, and a Mobile Station (MS). The timer is started on a receipt of a valid LLC frame from the MS following the Reset HLR or VLR to which this MS is attached. When the timer expires the appropriate procedure is initiated by the GPRS Mobility Management (GMM). The actual timer used is a randomized value less than this value in order to distribute the traffic to HLR or VLR after an HLR or VLR Reset. In the case of an HLR Reset, a MAP-UPDATE GPRS LOCATION (UGL) is performed and in the case of a VLR Reset a MAP-LOCATION UPDATE is performed.
Mib	WirelessSgsn
Values	Decimal (0..10)
Units	seconds
Default	5

ATTRIBUTE Sgsn Gsc t3TunnelTimer (t3Tunnel)

Access	Read: All Write: All
Description	This attribute specifies the time that the old SGSN will continue to forward packets to the new SGSN during an Inter SGSN Routing Area Update (IRAU). The timer is started in the old SGSN when it receives a GTP SGSN CONTEXT REQUEST message and there is at least one active Packet Data Protocol (PDP) context.

Mib	WirelessSgsn
Values	Decimal (1..40)
Units	seconds
Default	20

ATTRIBUTE Sgsn Gsc cipheringAlgorithms (ciphAlgo)

Access	Read: All Write: All
Description	This attribute specifies the Ciphering Algorithms supported on this Serving GPRS Support Node (SGSN) in descending order of preference. The mobile provides a list of the ciphering algorithms it supports to the SGSN. The SGSN compares the mobile provided values with the values listed in this attribute. The first value provisioned in this attribute that is also in the mobile provided list is chosen as the ciphering algorithm for use in communicating with this mobile. The ciphering algorithms supported are: ***noCiphering*** - No ciphering is used. ***geav1*** - GPRS algorithm is performed.
Mib	WirelessSgsn
Vector of	noCiphering geav1
Index	Decimal (1..2)
Default	(noCiphering, noCiphering)

GROUP Sgsn Gsc HlrCacheProv (HlrC)

Properties	Provisioned
Description	This group contains system-wide provisioning data for the *HlrCache* functionality of the *GprsSubscriberControl (Gsc)*.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsc authTripletsReuse (authTrip)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times each Authentication Triplet can be reused when authenticating a subscriber. The reuse of the Authentication Triplets is done only in abnormal situations, when new triplets cannot be received from the Home Location Register (HLR) due to connectivity breakdown between the Serving GPRS Support Node (SGSN) and the HLR.
Mib	WirelessSgsn
Values	Decimal (0..5000)
Default	5000

GROUP Sgsn Gsc SmProv (Sm)

Properties	Provisioned
Description	This group contains system-wide provisioning data for the Session Management (SM) functionality of the *GprsSubscriberControl (Gsc)*.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsc nwkPdpDeactTimer (t3395)

Access	Read: All Write: All
Description	This attribute specifies the timer value used in the Serving GPRS Support Node (SGSN) or in the Gateway GPRS Support Node (GGSN) initiated Packet Data Protocol (PDP) Context Deactivation procedures. This timer is started when a DEACTIVATE PDP CONTEXT REQUEST message is sent to the Mobile Station (MS) and is stopped when a DEACTIVATE PDP CONTEXT ACCEPT message is received from the MS. If this timer expires before the receipt of a DEACTIVATE PDP CONTEXT ACCEPT message,

	the SGSN or GGSN initiated PDP Context deactivation procedure is retried for a maximum of *nwkPdpDeactRetries*. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..255)
Units	seconds
Default	8

ATTRIBUTE Sgsn Gsc nwkPdpDeactRetries (t3395Retry)

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the *nwkPdpDeactTimer (t3395)* expires during a Serving GPRS Support Node (SGSN) or a Gateway GPRS Support Node (GGSN)-initiated PDP Context Deactivation procedure.
Mib	WirelessSgsn
Values	Decimal (0..4)
Default	4

ATTRIBUTE Sgsn Gsc defApnOperatorId (defApnOp)

Access	Read: All Write: All
Description	This attribute specifies the default Access Point Name (APN) Operator Identifier for this Public Land Mobile Network (PLMN). It is a fully qualified domain name according to the Domain Name System (DNS) naming conventions and consists of three labels (that is, <DNS-label>.<DNS-label>.gprs). It is expected that the operator uses this attribute to fill in a human-readable format of the APN Operator Identifier (that is, an APN Operator Identifier not in the mnc<MNC digits>.mcc<MCC digits>.gprs format).

Its use includes being the VPLMN APN Operator Identifier as defined in specification 23.060 Annex A or any other text clarifying its use.

A value of *defApnOperatorId* is used when an ACTIVATE PDP CONTEXT REQUEST message is received from an MS. If the MS sends an APN Operator Identity that is not in the format “mnc<MNC>.mcc<MCC>.gprs” and if it is not the same as the provisioned *defApnOperatorId* then it is assumed that the received APN Operator Identifier does not belong to this PLMN. The ACTIVATE PDP CONTEXT REQUEST message is then rejected.

The selected APN Operator identifier for a particular session can be displayed as part of the *selectedApnOperatorId* attribute (defined in *SessionContext*).

Mib: WirelessSgsn

Values: String (1..37, ASCII)

Default: " "

ATTRIBUTE Sgsn Gsc nwkPdpModifyTimer (t3386)

Access: Read: All
Write: All

Description: This attribute specifies the timer value used in the Serving GPRS Support Node (SGSN) initiated Packet Data Protocol (PDP) Context Modification procedures.

This timer is started when a MODIFY PDP CONTEXT REQUEST message is sent to the Mobile Station (MS) and is stopped when a MODIFY PDP CONTEXT ACCEPT message is received from the MS. If this timer expires before the receipt of a MODIFY PDP CONTEXT ACCEPT message, the PDP Context modification procedure is retried for a maximum of *nwkPdpModifyRetries*.

The timer must be provisioned to a value that is greater than the

	maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..255)
Units	seconds
Default	8

ATTRIBUTE Sgsn Gsc nwkPdpModifyRetries (n3386)

Access	Read: All Write: All
Description	This attribute specifies the number of times the SGSN, while acting as the new SGSN, resends a MODIFY PDP CONTEXT REQUEST message to the Mobile Station (MS) if the *nwkPdpModifyTimer* expires while the MS is undergoing an Inter-SGSN Routing Area Update (IRAU). If this attribute is exhausted, the *nwkPdpModifyRetriesExhausted* attribute will be incremented.
Mib	WirelessSgsn
Values	Decimal (1..20)
Default	4

ATTRIBUTE Sgsn Gsc defApnNetworkId (defApnNwk)

Access	Read: All Write: All
Description	This attribute specifies the default Access Point Name (APN) Network Identifier for different Packet Data Protocol (PDP) types. It is a label (for example “corporation”) or a set of labels separated by dots, which is a fully qualified domain name according to the Domain Name System (DNS) naming conventions (for example, “company.com”). The *defApnNetworkId* must not start with the strings “rac”, “lac” or “sgsn” and it must not end in “.gprs”. It must also not take the value “*”. In order to guarantee uniqueness of the APN Network

Identifier across all GPRS PLMNs, an APN Network Identifier containing more than one label corresponds to an Internet domain name. This name must only be allocated by the Public Land Mobile Network (PLMN) to an organization that has officially reserved this name in the Internet domain. Other types of APN Network Identifiers are not guaranteed to be unique within the GPRS PLMN(s).

This *defApnNetworkId* is used if the Mobile Station (MS) does not send the APN Network Identifier as part of the ACTIVATE PDP CONTEXT REQUEST and if its subscription record received from the HLR has a wildcard (*) APN. If the defApnNetworkId is not entered in such a case, the ACTIVATE PDP CONTEXT REQUEST
message is then rejected.

The selected APN Network Identifier for a particular session can be displayed as part of the *selectedApnNetworkId* attribute (defined in *SessionContext*).

Mib	WirelessSgsn
Vector of	String (0..63, ASCII)
Index	x25 ip ppp
Default	([0] "", [1] "", [2] "")

GROUP Sgsn Gsc GtpProv (Gtp)

Properties	Provisioned
Description	This group contains provisionable attributes to define the GPRS Tunneling Protocol (GTP) provisioning function of the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsc n3CreateRequest (n3CrReq)

Access	Read: All Write: All

Description	This attribute specifies the maximum number of attempts made by the GPRS Tunneling Protocol (GTP) to send the CREATE PDP CONTEXT REQUEST message to a Gateway GPRS Support Node (GGSN). It is recommended that the total wait time (that is, the product of *n3CreateRequest* and *t3CreateResponse*) is to be shorter than the Mobile Station (MS) wait time between retries of ATTACH and RA-UPDATE messages.
Mib	WirelessSgsn
Values	Decimal (1..10)
Default	5

ATTRIBUTE Sgsn Gsc t3CreateResponse (t3CrResp)

Access	Read: All Write: All
Description	This attribute specifies the maximum wait time for a response of a CREATE PDP CONTEXT REQUEST message. It is recommended that the total wait time (that is, the product of *n3CreateRequest* and *t3CreateResponse*) is to be shorter than the Mobile Station (MS) wait time between retries of ATTACH and RA-UPDATE messages. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU) from this Serving GPRS Support Node (SGSN) to any Gateway GPRS Support Node (GGSN).
Mib	WirelessSgsn
Values	Decimal (1..30)
Units	seconds
Default	5

ATTRIBUTE Sgsn Gsc n3DeleteRequest (n3DelReq)

Access	Read: All Write: All

Description	This attribute specifies the maximum number of attempts made by the GPRS Tunneling Protocol (GTP) to send the DELETE PDP CONTEXT REQUEST message to the Gateway GPRS Support Node (GGSN). It is recommended that the total wait time (that is, the product of *n3DeleteRequest* and *t3DeleteResponse*) is to be shorter than the Mobile Station (MS) wait time between retries of ATTACH and RA-UPDATE messages.
Mib	WirelessSgsn
Values	Decimal (1..10)
Default	5

ATTRIBUTE Sgsn Gsc t3DeleteResponse (t3DelResp)

Access	Read: All Write: All
Description	This attribute specifies the maximum wait time for a response of a DELETE PDP CONTEXT REQUEST message from the Gateway GPRS Support Node (GGSN). It is recommended that the total wait time (that is, the product of *n3DeleteRequest* and *t3DeleteResponse*) is to be shorter than the Mobile Station (MS) wait time between retries of ATTACH and RA-UPDATE messages. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..30)
Units	seconds
Default	5

ATTRIBUTE Sgsn Gsc n3EchoRequest (n3EcReq)

Access	Read: All Write: All

Description	This attribute specifies the maximum number of attempts made by the GPRS Tunneling Protocol (GTP) to send the ECHO REQUEST message to the Gateway GPRS Support Node (GGSN).
Mib	WirelessSgsn
Values	Decimal (1..10)
Default	5

ATTRIBUTE Sgsn Gsc t3EchoResponse (t3EcResp)

Access	Read: All Write: All
Description	This attribute specifies the maximum wait time for a response of a ECHO REQUEST message from the Gateway GPRS Support Node (GGSN). The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (5..600)
Units	seconds
Default	60

ATTRIBUTE Sgsn Gsc n3SgsnContextRequest (n3CntxtReq)

Access	Read: All Write: All
Description	This attribute specifies the number of times that this SGSN, while acting as the new SGSN, sends the SGSN CONTEXT REQUEST message while the Mobile Station (MS) is undergoing an Inter-SGSN Routing Area Update (IRAU).
Mib	WirelessSgsn
Values	Decimal (1..20)
Default	5

ATTRIBUTE Sgsn Gsc t3SgsnContextResponse (t3CntxtResp)

Access	Read: All Write: All
Description	This attributes specifies the time that this SGSN, while acting as the new SGSN, waits for an SGSN CONTEXT RESPONSE message from the SGSN which is acting as old SGSN while the Mobile Station (MS) is undergoing an Inter-SGSN Routing Area Update (IRAU). The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..20)
Units	seconds
Default	5

ATTRIBUTE Sgsn Gsc n3UpdateRequest (n3UpdateReq)

Access	Read: All Write: All
Description	This attribute specifies the number of times that this SGSN, while acting as the new SGSN, sends an UPDATE PDP CONTEXT REQUEST message to the Gateway GPRS Support Node (GGSN) while the Mobile Station (MS) is undergoing an Inter-SGSN Routing Area Update (IRAU).
Mib	WirelessSgsn
Values	Decimal (1..20)
Default	5

ATTRIBUTE Sgsn Gsc t3UpdateResponse (t3UpdateResp)

Access	Read: All Write: All

Description	This attributes specifies the time that this SGSN, while acting as the new SGSN, waits for an UPDATE PDP CONTEXT REPONSE message from the Gateway GPRS Support Node (GGSN) while the Mobile Station (MS) is undergoing an Inter-SGSN Routing Area Update (IRAU). The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..20)
Units	seconds
Default	5

ATTRIBUTE Sgsn Gsc gtpV0Version (gtpVer)

Access	Read: All Write: All
Description	This attribute specifies the version of 3GPP specification 09.60 GPRS Tunnelling Protocol (GTP) across the Gn and Gp interfaces that the Serving GPRS Support Node (SGSN) is compliant with. This attribute is applicable only to GTP version 0, which is used if the Release 99 compliant GTP version 1 cannot be negotiated with a neighboring Gprs Support Node (GSN). This attribute is important for network operators because SGSNs that support v7.6 cannot perform Inter SGSN Routing Area Updates (IRAUs) with SGSNs that support version v7.3 due to non-backwards compatible changes present in the GTP specification. If the value of this attribute is set to ***ver7-3,*** this SGSN supports version 7.3 of 09.60 and can perform IRAUs with other SGSNs supporting this same version of the specification. If the value of this attribute is set to ***ver7-6***, this SGSN supports version 7.6 of 09.60 and can perform IRAUs with other SGSNs supporting this same version of the specification.

Mib	WirelessSgsn
Values	ver7-3 ver7-6
Default	ver7-3

GROUP Sgsn Gsc GtpPathMgmtProv (GtpPm)

Properties	Provisioned
Description	This group contains provisionable attributes to define the GPRS Tunneling Protocol (GTP) provisioning function of the Serving GPRS Support Node (SGSN). This includes the Tunnel Management and the Path Management functionalities.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsc echoRequest (echoReq)

Access	Read: All Write: All
Description	This attribute specifies whether the ECHO REQUEST message is to be sent out for signaling path to the Gateway GPRS Support Node (GGSN) node.
Mib	WirelessSgsn
Values	disable enable
Default	disable

ATTRIBUTE Sgsn Gsc echoTimeInterval (echoInt)

Access	Read: All Write: All
Description	This attribute specifies the time interval at which ECHO REQUESTS are sent on a signaling path in use from the Serving GPRS Support Node (SGSN) to the Gateway GPRS Support Node (GGSN).
Mib	WirelessSgsn

Values	Decimal (1..300)
Units	minutes
Default	10

ATTRIBUTE Sgsn Gsc maxGgsnPaths (maxPaths)

Access	Read: All Write: Debug
Description	This attribute specifies the maximum number of managed paths that can be setup between this Serving GPRS Support Node (SGSN) and the Gateway GPRS Support Nodes (GGSNs). Each path contains one or more tunnels which may be used by, for example, PDP Contexts. It is possible to have more paths than specified by the *maxGgsnPaths*, but those exceeded are not managed paths (for example, cannot do echo). The peak number of transactions can be obtained from the attribute *peakGgsnPaths* (defined in *Gsc GtpMgmt*).
Mib	WirelessSgsn
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Sgsn Gsc pathHistoryExpireTimeInterval (pathHistExpInt)

Access	Read: All Write: All
Description	This attribute specifies the time interval at which the path history is reset. When the value is set to ***disabled***, it is never reset.
Mib	WirelessSgsn
Values	Decimal (1..300) disabled

Units	minutes
Default	10

GROUP Sgsn Gsc BssapProv (Bssap)

Properties	Provisioned
Description	This group contains the Base Station System Application Part + (BSSAP+) provisioning data of the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsc locationUpdateTimer (tLocUpd)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the Base Station System Application Part + (BSSAP+) allows for a response from the Visitor Location Register (VLR) when BSSAP+_LOCATION_UPDATE_REQUEST messages are sent to the VLR. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (10..90)
Units	seconds
Default	15

ATTRIBUTE Sgsn Gsc explicitGprsDetachTimer (t8)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the Base Station System Application Part + (BSSAP+) allows for a response from the Visitor Location Register (VLR) when

BSSAP+_GPRS_DETACH_INDICATION messages are sent to the VLR.

The count of timeouts can be viewed in the *t8Timeouts* attribute (defined in *Gsc Bssap*).

The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).

Mib	WirelessSgsn
Values	Decimal (1..30)
Units	seconds
Default	4

ATTRIBUTE Sgsn Gsc explicitGprsDetachRetries (n8)

Access	Read: All Write: All
Description	This attribute specifies the number of times the Serving GPRS Support Node (SGSN) can send the BSSAP+_GPRS_DETACH_INDICATION to the Visitor Location Register (VLR) upon no reception of the BSSAP+_GPRS_DETACH_ACK. If the maximum number of retries is reached, BSSAP+ increments the *gprsDetachMaxAttempts* attribute (defined in *Gsc BaseStationSystemApplPart*).
Mib	WirelessSgsn
Values	Decimal (0..8)
Default	2

ATTRIBUTE Sgsn Gsc explicitImsiDetachTimer (t9)

Access	Read: All Write: All

Description	This attribute specifies the amount of time the Base Station System Application Part + (BSSAP+) allows for a response from the Visitor Location Register (VLR) when explicit BSSAP+_IMSI_DETACH_INDICATION messages are sent to the VLR. The count of timeouts can be viewed in *t9Timeouts* attribute (defined in *Gsc Bssap*). The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..30)
Units	seconds
Default	4

ATTRIBUTE Sgsn Gsc explicitImsiDetachRetries (n9)

Access	Read: All Write: All
Description	This attribute specifies the number of times the Serving GPRS Support Node (SGSN) can send the explicit BSSAP+_IMSI_DETACH_INDICATION to the Visitor Location Register (VLR) upon no reception of the BSSAP+_IMSI_DETACH_ACK. If the maximum number of retries is reached, BSSAP+ increments the *explicitImsiDetachMaxAttempts* attribute (defined in *Gsc BaseStationSystemApplPart*).
Mib	WirelessSgsn
Values	Decimal (0..9)
Default	2

ATTRIBUTE Sgsn Gsc implicitImsiDetachTimer (t10)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the Base Station System Application Part + (BSSAP+) allows for a response from the Visitor Location Register (VLR) when implicit BSSAP+_IMSI_DETACH_INDICATION messages are sent to the VLR. The count of timeouts can be viewed in *t10Timeouts* attribute (defined in *Gsc Bssap*). The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..30)
Units	seconds
Default	4

ATTRIBUTE Sgsn Gsc implicitImsiDetachRetries (n10)

Access	Read: All Write: All
Description	This attribute specifies the number of times the Serving GPRS Support Node (SGSN) can send the BSSAP+_IMSI_DETACH_INDICATION to the Visitor Location Register (VLR) upon no reception of the BSSAP+_IMSI_DETACH_ACK. If the maximum number of retries is reached, BSSAP+ increments the *implicitImsiDetachMaxAttempts* attribute (defined in *Gsc BaseStationSystemApplPart*).
Mib	WirelessSgsn

Values	Decimal (0..10)
Default	2

ATTRIBUTE Sgsn Gsc sgsnResetTimer (t12)

Access	Read: All Write: All
Description	This attribute specifies the T12-2 Timer that is the amount of time the Base Station System Application Part + (BSSAP+) allows for a response from the Visitor Location Register (VLR) when BSSAP+_RESET_INDICATION messages are sent to the VLR. This message is sent when a *Gsc* recovers following a card failure. The count of timeouts can be viewed in *t12Timeouts* attribute (defined in *Gsc Bssap*). The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..120)
Units	seconds
Default	4

ATTRIBUTE Sgsn Gsc sgsnResetRetries (n12)

Access	Read: All Write: All
Description	This attribute specifies the number of times the Base Station System Application Part + (BSSAP+) can send the BSSAP+_RESET_INDICATION to the Visitor Location Register (VLR) upon no reception of the BSSAP+_RESET_ACK. If the maximum number of retries is reached, BSSAP+

	increments the *sgsnResetMaxAttempts* attribute (defined in *Gsc BaseStationSystemApplPart*).
Mib	WirelessSgsn
Values	Decimal (0..12)
Default	2

GROUP Sgsn Gsc SmsProv (Sms)

Properties	Provisioned
Description	This group contains the Short Message Service (SMS) provisioning data of the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsc cpResponseTimer (tc1n)

Access	Read: All Write: All
Description	This attribute specifies the TC1N timer that is the amount of time the Short Message Service (SMS) allows for a CP-ACK or CP-ERROR response from the Mobile Station (MS) when a CP-DATA message is sent to the MS. This timer is used in mobile originated and mobile terminated transactions. When this timer expiries, the SMS re-sends the CP-DATA message up to the maximum number of *cpResponseRetries*. Once the maximum number of *cpResponseRetries* is reached, the outstanding transaction is aborted. The value of the attribute *rpResponseTimer* cannot be less than the sum of the maximum number of *cpResponseRetries(tc1nRet)* multiplied by the *cpResponseTimer(tc1n)* value plus the maximum number of *pagingRetries (n3313)* multiplied by the *pagingTimer (t3313)* value. The count of the *cpResponseTimer* expiries due to the maximum number of *cpResponseRetries* can be viewed in *cpResponseExhaust* attribute (defined in *Gsc ShortMessageService*).

	The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU) but less than the *rpResponseTimer*.
Mib	WirelessSgsn
Values	Decimal (1..60)
Units	seconds
Default	20

ATTRIBUTE Sgsn Gsc cpResponseRetries (tc1nRet)

Access	Read: All Write: All
Description	This attribute specifies the number of times the Short Message Service (SMS) sends the CP-DATA message to the Mobile Station (MS) when a CP-ACK or CP-ERROR message is not received. The value of the attribute *rpResponseTimer* cannot be less than the sum of the maximum number of *cpResponseRetries(tc1nRet)* multiplied by the *cpResponseTimer(tc1n)* value plus the maximum number of *pagingRetries (n3313)* multiplied by the *pagingTimer (t3313)* value.
Mib	WirelessSgsn
Values	Decimal (1..3)
Default	3

ATTRIBUTE Sgsn Gsc rpResponseTimer (tr1n)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the Short Message Service (SMS) allows for a RP-ACK or RP-ERROR response from the Mobile Station (MS) when a CP-DATA message is sent to the MS in a Mobile Terminated (MT) transaction. When this timer expiries, the MT transaction is aborted.

	The value of this attribute cannot be less than the sum of the maximum number of *cpResponseRetries(tc1nRet)* multiplied by the *cpResponseTimer(tc1n)* value plus the maximum number of *pagingRetries (n3313)* multiplied by the *pagingTimer (t3313)* value.
Mib	WirelessSgsn
Values	Decimal (8..333)
Units	seconds
Default	79

ATTRIBUTE Sgsn Gsc iwmscResponseTimer (tr2n)

Access	Read: All Write: All
Description	This attribute specifies the TR2N timer that is the amount of time the Short Message Service (SMS) allows for a MOBILE ORIGINATED (MO)-FORWARD SHORT MESSAGE ACK response from the Service Center when a MO-FORWARD SHORT MESAGE message is sent to the Mobile Station (MS) in a MO transaction. When this timer expiries, the MO transaction is aborted. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (33..1803)
Units	seconds
Default	33

GROUP Sgsn Gsc BssapSccpUserInfoProv (BssapSccp)

Properties	Provisioned

Description	This group contains provisionable attributes that applied to all instances of the *Bssap* component. These attributes specify SCCP user information.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsc bssapCgpaRoutingIndicator (bssapRtInd)

Access	Read: All Write: All
Description	This attribute specifies whether routing is performed using the Global Title (GT) only or Subsytem Number (SSN) and Point Code (PC). The value of this attribute must match the Routing Indicator of the VLR. The CgPA (Calling Party Address) routing indicator values supported are: ***globalTitle-*** BSSAP subsystem sets the CgPA routing Indicator to route on Global Title and supplies Global Title information. ***pointCode -*** BSSAP subsystem sets the CgPA routing Indicator to route on Point Code and supplies the Subsystem Number and Point Code in the CgPA.
Mib	WirelessSgsn
Values	globalTitle (gt) pointCode (pc)
Default	globalTitle

ATTRIBUTE Sgsn Gsc bssapSubsystemNumber (bssapSsn)

Access	Read: All Write: All
Description	This attribute specifies the BSSAP client subsystem number used in SCCP message headers. This attribute can be changed if the operator wants to isolate his network. The value of this attribute must match the Subsystem Number of the VLR and MSC.
Mib	WirelessSgsn

Values	Decimal (1..255)
Default	254

ATTRIBUTE Sgsn Gsc bssapNatureOfAddress (bssapNatOfAddr)

Access	Read: All Write: All
Description	This attribute specifies the Nature of Address for Global Titles used in the CgPA (Calling Party Address) and CdPA (Called Party Address) fields of SCCP message headers. This attribute directly maps to the Nature of Address parameter of the SCCP CgPA or CdPA described in SCCP specifications and located in ITU-T Q.713 section 3.4.2.3.1 (7-1996). It is used to qualify the type of Global Title address digits. The values supported for the Nature of Address are: ***subscriberNumber* -** [1] corresponding to the ITU value 1. ***reserveNationalUse* -** [2] corresponding to the ITU value 2. ***nationalSpecificNumber* -** [3] corresponding to the ITU value 3. ***internationalNumber* -** [4] corresponding to the ITU value 4. The values 5-255 are currently not defined by ITU standards but future standards may define them.
Mib	WirelessSgsn
Values	Decimal (5..255) subscriberNumber reserveNationalUse nationalSpecificNumber internationalNumber
Default	internationalNumber

ATTRIBUTE Sgsn Gsc bssapE164TransType (bssapE164)

Access	Read: All Write: All

Description	This attribute specifies the Global Title translation type used for E.164 Numbering Plan global titles. The Global Title translation types supported are: ***ituNetwork-*** The Global Title translation type is ITU or ITU Chinese. [0] corresponding to the ITU value 0. ***ansiNetwork-*** The Global Title translation type is ANSI Network. [10] corresponding to the ANSI value 10. The values 1-9 and 11-255 may be defined by future standards.
Mib	WirelessSgsn
Values	Decimal (1..9; 11..255) ituNetwork ansiNetwork
Default	ituNetwork

ATTRIBUTE Sgsn Gsc bssapReturnOption (bssapRetOp)

Access	Read: All Write: All
Description	This attribute identifies the SCCP return option used by the BSSAP client. The SCCP return options supported are: ***noRetUndeliverable -*** The sender is not notified if the message is undeliverable. ***retUndeliverable -***The sender is notified if the message is undeliverable.
Mib	WirelessSgsn
Values	noRetUndeliverable retUndeliverable
Default	retUndeliverable

ATTRIBUTE Sgsn Gsc bssapHopCounter (bssapHopCntr)

Access	Read: All Write: All
Description	This attribute is used for circular route prevention and is only supported by Whitebook/ANSI96 SCCP. Each SS7 node decrements the hop counter by one. If the message makes more hops than is specified, the message is dropped at the node where the counter was exhausted.
Mib	WirelessSgsn
Values	Decimal (1..15)
Default	15

ATTRIBUTE Sgsn Gsc bssapXudtOption (bssapXudt)

Access	Read: All Write: All
Description	This attribute specifies whether or not XUDT (extended unitdata) messages can be used. The specified value is used to determine the type of message used for transmission of SCCP connectionless data. ***off***- an SCCP XUDT (extended unitdata) message is transmitted only when the data size is such that segmentation is required, otherwise an SCCP UDT (unitdata) message is transmitted. ***on***- an XUDT message is transmitted for all connectionless data regardless of data size. Usually, this attribute should specify ***off*** so that XUDT is only used when needed. Because XUDT is only supported by Whitebook, an operator may desire to set this value to ***on*** so that this node supports Whitebook (ITU-T 96/ANSI-96) SCCP.
Mib	WirelessSgsn
Values	on off

Default	off

ATTRIBUTE Sgsn Gsc bssapRegistrationRequestTimer (bssapRegTmr)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the BSSAP Client waits for the REGISTRATION_ACK message after sending a REGISTRATION_REQUEST message to the SCCP Protocol Stack. Retries of the Registration Request are infinite since the BSSAP Client cannot send or receive BSSAP messages until it is registered successfully with the SCCP stack. The *reqTimeouts* attribute indicates the number of timeouts that have occurred.
Mib	WirelessSgsn
Values	Decimal (1..60)
Units	seconds
Default	10

GROUP Sgsn Gsc SsfGlobalProv (Ssf)

Properties	Provisioned
Description	This group contains general provisioning data for all *Ssf* components on the shelf.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsc tssfTimer (tssf)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the SSF will wait for an SCP response while in the Waiting for Instructions state. Each new CAP (CAMEL Application Part) message from an SCP stops the Tssf timer. The timer is started when the SSF enters the Waiting for Instructions state. If a response is not received in the amount of time specified by this attribute, the SSF will give up

	and use the Default GPRS Handling field of the related mobile's CAMEL Subscriber Info (CSI) to determine the appropriate action to take.
Mib	WirelessSgsn
Values	Decimal (1..20)
Units	seconds
Default	3

ATTRIBUTE Sgsn Gsc ssfChargingGuardTimer (ssfCGuardTimer)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the SSF will wait for a reply from an SCP once an ApplyChargingReportGPRS CAP message has been sent and successfully received by the SCP. Valid responses from the SCP are the ApplyCharging, ReleaseGPRS or CancelGPRS messages. If a response if not received in the amount of time specified by this attribute, the SSF will give up and used the Default GPRS Handling field of the related mobile's CAMEL Subscriber Info (CSI) to determine the appropriate action to take. This attribute also specifies the amount of time the SSF will wait for a reply from an SCP indicating that one of the following SGSN initiated messages has been received: ApplyChargingReportGPRS, EventReportGPRS, EntityReleasedGPRS, and InitialDPGPRS. If an acknowledgement is not received from the SCP in the amount of time specified by this attribute for any of the messages listed above, the message is sent again to the SCP. The SSF will continue to retransmit the previous CAP message after each timeout until the number of consecutive timeouts reaches the value specified by the *ssfCGuardRetryAtt* attribute. If the maximum number of timeouts is reached, the SSF will give up and use the DefaultGprsHandling field of the related mobile's CAMEL Subscriber Info (CSI) to determine the appropriate action to take.

Mib	WirelessSgsn
Values	Decimal (1..20)
Units	seconds
Default	3

ATTRIBUTE Sgsn Gsc ssfTcapStackRegistrationTimer (ssfTcapRegTmr)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the SSF will wait for a registration response from the TCAP Stack after sending a registration request. If the timer expires, the SSF sends another registration request. The SSF continues to send registration requests whenever the timer expires until registration is successful.
Mib	WirelessSgsn
Values	Decimal (0..60)
Units	seconds
Default	10

ATTRIBUTE Sgsn Gsc ssfChargingGuardRetryAttempts (ssfCGuardRetryAtt)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of retry attempts after the *ssfChargingGuardTimer* expires.
Mib	WirelessSgsn
Values	Decimal (0..5)
Default	0

ATTRIBUTE Sgsn Gsc ssfCgpaRoutingIndicator (ssfCgpaRtInd)

Access	Read: All Write: All

Description	This attribute specifies the SCCP routing indicator used for SGSN Calling Party Addresses (CgPA). Two methods are supported. ***globalTitle***- CAP subsystem sets the CgPA routing Indicator to route on Global Title and supplies Global Title information. ***pointCode*** - CAP subsystem sets the CgPA routing Indicator to route on Point Code and supplies the Subsystem Number and Point Code in the CgPA.
Mib	WirelessSgsn
Values	globalTitle (gt) pointCode (pc)
Default	globalTitle

ATTRIBUTE Sgsn Gsc ssfCapSsn (ssfSsn)

Access	Read: All Write: All
Description	This attribute specifies the CAP (CAMEL Application Part) SGSN SubSystem Number (SSN). This SSN is used by SCCP for subsystem routing. The value of this attribute must match the value the corresponding subsystem number specified on the SS7 IP Gateway (SIG).
Mib	WirelessSgsn
Values	Decimal (1..255)
Default	146

ATTRIBUTE Sgsn Gsc ssfRoamerService (ssfRoamServ)

Access	Read: All Write: All
Description	This attribute specifies if CAMEL roaming subscribers are supported. If *ssfRoamerService* is set to ***disabled*** and a CAMEL subscriber roams into an area served by this SGSN, active PDP (Packet Data

	Protocol) contexts are dropped and new contexts cannot be created. If *ssfRoamerService* is set to ***enabled*** and a CAMEL subscriber roams into an area served by this SGSN, existing PDP Contexts are maintained and new contexts are created when requested. ***enabled***- enable roamer service, allowing roaming subscribers. ***disabled-*** disable roamer service, refusing roaming subscribers.
Mib	WirelessSgsn
Values	enabled disabled
Default	enabled

ATTRIBUTE Sgsn Gsc ssfSupportedCamelPhase (ssfSupportedPhase)

Access	Read: All Write: All
Description	This attribute specifies the highest phase of CAMEL supported by the SGSN or USGSN. If ***notSupported*** is specified, it indicates to all *Ssf* components that CAMEL is not supported by the network.
Mib	WirelessSgsn
Values	Decimal (3) notSupported
Default	notSupported

GROUP Sgsn Gsc MobileSubscriberPurge (MsPurge)

Properties	Provisioned
Description	This group contains provisionable attributes for the Mobile Subscriber (MS) Purge functionality on the (UMTS) Serving GPRS Support Node (USGSN or SGSN).
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsc msPurgeFunction (msPurgeFunc)

Access	Read: All Write: All
Description	This attribute specifies whether Mobile Subscriber Purge function is enabled or disabled. If this attribute is set to ***disabled,*** then no purge shall be sent out of the (UMTS) Serving GPRS Support Node (USGSN or SGSN).
Mib	WirelessSgsn
Values	disabled enabled
Default	disabled

ATTRIBUTE Sgsn Gsc purgeOnExplicitDetach (purgeExplicit)

Access	Read: All Write: All
Description	This attribute specifies whether Mobile Subscribers are purged immediately upon an explicit detach. The *msPurgeFunction* attribute must be set to ***enabled*** for this attribute to have an effect.
Mib	WirelessSgsn
Values	disabled enabled
Default	disabled

ATTRIBUTE Sgsn Gsc purgeMinimumInactiveMobileAge (purgeMinAge)

Access	Read: All Write: All
Description	This attribute specifies the minimum time that a detached Mobile Subscriber's Data is kept on the (UMTS) Serving GPRS Support Node (USGSN or SGSN). Once a Mobile Subscriber remains detached beyond the specified value, the Mobile Subscriber becomes a candidate for purge during an audit.

The *msPurgeFunction* attribute must be set to ***enabled*** for this attribute to have an effect.

Mib: WirelessSgsn

Values: Decimal (1..744)
disabled

Units: hours

Default: disabled

COMPONENT Sgsn GprsTransportLayer (Gtl)

Groups: "GROUP Sgsn Gtl NsProv"
"GROUP Sgsn Gtl BssgpProv (Bssgp)"

Scope: Application

Description: *Sgsn GprsTransportLayer*

This component represents the Transport Layer functionality of the
Gb interface of the Serving GPRS Support Node (SGSN). The Transport Layer includes protocol layers such as the Network Service (NS) and the BSS GPRS Protocol (BSSGP).

Mib: WirelessSgsn

Common Verbs:
- Help
- List
- Display

GROUP Sgsn Gtl NsProv

Properties: Provisioned

Description: This group contains provisionable attributes for the Network Service (NS) protocol layer of GPRS.

Mib: WirelessSgsn

ATTRIBUTE Sgsn Gtl nsBlockTimer (tnsBlk)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the Network Service Virtual Connection (NS-VC) BLOCK and UNBLOCK procedures. This is the time interval between an NS-BLOCK and NS-BLOCK ACK, or between an NS-UNBLOCK and NS-UNBLOCK ACK. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU). The default value is the value provided in the GPRS specification.
Mib	WirelessSgsn
Values	Decimal (1..120)
Units	seconds
Default	3

ATTRIBUTE Sgsn Gtl nsBlockRetries (nBlk)

Access	Read: All Write: All
Description	This attribute specifies the number of times the NS-BLOCK message can be retried if NS-BLOCK ACK is not received before the *nsBlockTimer* expires.
Mib	WirelessSgsn
Values	Decimal (0..10)
Default	3

ATTRIBUTE Sgsn Gtl nsUnBlockRetries (nUnBlk)

Access	Read: All Write: All

Description	This attribute specifies the number of times the NS-UNBLOCK message can be retried if NS-UNBLOCK ACK is not received before the *nsBlockTimer* expires. The default value is the value provided in the GPRS specification.
Mib	WirelessSgsn
Values	Decimal (3..15)
Default	3

ATTRIBUTE Sgsn Gtl nsResetTimer (tnsReset)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the Network Service Virtual Connection (NS-VC) RESET procedure. This is the time interval between an NS-RESET and NS-RESET ACK. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU). The default value is the value provided in the GPRS specification.
Mib	WirelessSgsn
Values	Decimal (1..120)
Units	seconds
Default	3

ATTRIBUTE Sgsn Gtl nsResetRetries (nReset)

Access	Read: All Write: All
Description	This attribute specifies the times the NS-RESET message can be retried if NS-RESET ACK is not received before the *nsResetTimer* expires.
Mib	WirelessSgsn
Values	Decimal (3..10)

Default	5

ATTRIBUTE Sgsn Gtl nsTestTimer (tnsTest)

Access	Read: All Write: All
Description	This attribute specifies the periodicity of the Network Service Virtual Connection (NS-VC) TEST procedure which is the initiation of the NS-ALIVE Protocol Data Unit (PDU). The range is the value provided in the GPRS specification.
Mib	WirelessSgsn
Values	Decimal (1..60)
Units	seconds
Default	30

ATTRIBUTE Sgsn Gtl nsAliveTimer (tnsAlive)

Access	Read: All Write: All
Description	This attribute specifies the timer to guard the Network Service Virtual Connection (NS-VC) ALIVE procedure. This is the time interval between an NS-ALIVE and NS-ALIVE ACK. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU). The default value is the value provided in the GPRS specification.
Mib	WirelessSgsn
Values	Decimal (1..10)
Units	seconds
Default	3

ATTRIBUTE Sgsn Gtl nsAliveRetries (nAlive)

Access	Read: All Write: All

Description	This attribute specifies the number of times the NS-ALIVE message can be retried if NS-ALIVE ACK is not received before the *nsAliveTimer* expires.
Mib	WirelessSgsn
Values	Decimal (3..10)
Default	10

GROUP Sgsn Gtl BssgpProv (Bssgp)

Properties	Provisioned
Description	This group contains provisionable attributes for the BSS GPRS Protocol (BSSGP) layer of GPRS.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gtl bvcResetTimer (tBvcReset)

Access	Read: All Write: All
Description	This attribute specifies the timer value to guard the BVC-RESET procedure. The Serving GPRS Support Node (SGSN) sends a BVC-RESET Protocol Data Unit (PDU) to the Packet Control Unit (PCU) and starts the *bvcResetTimer* for a BSS GPRS Virtual Connection (BVC). The SGSN stops the timer upon reception of a BVC-RESET-ACK PDU from the PCU. If the timer expires, the SGSN retries the BVC-RESET procedure. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..120)
Units	seconds
Default	60

ATTRIBUTE Sgsn Gtl bvcResetRetries (nBvcReset)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Serving GPRS Support Node (SGSN) can send the BVC-RESET Protocol Data Unit (PDU) in case a BVC-RESET-ACK is not received before the *bvcResetTimer* expiry.
Mib	WirelessSgsn
Values	Decimal (0..6)
Default	3

COMPONENT Sgsn GprsSubscriberDatapath (Gsd)

Groups	"GROUP Sgsn Gsd SndcpProv" "GROUP Sgsn Gsd LlcCpProv"
Scope	Application
Description	*Sgsn GprsSubscriberDatapath* This component represents the GPRS Subscriber Datapath functionality.
Mib	WirelessSgsn
Subcomponents	"COMPONENT Sgsn Gsd SapiControl (SapiC)" "COMPONENT Sgsn Gsd SapiData (SapiD)" "COMPONENT Sgsn Gsd SapiShortMessageService (SapiS)"
Common Verbs	Help List Display

GROUP Sgsn Gsd SndcpProv

Properties	Provisioned
Description	This group contains the centralized provisionable parameters for the SubNetwork Dependent Convergence Protocol (SNDCP).

Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsd rfc1144Slots (slots)

Access	Read: All Write: Illegal
Description	This attribute specifies the number of TCP state slots used for the RFC 1144 header compression. This is the value SNDCP uses to negotiate as part of the XID negotiation with the mobile. Either side can negotiate the value downward from this. The actual negotiated value can be viewed in the component *SessionContext* attribute *slots*.
Mib	WirelessSgsn
Values	Decimal (1..256)
Default	16

ATTRIBUTE Sgsn Gsd v42bisDictionary (p1)

Access	Read: All Write: All
Description	This attribute specifies maximum number of V.42bis codewords the SGSN supports. A codeword is a binary number that represents a string of characters in compressed form. The V.42bis keeps a dictionary of codewords for each compression direction. During Exchange Identification (XID) negotiation of the parameter P1 (number of codewords), both sides (the SGSN to the mobile or the mobile to the SGSN) agree on the total number of codewords in the dictionaries. Changes to this attribute impacts the compression ratio for the encoder (component *Gsd Tlli SessionContext* attribute *compRatioEncoder*). Changes also impact the amount of memory used (more memory is used when increasing the attribute). The gain in performance obtained from the selection of a larger dictionary can be offset by the larger codeword size needed, and for certain types of data, better performance can be obtained by using a smaller dictionary. The negotiated value can be viewed in the component *Gsd Tlli SessionContext* attribute *v42bisDictionary*.

Mib	WirelessSgsn
Values	Decimal (512; 1024; 2048; 4096)
Default	512

ATTRIBUTE Sgsn Gsd v42bisMaxStringSize (p2)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of characters allowed in a string represented by a codeword that the SGSN supports. Each codeword in a V.42bis dictionary represents a string of characters. During Exchange Identification (XID) negotiation of the parameter P2 (maximum string size), both sides (the SGSN and the Mobile Station or the SGSN and the Public Switched Telephone Network (PSTN)) agree on the maximum string length to be used in the dictionaries. Changes to this attribute impact the compression ratio for the encoder (component *Gsd Tlli SessionContext* attribute *compRatioEncoder*). The negotiated value can be viewed in the component *Gsd Tlli SessionContext* attribute *v42bisMaxStringSize*.
Mib	WirelessSgsn
Values	Decimal (6..250)
Default	20

ATTRIBUTE Sgsn Gsd snPduTimer (snPduT)

Access	Read: All Write: Debug
Description	This attribute specifies the timing when a complete Network Protocol Data Unit (N-PDU) is received by the SubNetwork Dependent Convergence Protocol (SNDCP). This attribute is used in N-PDU reassembly from SN-UNITDATA PDUs. It specifies the maximum time SNDCP waits for additional SN-UNITDATA PDUs for a given N-PDU. If this timer expires the partially reassembled N-PDU is discarded. This timer is restarted when each segment of the original N-PDU is received. This timer

	is only applicable to unacknowledged Logical Link Control (LLC) mode. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (1..60)
Units	seconds
Default	5

GROUP Sgsn Gsd LlcCpProv

Properties	Provisioned
Description	This group contains the system wide provisionable attributes for GPRS Subscriber Datapath (GSD) capacity enhancement.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsd cipheringHardwareAssist (ciphHwAssist)

Access	Read: All Write: All
Description	This attribute specifies whether hardware assistance is to be used for Logical Link Control (LLC) layer encryption if supported by the card used by *GprsSubscriberDatapath (Gsd)*. If the value is ***disable***, hardware assistance is not used. If the value is ***autoConfigure***, hardware assistance is used if supported.
Mib	WirelessSgsn
Values	disable autoConfigure
Default	autoConfigure

COMPONENT Sgsn Gsd SapiControl (SapiC)

Groups	"GROUP Sgsn Gsd SapiC Provisioned (Prov)"

Scope	Application
Description	*Sgsn Gsd SapiControl* This component represents the Service Access Point 1 (SAP-1) of the Logical Link Control (LLC) protocol layer.
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Gsd SapiC Provisioned (Prov)

Properties	Provisioned
Description	This group contains the Service Access Point 1 (SAP-1) specific system wide provisionable attributes.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsd SapiC t200RetransmitTimer (t200)

Access	Read: All Write: All
Description	This attribute specifies the time within which an acknowledgment of an Exchange Information (XID) frame must be received by the Service Access Point 1 (SAP-1) LLC entity. During the XID negotiation, both the Logical Link Control (LLC) entities (the Mobile Station and the SGSN) can agree to use a specific value for this timer. The Serving GPRS Support Node (SGSN) attempts to negotiate to the value specified by this attribute. Changes to this attribute do not trigger re-negotiation of this parameter with the Mobile Station. The *readyTimer* value provisioned in the *Sgsn GprsSubscriberControl* component should be at least 10% greater than the *t200RetransmitTimer* value, except when *readyTimer* is set to ***forceStandby*** or ***useMsValue***. The timer must be provisioned to a value that is greater than the

	expected maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (0.1..409.5)
Units	seconds
Default	5.0

ATTRIBUTE Sgsn Gsd SapiC n200MaxRetransmits (n200)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Service Access Point 1 (SAPI-1) LLC entity retransmits an individual frame following the expiry of the *t200* timer. During the Exchange Information (XID) negotiation, both the Logical Link Control (LLC) entities (the Mobile Station and the SGSN) can agree to use a specific value for *n200*. The SGSN attempts to negotiate to the value specified by this attribute. Changes to this attribute do not trigger re-negotiation of this parameter with the mobile.
Mib	WirelessSgsn
Values	Decimal (1..15)
Default	3

ATTRIBUTE Sgsn Gsd SapiC n201MaxUinfoFieldLength (n201U)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of octets allowed in Unnumbered (U) and Unconfirmed Information (UI) frames for the Service Access Point 1 (SAP-1). During the Exchange Information (XID) negotiation, both the Logical Link Control (LLC) entities (the Mobile Station and the SGSN) can agree to use a specific value for *n201U*. The Serving GPRS Support Node (SGSN) attempts to negotiate to the value specified by this

	attribute. Changes to this attribute do not trigger re-negotiation of this parameter with the Mobile Station.
Mib	WirelessSgsn
Values	Decimal (140..1520)
Units	octets
Default	400

COMPONENT Sgsn Gsd SapiData (SapiD)

Instance	Decimal (3; 5; 9; 11)
Groups	"GROUP Sgsn Gsd SapiD Provisioned (Prov)"
Scope	Application
Description	*Sgsn Gsd SapiData/<sapi>* This component represents a Service Access Point (SAP) of the Logical Link Control (LLC) protocol layer, indexed by a Service Access Point Identifier (SAPI). When an *Sgsn* is added, a *SapiData* instance is added automatically for each possible instance value. The attributes are set to default values, dependent on the SAPI value of the component instance.
Mib	WirelessSgsn
Common Verbs	Help List Display Add DELete

GROUP Sgsn Gsd SapiD Provisioned (Prov)

Properties	Provisioned

Description	This group contains system wide provisionable attributes for the Service Access Point 3, 5, 9, 11 (SAP-3, SAP-5, SAP-9 and SAP-11).
Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsd SapiD t200RetransmitTimer (t200)

Access	Read: All Write: All
Description	This attribute specifies the time within which an acknowledgment of a Unnumbered (U) frame must be received by the Service Access Point (SAP) LLC entity. This attribute is only applicable for Exchange Information (XID) negotiations and for Asynchronous Balanced Mode (ABM) mode. During the XID negotiation, both the Logical Link Control (LLC) entities (the Mobile Station and the SGSN) can agree to use a specific value for this timer. The Serving GPRS Support Node (SGSN) attempts to negotiate to the value specified by this attribute. Changes to this attribute do not trigger re-negotiation of this parameter with the Mobile Station. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (0.1..409.5)
Units	seconds
Default	No default

ATTRIBUTE Sgsn Gsd SapiD n200MaxRetransmits (n200)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times Logical Link Entity (LLE) representing that Service Access Point (SAP) retransmits an individual frame following the expiry of *t200* timer. During the Exchange Information (XID) negotiation, both

	the Logical Link Control (LLC) entities (the Mobile Station and the SGSN) can agree to use a specific value for *n200*. The SGSN attempts to negotiate to the value specified by this attribute. Changes to this attribute do not trigger re-negotiation of this parameter with the Mobile Station.
Mib	WirelessSgsn
Values	Decimal (1..15)
Default	No default

ATTRIBUTE Sgsn Gsd SapiD n201MaxUInfoFieldLength (n201U)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of octets allowed in Unnumbered (U) and Unconfirmed Information (UI) frames for that Service Access Point (SAP). During the Exchange Information (XID) negotiation, both the LLC entities (Mobile Station and SGSN) can agree to use a specific value for *n201U*. The SGSN attempts to negotiate to the value specified by this attribute. Changes to this attribute do not trigger re-negotiation of this parameter with the Mobile Station.
Mib	WirelessSgsn
Values	Decimal (140..1520)
Default	No default

ATTRIBUTE Sgsn Gsd SapiD n201MaxIinfoFieldLength (n201I)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of octets allowed in confirmed Information (I) frame for that Service Access Point (SAP). During the Exchange Information (XID) negotiation, both the Logical Link Control (LLC) entities (the Mobile Station and the SGSN)) can agree to use a specific value for *n201I*. The SGSN attempts to negotiate to the value specified by this attribute. Changes to this attribute do not trigger re-negotiation of this parameter with the Mobile Station.

Mib	WirelessSgsn
Values	Decimal (140..1520)
Default	No default

ATTRIBUTE Sgsn Gsd SapiD kWindowSizeDownlink (kD)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of outstanding unacknowledged sequenced Information (I) frames from the Serving GPRS Support Node (SGSN) to the mobile for that Service Access Point (SAP). During the Exchange Information (XID) negotiation, both the Logical Link Control (LLC) entities (the Mobile Station and the SGSN) can agree to use a specific value for *kD*. The SGSN attempts to negotiate to the value specified by this attribute. Changes to this attribute do not trigger re-negotiation of this parameter with the Mobile Station.
Mib	WirelessSgsn
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Sgsn Gsd SapiD kWindowSizeUplink (kU)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of outstanding unacknowledged sequenced Information (I) frames from the mobile to the Serving GPRS Support Node (SGSN) for that Service Access Point (SAP). During the Exchange Information (XID) negotiation, both the Logical Link Control (LLC) entities (the Mobile Station and the SGSN) can agree to use a specific value for *kU*. The SGSN attempts to negotiate to the value specified by this attribute. Changes to this attribute do not trigger re-negotiation of this parameter with the Mobile Station.
Mib	WirelessSgsn
Values	Decimal (1..255)

Default	No default

ATTRIBUTE Sgsn Gsd SapiD pduUnconfirmedInformationLifetime (pduUnInfo)

Access	Read: All Write: All
Description	This attribute specifies the Base Station Subsystem GPRS Protocol (BSSGP) Packet Data Unit (PDU) lifetime for Logical Link Control (LLC) Unconfirmed Information (UI) frames. This attribute is used by the Base Station Subsystem (BSS) to determine when to discard the PDU.
Mib	WirelessSgsn
Values	Decimal (0.1..600.0)
Units	seconds
Default	No default

COMPONENT Sgsn Gsd SapiShortMessageService (SapiS)

Groups	"GROUP Sgsn Gsd SapiS SapiSms (Prov)"
Scope	Application
Description	*Sgsn Gsd SapiShortMessageService* This component represents the Service Access Point 7 (SAP-7) of the Logical Link Control (LLC) protocol layer. This SAP is the access point for Short Message Services (SMS).
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Gsd SapiS SapiSms (Prov)

Properties	Provisioned
Description	This group contains the Service Access Point-7 (SAP-7) specific system wide provisionable attributes.

Mib	WirelessSgsn

ATTRIBUTE Sgsn Gsd SapiS t200RetransmitTimer (t200)

Access	Read: All Write: All
Description	This attribute specifies the time within which an acknowledgment of an Exchange Information (XID) frame must be received by the Service Access Point 7 (SAP-7) LLC entity. During the XID negotiation, both the Logical Link Control (LLC) entities (the Mobile Station and the SGSN) can agree to use a specific value for this timer. The Serving GPRS Support Node (SGSN) attempts to negotiate to the value specified by this attribute. Changes to this attribute do not trigger re-negotiation of this parameter with the Mobile Station. The *readyTimer* value provisioned in the *Sgsn GprsSubscriberControl* component should be at least 10% greater than the *t200RetransmitTimer* value. The timer must be provisioned to a value that is greater than the expected maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (0.1..409.5)
Units	seconds
Default	20.0

ATTRIBUTE Sgsn Gsd SapiS n200MaxRetransmits (n200)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of times the Service Access Point 7 (SAPI-7) LLC entity retransmits an individual frame following the expiry of the *t200* timer. During the Exchange Information (XID) negotiation, both the Logical Link Control (LLC) entities (the Mobile Station and the SGSN) can agree to use a specific value for *n200*. The SGSN attempts to

	negotiate to the value specified by this attribute. Changes to this attribute do not trigger re-negotiation of this parameter with the mobile.
Mib	WirelessSgsn
Values	Decimal (1..15)
Default	3

ATTRIBUTE Sgsn Gsd SapiS n201MaxUinfoFieldLength (n201U)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of octets allowed in Unnumbered (U) and Unconfirmed Information (UI) frames for the Service Access Point 7 (SAP-7). During the Exchange Information (XID) negotiation, both the Logical Link Control (LLC) entities (the Mobile Station and the SGSN) can agree to use a specific value for *n201U*. The Serving GPRS Support Node (SGSN) attempts to negotiate to the value specified by this attribute. Changes to this attribute do not trigger re-negotiation of this parameter with the Mobile Station.
Mib	WirelessSgsn
Values	Decimal (140..1520)
Units	octets
Default	270

COMPONENT Sgsn DnsAgent (DnsAg)

Groups	"GROUP Sgsn DnsAg Provisioned (Prov)"
Scope	Application
Description	*Sgsn DnsAgent*

	This component represents the Domain Name System (DNS) Agent.
Mib	WirelessSgsn
Opt. Subcomp.	"COMPONENT Sgsn DnsAg StaticCacheEntry (Static)"
Common Verbs	Help List Display

GROUP Sgsn DnsAg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the *DnsAgent* provisioning data of the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn

ATTRIBUTE Sgsn DnsAg retryTimer (tRetry)

Access	Read: All Write: All
Description	This attribute specifies how long the *DnsAgent* waits for a response from a Domain Name System (DNS) Server following the initial query. Intervals for subsequent retries if required, are computed using an algorithm based on this attribute. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	WirelessSgsn
Values	Decimal (2..20)
Units	seconds
Default	5

ATTRIBUTE Sgsn DnsAg maxRetries (nRetry)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of retries for a Domain Name System (DNS) query. After *maxRetries* expiry, if there is no response from the DNS Server, the *DnsAgent* sends an error indication to the application.
Mib	WirelessSgsn
Values	Decimal (0..5)
Default	2

ATTRIBUTE Sgsn DnsAg refreshTime (tRefresh)

Access	Read: All Write: All
Description	This attribute specifies how often a Domain Name System (DNS) cache table entries are refreshed. After the timer expires for a given entry, the next client query for that entry's Logical Name causes the DNS Name Server to be queried again to update the Logical Name information.
Mib	WirelessSgsn
Values	Decimal (0..14400)
Units	minutes
Default	10080

ATTRIBUTE Sgsn DnsAg staleIpAddressReuse (staleIpReuse)

Access	Read: All Write: All
Description	This attribute specifies whether the last stale Internet Protocol (IP) address for a given Access Point Name (APN) is reused by the *DnsAgent* component when all Domain Name System (DNS) query retries fail. If a value of ***enabled*** is specified, the *DnsAgent* cache table is not

emptied even if the *DnsAgent refreshTime* or *ttl* attribute values have expired for the cache entries. If all DNS query retries fail, the last dynamic entry in the *DnsAgent* cache table is reused. If a value of ***disabled*** is specified, the *DnsAgent* cache table behavior is unaffected.

Mib	WirelessSgsn
Values	disabled enabled
Default	disabled

COMPONENT Sgsn DnsAg StaticCacheEntry (Static)

Instance	virtualRouter (vr) [String (1..8, ASCII)] entryNum [Decimal (0..1000)]
Groups	"GROUP Sgsn DnsAg Static Provisioned (Prov)"
Scope	Application
Description	*Sgsn DnsAg StaticCacheEntry/<vr>,n* This component represents a Logical Name-IP Address mapping entry for the Serving GPRS Support Node (SGSN) in GPRS. An instance of this component is provisioned if a static Domain Name System (DNS) mapping is required.
Mib	WirelessSgsn
Common Verbs	Help List Display Add DELete

GROUP Sgsn DnsAg Static Provisioned (Prov)

Properties	Provisioned
Description	This group contains a Logical Name-IP Address mapping entry for the Serving GPRS Support Node (SGSN) in GPRS.

Mib	WirelessSgsn

ATTRIBUTE Sgsn DnsAg Static logicalName (lName)

Access	Read: All Write: All
Description	This attribute specifies the Logical Name for this static entry.
Mib	WirelessSgsn
Values	String (1..253, ASCII)
Default	No default

ATTRIBUTE Sgsn DnsAg Static mappedIpAddr (ipAddr)

Access	Read: All Write: All
Description	This attribute specifies the IP addresses corresponding to a given Logical Name. One Logical Name can have up to ten IP addresses mapped to it. The order of the addresses is not important; successive queries of the Logical Name return the IP addresses in a round robin fashion. This attribute must not specify the address ‘0.0.0.0’ or any address ending in ‘255’.
Mib	WirelessSgsn
List of	IP address
List Size	10
Default	No default

COMPONENT Sgsn PlmnImsiRange (Pir)

Instance	Decimal (1..1000)
Groups	"GROUP Sgsn Pir Provisioned (Prov)"
Scope	Application
Description	*Sgsn PlmnImsiRange/n*

This component represents an entry in a table of the International Mobile Subscriber Identity (IMSI) digits ranges. If a particular IMSI has a digit range that does not match any entry in the table, then it does not belong to this Public Land Mobile Network (PLMN).

Mib: WirelessSgsn

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Sgsn Pir Provisioned (Prov)

Properties: Provisioned

Description: This group contains the Mobile Country Code (MCC), Mobile Network Code (MNC) range for this Public Land Mobile Network (PLMN). All Mobile Stations (MS) whose MCC and MNC do not belong to the current PLMN are considered roamers.

The *fromPrefix* and *toPrefix* attributes represent decimal number value ranges that fit the IMSI specification of 15 digits. All digits must be 0 through 9 inclusive. When the *fromPrefix* or the *toPrefix* value is less than 15 digits, the value in attribute *fromPrefix* is always extended with 0's, and the value in attribute *toPrefix* is always extended with 9's.

A complete range (*fromPrefix* and *toPrefix* forming a range of IMSI digits) must not overlap any previously entered range.

Mib: WirelessSgsn

ATTRIBUTE Sgsn Pir fromPrefix (frPrefix)

Access: Read: All
Write: All

Description: This attribute specifies the lower limit of the range of the International Mobile Subscriber Identity (IMSI) digits which are

	considered as home subscribers. The value in attribute *fromPrefix* is always extended with 0's.
Mib	WirelessSgsn
Values	BCD (1..15)
Default	No default

ATTRIBUTE Sgsn Pir toPrefix

Access	Read: All Write: All
Description	This attribute specifies the upper limit of the range of the International Mobile Subscriber Identity (IMSI) digits which are considered as home subscribers. The value in attribute *toPrefix* is always extended with 9's.
Mib	WirelessSgsn
Values	BCD (1..15)
Default	No default

COMPONENT Sgsn MobileCountryCode (Mcc)

Instance	BCD (3)
Scope	Application
Description	*Sgsn MobileCountryCode/<Mcc>* This component represents a Mobile Country Code (MCC)

	supported by the Serving GPRS Support Node (SGSN). The instance value is the 3 digit MCC.
Mib	WirelessSgsn
Opt. Subcomp.	"COMPONENT Sgsn Mcc MobileNetworkCode (Mnc)"
Common Verbs	Help List Display Add DELete

COMPONENT Sgsn Mcc MobileNetworkCode (Mnc)

Instance	BCD (2..3)
Groups	"GROUP Sgsn Mcc Mnc Provisioned (Prov)"
Scope	Application
Description	*Sgsn Mcc/<Mcc> MobileNetworkCode/<Mnc>* This component represents a Mobile Network Code (MNC) supported by the Serving GPRS Support Node (SGSN). The instance value is the 2 or 3 digit MNC.
Mib	WirelessSgsn
Opt. Subcomp.	"COMPONENT Sgsn Mcc Mnc LocationAreaCode (Lac)" "COMPONENT Sgsn Mcc Mnc ImsiMask (ImsiMask)"
Common Verbs	Help List Display Add DELete

GROUP Sgsn Mcc Mnc Provisioned (Prov)

Properties	Provisioned

Description	This group contains the E.212 to E.214 Translation Table provisionable attributes.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Mcc Mnc countryCode (cc)

Access	Read: All Write: All
Description	This attribute specifies a specific country, countries in an integrated number plan, or a specific geographic area as defined by the ITU-T international public telecommunication numbering plan. The associated MCC (Mobile Country Code) gets translated to this CC (Country Code) during a E.212 to E.214 number translation used for global title addressing for the HLR.
Mib	WirelessSgsn
Values	BCD (1..3)
Default	No default

ATTRIBUTE Sgsn Mcc Mnc networkCode (nc)

Access	Read: All Write: All
Description	This attribute specifies the PLMN or HLR within the PLMN as defined by the ITU-T international public telecommunication numbering plan. The associated MNC (Mobile Network Code) gets translated to this NC (Network Code) during a E.212 to E.214 number translation used for global title addressing for the HLR.
Mib	WirelessSgsn
Values	BCD (1..9)
Default	No default

COMPONENT Sgsn Mcc Mnc LocationAreaCode (Lac)

Instance	String (4, ASCII)
Scope	Application

Description	*Sgsn Mcc/<Mcc> Mnc/<Mnc> LocationAreaCode/<Lac>* This component represents a Location Area Code (LAC) supported by the Serving GPRS Support Node (SGSN). The instance value is the 4 digit LAC.
Mib	WirelessSgsn
Opt. Subcomp.	"COMPONENT Sgsn Mcc Mnc Lac RoutingAreaCode (Rac)" "COMPONENT Sgsn Mcc Mnc Lac ImsiMask (ImsiMask)"
Common Verbs	Help List Display Add DELete

COMPONENT Sgsn Mcc Mnc Lac RoutingAreaCode (Rac)

Instance	String (2, ASCII)
Groups	"GROUP Sgsn Mcc Mnc Lac Rac Provisioned (Prov)"
Scope	Application
Description	*Sgsn Mcc/<Mcc> Mnc/<Mnc> Lac/<Lac> RoutingAreaCode/ <Rac>* This component represents a Routing Area Code (RAC) supported by the Serving GPRS Support Node (SGSN). The

	instance value is the 2 digit RAC.
Mib	WirelessSgsn
Opt. Subcomp.	"COMPONENT Sgsn Mcc Mnc Lac Rac ImsiMask (ImsiMask)" "COMPONENT Sgsn Mcc Mnc Lac Rac CellId (Cid)"
Common Verbs	Help List Display Add DELete

GROUP Sgsn Mcc Mnc Lac Rac Provisioned (Prov)

Properties	Provisioned
Description	This group contains general provisioning data for a Routing Area supported by the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn

ATTRIBUTE Sgsn Mcc Mnc Lac Rac periodicRaUpdateTimer (t3312)

Access	Read: All Write: All
Description	This attribute specifies the Periodic Routing Area Update Timer (T3312) for be used by the Mobile Station (MS). The MS receives this timer from the network during GPRS Attach Accept and during the Periodic Routing Area Update Accepts. When this timer expires, the MS notifies the Serving GPRS Support Node (SGSN) of the current routing area of the MS. This timer value is per Routing Area. The value ***deactivate*** means that no periodic messages are sent. The *mobileReachableTimer* provisioned in the *Sgsn GprsSubscriberControl* component must be at least four minutes longer than the longest *periodicRaUpdateTimer.* The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).

Mib	WirelessSgsn
Values	Decimal (1..31; 36; 42; 48; 54; 60; 66; 72; 78; 84; 90; 96; 102; 108; 114; 120; 126; 132; 138; 144; 150; 156; 162; 168; 174; 180; 186) deactivate
Units	minutes
Default	54

ATTRIBUTE Sgsn Mcc Mnc Lac Rac ptmsiEvents

Access	Read: All Write: All
Description	This attribute specifies the number, N, which indicates that at every Nth event requiring Packet-Temporary Mobile Subscriber Identity (P-TMSI) reallocation, the P-TMSI Reallocation procedure is initiated with the mobile subscriber. For example, when this value is set to ***never***, the P-TMSI Reallocation procedure is never performed on local P-TMSIs received from the mobile subscriber. Only, the non local P-TMSIs undergo P-TMSI reallocation. When the value is set to ***1***, P-TMSI Reallocation procedure is performed every time an event that triggers P-TMSI reallocation occurs. This means that the P-TMSI is reallocated whether it is local, foreign or random. This parameter is not per Mobile station (MS), rather it applies to events over an entire routing area.
Mib	WirelessSgsn
Values	Decimal (1..255) never
Default	10

ATTRIBUTE Sgsn Mcc Mnc Lac Rac linkToVlr (lToVlr)

Access	Read: All Write: All
Description	This attribute specifies the Visitor Location Register (VLR) that serves this Routing Area (RA).

	Changing this value causes the outstanding transactions to be affected.
Mib	WirelessSgsn
Values	Link (Service, linkToRoutingAreas)
Default	No default

ATTRIBUTE Sgsn Mcc Mnc Lac Rac networkServiceEntities (nse)

Access	Read: All Write: All
Description	This attribute specifies the Network Service Entities (NSE) in this Routing Area (RA). Each NSE is identified by its Network Service Entity Identifier (NSEI) number.
Mib	WirelessSgsn
List of	Decimal (1..65535)
Default	No default

COMPONENT Sgsn Mcc Mnc Lac Rac ImsiMask (ImsiMask)

Instance	BCD (1..15, Wildcarded)
Groups	"GROUP Sgsn Mcc Mnc Lac Rac ImsiMask Provisioned (Prov)"
Scope	Application
Description	*Sgsn Mcc/<mcc> Mnc/<mnc>ImsiMask/<mask>* *Sgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> ImsiMask/<mask>* *Sgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> Rac/<rac> ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> Rac/<rac> ImsiMask/<mask>* This component represents the masks for the Serving GPRS Support Node (SGSN or USGSN). The mask instance value specifies a string of BCD digits including wildcarded ‘?’ digits.

The Call Router Data (CRD) network address syntax check prohibits wildcards from appearing to the right of a mask, and also prevents default masks from containing more than one wildcard. A default mask contains one wildcard with no BCD digits.

Mib	WirelessSgsn
Common Verbs	Help List Display Add DELete

GROUP Sgsn Mcc Mnc Lac Rac ImsiMask Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for this component.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Mcc Mnc Lac Rac ImsiMask linkToSubscriberClass (lToSubC)

Access	Read: All Write: All
Description	This attribute specifies a link to the *SubscriberClass* component (defined in the *Sgsn* or *Usgsn* components).
Mib	WirelessSgsn
Values	Link (Service, linksToImsiMask)
Default	No default

COMPONENT Sgsn Mcc Mnc Lac Rac CellId (Cid)

Instance	Decimal (0..65535)
Groups	"GROUP Sgsn Mcc Mnc Lac Rac Cid Provisioned (Prov)"
Scope	Application

Description	*Sgsn Mcc/<Mcc> Mnc/<Mnc> Lac/<Lac> Rac/<Rac> CellId/ <CellId>* This component represents a Cell supported by the Serving GPRS Support Node (SGSN). The instance value is the Cell Id in decimal value.
Mib	WirelessSgsn
Common Verbs	Help List Display Add DELete

GROUP Sgsn Mcc Mnc Lac Rac Cid Provisioned (Prov)

Properties	Provisioned
Description	This group contains general provisioning data for a Cell supported by the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn

ATTRIBUTE Sgsn Mcc Mnc Lac Rac Cid directionLatitude (dirLat)

Access	Read: All Write: All
Description	This attribute specifies the direction of the latitude coordinate of the cell position. A value of ***north*** implies a position to the north of the Equator. A value of ***south*** implies a position to the south of the Equator.
Mib	WirelessSgsn
Values	north (n) south (s)
Default	north

ATTRIBUTE Sgsn Mcc Mnc Lac Rac Cid degreesLatitude (degLat)

Access	Read: All Write: All
Description	This attribute specifies the degree of the latitude coordinate for the cell position. Zero degrees corresponds to the Equator. Angles are either to the north or south of the Equator depending on the *directionLatitude* attribute. Approximately 5 decimal places are significant when the number is encoded in binary and sent to the Gateway Mobile Location Center (GMLC).
Mib	WirelessSgsn
Values	Decimal (0.00000..90.00000)
Default	No default

ATTRIBUTE Sgsn Mcc Mnc Lac Rac Cid directionLongitude (dirLong)

Access	Read: All Write: All
Description	This attribute specifies the direction of the longitude coordinate of the cell position. A value of ***east*** implies a position to the east of the Greenwich Meridian. A value of ***west*** implies a position to the west of the Greenwich Meridian.
Mib	WirelessSgsn
Values	east (e) west (w)
Default	east

ATTRIBUTE Sgsn Mcc Mnc Lac Rac Cid degreesLongitude (degLong)

Access	Read: All Write: All
Description	This attribute specifies the degree of the longitude coordinate for the cell position. Zero degrees corresponds to the Greenwich Meridian. Angles are either to the east or west of the Greenwich

	Meridian, depending on the attribute *directionLongitude*. Approximately 5 decimal places are significant when the number is encoded in binary and sent to the Gateway Mobile Location Center (GMLC).
Mib	WirelessSgsn
Values	Decimal (0.00000..180.00000)
Default	No default

ATTRIBUTE Sgsn Mcc Mnc Lac Rac Cid cellRadius (cellRad)

Access	Read: All Write: All
Description	This attribute specifies the cell radius in meters. It is used to compute the uncertainty code of the latitude and longitude co-ordinates that are sent to the Gateway Mobile Location Center (GMLC).
Mib	WirelessSgsn
Values	Decimal (0..1800000)
Units	metres
Default	4000

COMPONENT Sgsn Mcc Mnc Lac ImsiMask (ImsiMask)

Instance	BCD (1..15, Wildcarded)
Groups	"GROUP Sgsn Mcc Mnc Lac ImsiMask Provisioned (Prov)"
Scope	Application
Description	*Sgsn Mcc/<mcc> Mnc/<mnc>ImsiMask/<mask>* *Sgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> ImsiMask/<mask>* *Sgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> Rac/<rac> ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> Rac/<rac> ImsiMask/<mask>*

This component represents the masks for the Serving GPRS Support Node (SGSN or USGSN). The mask instance value specifies a string of BCD digits including wildcarded ‘?’ digits.

The Call Router Data (CRD) network address syntax check prohibits wildcards from appearing to the right of a mask, and also prevents default masks from containing more than one wildcard. A default mask contains one wildcard with no BCD digits.

Mib	WirelessSgsn
Common Verbs	Help List Display Add DELete

GROUP Sgsn Mcc Mnc Lac ImsiMask Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for this component.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Mcc Mnc Lac ImsiMask linkToSubscriberClass (lToSubC)

Access	Read: All Write: All
Description	This attribute specifies a link to the *SubscriberClass* component (defined in the *Sgsn* or *Usgsn* components).
Mib	WirelessSgsn
Values	Link (Service, linksToImsiMask)
Default	No default

COMPONENT Sgsn Mcc Mnc ImsiMask (ImsiMask)

Instance	BCD (1..15, Wildcarded)

Groups	"GROUP Sgsn Mcc Mnc ImsiMask Provisioned (Prov)"
Scope	Application
Description	*Sgsn Mcc/<mcc> Mnc/<mnc>ImsiMask/<mask>* *Sgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> ImsiMask/<mask>* *Sgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> Rac/<rac> ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> Rac/<rac> ImsiMask/<mask>* This component represents the masks for the Serving GPRS Support Node (SGSN or USGSN). The mask instance value specifies a string of BCD digits including wildcarded ‘?’ digits. The Call Router Data (CRD) network address syntax check prohibits wildcards from appearing to the right of a mask, and also prevents default masks from containing more than one wildcard. A default mask contains one wildcard with no BCD digits.
Mib	WirelessSgsn
Common Verbs	Help List Display Add DELete

GROUP Sgsn Mcc Mnc ImsiMask Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for this component.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Mcc Mnc ImsiMask linkToSubscriberClass (lToSubC)

Access	Read: All Write: All
Description	This attribute specifies a link to the *SubscriberClass* component (defined in the *Sgsn* or *Usgsn* components).
Mib	WirelessSgsn
Values	Link (Service, linksToImsiMask)
Default	No default

COMPONENT Sgsn TemporaryLogicalLinkId (Tlli)

Instance	String (4, Hex)
Scope	Application
Description	*Sgsn TemporaryLogicalLinkId/<tlli>* This component represents an instance of the Temporary Logical Link Identity (TLLI). The information includes subscription context, mobility management context, session contexts and logical link context. Each instance is indexed by the TLLI of the mobile subscriber. A list of all current *Tlli* instances is not possible, but it is possible to display a specific instance of *Tlli*.
Mib	WirelessSgsn
Dyn. Subcomp.	"COMPONENT Sgsn Tlli MobilityContext (Mc)" "COMPONENT Sgsn Tlli SessionContext (Sc)" "COMPONENT Sgsn Tlli HlrCacheRecord (HlrcRec)"
Common Verbs	Help List Display

COMPONENT Sgsn Tlli MobilityContext (Mc)

Groups	"GROUP Sgsn Tlli Mc Operational (Oper)" "GROUP Sgsn Tlli Mc WlcCustomCounters (WlcCustomCntr)"
Scope	Application

Description	*Sgsn Tlli/<tlli> MobilityContext* *Sgsn Imsi/<imsi> MobilityContext* *Gsc/n Tlli/<tlli> MobilityContext* *Gsc/n Imsi/<imsi> MobilityContext* This component represents the GPRS Mobility Management (GMM) context created for each mobile subscriber that is GPRS-Attached. The Mobility Context is an instance of the *InternationalMobileSubscriberId (Imsi)* and the *TemporaryLogicalLinkId (Tlli)* of the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Tlli Mc Operational (Oper)

Properties	Operational
Description	This group contains the GPRS Mobility Management (GMM) information for a subscriber.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Tlli Mc temporaryLogicalLinkId (tlli)

Access	Read: All Write: Illegal
Description	This attribute indicates the Temporary Logical Link Identifier (TLLI) used to identify the context of the Mobile Station (MS) within the Serving GPRS Support Node (SGSN). This is one of the main reference keys that is used to identify an MS in the SGSN.
Mib	WirelessSgsn
Values	String (4, Hex)
Default	No default

ATTRIBUTE Sgsn Tlli Mc gmmState (gmmSt)

Access	Read: All Write: Illegal
Description	This attribute indicates the GPRS Mobility Management (GMM) state for a mobile. Upon initialization, this attribute value is in ***idle*** state. The states have the following meaning: ***idle*** - The Mobile Station (MS) is not attached to the GPRS Mobility Management (GMM). The MS and the SGSN context hold no valid location or routing area information for the mobile. ***standby*** - The MS is attached to the GMM. ***ready*** - MS is attached and can be sending or receiving the Point To Point Protocol Data Units (PTP PDUs).
Mib	WirelessSgsn
Values	idle standby ready
Default	No default

ATTRIBUTE Sgsn Tlli Mc routingAreaIdentifier (rai)

Access	Read: All Write: Illegal
Description	This attribute indicates the current routing area of the Mobile Station (MS). The routing area is transmitted to the Serving GPRS Support Node (SGSN) during a Routing Area Update procedure or Attach procedure. The routing area identifier includes the Mobile Country Code (MCC as first 3 digits), the Mobile Network Code (MNC as next 2 digits), the Location Area Code (LAC as next 4 digits), and the Routing Area Code (RAC as last 2 digits).
Mib	WirelessSgsn
Values	String (5..6, Hex)
Default	No default

ATTRIBUTE Sgsn Tlli Mc cellId

Access	Read: All Write: Illegal
Description	This attribute indicates the current cell location of the Mobile Station (MS).
Mib	WirelessSgsn
Values	String (2, Hex)
Default	No default

ATTRIBUTE Sgsn Tlli Mc cellEntryTime (cellEntry)

Access	Read: All Write: Illegal
Description	This attribute indicates when the Mobile Station (MS) entered the cell indicated by the *cellId*.
Mib	WirelessSgsn
Values	Time (DHMS)
Default	No default

ATTRIBUTE Sgsn Tlli Mc sgsnClassmark (sgsnCm)

Access	Read: All Write: Illegal
Description	This attribute indicates the network portion of the Mobile Station (MS) classmark. The classmark contains specific information about a Mobile Station (MS).
Mib	WirelessSgsn
Values	String (1..2, Hex)
Default	No default

ATTRIBUTE Sgsn Tlli Mc drxParameters (drxParms)

Access	Read: All Write: Illegal

Description	This attribute indicates if the Mobile Station (MS) supports discontinuous reception or not. The DRX parameter is transmitted by the MS during an Attach Request procedure and a Routing Area Update procedure.
Mib	WirelessSgsn
Values	supported unsupported
Default	No default

ATTRIBUTE Sgsn Tlli Mc readyTimer (t3314)

Access	Read: All Write: Illegal
Description	This attribute indicates the negotiated value of the Ready Timer (T3314) for the GPRS Mobility Management (GMM) state transition. The Ready Timer is restarted whenever a signaling or a data Protocol Data Unit (PDU) is received from the Mobile Station (MS). In the event of the Ready Timer expiry, the attribute *gmmState* changes to ***standby***. The negotiation of this value is based on the *readyTimer* provisioned in the *Sgsn GprsSubscriberControl* component.
Mib	WirelessSgsn
Values	Decimal (1..11160) forceStandby
Units	seconds
Default	No default

ATTRIBUTE Sgsn Tlli Mc pagingProceedFlag (ppf)

Access	Read: All Write: Illegal
Description	This attribute indicates the paging proceed flag. The flag indicates whether paging can be initiated.
Mib	WirelessSgsn

Values	false true
Default	No default

GROUP Sgsn Tlli Mc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Tlli Mc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Tlli Mc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Tlli Mc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sgsn Tlli SessionContext (Sc)

Instance	Decimal (0..15)
Groups	"GROUP Sgsn Tlli Sc SessionContextOp (ScOp)"
Scope	Application
Description	*Sgsn Tlli/<tlli> SessionContext/<nsapi>* This component represents the Session Context information for a subscriber. The Session Contexts are created for each activated Packet Data Protocol (PDP) context of a subscriber. The instance value identifies a session for a mobile subscriber.
Mib	WirelessSgsn
Dyn. Subcomp.	"COMPONENT Sgsn Tlli Sc RequestedQos (ReqQos)" "COMPONENT Sgsn Tlli Sc NegotiatedQos (NegQos)"
Common Verbs	Help List Display

GROUP Sgsn Tlli Sc SessionContextOp (ScOp)

Properties	Operational
Description	This group contains the Session Context information for a subscriber. The Session Contexts are created for each activated Packet Data Protocol (PDP) context of a subscriber.

Mib	WirelessSgsn

ATTRIBUTE Sgsn Tlli Sc selectedApnNetworkId (selApnNwkId)

Access	Read: All Write: Illegal
Description	This attribute indicates the selected Access Point Name (APN) Network Identifier. The APN Network Identifier can be the one received from the mobile as part of the ACTIVATE PDP CONTEXT REQUEST message or it can be selected from the subscription record against which this session has been activated or it can be the *defaultApnNetworkId* (defined in *Sgsn Gsc*) for the requested PDP type provisioned on the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn
Values	String (1..63, ASCII)
Default	No default

ATTRIBUTE Sgsn Tlli Sc selectedApnOperatorId (selApnOpId)

Access	Read: All Write: Illegal
Description	This attribute indicates the selected Access Point Name (APN) Operator Identifier. The APN Operator Identifier can be the one received from the Mobile Station (MS) as part of the ACTIVATE PDP CONTEXT REQUEST message or it can be the one constructed from the subscriber's IMSI as mnc<3 MNC digits>.mcc<3 MCC digits>.gprs.
Mib	WirelessSgsn
Values	String (1..37, ASCII)
Default	No default

ATTRIBUTE Sgsn Tlli Sc dataPathGgsnAddress (dGgsnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the Gateway GPRS Support Node (GGSN) for the data path that is currently used by the activated Packet Data Protocol (PDP) context.
Mib	WirelessSgsn
Values	IP address
Default	No default

ATTRIBUTE Sgsn Tlli Sc signalingGgsnAddress (sGgsnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the Gateway GPRS Support Node (GGSN) for the signaling path that is currently used by the activated Packet Data Protocol (PDP) context.
Mib	WirelessSgsn
Values	IP address
Default	No default

ATTRIBUTE Sgsn Tlli Sc pdpContextIdentifier (pdpCid)

Access	Read: All Write: Illegal
Description	This attribute indicates the subscription record against which this session has been activated.
Mib	WirelessSgsn
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Sgsn Tlli Sc pdpType (pdpT)

Access	Read: All Write: Illegal

Description	This attribute defines the end user protocol to be used between the external packet data network and the Mobile Station (MS) such as, X.25, IP, PPP. For X.25 currently defined address format is X.121, for IP protocol currently defined address formats are IPV4, IPV6, and PPP protocol has no address format.
Mib	WirelessSgsn
Values	x25 ip ppp
Default	No default

ATTRIBUTE Sgsn Tlli Sc ipv4PdpAddress (ipv4Addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is IPv4. The address conforms to the standard addressing scheme of the IP version 4 address.
Mib	WirelessSgsn
Values	IP address
Default	No default

ATTRIBUTE Sgsn Tlli Sc x121PdpAddress (x121Addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is X.121.
Mib	WirelessSgsn
Values	BCD (1..14)
Default	No default

ATTRIBUTE Sgsn Tlli Sc otherPdpAddress (otherAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. The Packet Data Protocol (PDP) protocol type for the *otherPdpAddress* can be obtained from the attribute *pdpType* and the addressing type from *pdpAddressFormat*.
Mib	WirelessSgsn
Values	String (1..16, Hex)
Default	No default

ATTRIBUTE Sgsn Tlli Sc pdpAddressFormat (pdpTnum)

Access	Read: All Write: Illegal
Description	This attribute indicates the addressing type, such as, X.121, IPv4, IPv6.
Mib	WirelessSgsn
Values	x121 ipv4 ipv6
Default	No default

ATTRIBUTE Sgsn Tlli Sc ggsnRemoteTeid (ggsnRemTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg that originates at the GPRS Serving GPRS Support Node (SGSN) and terminates at the Gateway GPRS Support Node (GGSN).
Mib	WirelessSgsn
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Sgsn TIli Sc ggsnLocalTeid (ggsnLocTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg that originates at the Gateway GPRS Support Node (GGSN) and terminates at the GPRS Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn TIli Sc signallingGgsnTeid (sGgsnTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg endpoint of the control tunnel that runs between the GPRS Serving GPRS Support Node (SGSN) and the Gateway GPRS Support Node (GGSN).
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn TIli Sc packetFlowIdentifier (pfi)

Access	Read: All Write: Illegal
Description	This attribute indicates the Packet Flow Identifier (PFI) associated with this Packet Data Protocol (PDP) context. The PFI identifies the Aggregate BSS Quality of Service Profile (ABQP) used for a Packet Flow Context (PFC). The ABQP parameters associated with this PFI can be obtained

	from the *Tlli/<tlli> Mc Pfc/<pfi>* component or the *Imsi/<imsi> Mc Pfc/<pfi>* component.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sgsn Tlli Sc RequestedQos (ReqQos)

Groups	"GROUP Sgsn Tlli Sc ReqQos QosProfile (Qos)"
Scope	Application
Description	*Sgsn Imsi/<imsi> SessionContext/<nsapi> RequestedQos* *Gsc/n Imsi/<imsi> SessionContext/<nsapi> RequestedQos* This component represents the Quality of Service (QoS) profile requested by a mobile subscriber for this session.
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Tlli Sc ReqQos QosProfile (Qos)

Properties	Operational
Description	This group contains the Quality of Service (QoS) profile. It contains either the requested QoS, the negotiated QoS, or the subscribed QoS based on which component contains this group.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Tlli Sc ReqQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Signalling Data Units' (SDUs) order of delivery is guaranteed.
Mib	WirelessSgsn

Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Sgsn Tlli Sc ReqQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal
Description	This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network. The erroneous SDUs can be handled in one of the following ways: ***noDetect:*** The Signalling Data Units (SDUs) are delivered without considering error detection. ***errSdusDelivered:*** The erroneous Signalling Data Units (SDUs) are delivered together with an error indication. ***errSdusNotDelivered:*** The erroneous Signalling Data Units (SDUs) are discarded.
Mib	WirelessSgsn
Values	noDetect errSdusDelivered errSdusNotDelivered
Default	No default

ATTRIBUTE Sgsn Tlli Sc ReqQos trafficClass (traffClass)

Access	Read: All Write: Illegal
Description	This attribute indicates the type of application for which the bearer service is optimized. By including the traffic class itself as an attribute, GPRS can make assumptions about the traffic source and optimize the transport for that traffic type. The different traffic classes are:

conversational - This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing.

streaming - This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay.

interactive - This class includes applications where a human or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content.

background - This class includes applications where the end-user, typically a computer, sends and receives data files in the background (for example: emails, SMS and database downloads). This is characterized by the destination not expecting the data within a certain time.

Mib	WirelessSgsn
Values	conversational (conv) streaming (strm) interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Sgsn TIli Sc ReqQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDU). It is used for admission control and policing.
Mib	WirelessSgsn
Values	Decimal (1..1502)

Units	octets
Default	No default

ATTRIBUTE Sgsn Tlli Sc ReqQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to GPRS in the uplink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Sgsn Tlli Sc ReqQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered by GPRS in the downlink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Sgsn Tlli Sc ReqQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal
Description	This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is

requested, this attribute indicates the bit error ratio in the delivered SDUs.

This attribute can take up values ranging from 1 through 9, representing:

1 -> 5*10 -2
2 -> 1*10 -2
3 -> 5*10 -3
4 -> 4*10 -3
5 -> 1*10 -3
6 -> 1*10 -4
7 -> 1*10 -5
8 -> 1*10 -6
9 -> 6*10 -8

Mib	WirelessSgsn
Values	Decimal (1..9)
Default	No default

ATTRIBUTE Sgsn Tlli Sc ReqQos sduErrorRatio (sduErrRatio)

Access	Read: All Write: Illegal
Description	This attribute indicates the fraction of Signalling Data Units (SDUs) lost or detected as erroneous. It is defined only for conforming traffic. This attribute can take up values between the numbers 1 - 7 representing the following: 1 -> 1*10 -2 2 -> 7*10 -3 3 -> 1*10 -3 4 -> 1*10 -4 5 -> 1*10 -5 6 -> 1*10 -6 7 -> 1*10 -1

Mib	WirelessSgsn
Values	Decimal (1..7)
Default	No default

ATTRIBUTE Sgsn Tlli Sc ReqQos trafficHandlingPriority (traffHndlPr)

Access	Read: All Write: Illegal
Description	This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the value ***interactive.*** A value of ***0*** is reserved when this attribute is displayed for the negotiated Quality of Service (QoS) and the subscribed QoS. When displayed for the requested QoS, it indicates that the value in the subscribed QoS is to be used. Values of ***1***, ***2***, or ***3*** indicate the traffic priority, with ***1*** indicating the highest priority and ***3*** the lowest.
Mib	WirelessSgsn
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Sgsn Tlli Sc ReqQos transferDelay (transfDelay)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.
Mib	WirelessSgsn
Values	Decimal (10..4100)
Units	msec
Default	No default

ATTRIBUTE Sgsn Tlli Sc ReqQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Default	No default

ATTRIBUTE Sgsn Tlli Sc ReqQos guaranteedDownlinkBitRate (guarDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Default	No default

COMPONENT Sgsn Tlli Sc NegotiatedQos (NegQos)

Groups	"GROUP Sgsn Tlli Sc NegQos QosProfile (Qos)"
Scope	Application

Description	*Sgsn Imsi/<imsi> SessionContext/<nsapi> NegotiatedQos* *Gsc/n Imsi/<imsi> SessionContext/<nsapi> NegotiatedQos* This component represents the negotiated Quality of Service (QoS) profile received by a mobile subscriber for this session.
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Tlli Sc NegQos QosProfile (Qos)

Properties	Operational
Description	This group contains the Quality of Service (QoS) profile. It contains either the requested QoS, the negotiated QoS, or the subscribed QoS based on which component contains this group.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Tlli Sc NegQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Signalling Data Units' (SDUs) order of delivery is guaranteed.
Mib	WirelessSgsn
Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Sgsn Tlli Sc NegQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal
Description	This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network.

The erroneous SDUs can be handled in one of the following ways:

noDetect: The Signalling Data Units (SDUs) are delivered without considering error detection.

errSdusDelivered: The erroneous Signalling Data Units (SDUs) are delivered together with an error indication.

errSdusNotDelivered: The erroneous Signalling Data Units (SDUs) are discarded.

Mib: WirelessSgsn

Values:
noDetect
errSdusDelivered
errSdusNotDelivered

Default: No default

ATTRIBUTE Sgsn TIli Sc NegQos trafficClass (traffClass)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the type of application for which the bearer service is optimized. By including the traffic class itself as an attribute, GPRS can make assumptions about the traffic source and optimize the transport for that traffic type.

The different traffic classes are:
conversational - This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing.

streaming - This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay.

interactive - This class includes applications where a human or

machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content.

background **-** This class includes applications where the end-user, typically a computer, sends and receives data files in the background (for example: emails, SMS and database downloads). This is characterized by the destination not expecting the data within a certain time.

Mib	WirelessSgsn
Values	conversational (conv) streaming (strm) interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Sgsn Tlli Sc NegQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDU). It is used for admission control and policing.
Mib	WirelessSgsn
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Sgsn Tlli Sc NegQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to GPRS in the uplink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.

Mib	WirelessSgsn
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Sgsn Tlli Sc NegQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered by GPRS in the downlink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Sgsn Tlli Sc NegQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal
Description	This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered SDUs. This attribute can take up values ranging from 1 through 9, representing: ***1*** -> 5*10 -2 ***2*** -> 1*10 -2 ***3*** -> 5*10 -3 ***4*** -> 4*10 -3 ***5*** -> 1*10 -3 ***6*** -> 1*10 -4

7 -> 1*10 -5
8 -> 1*10 -6
9 -> 6*10 -8

Mib	WirelessSgsn
Values	Decimal (1..9)
Default	No default

ATTRIBUTE Sgsn Tlli Sc NegQos sduErrorRatio (sduErrRatio)

Access	Read: All Write: Illegal
Description	This attribute indicates the fraction of Signalling Data Units (SDUs) lost or detected as erroneous. It is defined only for conforming traffic. This attribute can take up values between the numbers 1 - 7 representing the following: 1 -> 1*10 -2 2 -> 7*10 -3 3 -> 1*10 -3 4 -> 1*10 -4 5 -> 1*10 -5 6 -> 1*10 -6 7 -> 1*10 -1
Mib	WirelessSgsn
Values	Decimal (1..7)
Default	No default

ATTRIBUTE Sgsn Tlli Sc NegQos trafficHandlingPriority (traffHndlPr)

Access	Read: All Write: Illegal
Description	This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the value ***interactive.***

A value of ***0*** is reserved when this attribute is displayed for the negotiated Quality of Service (QoS) and the subscribed QoS. When displayed for the requested QoS, it indicates that the value in the subscribed QoS is to be used. Values of ***1***, ***2***, or ***3*** indicate the traffic priority, with ***1*** indicating the highest priority and ***3*** the lowest.

Mib	WirelessSgsn
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Sgsn Tlli Sc NegQos transferDelay (transfDelay)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.
Mib	WirelessSgsn
Values	Decimal (10..4100)
Units	msec
Default	No default

ATTRIBUTE Sgsn Tlli Sc NegQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute

has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.

Mib WirelessSgsn

Values Decimal (0..8640)

Default No default

ATTRIBUTE Sgsn Tlli Sc NegQos guaranteedDownlinkBitRate (guarDnBr)

Access Read: All
Write: Illegal

Description This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period.

The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.

Mib WirelessSgsn

Values Decimal (0..8640)

Default No default

COMPONENT Sgsn Tlli HlrCacheRecord (HlrcRec)

Groups "GROUP Sgsn Tlli HlrcRec Operational (Oper)"
"GROUP Sgsn Tlli HlrcRec WlcCustomCounters (WlcCustomCntr)"

Scope Application

Description *Sgsn Tlli/<tlli> HlrCacheRecord*
Sgsn Imsi/<imsi> HlrCacheRecord
Gsc/n Tlli/<tlli> HlrCacheRecord
Gsc/n Imsi/<imsi> HlrCacheRecord

This component represents a subscription record downloaded

	from the Home Location Register (HLR). The *HlrCache* on the *GprsSubscriberControl (Gsc)* contains the active subscriber data.
Mib	WirelessSgsn
Dyn. Subcomp.	"COMPONENT Sgsn Tlli HlrcRec PdpContext (PdpC)"
Common Verbs	Help List Display

GROUP Sgsn Tlli HlrcRec Operational (Oper)

Properties	Operational
Description	This group contains subscription information downloaded from the Home Location Register (HLR).
Mib	WirelessSgsn

ATTRIBUTE Sgsn Tlli HlrcRec internationalMobileSubscriberId (imsi)

Access	Read: All Write: Illegal
Description	This attribute indicates the International Mobile Subscriber Identity (IMSI) of the Mobile Station (MS).
Mib	WirelessSgsn
Values	BCD (5..15)
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec hlrNumber (hlrNo)

Access	Read: All Write: Illegal
Description	This attribute indicates the HLR Number of the Home Location Register (HLR) to which the *HlrCache* record is currently associated. It is used to retrieve the *HlrCache* records to be restored after receipt of the RESET message from the HLR.
Mib	WirelessSgsn

Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE Sgsn TIli HlrcRec msIsdnNumber (msIsdn)

Access	Read: All Write: Illegal
Description	This attribute indicates the Integrated Service Digital Network (ISDN) number of the mobile subscriber. This is represented as an E.164 number in international format.
Mib	WirelessSgsn
Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE Sgsn TIli HlrcRec subscriptionConfirmedByHlr (subsCByHlr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the subscription information in the Serving GPRS Support Node (SGSN) is known to be in agreement with the Home Location Register (HLR) when the SGSN successfully performs an UPDATE GPRS LOCATION to the HLR.
Mib	WirelessSgsn
Values	no yes
Default	No default

ATTRIBUTE Sgsn TIli HlrcRec locationInfoConfirmedInHlr (locCInHlr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Home Location Register (HLR) record of the Serving GPRS Support Node (SGSN) address for the Mobile Station (MS) has been confirmed by radio contact.

	It is initially set to, ***no***, when the SGSN receives a ROUTING AREA UPDATE REQUEST, or an IMSI and a GPRS ATTACH-REQUEST, or if a RESET message is received from the HLR with which the MS is registered. The indicator is set to, ***yes***, when a successful UPDATE GPRS LOCATION is performed for the MS.
Mib	WirelessSgsn
Values	no yes
Default	No default

GROUP Sgsn Tlli HlrcRec WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Tlli HlrcRec customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec customCounter2 (customCntr2)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sgsn Tlli HlrcRec PdpContext (PdpC)

Instance	Decimal (1..50)
Groups	"GROUP Sgsn Tlli HlrcRec PdpC Operational (Oper)" "GROUP Sgsn Tlli HlrcRec PdpC WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Tlli/<tlli> HlrcRec PdpContext/n* *Sgsn Imsi/<imsi> HlrcRec PdpContext/n* *Gsc/n Tlli/<tlli> HlrcRec PdpContext/n* *Gsc/n Imsi/<imsi> HlrcRec PdpContext/n* This component represents the Packet Data Protocol (PDP) context data downloaded from the Home Location Register

	(HLR). It indicates the different PDP profiles (that is, Quality of Service) the subscriber has.
Mib	WirelessSgsn
Dyn. Subcomp.	"COMPONENT Sgsn Tlli HlrcRec PdpC SubscribedQos (SubsQos)"
Common Verbs	Help List Display

GROUP Sgsn Tlli HlrcRec PdpC Operational (Oper)

Properties	Operational
Description	This group contains the Packet Data Protocol (PDP) subscription data downloaded from the Home Location Register (HLR).
Mib	WirelessSgsn

ATTRIBUTE Sgsn Tlli HlrcRec PdpC pdpContextIdentifier (pdpCid)

Access	Read: All Write: Illegal
Description	This attribute indicates a Packet Data Protocol (PDP) Context in a subscription record.
Mib	WirelessSgsn
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC pdpType (pdpT)

Access	Read: All Write: Illegal
Description	This attribute defines the end user protocol to be used between the external packet data network and the Mobile Station (MS) such as, X.25, IP, PPP. For X.25 currently defined address format is X.121, for IP

protocol currently defined address formats are IPV4, IPV6, and PPP protocol has no address format.

Mib: WirelessSgsn

Values:
x25
ip
ppp

Default: No default

ATTRIBUTE Sgsn TIli HlrcRec PdpC ipv4PdpAddress (ipv4Addr)

Access: Read: All
Write: Illegal

Description: This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is IPv4. The address conforms to the standard addressing scheme of the IP version 4 address.

Mib: WirelessSgsn

Values: IP address

Default: No default

ATTRIBUTE Sgsn TIli HlrcRec PdpC x121PdpAddress (x121Addr)

Access: Read: All
Write: Illegal

Description: This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is X.121.

Mib: WirelessSgsn

Values: BCD (1..14)

Default: No default

ATTRIBUTE Sgsn TIli HlrcRec PdpC otherPdpAddress (otherAddr)

Access: Read: All
Write: Illegal

Description	This attribute indicates the network layer address of the packet data network. The Packet Data Protocol (PDP) protocol type for the *otherPdpAddress* can be obtained from the attribute *pdpType* and the addressing type from *pdpAddressFormat*.
Mib	WirelessSgsn
Values	String (1..16, Hex)
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC pdpAddressFormat (pdpTnum)

Access	Read: All Write: Illegal
Description	This attribute indicates the addressing type, such as, X.121, IPv4, IPv6.
Mib	WirelessSgsn
Values	x121 ipv4 ipv6
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC apnNetworkIdentifier (apnNwkId)

Access	Read: All Write: Illegal
Description	This attribute indicates an Access Point Name (APN) Network Identifier which is the Logical Name of the access point to the external packet data network. A Logical Name is a label or a fully qualified domain name according to the Domain Name System (DNS) naming conventions.
Mib	WirelessSgsn
Values	String (1..63, ASCII)
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC vplmnAddressAllowed (vplmnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Mobile Station (MS) is allowed to use the Access Point Name (APN) in the Visiting Public Land Mobile Network (VPLMN).
Mib	WirelessSgsn
Values	no yes
Default	No default

GROUP Sgsn Tlli HlrcRec PdpC WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Tlli HlrcRec PdpC customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sgsn Tlli HlrcRec PdpC SubscribedQos (SubsQos)

Groups	"GROUP Sgsn Tlli HlrcRec PdpC SubsQos QosProfile (Qos)"
Scope	Application
Description	*Sgsn Imsi/<imsi> HlrcRec PdpContext/n SubscribedQos* *Gsc/n Imsi/<imsi> HlrcRec PdpContext/n SubscribedQos* This component represents the Quality of Service (QoS) profile of the subscriber downloaded from the Home Location Register (HLR).
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Tlli HlrcRec PdpC SubsQos QosProfile (Qos)

Properties	Operational
Description	This group contains the Quality of Service (QoS) profile. It contains either the requested QoS, the negotiated QoS, or the subscribed QoS based on which component contains this group.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Tlli HlrcRec PdpC SubsQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Signalling Data Units' (SDUs) order of delivery is guaranteed.
Mib	WirelessSgsn
Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC SubsQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal
Description	This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network. The erroneous SDUs can be handled in one of the following ways: ***noDetect:*** The Signalling Data Units (SDUs) are delivered without considering error detection. ***errSdusDelivered:*** The erroneous Signalling Data Units (SDUs) are delivered together with an error indication. ***errSdusNotDelivered:*** The erroneous Signalling Data Units (SDUs) are discarded.
Mib	WirelessSgsn

Values	noDetect errSdusDelivered errSdusNotDelivered
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC SubsQos trafficClass (traffClass)

Access	Read: All Write: Illegal
Description	This attribute indicates the type of application for which the bearer service is optimized. By including the traffic class itself as an attribute, GPRS can make assumptions about the traffic source and optimize the transport for that traffic type. The different traffic classes are: ***conversational -*** This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing. ***streaming -*** This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay. ***interactive -*** This class includes applications where a human or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content. ***background -*** This class includes applications where the end-user, typically a computer, sends and receives data files in the background (for example: emails, SMS and database downloads). This is characterized by the destination not expecting the data within a certain time.
Mib	WirelessSgsn
Values	conversational (conv) streaming (strm)

	interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC SubsQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDU). It is used for admission control and policing.
Mib	WirelessSgsn
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC SubsQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to GPRS in the uplink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC SubsQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered by GPRS in the downlink direction within a period of time, divided

by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.

Mib	WirelessSgsn
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC SubsQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal
Description	This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered SDUs. This attribute can take up values ranging from 1 through 9, representing: ***1*** -> 5*10 -2 ***2*** -> 1*10 -2 ***3*** -> 5*10 -3 ***4*** -> 4*10 -3 ***5*** -> 1*10 -3 ***6*** -> 1*10 -4 ***7*** -> 1*10 -5 ***8*** -> 1*10 -6 ***9*** -> 6*10 -8
Mib	WirelessSgsn
Values	Decimal (1..9)
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC SubsQos sduErrorRatio (sduErrRatio)

Access	Read: All Write: Illegal

Description

This attribute indicates the fraction of Signalling Data Units (SDUs) lost or detected as erroneous. It is defined only for conforming traffic.

This attribute can take up values between the numbers 1 - 7 representing the following:
1 -> 1*10 -2
2 -> 7*10 -3
3 -> 1*10 -3
4 -> 1*10 -4
5 -> 1*10 -5
6 -> 1*10 -6
7 -> 1*10 -1

Mib

WirelessSgsn

Values

Decimal (1..7)

Default

No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC SubsQos trafficHandlingPriority (traffHndlPr)

Access

Read: All
Write: Illegal

Description

This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the value ***interactive.***

A value of ***0*** is reserved when this attribute is displayed for the negotiated Quality of Service (QoS) and the subscribed QoS. When displayed for the requested QoS, it indicates that the value in the subscribed QoS is to be used. Values of ***1***, ***2***, or ***3*** indicate the traffic priority, with ***1*** indicating the highest priority and ***3*** the lowest.

Mib

WirelessSgsn

Values

Decimal (0..3)

Default

No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC SubsQos transferDelay (transfDelay)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.
Mib	WirelessSgsn
Values	Decimal (10..4100)
Units	msec
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC SubsQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Default	No default

ATTRIBUTE Sgsn Tlli HlrcRec PdpC SubsQos guaranteedDownlinkBitRate (guarDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period.

The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.

Mib WirelessSgsn

Values Decimal (0..8640)

Default No default

COMPONENT Sgsn InternationalMobileSubscriberId (Imsi)

Instance BCD (5..15)

Scope Application

Description *Sgsn InternationalMobileSubscriberId/<imsi>*

This component represents an instance of the International Mobile Subscriber Identity (IMSI). The information includes subscription context, mobility management context, session contexts, and logical
link context. Each instance is indexed by the IMSI of the mobile subscriber. A list of all the current IMSI instances is not possible, but it is possible to display a specific instance of *Imsi*.

Mib WirelessSgsn

Dyn. Subcomp. "COMPONENT Sgsn Imsi MobilityContext (Mc)"
"COMPONENT Sgsn Imsi SessionContext (Sc)"
"COMPONENT Sgsn Imsi HlrCacheRecord (HlrcRec)"
"COMPONENT Sgsn Imsi Bssap"

Common Verbs
Help
List
Display

VERB Clear Sgsn Imsi

Impact	Service
Description	*Clear InternationMobileSubscriberId/<imsi>* This command clears the specified *Imsi* component. If the *msPurgeFunction* provisionable attribute is enabled in SGSN GSC MsPurge, it will cause a Mobile Subscriber Purge request to be sent to the Home Location Register.

COMPONENT Sgsn Imsi MobilityContext (Mc)

Groups	"GROUP Sgsn Imsi Mc Operational (Oper)" "GROUP Sgsn Imsi Mc WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Tlli/<tlli> MobilityContext* *Sgsn Imsi/<imsi> MobilityContext* *Gsc/n Tlli/<tlli> MobilityContext* *Gsc/n Imsi/<imsi> MobilityContext* This component represents the GPRS Mobility Management (GMM) context created for each mobile subscriber that is GPRS-Attached. The Mobility Context is an instance of the *InternationalMobileSubscriberId (Imsi)* and the *TemporaryLogicalLinkId (Tlli)* of the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Imsi Mc Operational (Oper)

Properties	Operational
Description	This group contains the GPRS Mobility Management (GMM) information for a subscriber.

Mib	WirelessSgsn

ATTRIBUTE Sgsn Imsi Mc temporaryLogicalLinkId (tlli)

Access	Read: All Write: Illegal
Description	This attribute indicates the Temporary Logical Link Identifier (TLLI) used to identify the context of the Mobile Station (MS) within the Serving GPRS Support Node (SGSN). This is one of the main reference keys that is used to identify an MS in the SGSN.
Mib	WirelessSgsn
Values	String (4, Hex)
Default	No default

ATTRIBUTE Sgsn Imsi Mc gmmState (gmmSt)

Access	Read: All Write: Illegal
Description	This attribute indicates the GPRS Mobility Management (GMM) state for a mobile. Upon initialization, this attribute value is in ***idle*** state. The states have the following meaning: ***idle*** - The Mobile Station (MS) is not attached to the GPRS Mobility Management (GMM). The MS and the SGSN context hold no valid location or routing area information for the mobile. ***standby*** - The MS is attached to the GMM. ***ready*** - MS is attached and can be sending or receiving the Point To Point Protocol Data Units (PTP PDUs).
Mib	WirelessSgsn
Values	idle standby ready
Default	No default

ATTRIBUTE Sgsn Imsi Mc routingAreaIdentifier (rai)

Access	Read: All Write: Illegal
Description	This attribute indicates the current routing area of the Mobile Station (MS). The routing area is transmitted to the Serving GPRS Support Node (SGSN) during a Routing Area Update procedure or Attach procedure. The routing area identifier includes the Mobile Country Code (MCC as first 3 digits), the Mobile Network Code (MNC as next 2 digits), the Location Area Code (LAC as next 4 digits), and the Routing Area Code (RAC as last 2 digits).
Mib	WirelessSgsn
Values	String (5..6, Hex)
Default	No default

ATTRIBUTE Sgsn Imsi Mc cellId

Access	Read: All Write: Illegal
Description	This attribute indicates the current cell location of the Mobile Station (MS).
Mib	WirelessSgsn
Values	String (2, Hex)
Default	No default

ATTRIBUTE Sgsn Imsi Mc cellEntryTime (cellEntry)

Access	Read: All Write: Illegal
Description	This attribute indicates when the Mobile Station (MS) entered the cell indicated by the *cellId*.
Mib	WirelessSgsn
Values	Time (DHMS)
Default	No default

ATTRIBUTE Sgsn Imsi Mc sgsnClassmark (sgsnCm)

Access	Read: All Write: Illegal
Description	This attribute indicates the network portion of the Mobile Station (MS) classmark. The classmark contains specific information about a Mobile Station (MS).
Mib	WirelessSgsn
Values	String (1..2, Hex)
Default	No default

ATTRIBUTE Sgsn Imsi Mc drxParameters (drxParms)

Access	Read: All Write: Illegal
Description	This attribute indicates if the Mobile Station (MS) supports discontinuous reception or not. The DRX parameter is transmitted by the MS during an Attach Request procedure and a Routing Area Update procedure.
Mib	WirelessSgsn
Values	supported unsupported
Default	No default

ATTRIBUTE Sgsn Imsi Mc readyTimer (t3314)

Access	Read: All Write: Illegal
Description	This attribute indicates the negotiated value of the Ready Timer (T3314) for the GPRS Mobility Management (GMM) state transition. The Ready Timer is restarted whenever a signaling or a data Protocol Data Unit (PDU) is received from the Mobile Station (MS). In the event of the Ready Timer expiry, the attribute *gmmState* changes to ***standby***.

	The negotiation of this value is based on the *readyTimer* provisioned in the *Sgsn GprsSubscriberControl* component.
Mib	WirelessSgsn
Values	Decimal (1..11160) forceStandby
Units	seconds
Default	No default

ATTRIBUTE Sgsn Imsi Mc pagingProceedFlag (ppf)

Access	Read: All Write: Illegal
Description	This attribute indicates the paging proceed flag. The flag indicates whether paging can be initiated.
Mib	WirelessSgsn
Values	false true
Default	No default

GROUP Sgsn Imsi Mc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Imsi Mc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Imsi Mc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Imsi Mc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sgsn Imsi SessionContext (Sc)

Instance	Decimal (0..15)
Groups	"GROUP Sgsn Imsi Sc SessionContextOp (ScOp)"
Scope	Application
Description	*Sgsn Imsi/<imsi> SessionContext/<nsapi>* This component represents the Session Context information for a

	subscriber. The Session Contexts are created for each activated Packet Data Protocol (PDP) context of a subscriber. The instance value identifies a session for a mobile subscriber.
Mib	WirelessSgsn
Dyn. Subcomp.	"COMPONENT Sgsn Imsi Sc RequestedQos (ReqQos)" "COMPONENT Sgsn Imsi Sc NegotiatedQos (NegQos)"
Common Verbs	Help List Display

GROUP Sgsn Imsi Sc SessionContextOp (ScOp)

Properties	Operational
Description	This group contains the Session Context information for a subscriber. The Session Contexts are created for each activated Packet Data Protocol (PDP) context of a subscriber.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Imsi Sc selectedApnNetworkId (selApnNwkId)

Access	Read: All Write: Illegal
Description	This attribute indicates the selected Access Point Name (APN) Network Identifier. The APN Network Identifier can be the one received from the mobile as part of the ACTIVATE PDP CONTEXT REQUEST message or it can be selected from the subscription record against which this session has been activated or it can be the *defaultApnNetworkId* (defined in *Sgsn Gsc*) for the requested PDP type provisioned on the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn
Values	String (1..63, ASCII)
Default	No default

ATTRIBUTE Sgsn Imsi Sc selectedApnOperatorId (selApnOpId)

Access	Read: All Write: Illegal
Description	This attribute indicates the selected Access Point Name (APN) Operator Identifier. The APN Operator Identifier can be the one received from the Mobile Station (MS) as part of the ACTIVATE PDP CONTEXT REQUEST message or it can be the one constructed from the subscriber's IMSI as mnc<3 MNC digits>.mcc<3 MCC digits>.gprs.
Mib	WirelessSgsn
Values	String (1..37, ASCII)
Default	No default

ATTRIBUTE Sgsn Imsi Sc dataPathGgsnAddress (dGgsnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the Gateway GPRS Support Node (GGSN) for the data path that is currently used by the activated Packet Data Protocol (PDP) context.
Mib	WirelessSgsn
Values	IP address
Default	No default

ATTRIBUTE Sgsn Imsi Sc signalingGgsnAddress (sGgsnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the Gateway GPRS Support Node (GGSN) for the signaling path that is currently used by the activated Packet Data Protocol (PDP) context.
Mib	WirelessSgsn

Values	IP address
Default	No default

ATTRIBUTE Sgsn Imsi Sc pdpContextIdentifier (pdpCid)

Access	Read: All Write: Illegal
Description	This attribute indicates the subscription record against which this session has been activated.
Mib	WirelessSgsn
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Sgsn Imsi Sc pdpType (pdpT)

Access	Read: All Write: Illegal
Description	This attribute defines the end user protocol to be used between the external packet data network and the Mobile Station (MS) such as, X.25, IP, PPP. For X.25 currently defined address format is X.121, for IP protocol currently defined address formats are IPV4, IPV6, and PPP protocol has no address format.
Mib	WirelessSgsn
Values	x25 ip ppp
Default	No default

ATTRIBUTE Sgsn Imsi Sc ipv4PdpAddress (ipv4Addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data

	Protocol (PDP) address is IPv4. The address conforms to the standard addressing scheme of the IP version 4 address.
Mib	WirelessSgsn
Values	IP address
Default	No default

ATTRIBUTE Sgsn Imsi Sc x121PdpAddress (x121Addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is X.121.
Mib	WirelessSgsn
Values	BCD (1..14)
Default	No default

ATTRIBUTE Sgsn Imsi Sc otherPdpAddress (otherAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. The Packet Data Protocol (PDP) protocol type for the *otherPdpAddress* can be obtained from the attribute *pdpType* and the addressing type from *pdpAddressFormat*.
Mib	WirelessSgsn
Values	String (1..16, Hex)
Default	No default

ATTRIBUTE Sgsn Imsi Sc pdpAddressFormat (pdpTnum)

Access	Read: All Write: Illegal
Description	This attribute indicates the addressing type, such as, X.121, IPv4, IPv6.

Mib	WirelessSgsn
Values	x121 ipv4 ipv6
Default	No default

ATTRIBUTE Sgsn Imsi Sc ggsnRemoteTeid (ggsnRemTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg that originates at the GPRS Serving GPRS Support Node (SGSN) and terminates at the Gateway GPRS Support Node (GGSN).
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Imsi Sc ggsnLocalTeid (ggsnLocTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg that originates at the Gateway GPRS Support Node (GGSN) and terminates at the GPRS Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Imsi Sc signallingGgsnTeid (sGgsnTeid)

Access	Read: All Write: Illegal

Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg endpoint of the control tunnel that runs between the GPRS Serving GPRS Support Node (SGSN) and the Gateway GPRS Support Node (GGSN).
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Imsi Sc packetFlowIdentifier (pfi)

Access	Read: All Write: Illegal
Description	This attribute indicates the Packet Flow Identifier (PFI) associated with this Packet Data Protocol (PDP) context. The PFI identifies the Aggregate BSS Quality of Service Profile (ABQP) used for a Packet Flow Context (PFC). The ABQP parameters associated with this PFI can be obtained from the *Tlli/<tlli> Mc Pfc/<pfi>* component or the *Imsi/<imsi> Mc Pfc/<pfi>* component.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sgsn Imsi Sc RequestedQos (ReqQos)

Groups	"GROUP Sgsn Imsi Sc ReqQos QosProfile (Qos)"
Scope	Application
Description	*Sgsn Imsi/<imsi> SessionContext/<nsapi> RequestedQos* *Gsc/n Imsi/<imsi> SessionContext/<nsapi> RequestedQos*

	This component represents the Quality of Service (QoS) profile requested by a mobile subscriber for this session.
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Imsi Sc ReqQos QosProfile (Qos)

Properties	Operational
Description	This group contains the Quality of Service (QoS) profile. It contains either the requested QoS, the negotiated QoS, or the subscribed QoS based on which component contains this group.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Imsi Sc ReqQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Signalling Data Units' (SDUs) order of delivery is guaranteed.
Mib	WirelessSgsn
Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Sgsn Imsi Sc ReqQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal
Description	This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network. The erroneous SDUs can be handled in one of the following ways:

noDetect: The Signalling Data Units (SDUs) are delivered without considering error detection.

errSdusDelivered: The erroneous Signalling Data Units (SDUs) are delivered together with an error indication.

errSdusNotDelivered: The erroneous Signalling Data Units (SDUs) are discarded.

Mib: WirelessSgsn

Values:
noDetect
errSdusDelivered
errSdusNotDelivered

Default: No default

ATTRIBUTE Sgsn Imsi Sc ReqQos trafficClass (traffClass)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the type of application for which the bearer service is optimized. By including the traffic class itself as an attribute, GPRS can make assumptions about the traffic source and optimize the transport for that traffic type.

The different traffic classes are:
conversational - This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing.

streaming - This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay.

interactive - This class includes applications where a human or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content.

	background **-** This class includes applications where the end-user, typically a computer, sends and receives data files in the background (for example: emails, SMS and database downloads). This is characterized by the destination not expecting the data within a certain time.
Mib	WirelessSgsn
Values	conversational (conv) streaming (strm) interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Sgsn Imsi Sc ReqQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDU). It is used for admission control and policing.
Mib	WirelessSgsn
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Sgsn Imsi Sc ReqQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to GPRS in the uplink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessSgsn
Values	Decimal (0..8640)

Units	kbit/s
Default	No default

ATTRIBUTE Sgsn Imsi Sc ReqQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered by GPRS in the downlink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Sgsn Imsi Sc ReqQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal
Description	This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered SDUs. This attribute can take up values ranging from 1 through 9, representing: ***1*** -> 5*10 -2 ***2*** -> 1*10 -2 ***3*** -> 5*10 -3 ***4*** -> 4*10 -3 ***5*** -> 1*10 -3 ***6*** -> 1*10 -4 ***7*** -> 1*10 -5 ***8*** -> 1*10 -6 ***9*** -> 6*10 -8

Mib	WirelessSgsn
Values	Decimal (1..9)
Default	No default

ATTRIBUTE Sgsn Imsi Sc ReqQos sduErrorRatio (sduErrRatio)

Access	Read: All Write: Illegal
Description	This attribute indicates the fraction of Signalling Data Units (SDUs) lost or detected as erroneous. It is defined only for conforming traffic. This attribute can take up values between the numbers 1 - 7 representing the following: 1 -> 1*10 -2 2 -> 7*10 -3 3 -> 1*10 -3 4 -> 1*10 -4 5 -> 1*10 -5 6 -> 1*10 -6 7 -> 1*10 -1
Mib	WirelessSgsn
Values	Decimal (1..7)
Default	No default

ATTRIBUTE Sgsn Imsi Sc ReqQos trafficHandlingPriority (traffHndlPr)

Access	Read: All Write: Illegal
Description	This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the value ***interactive.*** A value of ***0*** is reserved when this attribute is displayed for the negotiated Quality of Service (QoS) and the subscribed QoS. When displayed for the requested QoS, it indicates that the value in the subscribed QoS is to be used. Values of ***1***, ***2***, or ***3*** indicate

	the traffic priority, with ***1*** indicating the highest priority and ***3*** the lowest.
Mib	WirelessSgsn
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Sgsn Imsi Sc ReqQos transferDelay (transfDelay)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.
Mib	WirelessSgsn
Values	Decimal (10..4100)
Units	msec
Default	No default

ATTRIBUTE Sgsn Imsi Sc ReqQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessSgsn
Values	Decimal (0..8640)

Default	No default

ATTRIBUTE Sgsn Imsi Sc ReqQos guaranteedDownlinkBitRate (guarDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Default	No default

COMPONENT Sgsn Imsi Sc NegotiatedQos (NegQos)

Groups	"GROUP Sgsn Imsi Sc NegQos QosProfile (Qos)"
Scope	Application
Description	*Sgsn Imsi/<imsi> SessionContext/<nsapi> NegotiatedQos* *Gsc/n Imsi/<imsi> SessionContext/<nsapi> NegotiatedQos* This component represents the negotiated Quality of Service (QoS) profile received by a mobile subscriber for this session.
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Imsi Sc NegQos QosProfile (Qos)

Properties	Operational

Description	This group contains the Quality of Service (QoS) profile. It contains either the requested QoS, the negotiated QoS, or the subscribed QoS based on which component contains this group.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Imsi Sc NegQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Signalling Data Units' (SDUs) order of delivery is guaranteed.
Mib	WirelessSgsn
Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Sgsn Imsi Sc NegQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal
Description	This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network. The erroneous SDUs can be handled in one of the following ways: ***noDetect:*** The Signalling Data Units (SDUs) are delivered without considering error detection. ***errSdusDelivered:*** The erroneous Signalling Data Units (SDUs) are delivered together with an error indication. ***errSdusNotDelivered:*** The erroneous Signalling Data Units (SDUs) are discarded.
Mib	WirelessSgsn

Values	noDetect errSdusDelivered errSdusNotDelivered
Default	No default

ATTRIBUTE Sgsn Imsi Sc NegQos trafficClass (traffClass)

Access	Read: All Write: Illegal
Description	This attribute indicates the type of application for which the bearer service is optimized. By including the traffic class itself as an attribute, GPRS can make assumptions about the traffic source and optimize the transport for that traffic type. The different traffic classes are: ***conversational -*** This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing. ***streaming -*** This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay. ***interactive -*** This class includes applications where a human or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content. ***background -*** This class includes applications where the end-user, typically a computer, sends and receives data files in the background (for example: emails, SMS and database downloads). This is characterized by the destination not expecting the data within a certain time.
Mib	WirelessSgsn
Values	conversational (conv) streaming (strm)

	interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Sgsn Imsi Sc NegQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDU). It is used for admission control and policing.
Mib	WirelessSgsn
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Sgsn Imsi Sc NegQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to GPRS in the uplink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Sgsn Imsi Sc NegQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered by GPRS in the downlink direction within a period of time, divided

by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.

Mib	WirelessSgsn
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Sgsn Imsi Sc NegQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal
Description	This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered SDUs. This attribute can take up values ranging from 1 through 9, representing: ***1*** -> 5*10 -2 ***2*** -> 1*10 -2 ***3*** -> 5*10 -3 ***4*** -> 4*10 -3 ***5*** -> 1*10 -3 ***6*** -> 1*10 -4 ***7*** -> 1*10 -5 ***8*** -> 1*10 -6 ***9*** -> 6*10 -8
Mib	WirelessSgsn
Values	Decimal (1..9)
Default	No default

ATTRIBUTE Sgsn Imsi Sc NegQos sduErrorRatio (sduErrRatio)

Access	Read: All Write: Illegal

Description	This attribute indicates the fraction of Signalling Data Units (SDUs) lost or detected as erroneous. It is defined only for conforming traffic. This attribute can take up values between the numbers 1 - 7 representing the following: 1 -> 1*10 -2 2 -> 7*10 -3 3 -> 1*10 -3 4 -> 1*10 -4 5 -> 1*10 -5 6 -> 1*10 -6 7 -> 1*10 -1
Mib	WirelessSgsn
Values	Decimal (1..7)
Default	No default

ATTRIBUTE Sgsn Imsi Sc NegQos trafficHandlingPriority (traffHndlPr)

Access	Read: All Write: Illegal
Description	This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the value ***interactive.*** A value of ***0*** is reserved when this attribute is displayed for the negotiated Quality of Service (QoS) and the subscribed QoS. When displayed for the requested QoS, it indicates that the value in the subscribed QoS is to be used. Values of ***1***, ***2***, or ***3*** indicate the traffic priority, with ***1*** indicating the highest priority and ***3*** the lowest.
Mib	WirelessSgsn
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Sgsn Imsi Sc NegQos transferDelay (transfDelay)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.
Mib	WirelessSgsn
Values	Decimal (10..4100)
Units	msec
Default	No default

ATTRIBUTE Sgsn Imsi Sc NegQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Default	No default

ATTRIBUTE Sgsn Imsi Sc NegQos guaranteedDownlinkBitRate (guarDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period.

	The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Default	No default

COMPONENT Sgsn Imsi HlrCacheRecord (HlrcRec)

Groups	"GROUP Sgsn Imsi HlrcRec Operational (Oper)" "GROUP Sgsn Imsi HlrcRec WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Tlli/<tlli> HlrCacheRecord* *Sgsn Imsi/<imsi> HlrCacheRecord* *Gsc/n Tlli/<tlli> HlrCacheRecord* *Gsc/n Imsi/<imsi> HlrCacheRecord* This component represents a subscription record downloaded from the Home Location Register (HLR). The *HlrCache* on the *GprsSubscriberControl (Gsc)* contains the active subscriber data.
Mib	WirelessSgsn
Dyn. Subcomp.	"COMPONENT Sgsn Imsi HlrcRec PdpContext (PdpC)"
Common Verbs	Help List Display

GROUP Sgsn Imsi HlrcRec Operational (Oper)

Properties	Operational
Description	This group contains subscription information downloaded from the Home Location Register (HLR).
Mib	WirelessSgsn

ATTRIBUTE Sgsn Imsi HlrcRec internationalMobileSubscriberId (imsi)

Access	Read: All Write: Illegal
Description	This attribute indicates the International Mobile Subscriber Identity (IMSI) of the Mobile Station (MS).
Mib	WirelessSgsn
Values	BCD (5..15)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec hlrNumber (hlrNo)

Access	Read: All Write: Illegal
Description	This attribute indicates the HLR Number of the Home Location Register (HLR) to which the *HlrCache* record is currently associated. It is used to retrieve the *HlrCache* records to be restored after receipt of the RESET message from the HLR.
Mib	WirelessSgsn
Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec msIsdnNumber (msIsdn)

Access	Read: All Write: Illegal
Description	This attribute indicates the Integrated Service Digital Network (ISDN) number of the mobile subscriber. This is represented as an E.164 number in international format.
Mib	WirelessSgsn
Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec subscriptionConfirmedByHlr (subsCByHlr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the subscription information in the Serving GPRS Support Node (SGSN) is known to be in agreement with the Home Location Register (HLR) when the SGSN successfully performs an UPDATE GPRS LOCATION to the HLR.
Mib	WirelessSgsn
Values	no yes
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec locationInfoConfirmedInHlr (locCInHlr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Home Location Register (HLR) record of the Serving GPRS Support Node (SGSN) address for the Mobile Station (MS) has been confirmed by radio contact. It is initially set to, ***no***, when the SGSN receives a ROUTING AREA UPDATE REQUEST, or an IMSI and a GPRS ATTACH-REQUEST, or if a RESET message is received from the HLR with which the MS is registered. The indicator is set to, ***yes***, when a successful UPDATE GPRS LOCATION is performed for the MS.
Mib	WirelessSgsn
Values	no yes
Default	No default

GROUP Sgsn Imsi HlrcRec WlcCustomCounters (WlcCustomCntr)

Properties	Operational

Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Imsi HlrcRec customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sgsn Imsi HlrcRec PdpContext (PdpC)

Instance	Decimal (1..50)
Groups	"GROUP Sgsn Imsi HlrcRec PdpC Operational (Oper)" "GROUP Sgsn Imsi HlrcRec PdpC WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Tlli/<tlli> HlrcRec PdpContext/n* *Sgsn Imsi/<imsi> HlrcRec PdpContext/n* *Gsc/n Tlli/<tlli> HlrcRec PdpContext/n* *Gsc/n Imsi/<imsi> HlrcRec PdpContext/n* This component represents the Packet Data Protocol (PDP) context data downloaded from the Home Location Register (HLR). It indicates the different PDP profiles (that is, Quality of Service) the subscriber has.
Mib	WirelessSgsn
Dyn. Subcomp.	"COMPONENT Sgsn Imsi HlrcRec PdpC SubscribedQos (SubsQos)"
Common Verbs	Help List Display

GROUP Sgsn Imsi HlrcRec PdpC Operational (Oper)

Properties	Operational
Description	This group contains the Packet Data Protocol (PDP) subscription data downloaded from the Home Location Register (HLR).
Mib	WirelessSgsn

ATTRIBUTE Sgsn Imsi HlrcRec PdpC pdpContextIdentifier (pdpCid)

Access	Read: All Write: Illegal
Description	This attribute indicates a Packet Data Protocol (PDP) Context in a subscription record.
Mib	WirelessSgsn
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC pdpType (pdpT)

Access	Read: All Write: Illegal
Description	This attribute defines the end user protocol to be used between the external packet data network and the Mobile Station (MS) such as, X.25, IP, PPP. For X.25 currently defined address format is X.121, for IP protocol currently defined address formats are IPV4, IPV6, and PPP protocol has no address format.
Mib	WirelessSgsn
Values	x25 ip ppp
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC ipv4PdpAddress (ipv4Addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is IPv4. The address conforms to the standard addressing scheme of the IP version 4 address.
Mib	WirelessSgsn
Values	IP address

Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC x121PdpAddress (x121Addr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is X.121.
Mib	WirelessSgsn
Values	BCD (1..14)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC otherPdpAddress (otherAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the network layer address of the packet data network. The Packet Data Protocol (PDP) protocol type for the *otherPdpAddress* can be obtained from the attribute *pdpType* and the addressing type from *pdpAddressFormat*.
Mib	WirelessSgsn
Values	String (1..16, Hex)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC pdpAddressFormat (pdpTnum)

Access	Read: All Write: Illegal
Description	This attribute indicates the addressing type, such as, X.121, IPv4, IPv6.
Mib	WirelessSgsn
Values	x121 ipv4 ipv6

Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC apnNetworkIdentifier (apnNwkId)

Access	Read: All Write: Illegal
Description	This attribute indicates an Access Point Name (APN) Network Identifier which is the Logical Name of the access point to the external packet data network. A Logical Name is a label or a fully qualified domain name according to the Domain Name System (DNS) naming conventions.
Mib	WirelessSgsn
Values	String (1..63, ASCII)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC vplmnAddressAllowed (vplmnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Mobile Station (MS) is allowed to use the Access Point Name (APN) in the Visiting Public Land Mobile Network (VPLMN).
Mib	WirelessSgsn
Values	no yes
Default	No default

GROUP Sgsn Imsi HlrcRec PdpC WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Imsi HlrcRec PdpC customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sgsn Imsi HlrcRec PdpC SubscribedQos (SubsQos)

Groups	"GROUP Sgsn Imsi HlrcRec PdpC SubsQos QosProfile (Qos)"
Scope	Application
Description	*Sgsn Imsi/<imsi> HlrcRec PdpContext/n SubscribedQos* *Gsc/n Imsi/<imsi> HlrcRec PdpContext/n SubscribedQos* This component represents the Quality of Service (QoS) profile of the subscriber downloaded from the Home Location Register (HLR).
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Imsi HlrcRec PdpC SubsQos QosProfile (Qos)

Properties	Operational
Description	This group contains the Quality of Service (QoS) profile. It contains either the requested QoS, the negotiated QoS, or the subscribed QoS based on which component contains this group.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Imsi HlrcRec PdpC SubsQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Signalling Data Units' (SDUs) order of delivery is guaranteed.
Mib	WirelessSgsn
Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC SubsQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal

Description

This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network.

The erroneous SDUs can be handled in one of the following ways:

noDetect: The Signalling Data Units (SDUs) are delivered without considering error detection.

errSdusDelivered: The erroneous Signalling Data Units (SDUs) are delivered together with an error indication.

errSdusNotDelivered: The erroneous Signalling Data Units (SDUs) are discarded.

Mib

WirelessSgsn

Values

noDetect
errSdusDelivered
errSdusNotDelivered

Default

No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC SubsQos trafficClass (traffClass)

Access

Read: All
Write: Illegal

Description

This attribute indicates the type of application for which the bearer service is optimized. By including the traffic class itself as an attribute, GPRS can make assumptions about the traffic source and optimize the transport for that traffic type.

The different traffic classes are:
conversational - This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing.

streaming - This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not

necessarily a low transfer delay.

interactive - This class includes applications where a human or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content.

background - This class includes applications where the end-user, typically a computer, sends and receives data files in the background (for example: emails, SMS and database downloads). This is characterized by the destination not expecting the data within a certain time.

Mib	WirelessSgsn
Values	conversational (conv) streaming (strm) interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC SubsQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDU). It is used for admission control and policing.
Mib	WirelessSgsn
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC SubsQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to GPRS in the uplink direction within a period of time, divided by

	the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC SubsQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered by GPRS in the downlink direction within a period of time, divided by the duration of the period. This is the upper limit in kilobits per second allowed for a specific context.
Mib	WirelessSgsn
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC SubsQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal
Description	This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered SDUs. This attribute can take up values ranging from 1 through 9, representing: ***1*** -> 5*10 -2 ***2*** -> 1*10 -2 ***3*** -> 5*10 -3 ***4*** -> 4*10 -3

5 -> 1*10 -3
6 -> 1*10 -4
7 -> 1*10 -5
8 -> 1*10 -6
9 -> 6*10 -8

Mib	WirelessSgsn
Values	Decimal (1..9)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC SubsQos sduErrorRatio (sduErrRatio)

Access	Read: All Write: Illegal
Description	This attribute indicates the fraction of Signalling Data Units (SDUs) lost or detected as erroneous. It is defined only for conforming traffic. This attribute can take up values between the numbers 1 - 7 representing the following: 1 -> 1*10 -2 2 -> 7*10 -3 3 -> 1*10 -3 4 -> 1*10 -4 5 -> 1*10 -5 6 -> 1*10 -6 7 -> 1*10 -1
Mib	WirelessSgsn
Values	Decimal (1..7)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC SubsQos trafficHandlingPriority (traffHndlPr)

Access	Read: All Write: Illegal

Description	This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the value ***interactive.*** A value of ***0*** is reserved when this attribute is displayed for the negotiated Quality of Service (QoS) and the subscribed QoS. When displayed for the requested QoS, it indicates that the value in the subscribed QoS is to be used. Values of ***1***, ***2***, or ***3*** indicate the traffic priority, with ***1*** indicating the highest priority and ***3*** the lowest.
Mib	WirelessSgsn
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC SubsQos transferDelay (transfDelay)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.
Mib	WirelessSgsn
Values	Decimal (10..4100)
Units	msec
Default	No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC SubsQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period.

The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.

Mib: WirelessSgsn

Values: Decimal (0..8640)

Default: No default

ATTRIBUTE Sgsn Imsi HlrcRec PdpC SubsQos guaranteedDownlinkBitRate (guarDnBr)

Access: Read: All
Write: Illegal

Description: This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period.

The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.

Mib: WirelessSgsn

Values: Decimal (0..8640)

Default: No default

COMPONENT Sgsn Imsi Bssap

Groups: "GROUP Sgsn Imsi Bssap Operational (Oper)"
"GROUP Sgsn Imsi Bssap WlcCustomCounters (WlcCustomCntr)"

Scope: Application

Description: *Sgsn Imsi/<imsi> Bssap*
Gsc/n Imsi/<imsi> Bssap

This component represents the Base Station System Application Part + (BSSAP+) context information for each mobile subscriber that is IMSI attached to both GPRS and non-GPRS services.

	The BSSAP+ layer is responsible for co-ordinating the location information for a mobile subscriber and conveying some Circuit Switched related procedures via the SGSN.
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Imsi Bssap Operational (Oper)

Properties	Operational
Description	This group contains the GPRS Base Station System Application Part+ (BSSAP+) context information.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Imsi Bssap vlrNumber (vlrNo)

Access	Read: All Write: Illegal
Description	This attribute indicates the E.164 number of the VLR that the Mobile Station (MS) uses for non-GPRS services. If there is no associated VLR, the value is empty.
Mib	WirelessSgsn
Values	BCD (0..15)
Default	No default

ATTRIBUTE Sgsn Imsi Bssap gsState

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the Gs interface in the SGSN. The states have the following meaning: ***null*** - There is no associated VLR for the Mobile station (MS). ***laUpdate*** - The SGSN has sent a BSSAP+_LOCATION_UPDATE_REQUEST to the VLR. ***associated*** - The MS is attached to both GPRS and non-GPRS

services.

Mib WirelessSgsn

Values null
laUpdate
associated

Default No default

ATTRIBUTE Sgsn Imsi Bssap vlrReliable (vlrRel)

Access Read: All
Write: Illegal

Description This attribute indicates the reset status of the VLR that provides non-GPRS services to the MS.

If the value is ***false***, upon reception of any Routing Area Update or Combined Routing and Location Update, the SGSN requests the mobile to re-attach to non-GPRS services. If the value is ***true***, the SGSN proceeds with the Routing Area Update or Combined Routing and Location Update.

This value is set to ***true*** when the SGSN receives a BSSAP+_LOCATION_UPDATE_ACCEPT from the VLR. It is set to ***false***, when the SGSN has received a reset indication from the VLR.

Mib WirelessSgsn

Values false
true

Default No default

ATTRIBUTE Sgsn Imsi Bssap nonGprsAlertFlag (ngaf)

Access Read: All
Write: Illegal

Description This attribute indicates the non-GPRS alert flag. If the value is ***true***, the VLR is notified of any activity on the mobile and if the value is ***false***, the VLR is not notified.

	This value is set to ***true*** when the SGSN replies to a BSSAP+-ALERT-REQUEST with an ACK. It is set to ***false***, when the SGSN sends an BSSAP+-MS_ACTIVITY_INDICATION message to the VLR.
Mib	WirelessSgsn
Values	false true
Default	No default

GROUP Sgsn Imsi Bssap WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Imsi Bssap customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Imsi Bssap customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Imsi Bssap customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sgsn GprsVisitorLocationRegister (GprsVlr)

Instance	BCD (1..15)
Groups	"GROUP Sgsn GprsVlr Provisioned (Prov)"
Scope	Application
Description	*Sgsn GprsVisitorLocationRegister/<vlrNum>* This component represents a Visitor Location Register (VLR)

used by the Serving GPRS Support Node (SGSN). The instance value is the E.164 address of the VLR.

Mib	WirelessSgsn
Common Verbs	Help List Display Add DELete

GROUP Sgsn GprsVlr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the Visitor Location Register (VLR) provisioning data of the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn

ATTRIBUTE Sgsn GprsVlr linkToRoutingAreas (lToRa)

Access	Read: All Write: All
Description	This attribute specifies a list of Routing Areas (RAs) that are served by this Visitor Location Register (VLR). This points to the *Sgsn Mcc Mnc Lac RoutingAreaCode* component. Changing an existing value of the link may affect outstanding transactions involving that RA.
Mib	WirelessSgsn
List of	Link (Service, linkToVlr)
Default	No default

COMPONENT Sgsn Shelf (Sh)

Groups	"GROUP Sgsn Sh Provisioned (Prov)"
Scope	Application

Description	*Sgsn Shelf* This component represents a shelf in a Multi Shelf SGSN configuration. The *Shelf* component is the control entity for a shelf and for a network of shelves. A Nodal Manager in a Multi Shelf configuration is either a Master or a Slave shelf. Only one shelf can be provisioned as a master shelf. A master shelf is one that has at least one *ConnToSlave* component provisioned. A slave shelf is one that has the *ConnToMaster* component provisioned.
Mib	WirelessSgsn
Opt. Subcomp.	"COMPONENT Sgsn Sh ConnectionToMaster (ConM)" "COMPONENT Sgsn Sh ConnectionToSlave (ConS)"
Common Verbs	Help List Display

GROUP Sgsn Sh Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data of the *Shelf (Sh)* component.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Sh atmLocalEsi (atmEsi)

Access	Read: All Write: All
Description	This attribute specifies the End System Identifier (ESI) of the ATM NSAP address used by this shelf. The full ATM address is constructed by prepending the *nodeprefix* (taken from the *ModuleData* component) to the *atmLocalEsi*.
Mib	WirelessSgsn
Values	String (14, ASCII)
Default	No default

COMPONENT Sgsn Sh ConnectionToMaster (ConM)

Groups	"GROUP Sgsn Sh ConM Provisioned (ConM)" "GROUP Sgsn Sh ConM WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Sh ConnectionToMaster* *Usgsn Sh ConnectionToMaster* This component represents a Slave shelf in a Multi Shelf SGSN configuration. This component is provisioned with the ATM Address (NSAP) of the Master Nodal Manager.
Mib	WirelessSgsn
Dyn. Subcomp.	"COMPONENT Sgsn Sh ConM AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete

GROUP Sgsn Sh ConM Provisioned (ConM)

Properties	Provisioned
Description	This group contains the *Shelf (Sh)* provisioning data for the slave shelf.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Sh ConM masterAddress (mAddr)

Access	Read: All Write: All
Criticality	Module
Description	This attribute specifies the full ATM NSAP Address of the Master shelf. It is constructed by prepending the *nodeprefix* (taken from the *ModuleData* component) to the *atmLocalEsi*

	(taken from the *Sgsn Shelf* component) of the Master Shelf. Changing the value of this attribute causes a system reload on the shelf.
Mib	WirelessSgsn
Values	String (40, NativeAESANsapAddress)
Default	No default

GROUP Sgsn Sh ConM WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Sh ConM customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Sh ConM customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Sh ConM customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sgsn Sh ConM AtmConnection (AtmCon)

Groups	"GROUP Sgsn Sh ConM AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Sh ConM AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Sh ConM AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	WirelessSgsn
Values	The name of the component
Default	No default

COMPONENT Sgsn Sh ConnectionToSlave (ConS)

Instance	Decimal (1..2)
Groups	"GROUP Sgsn Sh ConS Provisioned (ConS)" "GROUP Sgsn Sh ConS WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Sh ConnectionToSlave/n* *Usgsn Sh ConnectionToSlave/n* This component represents a Master shelf in a Multi Shelf SGSN configuration. This component is provisioned with the ATM Address (NSAP) of all Slave Nodal Managers. The instance value of this component is used as the Shelf Id.
Mib	WirelessSgsn
Dyn. Subcomp.	"COMPONENT Sgsn Sh ConS AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete

GROUP Sgsn Sh ConS Provisioned (ConS)

Properties	Provisioned

Description	This group contains the *Shelf (Sh)* provisioning data for the Master shelf.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Sh ConS slaveAddress (sAddr)

Access	Read: All Write: All
Description	This attribute specifies the ATM NSAP Address of the Nodal Manager (NM) of the Remote Slave shelf. It is constructed by prepending the *nodeprefix* (taken from the *ModuleData* component) to the *atmLocalEsi* (taken from the *Sgsn Shelf* component) of this Slave Shelf.
Mib	WirelessSgsn
Values	String (40, NativeAESANsapAddress)
Default	No default

GROUP Sgsn Sh ConS WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Sh ConS customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Sh ConS customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sgsn Sh ConS customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sgsn Sh ConS AtmConnection (AtmCon)

Groups	"GROUP Sgsn Sh ConS AtmCon Operational (Oper)"
Scope	Device

Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	WirelessSgsn
Common Verbs	Help List Display

GROUP Sgsn Sh ConS AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	WirelessSgsn

ATTRIBUTE Sgsn Sh ConS AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	WirelessSgsn
Values	The name of the component
Default	No default

COMPONENT Sgsn TieredSubscription (Ts)

Groups	"GROUP Sgsn Ts Provisioned (Prov)"
Scope	Application
Description	*Sgsn TieredSubscription* *Usgsn TieredSubscription* This component represents the differentiated tiers of service on the (UMTS) Serving GPRS Support Node (SGSN or USGSN) on a per Packet Data Protocol (PDP) context basis for downlink

traffic. The maximum average bandwidth associated with each tier is not guaranteed at all times but indicates the upper bound on the average data rate for the service. If this component is not provisioned, the data rate for every context will be best effort.

Mib: WirelessSgsn

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Sgsn Ts Provisioned (Prov)

Properties: Provisioned

Description: This group contains the *Tiered Subscription (Ts)* provisioning data of the (UMTS) Serving GPRS Support Node (SGSN or USGSN).

Mib: WirelessSgsn

ATTRIBUTE Sgsn Ts roamerTier

Access: Read: All
Write: All

Description: This attribute specifies the peak bit rate (tier) that can be assigned to a PDP context for mobiles that are not in their Home PLMN. Tier 0 through Tier 9 map to peak throughput classes 0 through 9. Peak throughput class 0 represents the subscribed peak throughput class for a PDP context. Peak throughput classes 1 through 9 represent peak bit rates of 8 kbit/s, 16 kbit/s, 32 kbit/s, 64 kbit/s, 128 kbit/s, 256 kbit/s, 512 kbit/s, 1024 kbit/s and 2048 kbit/s respectively. The Tiered Subscription service uses this information during a PDP context activation for a roamer to determine the maximum average throughput for the context.
If the *roamerTier* is provisioned as ***0***, then the peak throughput for the context is the lower of the peak throughput class of the mobile requested QoS and the mobile's subscribed QoS.
If the *roamerTier* is a value between ***1*** and ***9***, then the peak

throughput class for the context is the peak throughput associated with that tier.

Mib WirelessSgsn

Values
0
1
2
3
4
5
6
7
8
9

Default 0

ATTRIBUTE Sgsn Ts averagingWindow (avgWin)

Access
Read: All
Write: All

Description
This attribute specifies the size of the averaging window used to compute the average bandwidth used by a PDP context.

User traffic is policed per context using the peak throughput rate. In order to police the average peak data rate per context in the down link direction, Tiered Subscription (TS) monitors the amount of data passed over a specified period of time, which is defined by the *averagingWindow*. In other words, the user data rate is throttled in terms of how many bytes are passed over the averaging Window time frame.
Tiered Subscription (TS) limits the data transfer to the data rate (bits/s) multiplied by the *averagingWindow* (s). The larger the *averagingWindow*, the more burst size is accommodated.

Mib WirelessSgsn

Values Decimal (1..10)

Units seconds

Default 5

COMPONENT Sgsn PrepaidShortMessageService (PSms)

Groups	"GROUP Sgsn PSms Provisioned (Prov)"
Scope	Application
Description	*Sgsn PrepaidShortMessageService* This component represents the Prepaid Short Message Service (PSMS) functionality of the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn
Opt. Subcomp.	"COMPONENT Sgsn PSms ServiceControlPoint (Scp)"
Common Verbs	Help List Display Add DELete

GROUP Sgsn PSms Provisioned (Prov)

Properties	Provisioned
Description	This group contains the *PrepaidShortMessageService(PSms)* provisioning data of the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn

ATTRIBUTE Sgsn PSms currencyType (curT)

Access	Read: All Write: All
Description	This attribute specifies the ISO currency type that will be sent to the external Service Control Point (SCP) in the Prepaid-CTP INCREMENT DECREMENT messages. This is a three digit letter or a three digit decimal number.
Mib	WirelessSgsn
Values	String (3, ASCII)

Default	No default

ATTRIBUTE Sgsn PSms currencyAmount (curAmt)

Access	Read: All Write: All
Description	This attribute specifies the monetary amount, in the minor of the currency, that will be sent to the external Service Control Point (SCP) in the Prepaid-CTP INCREMENT DECREMENT messages.
Mib	WirelessSgsn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Sgsn PSms transactionTimer (tTran)

Access	Read: All Write: All
Description	This attribute specifies the maximum time the SGSN waits for a Prepaid-CTP transaction to complete. If the transaction is not completed within this time period, the Prepaid Short Message Service (PSMS) message will be discarded.
Mib	WirelessSgsn
Values	Decimal (1..44)
Units	seconds
Default	20

ATTRIBUTE Sgsn PSms nccpLoginResponseTimer (tNccpLiR)

Access	Read: All Write: All
Description	This attribute specifies the maximum time that the SGSN waits for a response from the external Service Control Point (SCP) to an NCCP (Network Connection Control Protocol) LOGIN REQUEST message. If the SCP fails to respond in this time period, the SGSN will consider the login attempt to have failed. If

	the login request for one Service Processor (SP) fails, the other SP of the SCP pair is tried. The count of timeouts can be viewed in the *nccpLoginResponseTimeouts* attribute (defined in *Gsc PSms Scp*).
Mib	WirelessSgsn
Values	Decimal (1..30)
Units	seconds
Default	15

ATTRIBUTE Sgsn PSms nccpLogoutResponseTimer (tNccpLoR)

Access	Read: All Write: All
Description	This attribute specifies the maximum time that this SGSN waits for a response from the external Service Control Point (SCP) to an NCCP (Network Connection Control Protocol) LOGOUT REQUEST message. If the SCP fails to respond in this time period, the SGSN will consider the logout attempt to have failed. The count of expirations can be viewed in the *nccpLogoutFailures* attribute (defined in *Gsc PSms Scp*).
Mib	WirelessSgsn
Values	Decimal (1..30)
Units	seconds
Default	5

ATTRIBUTE Sgsn PSms nccpRoundRobinTimer (tNccpRr)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the SGSN waits between each connection attempt when it round robins between the two Service Processors (SPs) of the external Service Control Point (SCP) pair.

	The count of expirations can be viewed in the *nccpRoundRobinTimeouts* attribute (defined in *Gsc PSms Scp*).
Mib	WirelessSgsn
Values	Decimal (0..60)
Units	seconds
Default	5

ATTRIBUTE Sgsn PSms nccpReconnectTimer (tNccpRec)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the SGSN will wait after a login attempt to an external Service Control Point (SCP) has been denied. Specifically, the SGSN will wait this amount of time after receiving a failed NCCP (Network Connection Control Protocol) LOGIN RESPONSE message from the external SCP before trying to reconnect to the SCP. The count of expirations can be viewed in the *nccpReconnectTimeouts* attribute (defined in *Gsc PSms Scp*).
Mib	WirelessSgsn
Values	Decimal (1..120)
Units	seconds
Default	50

COMPONENT Sgsn PSms ServiceControlPoint (Scp)

Instance	Decimal (1..32)
Groups	"GROUP Sgsn PSms Scp Provisioned (Prov)"
Scope	Application
Description	*Sgsn Sms GprsServiceControlPointCp* This component represents a Service Control Point (SCP) that the

	Serving GPRS Support Node (SGSN) uses to authorize subscriber SGSN Prepaid Short Message Service (PSMS) messages.
Mib	WirelessSgsn
Common Verbs	Help List Display Add DELete

GROUP Sgsn PSms Scp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the *ServiceControlPoint* (*Scp)* provisioning data of the Serving GPRS Support Node (SGSN).
Mib	WirelessSgsn

ATTRIBUTE Sgsn PSms Scp accessPointName (apn)

Access	Read: All Write: All
Description	This attribute specifies the Access Point Name (APN), found in the HLR context, that is used to identify the mobile as a Prepaid Short Message Service (PSMS) subscriber. Furthermore, this APN uniquely identifies that this external Service Control Point (SCP) should be used to authorize the subscribers message(s).
Mib	WirelessSgsn
Values	String (1..63, ASCII)
Default	No default

ATTRIBUTE Sgsn PSms Scp spAddress1 (spAddr1)

Access	Read: All Write: All
Description	This attribute specifies the IP address of the first Service Processor (SP) of this external Service Control Point (SCP).

Since the SCP is always deployed in a duplex configuration where one SP is the active SP and the other is the stand-by SP, the SGSN will alternate its login connection attempts between the SPs until a successful attempt is made. The IP address of the other SP is provisioned in the *spAddress2* attribute.

Both of these addresses must be unique and neither can be set to 0.0.0.0.

Mib: WirelessSgsn

Values: IP address

Default: No default

ATTRIBUTE Sgsn PSms Scp spAddress2 (spAddr2)

Access: Read: All
Write: All

Description: This attribute specifies the IP address of the second Service Processor (SP) of this external Service Control Point (SCP). Since the SCP is always deployed in a duplex configuration where one SP is the active SP and the other is the stand-by SP, the SGSN will alternate its login connection attempts between the SPs until a successful attempt is made. The IP address of the other SP is provisioned in the *spAddress1* attribute.

Both of these addresses must be unique and neither can be set to 0.0.0.0.

Mib: WirelessSgsn

Values: IP address

Default: No default

ATTRIBUTE Sgsn PSms Scp tcpPort

Access: Read: All
Write: All

Description: This attribute specifies the TCP port that the SGSN will attempt to establish a connection with for this external Service Control Point (SCP).

Mib	WirelessSgsn
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Sgsn PSms Scp password (passwd)

Access	Read: All Write: All
Description	This attribute specifies the password that should be used when the SGSN logs into this Service Control Point (SCP).
Mib	WirelessSgsn
Values	String (6..20, ASCII)
Default	No default

COMPONENT Sgsn EquivalentPlmn (EquivPlmn)

Instance	Decimal (1..200)
Groups	"GROUP Sgsn EquivPlmn Provisioned (Prov)"
Scope	Application
Description	Sgsn EquivalentPlmn/n This component collectively represents all Public Land Mobile Networks (PLMNs) that must be considered equivalent by the Mobile Station (MS) at PLMN selection, handover, cell re-selection, and so on.
Mib	WirelessSgsn
Common Verbs	Help List Display Add DELete

GROUP Sgsn EquivPlmn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for one of the Public Land Mobile Network (PLMN) codes that must be considered equivalent. PLMN codes consist of a Mobile Country Code (MCC) and a Mobile Network Code (MNC).
Mib	WirelessSgsn

ATTRIBUTE Sgsn EquivPlmn plmnList (plmnL)

Access	Read: All Write: All
Description	This attribute specifies the Public Land Mobile Networks (PLMNs) that this *EquivalentPlmn* component is associated with. Each PLMN consists of a three-digit Mobile Country Code (MCC) and a two or three-digit Mobile Network Code (MNC) pair.
Mib	WirelessSgsn
List of	BCD (5..6)
List Size	5
Default	No default

ATTRIBUTE Sgsn EquivPlmn linksToSubscriberClass (lToSubC)

Access	Read: All Write: All
Description	This attribute specifies links to the *SubscriberClass* components (defined in the *Sgsn* or *Usgsn* components).
Mib	WirelessSgsn
List of	Link
Default	No default

COMPONENT Sgsn SubscriberClass (SubsClass)

Instance	Decimal (1..200)
Groups	"GROUP Sgsn SubsClass Provisioned (Prov)"
Scope	Application
Description	*Sgsn SubscriberClass/n* *Usgsn SubscriberClass/n* This component represents the subscriber classes for the Serving GPRS Support Node (SGSN or USGSN).
Mib	WirelessSgsn
Common Verbs	Help List Display Add DELete

GROUP Sgsn SubsClass Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for this component.
Mib	WirelessSgsn

ATTRIBUTE Sgsn SubsClass linkToEquivalentPlmn (lToEqPlmn)

Access	Read: All Write: All
Description	This attribute specifies a link to the *EquivalentPlmn* component (defined in the *Sgsn* or *Usgsn* components). The value of the *linkToEquivalentPlmn* attribute is used only if the value of the *rejectCause* attribute is set to ***disabled***.
Mib	WirelessSgsn
Values	Link (Service, linksToSubscriberClass)

Default	No default

ATTRIBUTE Sgsn SubsClass rejectCause (rejC)

Access	Read: All Write: All
Description	This attribute specifies the cause value for rejecting the mobile. This represents a GPRS location or International Mobile Subscriber Identifier (IMSI) based cause code. A warning is generated if the cause code is not one of the following 3GPP 24.008 specification defined location or IMSI based causes: Cause code 7: GPRS Services Not Allowed Cause code 8: GPRS Services and Non-GPRS Services Not Allowed Cause code 11: PLMN Not Allowed Cause code 12: Location Area Not Allowed Cause code 13: Roaming Not Allowed In This Location Area Cause code 14: GPRS Not Allowed In This PLMN Cause code 15: No Suitable Cells In Location Area
Mib	WirelessSgsn
Values	Decimal (1..255) disabled
Default	disabled

ATTRIBUTE Sgsn SubsClass snrApnOperatorId (apnOp)

Access	Read: All Write: All
Description	This attribute specifies the Access Point Name (APN) Operator Identifier for this Public Land Mobile Network (PLMN). It is a fully qualified domain name according to the Domain Name System (DNS) naming conventions and consists of three labels (that is, <DNS-label>.<DNS-label>.gprs). It is expected that the operator uses this attribute to fill in a human-readable format of the APN Operator Identifier (that is, an APN Operator Identifier not in the mnc<MNC digits>.mcc<MCC digits>.gprs format).

	The value of the *snrApnOperatorId* attribute is used only if the value of the *rejectCause* attribute is set to ***disabled***.
Mib	WirelessSgsn
Values	String (0..37, ASCII)
Default	No default

ATTRIBUTE Sgsn SubsClass qosEquivalency (qosEq)

Access	Read: All Write: All
Description	This attribute specifies the Equivalent Quality of Service that a roaming mobile may receive due to Seamless National Roaming (SNR). The value of the *qosEquivalency* attribute is used only if the value of the *rejectCause* attribute is set to ***disabled***.
Mib	WirelessSgsn
Values	roamer homer
Default	roamer

ATTRIBUTE Sgsn SubsClass linksToImsiMask (lToImsiM)

Access	Read: All Write: All
Description	This attribute specifies links to the *ImsiMask* components (defined in the *Sgsn* or *Usgsn* components).
Mib	WirelessSgsn
List of	Link
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Sgsn

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Sg

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Sg

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COMPONENT SignallingGateway (Sg)

Instance	Decimal (1..15)
Groups	"GROUP Sg Provisioned (Prov)" "GROUP Sg OsiState (State)" "GROUP Sg WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*SignallingGateway/n*

This component defines the signalling interface between a Radio Network Controller (RNC) and the Core Network in 3 possible configurations:

Circuit Switched (CS) domain only - In this configuration, the Signalling Gateway provides the interface between the RNC and the Call Server.

Packet Switched (PS) domain only - In this configuration, the Signalling Gateway provides the interface between the RNC and a UMTS Serving GPRS Support Node (USGSN).

Both domains: In this configuration, the Signalling Gateway provides the interface between the RNC and a UMTS Serving GPRS Support Node (USGSN), as well as an interface between the RNC and a Call Server(CS).

The Circuit Switched(CS) domain is supported if a *Sg/n CsDomain* component is provisioned. The Packet Switched (PS)

	domain is supported if a *Sg/n PsDomain* component is provisioned.
Mib	SignallingGateway
Subcomponents	"COMPONENT Sg RncInterface (RncIf)"
Opt. Subcomp.	"COMPONENT Sg CsDomain (Cs)" "COMPONENT Sg PsDomain (Ps)"
Common Verbs	Help List Display Add DELete

GROUP Sg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of this component.
Mib	SignallingGateway

ATTRIBUTE Sg linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor that this component and its subcomponents are provisioned on.
Mib	SignallingGateway
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP Sg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies

about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib SignallingGateway

ATTRIBUTE Sg adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib SignallingGateway

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Sg operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for

operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	SignallingGateway
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Sg usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	SignallingGateway
Values	idle active (activ) busy
Default	idle

GROUP Sg WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.

Mib	SignallingGateway

ATTRIBUTE Sg customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway

Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sg CsDomain (Cs)

Groups	"GROUP Sg Cs Provisioned (Prov)" "GROUP Sg Cs OsiState (State)" "GROUP Sg Cs Stats" "GROUP Sg Cs WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS SignallingGateway CsDomain"

Scope	Application
Description	*Sg/n CsDomain* This component represents the signalling between the RNC and a Call Server. It maintains the parameters and statistics for the reformatting of RANAP signalling in the circuit switched domain and connects the transport layers for communication between the RNC and the Call Server (MSC).
Mib	SignallingGateway
Subcomponents	"COMPONENT Sg Cs SccpConnection (SccpConn)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Sg Cs Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of this component.
Mib	SignallingGateway

ATTRIBUTE Sg Cs linkToVirtualMediaGateway (lToVmg)

Access	Read: All Write: All
Description	This attribute links the Signalling Gateway to a Virtual Media Gateway that provides a pool of media gateways for bearer connections. This attribute must be set for the *CsDomain* to activate properly.
Mib	SignallingGateway
Values	Link (Service, linkToCsDomain)
Default	No default

GROUP Sg Cs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SignallingGateway

ATTRIBUTE Sg Cs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

	The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	SignallingGateway
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Sg Cs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	SignallingGateway
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Sg Cs usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: SignallingGateway

Values: idle
active (activ)
busy

Default: idle

GROUP Sg Cs Stats

Properties: Operational

Description: This group contains the operational attributes of this component.

Mib: SignallingGateway

ATTRIBUTE Sg Cs uplinkMsgs (ulMsgs)

Access: Read: All
Write: Illegal

Description: This attribute counts the RANAP messages received from the RNC.

The counter wraps to 0 when it exceeds its maximum value.

Mib: SignallingGateway

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Sg Cs downlinkMsgs (dlMsgs)

Access: Read: All
Write: Illegal

Description: This attribute counts the RANAP messages sent to the RNC.

The counter wraps to 0 when it exceeds its maximum value.

Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs csRanapMsgsTx (csRanapTx)

Access	Read: All Write: Illegal
Description	This attribute counts the RANAP messages sent to the Call Server. The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs csRanapMsgsRx (csRanapRx)

Access	Read: All Write: Illegal
Description	This attribute counts the RANAP messages received from the Call Server. The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs bssmapMsgsTx (bssmapTx)

Access	Read: All Write: Illegal
Description	This attribute counts the BSSMAP messages sent to the Call Server.

	The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs bssmapMsgsRx (bssmapRx)

Access	Read: All Write: Illegal
Description	This attribute counts the BSSMAP messages received from the Call Server. This includes the faulty BSSMAP messages indicated by the attribute *bssmapMsgErrsRx*. The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs bssmapMsgErrsRx

Access	Read: All Write: Illegal
Description	This attribute counts the unrecognized or faulty BSSMAP messages that were received from the Call Server. The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs invalidRabRequests (invRabReq)

Access	Read: All Write: Illegal

Description	This attribute counts the Rab Assignment Requests from the Call Server that were rejected by the Signalling Gateway. The SG rejects a Rab Assignment Request from the Call Server when the request contains a CIC that is not found in the list of CICs derived from the *startingCic* attribute provisioned in the *Vmg MgIf TdmResource* component. The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs invalidRelocRequests (invRelocReq)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Relocation Requests from the Call Server rejected be the Signalling Gateway (SG). The SG rejects a Relocation Request from the Call Server when the request contains a CIC that is not found in the list of CICs derived from the *startingCic* attribute provisioned in the *Vmg MgIf TdmResource* component. The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs rabAssignRequests (rabAssgnRqsts)

Access	Read: All Write: Illegal

Description	This attribute counts the number of RAB ASSIGNMENT REQUEST messages that were sent to the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs relocRequests (relocRqsts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RELOCATION REQUEST messages that were sent to the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs paging (paging)

Access	Read: All Write: Illegal
Description	This attribute counts the number of PAGING messages that were sent to the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs iuReleaseCmds (iuRelCmds)

Access	Read: All Write: Illegal

Description	This attribute counts the number of IU RELEASE COMMAND messages that were sent to the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs relocCmds (relocCmds)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RELOCATION COMMAND messages that were sent to the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs relocPrepFailures (relocPrepFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RELOCATION PREPARATION FAILURE messages that were sent to the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs relocCancelAcks (relocCancAcks)

Access	Read: All Write: Illegal

Description	This attribute counts the number of RELOCATION CANCEL ACKNOWLEDGE messages that were sent to the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs commonIds (commIds)

Access	Read: All Write: Illegal
Description	This attribute counts the number of COMMON ID messages that were sent to the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs cnInvokeTraces

Access	Read: All Write: Illegal
Description	This attribute counts the number of CN INVOKE TRACE messages that were sent to the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs securityModeCmds (secModeCmds)

Access	Read: All Write: Illegal

Description	This attribute counts the number of SECURITY MODE COMMAND messages that were sent to the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs directTransfers (dirTransf)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of DIRECT TRANSFER messages between the RNC and the Core Network in either direction. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs resets

Access	Read: All Write: Illegal
Description	This attribute counts the total number of RESET messages between the RNC and the Core Network in either direction. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs resetAcks (resetAcks)

Access	Read: All Write: Illegal

Description	This attribute counts the total number of RESET ACKNOWLDEGE messages between the RNC and the Core Network in either direction. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs errorIndications (errorInd)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of ERROR INDICATION messages between the RNC and the Core Network in either direction. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs initialUeMessages (inUeMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of INITIAL UE messages that were received from the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs rabAssignResponses (rabAssignResps)

Access	Read: All Write: Illegal

Description	This attribute counts the number of RAB ASSIGNMENT RESPONSE messages that were received from the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs rabReleaseRequests (rabRelRqsts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RAB RELEASE REQUEST messages that were received from the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs iuReleaseRequests (iuRelRqsts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Iu RELEASE REQUEST messages that were received from the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs iuReleaseCompletes (iuRelComps)

Access	Read: All Write: Illegal

Description	This attribute counts the number of Iu RELEASE COMPLETE messages that were received from the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs relocRqds (relocRqds)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RELOCATION REQUIRED messages that were received from the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs relocRequestAcks (relocRqstAcks)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RELOCATION REQUEST ACKNOWLEDGE messages that were received from the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs relocDetects (relocDet)

Access	Read: All Write: Illegal

Description	This attribute counts the number of RELOCATION DETECT messages that were received from the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs relocCompletes (relocComps)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RELOCATION COMPLETE messages that were received from the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs relocFailures (relocFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RELOCATION FAILURE messages that were received from the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs relocCancels (relocCancels)

Access	Read: All Write: Illegal

Description	This attribute counts the number of RELOCATION CANCEL messages that were received from the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs securityModeComps (securityModeComps)

Access	Read: All Write: Illegal
Description	This attribute counts the number of SECURITY MODE COMPLETE messages that were received from the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs resetCircuits (resetCkts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of RESET CIRCUIT messages between the Core Network and the DMS Call Server. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs unequipCircuits (unequipCkts)

Access	Read: All Write: Illegal

Description	This attribute counts the number of UNEQUIPPED CIRCUIT messages received from the DMS Call Server. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs blocks

Access	Read: All Write: Illegal
Description	This attribute counts the number of BLOCK messages that were sent to the DMS Call Server. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs unblocks

Access	Read: All Write: Illegal
Description	This attribute counts the number of UNBLOCK messages that were sent to the DMS Call Server. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs circuitGrpBlocks (cktGrpBl)

Access	Read: All Write: Illegal

Description	This attribute counts the number of CIRCUIT GROUP BLOCK messages that were sent to the DMS Call Server. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs circuitGrpUnblocks (cktGrpUnbl)

Access	Read: All Write: Illegal
Description	This attribute counts the number of CIRCUIT GROUP UNBLOCK messages that were sent to the DMS Call Server. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs securityModeRjcts (secModeRjcts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of SECURITY MODE REJECT messages that were received from the RNC. The counter wraps to zero when it exceeds the maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

GROUP Sg Cs WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.

Mib	SignallingGateway

ATTRIBUTE Sg Cs customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway

Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS SignallingGateway CsDomain

Description	The statistics record generated by the SignallingGateway CsDomain component.

ATTRIBUTE Sg Cs rabAssignRequests

Description	This attribute indicates the number of RAB ASSIGNMENT REQUEST messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocRequests

Description	This attribute indicates the number of RELOCATION REQUEST messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs paging

Description	This attribute indicates the number of PAGING messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs iuReleaseCmds

Description	This attribute indicates the number of IU RELEASE COMMAND messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocCmds

Description	This attribute indicates the number of RELOCATION COMMAND messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocPrepFailures

Description	This attribute indicates the number of RELOCATION PREPARATION FAILURE messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocCancelAcks

Description	This attribute indicates the number of RELOCATION CANCEL ACKNOWLEDGE messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs commonIds

Description	This attribute indicates the number of COMMON ID messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs cnInvokeTraces

Description	This attribute indicates the number of CN INVOKE TRACE messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs securityModeCmds

Description	This attribute indicates the number of SECURITY MODE COMMAND messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs directTransfers

Description	This attribute indicates the total number of DIRECT TRANSFER messages exchanged between the RNC and the Core Network in either direction over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs resets

Description	This attribute indicates the total number of RESET messages between the RNC and the Core Network in either direction over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs resetAcks

Description	This attribute indicates the total number of RESET ACKNOWLDEGE messages between the RNC and the Core Network in either direction over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs errorIndications

Description	This attribute indicates the total number of ERROR INDICATION messages between the RNC and the Core Network in either direction over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs initialUeMessages

Description	This attribute indicates the number of INITIAL UE messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs rabAssignResponses

Description	This attribute indicates the number of RAB ASSIGNMENT RESPONSE messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs rabReleaseRequests

Description	This attribute indicates the number of RAB RELEASE REQUEST messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs iuReleaseRequests

Description This attribute indicates the number of Iu RELEASE REQUEST messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs iuReleaseComps

Description This attribute indicates the number of Iu RELEASE COMPLETE messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocRqds

Description This attribute indicates the number of RELOCATION REQUIRED messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocRequestAcks

Description This attribute indicates the number of RELOCATION REQUEST ACKNOWLEDGE messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocDetects

Description This attribute indicates the number of RELOCATION DETECT messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocComps

Description This attribute indicates the number of RELOCATION COMPLETE messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocFailures

Description This attribute indicates the number of RELOCATION FAILURE messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs relocCancels

Description This attribute indicates the number of RELOCATION CANCEL messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs securityModeComps

Description This attribute indicates the number of SECURITY MODE COMPLETE messages that were received from the RNC over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs resetCircuits

Description This attribute indicates the number of RESET CIRCUIT messages between the Core Network and the DMS Call Server over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs unequipCircuits

Description This attribute indicates the number of UNEQUIPPED CIRCUIT messages received from the DMS Call Server over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Sg Cs blocks

Description This attribute indicates the number of BLOCK messages that were sent to the DMS Call Server over the collection interval.

Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs unblocks

Description	This attribute indicates the number of UNBLOCK messages that were sent to the DMS Call Server over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs circuitGrpBlocks

Description	This attribute indicates the number of CIRCUIT GROUP BLOCK messages that were sent to the DMS Call Server over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs circuitGrpUnblocks

Description	This attribute indicates the number of CIRCUIT GROUP UNBLOCK messages that were sent to m the DMS Call Server over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs securityModeRjcts

Description	This attribute indicates the number of SECURITY MODE REJECT messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs rabSetups

Description	This attribute indicates the number of RAB SETUP messages that were received from the Virtual Media Gateway over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs rabSetupResps

Description	This attribute indicates the number of RAB SETUP RESPONSE messages that were received from the RNC over the collection interval.

Values	Decimal (0..4294967295)

ATTRIBUTE Sg Cs releases

Description	This attribute indicates the number of RELEASE messages between RANAP-CS and the Virtual Media Gateway over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Sg Cs SccpConnection (SccpConn)

Groups	"GROUP Sg Cs SccpConn Provisioned (Prov)" "GROUP Sg Cs SccpConn WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sg/n CsDomain SccpConnection* *Sg/n RncIf SccpConnection* This component represents the connection to an SCCP layer used for signalling services between an RNC and a Signalling Gateway
Mib	SignallingGateway
Common Verbs	Help List Display

GROUP Sg Cs SccpConn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *sccpConnection* component.
Mib	SignallingGateway

ATTRIBUTE Sg Cs SccpConn linkToLocalSubsystem (lToLocalSub)

Access	Read: All Write: All

Description	This attribute specifies a link to an *Sccp/n LocalSubsystem/n* component for SCCP services.
Mib	SignallingGateway
Values	Link (Service, linkToSccpConnection)
Default	No default

GROUP Sg Cs SccpConn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	SignallingGateway

ATTRIBUTE Sg Cs SccpConn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Cs SccpConn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Sg Cs SccpConn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sg RncInterface (RncIf)

Groups	"GROUP Sg RncIf Provisioned (Prov)" "GROUP Sg RncIf OsiState (State)" "GROUP Sg RncIf Stats" "GROUP Sg RncIf WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sg/n RncInterface* This component represents the signalling connection between an RNC and a Signalling Gateway.
Mib	SignallingGateway
Subcomponents	"COMPONENT Sg RncIf SccpConnection (SccpConn)"
Common Verbs	Help List Display LOCK Unlock

GROUP Sg RncIf Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes of this component.
Mib	SignallingGateway

ATTRIBUTE Sg RncIf rncId

Access	Read: All Write: All
Description	This attribute specifies the RNC ID of the Radio Network Controller (RNC) attached to the RNC Interface represented by this component.The *rncId* is a field of RNC-ID defined in 3G TS 25.413, that uniquely identifies an RNC in a network. If the packet domain is supported, this RNC Id must also be included in the list of RNC Ids corresponding to a routing area, provisioned in the *rncIds* attribute of the *Usgsn Mcc Mnc Rac*(corresponding to the routing area) component.
Mib	SignallingGateway
Values	Decimal (0..4095)
Default	No default

ATTRIBUTE Sg RncIf rncAtmAddress (rncAtmAddr)

Access	Read: All Write: All
Description	This attribute specifies the ATM Address of the RNC attached to the RNC interface represented by this component.
Mib	SignallingGateway
Values	String (1..44, AESANsapAddress)
Default	No default

GROUP Sg RncIf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies

about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib SignallingGateway

ATTRIBUTE Sg RnclF adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib SignallingGateway

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Sg RnclF operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for

operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	SignallingGateway
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Sg RncIf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	SignallingGateway
Values	idle active (activ) busy
Default	idle

GROUP Sg RncIf Stats

Properties	Operational
Description	This group contains the statistical attributes of this component.
Mib	SignallingGateway

ATTRIBUTE Sg RncIf uplinkMsgs (ulMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the RANAP messages received from the RNC. This includes the invalid messages. The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg RncIf invalidUplinkMsgs (invUlMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the invalid RANAP messages received from the RNC. This includes messages with errors such as syntax errors, decoding errors, contents not validated, unrecognized messages, etc. that have occurred. The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

GROUP Sg RncIf WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	SignallingGateway

ATTRIBUTE Sg RncIf customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg RncIf customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg RncIf customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)

Default	No default

COMPONENT Sg RncIf SccpConnection (SccpConn)

Groups	"GROUP Sg RncIf SccpConn Provisioned (Prov)" "GROUP Sg RncIf SccpConn WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sg/n CsDomain SccpConnection* *Sg/n RncIf SccpConnection* This component represents the connection to an SCCP layer used for signalling services between an RNC and a Signalling Gateway
Mib	SignallingGateway
Common Verbs	Help List Display

GROUP Sg RncIf SccpConn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *sccpConnection* component.
Mib	SignallingGateway

ATTRIBUTE Sg RncIf SccpConn linkToLocalSubsystem (lToLocalSub)

Access	Read: All Write: All
Description	This attribute specifies a link to an *Sccp/n LocalSubsystem/n* component for SCCP services.
Mib	SignallingGateway
Values	Link (Service, linkToSccpConnection)
Default	No default

GROUP Sg RncIf SccpConn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	SignallingGateway

ATTRIBUTE Sg RncIf SccpConn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg RncIf SccpConn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg RncIf SccpConn customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sg PsDomain (Ps)

Groups	"GROUP Sg Ps Provisioned (Prov)" "GROUP Sg Ps Operational (Oper)" "GROUP Sg Ps WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sg/n PsDomain* This component represents the signalling between the RNC and a packet server. It maintains the parameters and statistics for the termination of RANAP signalling in the PS domain and connects the transport layers for communication between the RNC and the UMTS Serving GPRS Support Node (USGSN).
Mib	SignallingGateway
Dyn. Subcomp.	"COMPONENT Sg Ps RemoteApplicationConnection (RaConn)"
Common Verbs	Help List Display Add DELete

GROUP Sg Ps Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for this component.

Mib	SignallingGateway

ATTRIBUTE Sg Ps maxSigConn

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the maximum number of simultaneous two-leg signalling connections from the Radio Network Controller. One signalling connection is established per user. Memory resources are reserved for signalling connections based on the value of this attribute. The current number of active signalling connections used are displayed by the attribute *activeSigConnections.*
Mib	SignallingGateway
Values	Decimal (1..150000)
Default	500

ATTRIBUTE Sg Ps resetAckTimer (tRatR)

Access	Read: All Write: All
Description	This attribute specifies the value of the TRatR timer defined in 3G TS 25.413. *tRatR* specifies a guard period in the Core Network prior to the transmission of a reset acknowledge message. This timer is started when a RESET message is received by the Signalling Gateway from the RNC. This timer is stopped when a response from all the USCs is received by the Signalling Gateway. Upon timer expiration, the reset procedure is terminated in the Signalling Gateway.

	The value of this attribute can be increased when timeouts are seen, as indicated by the attribute *tRatRTimeouts*.
Mib	SignallingGateway
Values	Decimal (60..120)
Units	seconds
Default	60

GROUP Sg Ps Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of this component.
Mib	SignallingGateway

ATTRIBUTE Sg Ps activeSigConnections (actSigConn)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of active signalling connections established between the Radio Network Controller (RNC) and the UMTS Subscriber Control (USC). The maximum number of signalling connections is provisioned in the attribute *maxSigConnections*.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Ps maxSigConnectionsExhausted (maxSigConnExh)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times a connection was refused because the maximum number of signalling connections, specified by the attribute *maxSigConnections*, was reached.

	The current number of signalling connections is indicated by the attribute *activeSigConnections*.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Ps rejectedConnections (rejConn)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times a USC rejects signalling connection requests from the RNC. For all the USCs that the SG talks to, the *currentlyAttached* attribute of the *Usc/n Gmm* component can be checked against the *maxAttachedSubscribers* attribute of the parent *Usc/n* component to check if this failure is caused because all the allocated contexts have been used up. The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Ps ranapMsgsRx

Access	Read: All Write: Illegal
Description	This attribute counts the RANAP messages received from the RNC. The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Ps uscConnectFailures (uscConnFail)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times a connection request to the USC failed. The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Ps rncConnectFailures (rncConnFail)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times a connection request to the RNC failed. The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Ps resetAckTimeouts (tRatRTm)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times the *resetAckTimer* expired. If the value of this attribute increases consistently, the value of the *resetAckTimer* can be increased. The counter wraps to 0 when it exceeds its maximum value.
Mib	SignallingGateway
Values	Decimal (0..4294967295)

Default	No default

GROUP Sg Ps WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	SignallingGateway

ATTRIBUTE Sg Ps customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Ps customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Ps customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sg Ps RemoteApplicationConnection (RaConn)

Instance	appType [String (1..8, ASCII)] shelfId [Decimal (0..15)] n [Decimal (1..15)]
Groups	"GROUP Sg Ps RaConn OsiState (State)" "GROUP Sg Ps RaConn WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	... *RemoteApplicationConnection/<appType, shelfId, n>* This component represents the Remote Application Connection information of an application that talks to applications on other shelves. For each application that it can communicate with, one of these connection components is created and is instantiated with the name of the remote application, the Id of the shelf on which the application runs, and the instance number of the application. ShelfId ***0*** represents the Master shelf.
Mib	SignallingGateway
Dyn. Subcomp.	"COMPONENT Sg Ps RaConn AtmConnection (AtmCon)"
Common Verbs	Help List Display

GROUP Sg Ps RaConn OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SignallingGateway

ATTRIBUTE Sg Ps RaConn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	SignallingGateway
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Sg Ps RaConn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: SignallingGateway

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Sg Ps RaConn usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: SignallingGateway

Values: idle
active (activ)
busy

Default: idle

GROUP Sg Ps RaConn WlcCustomCounters (WlcCustomCntr)

Properties: Operational

Description	This group contains the spare counters that can be dynamically patched.
Mib	SignallingGateway

ATTRIBUTE Sg Ps RaConn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Ps RaConn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Sg Ps RaConn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	SignallingGateway
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Sg Ps RaConn AtmConnection (AtmCon)

Groups	"GROUP Sg Ps RaConn AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	SignallingGateway
Common Verbs	Help List Display

GROUP Sg Ps RaConn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	SignallingGateway

ATTRIBUTE Sg Ps RaConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	SignallingGateway
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Sg

Release 6.1

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7400/15000/20000

Component Shelf

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Shelf

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COMPONENT Shelf

Groups	"GROUP Shelf Provisioned (Prov)" "GROUP Shelf Operational (Oper)"
Scope	Device
Description	*Shelf* There is one *Shelf* component per module. It is the parent component of the hardware components (which include *Card* and *Bus* components).
Mib	BaseShelf
Subcomponents	"COMPONENT Shelf Test"
Opt. Subcomp.	"COMPONENT Shelf Card"
Dyn. Subcomp.	"COMPONENT Shelf Bus" "COMPONENT Shelf FabricCard"
Common Verbs	Help List Display

VERB RESET Shelf

Impact	Service
Description	This command is used to simultaneously reset all processor cards on the shelf. The system behaves as if the shelf had just been powered on.

VERB RESTART Shelf

Impact	Service
Description	This command restarts all processor cards on the shelf. A processor card restart reinitializes the software, making the card behave as if it has just been reloaded.

GROUP Shelf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Shelf* component.
Mib	BaseShelf

ATTRIBUTE Shelf commentText (text)

Access	Read and write
Description	This is an arbitrary string that can be used to specify the location of the module. It is not used by the system.
Mib	BaseShelf
Values	String (0..80, ASCII)
Default	""

ATTRIBUTE Shelf cpEquipmentProtection

Access	Read and write
Description	This attribute specifies the type of Equipment Protection support provided by a spared CP configuration. The valid values are: ***hot***, enables delivery of provisioning data to standby CP and on CPSO allows switching to the current view. ***cold***, the default value which supports switchover to the committed view. When the attribute is set to ***hot***, applications which provide hot or warm CP based services, receive the provisioning data during *activate prov*. The cold CP based services receive the

provisioning data during CP switchover, when the standby CP is taking over as active. On CPSO, hot and warm services are activated first followed by the cold services. Hence the activation time of cold services is potentially extended which will increase the service outage, compared to when this attribute is set to ***cold***.

It is important to note that this attribute does not make any service warm or hot; instead, CP based services are provided the ability to reduce or eliminate call-setup outage due to a CPSO and to ensure stable calls are unaffected by a CPSO.

The standby CP will be reset when the value of this attribute is changed. To set this attribute to ***hot***, the *maxNumberJournalFiles* attribute under the *ProvisioningSystem* component must be set to a value other than ***none***.

Mib	BaseShelf
Values	cold hot
Default	cold

ATTRIBUTE Shelf repeatFanAlarm

Access	Read and write
Description	On the Nortel Networks Multiservice Switch 15000 and the Nortel Networks Multiservice Switch 20000, there are three fans to cool the shelf. Because of a hardware limitation, it is not possible to determine how many fans are affected upon fan failure. Such fan failures are reported through a 7012 0051 alarm. This attribute specifies whether the 7012 0051 alarm should be set once or repeated on a regular basis: ***on*** - specifies that the fan alarm should be re-issued every eight hours until the alarm is cleared. Normally, the same alarm is never re-issued in order to minimize the number of alarms generated by a node. Nonetheless, selecting this option helps to compensate for the hardware limitation by providing a regular reminder (once per eight hour shift) that one or possibly more fans have failed on this node.

In addition, if the alarm condition remains for more than 24 hours, the alarm severity is increased. That is, the first three alarms are issued with a severity of MAJOR, while all subsequent alarms have a severity of CRITICAL.

off - specifies that the fan alarm be issued only once upon failure.

This attribute is not applicable and is therefore ignored on the Nortel Networks Multiservice Switch 7400.

Mib: BaseShelf

Values: off
on

Default: off

GROUP Shelf Operational (Oper)

Properties: Operational

Description

This group contains the operational attributes for the *Shelf* component.

Mib: BaseShelf

ATTRIBUTE Shelf hardwareFailures (hwFailures)

Access: Read only

Description

This attribute indicates which type of components have failed.The hardware's fault detection system can report the following kinds of component failures: card, power converter, cooling unit, terminator card, fan, input power feed or fabric card failures.
card - The card has failed.
powerConverter - The power converter has failed.
coolingUnit - The cooling unit has failed.
terminatorCard - The terminator card has failed.

The following types only apply to a fabric-based shelf:

fan - The fan has failed.
inputPowerFeed - The input power feed has failed.
fabricCard - The fabric card has failed.
macAddressCard - The MAC address card has failed.
alarmBitsCard - The alarm/bit card has failed.

Mib: BaseShelf

Set of:
card
powerConverter
coolingUnit
terminatorCard
fan
powerSupply
fabricCard
macAddressCard
alarmBitsCard

Default: No default

ATTRIBUTE Shelf numberOfSlots (slots)

Access: Read only

Description: This attribute specifies the number of slots for this shelf.

Mib: BaseShelf

Values: Decimal (1..16)

Default: No default

ATTRIBUTE Shelf shelfType

Access: Read only

Description: This attribute indicates the shelf type:
busBasedShelf - bus-based backplane shelf.
fabricBasedShelf - fabric-based backplane shelf.
fabricBasedV2Shelf - dual-speed configurable fabric-based backplane shelf.

Mib: BaseShelf

Values	busBasedShelf fabricBasedShelf fabricBasedV2Shelf
Default	No default

ATTRIBUTE Shelf backplaneOperatingMode (backplaneMode)

Access	Read only
Description	This attribute indicates the current backplane operating mode. On a fabric-based shelf: ***noFabric*** - No fabric is in service now. ***singleFabricX*** - The shelf is running on fabric X only. ***singleFabricY*** - The shelf is running on fabric Y only. ***dualFabric*** - The shelf is running on fabric X and fabric Y. ***dualFabricDegraded*** - The shelf is running on fabric X and fabric Y with some fabric ports disabled. On a bus-based shelf: ***noBus*** - No bus is in service now. ***singleBusX*** - The shelf is running on bus X only. ***singleBusY*** - The shelf is running on bus Y only. ***dualBus*** - The shelf is running on bus X and bus Y.
Mib	BaseShelf
Values	noBus singleBusX singleBusY dualBus noFabric singleFabricX singleFabricY dualFabric dualFabricDegraded
Default	No default

ATTRIBUTE Shelf slotConfiguration (sConf)

Access	Read only

Description	This attribute indicates the slot configuration of the shelf with its associated fabric cards. A value of ***40G*** indicates a configuration in which all slots can accommodate 2.5 Gbit/s cards. A value of ***70G*** indicates a configuration in which all slots can accommodate 2.5 Gbit/s cards, and where slots 6, 7, 14, and 15 can accommodate 10 Gbit/s cards. A value of ***mismatched*** indicates a shelf where the two fabric cards support different configurations. The mismatched configuration should only occur during in-service upgrades. This attribute is not displayed when the *shelfType* attribute has a value of ***busBasedShelf***.
Mib	BaseShelf
Values	mismatched 40G 70G
Default	No default

COMPONENT Shelf Card

Instance	Decimal (0..15)
Groups	"GROUP Shelf Card Provisioned (Prov)" "GROUP Shelf Card OsiState (State)" "GROUP Shelf Card Operational (Oper)" "GROUP Shelf Card Properties (Prop)" "GROUP Shelf Card Utilization (Util)" "GROUP Shelf Card Capacity (Cap)"
Scope	Device
Description	*Shelf Card/n* The *Card* component is a subcomponent of the *Shelf* component. There are a maximum of 16 *Card* components defined, one corresponding to each physical card slot. This is necessary in order to be able to reflect which processor card is present in each

slot at any time.

For a shelf that does not contain 16 slots, the *Card* components only need to be defined for each of their physical card slots. This can be accomplished via the StartUp initial provisioning system. It is possible to add a *Card* component since it may be desirable to move a CP to a shelf that contains more physical card slots. This CP move would result in adding the provisioning information associated with the other processor cards instead of starting over.

It is not possible to delete a *Card* component, but its type can be changed to "None".

Mib	BaseShelf
Subcomponents	"COMPONENT Shelf Card Diagnostics (Diag)"
Dyn. Subcomp.	"COMPONENT Shelf Card BusTap" "COMPONENT Shelf Card Test" "COMPONENT Shelf Card FabricPort" "COMPONENT Shelf Card SparedServices (SpServ)" "COMPONENT Shelf Card DaughterCard (Dcard)" "COMPONENT Shelf Card HwDiagnostics (HwDiag)"
Common Verbs	Help List Display Add LOCK Unlock

VERB RESET Shelf Card

Impact	Service
Description	*Reset Shelf Card/n* *Reset -force Shelf Card/n* This command is used to reset a processor card. Resetting a processor card implies: (1) resetting the hardware (as if the card had just been powered on), (2) performing the card's self-tests, and (3) reloading the software (assuming an LP is configured to run on the card). A *Reset* command issued against the CP causes it to reload from the committed provisioning data file. A *Reset* command issued against an FP causes it to reload the same software it was already running. This is the software load that is derived from the provisioning data in the CP's current view (this may or may not be the committed view). **Options:** *-force* If the card number of the active CP is specified, this option causes the reset to occur against the active cp even if the current or edit view differs from the committed view, or if the standby OAM Ethernet port is not available, or if the standby CP is currently loading the committed provisioning data file. Use of this option would cause the loss of data in any unsaved view, and any FPs running uncommitted data would restart. On any card other than the active CP, -force has no meaning.

VERB RESTART Shelf Card

Impact	Service
Description	*Restart Shelf Card/n* *Restart -force Shelf Card/n* This command is used to restart a processor card. Restarting a processor card causes the software to reinitialize itself and behave as if it had just been reloaded. A *Restart* command issued against a CP causes it to restart using the committed provisioning data. **Options:** *-force* If the card number of the active CP is specified, this option causes the restart to occur against the active CP even if the current or edit view differs from the committed view, or if the standby OAM Ethernet port is not available, or if the standby CP is currently loading the committed provisioning data file. Use of this option would cause the loss of data in any unsaved view, and any FPs running uncommitted data would restart. On any card other than the active CP, -force has no meaning.

GROUP Shelf Card Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Card component.
Mib	BaseShelf

ATTRIBUTE Shelf Card cardType (card)

Access	Read and write
Description	This is the type of card expected in this slot. Specifying a card type here has the effect of configuring a card to run in this slot. A value of ***none*** means that no card is configured to run in this slot.
Mib	BaseShelf

Values	CP V11 V35 DS1 DS1V DS3 E1 E1V E3 none 1pFddiMultiMode (FDDI) 4pTokenRing (TokenRing) 6pEth10BaseT (Ethernet) DS1C E1C 3pE3Atm (E3A) 3pDS3Atm (DS3A) 3pOC3MmAtm (OC3M) 3pOC3SmAtm (OC3S) 3pE1Atm 3pDS1Atm J2MV 4pEthAui 1pFddiSingleMode 1pDS1V 1pE1V 2pJ6MAtm HSSI 8pDS1 CFP1 DEV1 CFP2 DEV2 4pDS1Aal1 4pE1Aal1 1pDS3C IlsForwarder 8pDS1Atm 8pE1Atm 1pE1Mvp 1pDS1Mvp

1pTTC2mMvp
1pDS3cAal
2pDS3cAal
12mVspAal
2pEth100BaseT (Eth100BaseT)
2pOC3MmAtm2
2pOC3SmAtm2
3pDS3Atm2
3pE3Atm2
CPeD
CPeE
4pOC3SmIrAtm
4pOC3MmAtm
12pDS3Atm
12pE3Atm
1pOC12SmLrAtm
1pE1Mvpe
1pDS1Mvpe
1pTTC2mMvpe
32pDS1Msa
32pDS1MsaMt
32pDS1MsaMtp
32pDS1MsaSt
32pDS1MsaStp
32pE1Aal
1pOC48SmSrAtm
4pDS3Ch
4pDS3ChAtm
1pSTM1ChSmIr
1pSTM1ChSmIrAtm
4pOC12SmIrAtm
4pOC12SmLrAtm
12mPcusp
32pE1Msa
32pE1MsaMt
32pE1MsaMtp
32pE1MsaSt
32pE1MsaStp
1pOC48ChSmIrAtm
16pOC3SmIrAtm
1pOC48SmIrAtm

4pDS3ChAal1
Vsp2
VpnAccelerator
24pBCNW
6mPktServSP
2pGPDsk
WPDS
11pMSW
1pOC48SmSrPos
1pOC48SmIrPos
2mPktServSP
1pOC48Pos
4pOC12Pos
16pOC3PosAtm
4pDS1Mvpe
4pE1Mvpe
4pOC3ChSmIr
1pOC12SmSrPos
1pOC12SmIrPos
4pOC3SmSrPos
4pOC3SmIrPos
2pSTM1eAtm
VpnXc
2pGeMmSrVsp3
4pGe
2pSTM1eCh
2pOC3ChSmIrVsp3
Vsp2W
34pGeLxTdmVsp
3pGeLxOC3SmIrVsp
6mAppServ
2pVS
2pOC3ChSmIrVsp4
8pEth100BaseT
4pMRPosAtm
4pEth100BaseT

Default none

ATTRIBUTE Shelf Card sparingConnection (sc)

Access Read and write

Description	This attribute contains the identification of the 1 for N sparing panel group of connectors to which the card is connected. This identification should coincide with the label located on the sparing panel.
Mib	BaseShelf
Values	notApplicable mainA mainB mainC mainD mainE mainF mainG mainH mainI mainJ mainK mainL mainM spare
Default	notApplicable

ATTRIBUTE Shelf Card commentText (text)

Access	Read and write
Description	This is an arbitrary string that can be used to specify the location of the sparing panel.
Mib	BaseShelf
Values	String (0..80, ASCII)
Default	""

ATTRIBUTE Shelf Card configuredLPs

Access	Read only
Description	This is a read-only attribute that shows which LPs are currently

configured to run on this card (it is the opposite side of the LP component's *mainCard* and *spareCard* link attributes). Note that there is only one case where more than one LP can be configured to run on a card. This is when the card is configured as an N+1 spare. If this is not the case, the card is configured as a main card or as a 1for1 spare, only one LP can appear in this list.

Mib	BaseShelf
List of	Link
List Size	16
Default	No default

GROUP Shelf Card OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	BaseShelf

ATTRIBUTE Shelf Card adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

	is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BaseShelf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Shelf Card operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BaseShelf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Shelf Card usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BaseShelf
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Shelf Card availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can

be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	BaseShelf
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Shelf Card proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: BaseShelf

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Shelf Card controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: BaseShelf

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Shelf Card alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: BaseShelf

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Shelf Card standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: BaseShelf

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Shelf Card unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	BaseShelf
Values	false true
Default	false

GROUP Shelf Card Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes that reflect the current status of the card.
Mib	BaseShelf

ATTRIBUTE Shelf Card failureCause

Access	Read only
Description	This attribute indicates why the card has failed. This attribute is meaningful when the OSI *AvailabilityStatus* attribute is set to ***failed***.

none - The card is operational.
wrongCardType - The wrong card type has been inserted.
notConfigured - The card is not configured.
cannotLoadSoftware - The card can not load software.
failedSelfTests - The card failed itself test.
notResponding - The card is not responding.
backplaneConnectivityProblem - The card is not properly connected to the backplane.
unsupportedPecCode - The card with unsupported PEC code is inserted.

Mib: BaseShelf

Values:
none
wrongCardType
notConfigured
cannotLoadSoftware
failedSelfTests
notResponding
backplaneConnectivityProblem
unsupportedPecCode

Default: No default

ATTRIBUTE Shelf Card selfTestFault

Access: Read only

Description:
This attribute indicates the result of the processor card's self-tests that were performed when it initially came up.

Mib: BaseShelf

Values: none

Default: No default

ATTRIBUTE Shelf Card sparingConnectionStatus (scstat)

Access: Read only

Description:
This attribute indicates if the control signal received from a 1forN sparing panel or a 1for1 sparing panel is properly terminated.
notApplicable - The card is not provisioned as part of a

sparing configuration, and is not connected to any sparing panel.
1for1Ok -The card is provisioned correctly for 1for1 sparing and is connected to the active relay of a 1for1 sparing panel.
1forNOk -The card is provisioned correctly for either 1for1 or 1forN sparing and is connected to either the standby or active relay of a 1forN sparing panel.
unconfirmed -The card is provisioned as part of a sparing configuration, but its connection status cannot be determined. This is expected for the standby card in a 1for1 sparing configuration.
To determine if the card is connected to a sparing panel, perform a switchover of the LP to see if the card will grab a relay when it is active. If the card has grabbed the relay, the sparing connection status should change from, ***unconfirmed***, to ***1for1Ok*** and the LED on the sparing panel corresponding to that relay should be illuminated.
Please note: Performing the switchover will disrupt traffic on the other card and this test should be conducted when no traffic is running on the active card.
notConnected - The card is provisioned as part of a sparing configuration, but is not connected to a sparing panel.
Remedial Action: Check the cable connectivity between the card and the sparing panel.
incorrectlyConnected - The card is provisioned as part of a sparing configuration, but is connected to the wrong port on a 1forN panel, or is connected to a 1for1 sparing panel while configured for 1forN.
Remedial Action: Connect the cable to the port that was specified by the *sparingConnection* attribute.
inconsistentlyConnected - The card is provisioned as part of a 1forN sparing configuration, but is connected to a sparing panel which is not the same as the other cards sharing the same spare card.
Remedial Action: Ensure all cards that share the same spare card are connected to the same sparing panel.
This value is also used to indicate that two sparing panels with the same sparing panel IDs are being used by cards on the same shelf.
Remedial Action: Replace one of the sparing panels with another panel that has a different sparing panel ID. Sparing panel IDs are

	assigned at the time of manufacture and cannot be changed by the user.
Mib	BaseShelf
Values	notApplicable 1for1Ok 1forNOk unconfirmed notConnected incorrectlyConnected inconsistentlyConnected
Default	No default

ATTRIBUTE Shelf Card hardwareAlarm (hwAlarm)

Access	Read only
Description	This attribute indicates whether and why the card is generating a hardware alarm.
Mib	BaseShelf
Values	none batteryFeedFailure
Default	No default

ATTRIBUTE Shelf Card currentLP

Access	Read only
Description	This attribute indicates which LPs are currently associated with this card. A card configured as a 1forN spare may be associated with more than one LP.
Mib	BaseShelf
List of	The name of the component
List Size	16
Default	No default

GROUP Shelf Card Properties (Prop)

Properties	Operational
Description	This group contains the operational attributes that specify the fixed characteristics of the card.
Mib	BaseShelf

ATTRIBUTE Shelf Card insertedCardType

Access	Read only
Description	This attribute indicates the type of card that is currently inserted in this slot. A value of ***none*** means that no card is configured to run in this slot. A value of ***unsupported*** means that the card type of the inserted card was not recognized and that this type of card is therefore not supported with the current release of software.
Mib	BaseShelf
Values	CP V11 V35 DS1 DS1V DS3 E1 E1V E3 none 1pFddiMultiMode (FDDI) 4pTokenRing (TokenRing) 6pEth10BaseT (Ethernet) DS1C E1C 3pE3Atm (E3A) 3pDS3Atm (DS3A) 3pOC3MmAtm (OC3M) 1pOC3MmAtm (OC3P) 3pOC3SmAtm (OC3S)

3pE1Atm
3pDS1Atm
J2MV
4pEthAui
1pFddiSingleMode
1pDS1V
1pE1V
2pJ6MAtm
HSSI
8pDS1
CFP1
DEV1
CFP2
DEV2
4pDS1Aal1
4pE1Aal1
1pDS3C
IlsForwarder
8pDS1Atm
8pE1Atm
1pE1Mvp
1pDS1Mvp
1pTTC2mMvp
1pDS3cAal
2pDS3cAal
12mVspAal
2pEth100BaseT (Eth100BaseT)
2pOC3MmAtm2
2pOC3SmAtm2
3pDS3Atm2
3pE3Atm2
CPeD
CPeE
4pOC3SmIrAtm
4pOC3MmAtm
12pDS3Atm
12pE3Atm
1pOC12SmLrAtm
1pE1Mvpe
1pDS1Mvpe
1pTTC2mMvpe

32pDS1Msa
32pDS1MsaMt
32pDS1MsaMtp
32pDS1MsaSt
32pDS1MsaStp
32pE1Aal
1pOC48SmSrAtm
4pDS3Ch
4pDS3ChAtm
1pSTM1ChSmIr
1pSTM1ChSmIrAtm
4pOC12SmIrAtm
4pOC12SmLrAtm
12mPcusp
32pE1Msa
32pE1MsaMt
32pE1MsaMtp
32pE1MsaSt
32pE1MsaStp
1pOC48ChSmIrAtm
16pOC3SmIrAtm
1pOC48SmIrAtm
4pDS3ChAal1
Vsp2
VpnAccelerator
24pBCNW
6mPktServSP
2pGPDsk
WPDS
11pMSW
unsupported
1pOC48SmSrPos
1pOC48SmIrPos
2mPktServSP
1pOC48Pos
4pOC12Pos
16pOC3PosAtm
4pDS1Mvpe
4pE1Mvpe
4pOC3ChSmIr
1pOC12SmSrPos

1pOC12SmIrPos
4pOC3SmSrPos
4pOC3SmIrPos
2pSTM1eAtm
VpnXc
2pGeMmSrVsp3
4pGe
2pSTM1eCh
2pOC3ChSmIrVsp3
Vsp2W
34pGeLxTdmVsp
3pGeLxOC3SmIrVsp
6mAppServ
2pVS
2pOC3ChSmIrVsp4
8pEth100BaseT
4pMRPosAtm
4pEth100BaseT

Default No default

ATTRIBUTE Shelf Card pmRevisionCode

Access Read only

Description

This attribute indicates the hardware revision level of the Processor Module (PM).

Mib BaseShelf

Values String (0..16, ASCII)

Default No default

ATTRIBUTE Shelf Card imRevisionCode

Access Read only

Description

This attribute indicates the hardware revision level of the Interface Module (IM).

Mib BaseShelf

Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE Shelf Card serialNumber

Access	Read only
Description	This attribute indicates the processor card's serial number.
Mib	BaseShelf
Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE Shelf Card activeFirmwareVersion

Access	Read only
Description	This attribute indicates the firmware version of the currently active flash memory bank.
Mib	BaseShelf
Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE Shelf Card inactiveFirmwareVersion

Access	Read only
Description	This attribute indicates the firmware version of the currently inactive flash memory bank.
Mib	BaseShelf
Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE Shelf Card productCode (prc)

Access	Read only

Description	This attribute indicates the product ordering code and release of the card.
Mib	BaseShelf
Values	String (0..12, ASCII)
Default	No default

GROUP Shelf Card Utilization (Util)

Properties	Operational
Description	This group contains the operational attributes that specify the processor's utilization levels. When this group exists for an LP component, the attributes are representative of the active card.
Mib	BaseShelf

ATTRIBUTE Shelf Card timeInterval

Access	Read only
Description	This attribute indicates the time period for which the average, minimum, and maximum utilization values are calculated. This attribute is reset to 0 every 15 minutes.
Mib	BaseShelf
Values	Decimal (0..15)
Units	minutes
Default	No default

ATTRIBUTE Shelf Card cpuUtil

Access	Read only
Description	This attribute indicates an approximation of the current processor utilization level (expressed as a percentage).
Mib	BaseShelf

Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Shelf Card cpuUtilAvg

Access	Read only
Description	This attribute indicates an average processor utilization level over the specified time period, *timeInterval*. This average is calculated based on one minute CPU utilization averages.
Mib	BaseShelf
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Shelf Card cpuUtilAvgMin

Access	Read only
Description	This attribute indicates the minimum processor utilization level over a specified time period, *timeInterval*. This is based on one minute CPU utilization averages.
Mib	BaseShelf
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Shelf Card cpuUtilAvgMax

Access	Read only
Description	This attribute indicates the maximum processor utilization level

over a specified time period, *timeInterval*. This is based on one minute CPU utilization averages.

Mib	BaseShelf
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Shelf Card sharedMsgBlockUsage

Access	Read only
Description	This attribute indicates the processor's current shared message block memory utilization.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card sharedMsgBlockUsageAvg

Access	Read only
Description	This attribute indicates the processor's average memory utilization of shared message blocks, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this average memory utilization is reset to the current usage, *sharedMsgBlockUsage*.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card sharedMsgBlockUsageAvgMin

Access	Read only
Description	This attribute indicates the processor's minimum memory utilization of shared message blocks, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this minimum memory utilization is reset to the current usage, *sharedMsgBlockUsage*.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card sharedMsgBlockUsageAvgMax

Access	Read only
Description	This attribute indicates the processor's maximum memory utilization of shared message blocks, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this maximum memory utilization is reset to the current usage, *sharedMsgBlockUsage*.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card localMsgBlockUsage

Access	Read only
Description	This attribute indicates the processor's current memory utilization

of message blocks which are used for local messaging on the card.

Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card localMsgBlockUsageAvg

Access	Read only
Description	This attribute indicates the processor's average memory utilization of message blocks used for local messaging on the card, calculated over a specified time period, *timeInterval*. This utilization value is calculated using 15 second samples. At the start of each *timeInterval*, this average memory utilization is reset to the current usage, *localMsgBlockUsage.*
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card localMsgBlockUsageMin

Access	Read only
Description	This attribute indicates the processor's minimum memory utilization of message blocks used for local messaging on the card, calculated over a specified time period, *timeInterval*. This utilization value is updated at 15 second intervals. At the start of each *timeInterval*, this minimum memory utilization is reset to the current usage, *localMsgBlockUsage*.
Mib	BaseShelf
Values	Decimal (0..2147483647)

Units	kbyte
Default	No default

ATTRIBUTE Shelf Card localMsgBlockUsageMax

Access	Read only
Description	This attribute indicates the processor's maximum memory utilization of message blocks used for local messaging on the card, calculated over a specified time period, *timeInterval*. This utilization value is updated at 15 second intervals. At the start of each *timeInterval*, this maximum memory utilization is reset to the current usage, *localMsgBlockUsage*.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card memoryUsage

Access	Read only
Description	This attribute indicates the processor's current memory utilization for each type of memory.
Mib	BaseShelf
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

ATTRIBUTE Shelf Card memoryUsageAvg

Access	Read only

Description	This attribute indicates the processor's average memory utilization for each type of memory in the specified time period, *timeInterval*. This value is calculated using 15 second samples.
Mib	BaseShelf
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

ATTRIBUTE Shelf Card memoryUsageAvgMin

Access	Read only
Description	This attribute indicates the processor's minimum memory utilization for each type of memory in the specified time period, *timeInterval*. This value is calculated using 15 second samples.
Mib	BaseShelf
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

ATTRIBUTE Shelf Card memoryUsageAvgMax

Access	Read only
Description	This attribute indicates the processor's maximum memory utilization for each type of memory in the specified time period, *timeInterval*. This value is calculated using 15 second samples.

Mib	BaseShelf
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

GROUP Shelf Card Capacity (Cap)

Properties	Operational
Description	This group contains the operational attributes that specify the processor's capacity levels. When this group exists for an *LP* component, the attributes are representative of the active *Card*.
Mib	BaseShelf

ATTRIBUTE Shelf Card sharedMsgBlockCapacity

Access	Read only
Description	This attribute indicates the processor card's shared message block memory capacity.
Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card localMsgBlockCapacity

Access	Read only
Description	This attribute indicates the processor card's local message block memory capacity. These message blocks are used for local messaging on the card.

Mib	BaseShelf
Values	Decimal (0..2147483647)
Units	kbyte
Default	No default

ATTRIBUTE Shelf Card memoryCapacity

Access	Read only
Description	This attribute indicates the processor card's memory capacity for each type of memory.
Mib	BaseShelf
Vector of	Decimal (0..2147483647)
Units	kbyte
Index	fastRam normalRam sharedRam
Default	No default

COMPONENT Shelf Card BusTap

Instance	x y
Groups	"GROUP Shelf Card BusTap OsiState (State)" "GROUP Shelf Card BusTap Operational (Oper)" "GROUP Shelf Card BusTap Errors"
Scope	Device
Description	*Shelf Card/n BusTap/b* A *BusTap* component represents a physical bus tap on a card. A bus tap is a card's interface to a bus; it provides a pathway for the card to send cells over the bus to the other cards in the module, and to receive cells sent to it over the bus by the other cards in the module. A card's *BusTap* components are created automatically whenever

the card begins acting as an active or standby LP, and remain in existence as long as the card remains operational; *BusTap* components cannot be added or deleted.

Mib: Bus

Common Verbs:
- Help
- List
- Display

GROUP Shelf Card BusTap OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Bus

ATTRIBUTE Shelf Card BusTap adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To

enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Bus

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Shelf Card BusTap operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Bus

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Shelf Card BusTap usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Bus
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Shelf Card BusTap availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Bus
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Shelf Card BusTap proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Bus

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Shelf Card BusTap controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Bus

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Shelf Card BusTap alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Bus

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Shelf Card BusTap standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Bus

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Shelf Card BusTap unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Bus
Values	false true
Default	false

GROUP Shelf Card BusTap Operational (Oper)

Properties	Operational
Description	This attribute group contains operational attributes of a bus tap. This information outlines what the bus tap is doing and why it is doing it, and is primarily intended for use in diagnosing the cause of a bus-related problem reported by the module.
Mib	Bus

ATTRIBUTE Shelf Card BusTap failuresInEffect

Access	Read only
Description	This attribute records the hardware problems that prevent the bus tap from using the associated bus. It may contain any combination of the following values.

	selfTest: the bus tap has failed its self-test ***clockSignal***: the bus tap is not receiving clock signals from the bus ***parityError***: the bus tap has detected too many parity errors on the bus
Mib	Bus
Set of	selfTest clockSignal parityError
Default	No default

ATTRIBUTE Shelf Card BusTap dependenciesInEffect

Access	Read only
Description	This attribute records the non-hardware problems that prevent the bus tap from using the associated bus. It may contain any combination of the following values. ***busLocked***: the bus is locked ***busDisabled***: the bus is disabled
Mib	Bus
Set of	busLocked busDisabled
Default	No default

ATTRIBUTE Shelf Card BusTap cardsAvailable

Access	Read only
Description	This attribute records the slot numbers of the cards that the bus tap considers available on the bus—that is, the cards that have an operational bus tap connected to the bus. The value of this attribute is determined automatically by the bus tap by monitoring signals generated by each bus tap on the bus; it cannot be changed by the operator. Normally, every card in the module signals its availability on both buses; if a card does not signal its availability on a bus this indicates that the card is not present or that its bus tap has failed. By examining this attribute for both of a card's *BusTap* components, it is possible to determine which

	cards are present in the module and which buses each can use. Note: If *failuresInEffect* contains either ***selfTest*** or ***clockSignal*** the bus tap is unable to monitor the availability of the bus taps on the bus; *cardsAvailable* will indicate that no bus taps are available on the bus.
Mib	Bus
Set of	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf Card BusTap cardsTxTo

Access	Read only
Description	This attribute records the slot numbers of the cards which the bus tap is currently configured to transmit cells to. This configuration is managed automatically, and cannot be changed by the operator. By examining this attribute for both of a card's *BusTap* components, it is possible to determine which bus (if any) the card uses when it needs to transmits cells to a specific card in the module.
Mib	Bus
Set of	Decimal (0..15)
Default	No default

GROUP Shelf Card BusTap Errors

Properties	Operational
Description	This attribute group records errors that the bus tap has detected since the card was last rebooted. This information is intended for use in detecting and diagnosing bus-related problems within a module.
Mib	Bus

ATTRIBUTE Shelf Card BusTap selfTestErrorCode

Access	Read only

Description	This attribute records the error code generated by the most recent self-test of the bus tap. The value zero indicates that the self-test was successful. A non-zero value indicates that the self-test failed, and is used by the service technician when a defective card is returned for repair.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap clockErrors

Access	Read only
Description	This attribute records the number of times that the bus tap has detected a loss of the fundamental clock signal used by the bus. Each occurrence may result in the loss of one or more cells or frames. This type of event may occur during normal operation of the module, for example when switching from one of the bus's clock sources to the other; it may also be caused by a hardware fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap endOfCellErrors

Access	Read only
Description	This attribute records the number of times that the bus tap has detected a loss of the end-of-cell timing signal used by the bus. Each occurrence may result in the loss of one or more cells or frames. This type of event may occur during normal operation of the module, for example switching the bus's clock source from one card to another; it may also be caused by a hardware fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.

Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap parityErrors

Access	Read only
Description	This attribute records the number of times that the bus tap has detected a cell with invalid parity on the bus. Each occurrence may result in the loss of one or more cells or frames. This type of event may occur during normal operation of the module, for example when a card is inserted, removed, or reboots; it may also be caused by a hardware fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap frmCongestionErrors

Access	Read only
Description	This attribute records the number of times that the bus tap was unable to receive a frame from the bus because all of its bus receive channels were in use. Each occurrence results in the loss of the frame. This type of event may occur during normal operation of the module, for example when the module is operating in single bus mode; it may also be caused by a hardware fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap frmCollisionErrors

Access	Read only
Description	This attribute records the number of times that the bus tap was unable to receive a frame from the bus because it did not receive the last cell of the frame before the first cell of the following frame from the same source. Each occurrence results in the loss of both frames. This type of event may occur during normal operation of the module, for example when a card reboots; it may also be caused by a hardware fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap frmTimeoutErrors

Access	Read only
Description	This attribute records the number of times that the bus tap was unable to receive a frame from the bus because the delay between two successive cells in that frame exceeded the maximum allowable duration. Each occurrence results in the loss of the frame. This type of event may occur during normal operation of the module, for example when the module changes bus mode; it may also be caused by a hardware fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap frmDeliveryErrors

Access	Read only
Description	This attribute records the number of times that the bus tap was unable to receive a frame from the bus because it was destined for a bus transmit queue; that is, the frame would have been

	immediately retransmitted over a bus. Each occurrence results in the loss of the frame. This type of event should never occur during normal operation of the module and indicates the occurrence of a hardware or software fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card BusTap frmSizeErrors

Access	Read only
Description	This attribute records the number of times that the bus tap was unable to receive a frame from the bus because it required more than 255 blocks of shared memory. Each occurrence results in the loss of the frame. This type of event should never occur during normal operation of the module and indicates improper configuration of the card or the occurrence of a hardware or software fault. The attribute's value wraps around to zero when it exceeds the maximum permitted value.
Mib	Bus
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Shelf Card Test

Groups	"GROUP Shelf Card Test OsiState (State)" "GROUP Shelf Card Test Setup" "GROUP Shelf Card Test Results"
Scope	Device
Description	*Shelf Card/n Test* This component is used to verify the operation of a module's cards. A card test may be run when new hardware or services are commissioned, as part of a routine maintenance program, or to

diagnose the cause of card- or bus-related problems. The *Test* component is created automatically for each card that is running as an active or standby LP; *Test* components cannot be added or deleted.

A card test allows the operator to stress test new or existing cards under controlled conditions. The test circulates frames over the bus between the card under test and a distinct “target card”, thereby exercising both cards and consuming bus bandwidth. The test frames follow the same route to their destination as normal frames. If the node is in dual bus mode, each card test that is activated consumes bandwidth from both backplane buses in equal amounts; if the module is in single bus mode, only the bus in service is utilized.

The test frames generated by the card under test are grouped into two independent streams.
1) The loading frame stream circulates a set of “loading frames” between the card under test and the target card as rapidly as possible. The intent of this stream is to verify the operation of the cards and the backplane buses under a controlled load.
2) The verification stream transmits a series of “verification frames” from the card under test to the target card; as each frame is returned, its contents are verified and the next verification frame in the series is transmitted. The intent of this stream is to verify that frames are not being corrupted during transfer from card to card.
The card test can be configured to send frames from either or both streams. The priority, size, and content of the test frames can also be controlled.

Each card can run the card test independently. The operator can run the card test on any subset of the cards simultaneously and can specify different test frame configurations for each test. It is also possible for a card to act as the target card for more than one card under test, and for a card to act as a target card while it is itself under test. The flexibility provided by the card test allows

the operator to tailor a set of card tests according to the testing to be performed.

Mib BaseShelf

Common Verbs
Help
List
Display

VERB START Shelf Card Test

Impact Service

Description *Start Shelf Card/n Test*
This verb initiates the card test. If the card test is already running, the command has no effect and the test continues. The *Test* component on the target card must exist before the test can be run.

VERB STOP Shelf Card Test

Impact Service

Description *STOP Shelf Card/n Test*
This verb terminates the card test. If the card test is not running, the command has no effect.

GROUP Shelf Card Test OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib BaseShelf

ATTRIBUTE Shelf Card Test adminState (osiAdmin)

Access Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	BaseShelf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Shelf Card Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	BaseShelf

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Shelf Card Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	BaseShelf
Values	idle active (activ) busy
Default	idle

GROUP Shelf Card Test Setup

Properties	Operational
Description	This attribute group contains the attributes that govern the operation of a card test. These attributes cannot be changed while a card test is running.
Mib	BaseShelf

ATTRIBUTE Shelf Card Test targetCard (card)

Access	Read and write
Description	This attribute specifies the slot number of the card to which frames are sent during the card test. There is no single default value for this attribute—it defaults to the slot number of the *Test*

	component's own card and must be changed to a different value before the test can be started.
Mib	BaseShelf
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf Card Test frmTypes (types)

Access	Read and write
Description	This attribute specifies the types of frames that are sent during the card test. It must contain at least one of the following values. ***loading***: A set of "loading frames" is circulated between the *Test* component and the *Test* component on the target card as rapidly as possible. This frame type should be selected when the test is intended to verify the operation of the cards and the backplane buses under a specified load. ***verification***: A single "verification frame" is transmitted to the *Test* component on the target card; when the frame is returned, its contents are verified and the next verification frame in the series is transmitted. This frame type should be selected when the test is intended to verify that frames are not being corrupted as they pass from card to card.
Mib	BaseShelf
Set of	loading verification
Default	(loading, verification)

ATTRIBUTE Shelf Card Test frmPriorities (priorities)

Access	Read and write
Description	This attribute specifies the priorities of the frames that are sent during the card test. It must contain at least one of the following values. ***lowPriority***: Low priority frames are sent. ***highPriority***: High priority frames are sent.

Mib	BaseShelf
Set of	lowPriority highPriority
Default	(lowPriority)

ATTRIBUTE Shelf Card Test frmPatternType (fpt)

Access	Read and write
Description	This attribute specifies the bit sequence to fill the frames used in the card test. It must contain one of the following values. ***ccitt32kBitPattern***: a pseudo-random sequence of 32 kbit is used ***ccitt8MBitPattern***: a pseudo-random sequence of 8 Mbit is used ***customizedPattern***: the pattern defined by the *customizedPattern* attribute is used
Mib	BaseShelf
Values	ccitt32kBitPattern ccitt8MBitPattern customizedPattern
Default	ccitt32kBitPattern

ATTRIBUTE Shelf Card Test customizedPattern (cp)

Access	Read and write
Description	This attribute specifies a 32 bit sequence used to fill frames when the *framePatternType* attribute has a value of ***customizedPattern***. The default value gives a pattern of alternating 0 and 1 bits.
Mib	BaseShelf
Values	Hex (H.0..H.ffffffff)
Units	Hex
Default	H.55555555

ATTRIBUTE Shelf Card Test duration

Access	Read and write

Description	This attribute specifies the maximum length of time that the card test is allowed to run. The value is expressed in minutes. The maximum allowed value permits the card test to be run for up to 30 days.
Mib	BaseShelf
Values	Decimal (1..43200)
Units	minutes
Default	60

ATTRIBUTE Shelf Card Test frmSize (size)

Access	Read and write
Description	This attribute specifies for each priority level the number of data bytes in each frame sent during the card test. (The value specified does not include the 4-byte header that is automatically added to a frame when it is transmitted over the backplane.)
Mib	BaseShelf
Vector of	Decimal (16..16000)
Units	bytes
Index	lowPriority highPriority
Default	(lowPriority: 1024, highPriority: 56)

GROUP Shelf Card Test Results

Properties	Operational
Description	This attribute group contains the results of the card test that is currently running; if no test is running, the attribute group contains the results of the most recently completed card test. The attributes of the *Results* group are reset to their initial values whenever a card test is started or any attribute of the *Setup* group is set.
Mib	BaseShelf

ATTRIBUTE Shelf Card Test elapsedTime

Access	Read only
Description	This attribute records the length of time that the card test has been running.
Mib	BaseShelf
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf Card Test timeRemaining

Access	Read only
Description	This attribute records the maximum length of time that the card test will continue to run before stopping.
Mib	BaseShelf
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf Card Test causeOfTermination

Access	Read only
Description	This attribute records the reason the card test ended. It contains one of the following values: ***neverStarted***: the card test has not been started. ***testRunning***: the card test is currently running. ***testTimeExpired***: the card test ran for the specified duration. ***stoppedByOperator***: a *Stop* command was issued. ***targetFailed***: the target card became non-operational. ***becameActive***: the source card became the active card for some LP.
Mib	BaseShelf

Values	neverStarted testRunning testTimeExpired stoppedByOperator targetFailed becameActive
Default	No default

ATTRIBUTE Shelf Card Test loadingFrmData

Access	Read only
Description	This attribute records information about the loading frames that have been transmitted to the *Test* component on the target card. The following data is shown for each priority level: — the number of frames that have been transmitted, — the number of frames that were not returned successfully. The attribute's value wraps to zero when they exceed the maximum permitted value. Note: A loading frame is considered to have been successfully returned even if it contains bit errors. Frame error statistics are recorded in the *verificationFrmData* attribute.
Mib	BaseShelf
Array of	Decimal (0..4294967295)
Row	results [framesSent framesLost]
Column	priority [low high]
Default	No default

ATTRIBUTE Shelf Card Test verificationFrmData

Access	Read only
Description	This attribute records information about the verification frames that have been transmitted to the *Test* component on the target card. The following data is shown for each priority level: — the number of frames that have been tested,

— the number of frames that had incorrect bits when returned. The attribute's values wrap around to zero when they exceed the maximum permitted value.

Note: Verification frames that are not returned at all, or are returned too late, are considered "lost" and are not counted in either of the above values. Frame loss statistics are recorded in the *loadingFrmData* attribute.

Mib	BaseShelf
Array of	Decimal (0..4294967295)
Row	results [framesTested framesBad]
Column	priority [low high]
Default	No default

COMPONENT Shelf Card Diagnostics (Diag)

Scope	Device
Description	*Shelf Card/n Diagnostics* This component manages all diagnostic information for a specific card. The diagnostic information under this component is intended to be used by Nortel Networks technical support.
Mib	BaseShelf
Subcomponents	"COMPONENT Shelf Card Diag TrapData" "COMPONENT Shelf Card Diag RecoverableError (RecErr)"
Common Verbs	Help List Display

COMPONENT Shelf Card Diag TrapData

Scope	Device

Description	Shelf Card/n Diag TrapData On control and function processors, information about hardware- or software-detected critical faults is preserved on the card until the power is lost. These critical faults lead to the reboot of the card and the captured trap data survives the rebooting of the card. This component manages trap data stored in the persistent memory on the card. The trap data can be retrieved from the card to determine the cause of the fault.
Mib	BaseShelf
Dyn. Subcomp.	"COMPONENT Shelf Card Diag TrapData Line"
Common Verbs	Help List Display

COMPONENT Shelf Card Diag TrapData Line

Instance	Decimal (1..500)
Groups	"GROUP Shelf Card Diag TrapData Line Operational (Oper)"
Scope	Device
Description	*Shelf Card/m Diag TrapData Line/n* This component represents one line of trap data report.
Mib	BaseShelf
Common Verbs	Help List Display

GROUP Shelf Card Diag TrapData Line Operational (Oper)

Properties	Operational
Description	This attribute group contains operational attributes for one line of trap data or recoverable error report.
Mib	BaseShelf

ATTRIBUTE Shelf Card Diag TrapData Line data

Access	Read only
Description	This attribute contains one line of trap data or recoverable error report.
Mib	BaseShelf
Values	String (0..512, Extended ASCII)
Default	No default

COMPONENT Shelf Card Diag RecoverableError (RecErr)

Scope	Device
Description	Shelf Card/n Diag RecoverableError This component manages recoverable errors stored in the persistent memory that are preserved on the card until the power is lost. Recoverable errors do not cause the reboot of a card. Information about the errors can be retrieved from the card to determine the cause of the fault.
Mib	BaseShelf
Dyn. Subcomp.	"COMPONENT Shelf Card Diag RecErr Line"
Common Verbs	Help List Display

COMPONENT Shelf Card Diag RecErr Line

Instance	Decimal (1..500)
Groups	"GROUP Shelf Card Diag RecErr Line Operational (Oper)"
Scope	Device

Description	*Shelf Card/m Diag RecErr Line/n* This component represents one line of recoverable error report.
Mib	BaseShelf
Common Verbs	Help List Display

GROUP Shelf Card Diag RecErr Line Operational (Oper)

Properties	Operational
Description	This attribute group contains operational attributes for one line of trap data or recoverable error report.
Mib	BaseShelf

ATTRIBUTE Shelf Card Diag RecErr Line data

Access	Read only
Description	This attribute contains one line of trap data or recoverable error report.
Mib	BaseShelf
Values	String (0..512, Extended ASCII)
Default	No default

COMPONENT Shelf Card FabricPort

Instance	x y
Groups	"GROUP Shelf Card FabricPort OsiState (State)" "GROUP Shelf Card FabricPort Operational (Oper)" "GROUP Shelf Card FabricPort Errors"
Scope	Device
Description	*Shelf Card/n FabricPort/f* This component represents a physical fabric port on a card. A fabric port is a card’s interface to a fabric card; it provides a pathway for the card to send cells over the fabric card to the other

cards in the module, and to receive cells sent to it over the fabric card by the other cards in the module.

A card's *FabricPort* components are created automatically whenever the card begins acting as an active or standby LP. They remain in existence as long as the card remains operational. *FabricPort* components cannot be added or deleted.

Mib: Fabric

Dyn. Subcomp.: "COMPONENT Shelf Card FabricPort Test"

Common Verbs:
- Help
- List
- Display
- LOCK
- Unlock

GROUP Shelf Card FabricPort OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Fabric

ATTRIBUTE Shelf Card FabricPort adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Fabric

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Shelf Card FabricPort operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Fabric

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Shelf Card FabricPort usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Fabric
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Shelf Card FabricPort availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: Fabric

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Shelf Card FabricPort proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been

initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Fabric
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Shelf Card FabricPort controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Fabric

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Shelf Card FabricPort alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Fabric

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Shelf Card FabricPort standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	Fabric
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Shelf Card FabricPort unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Fabric
Values	false true
Default	false

GROUP Shelf Card FabricPort Operational (Oper)

Properties	Operational
Description	This attribute group contains operational attributes of a fabric port. This information outlines what the fabric port is doing and why it is doing it. It is primarily intended for use in diagnosing the cause of a fabric-related problem reported by the module.
Mib	Fabric

ATTRIBUTE Shelf Card FabricPort failuresInEffect

Access	Read only
Description	This attribute indicates the failures that prevent the fabric port from using the associated fabric. It may contain any combination

of the following values:
selfTest: The port has failed its self-test.
hardwareError: An unrecoverable critical error has occurred on the hardware of the processor card which exchanges cells with fabric card.
portProtocolError: Errors have occurred which violate the protocol between components of the fabric port in datapath.
switchClockError: The fabric card clock is no longer detected by the processor card.
livelinessError: A non-fatal hardware error has occurred on the component which exchanges cells with the fabric card. Excessive numbers of these errors on the fabric port may be indicating a serious hardware problem.
dataCorruptionError: Cell payloads or headers are detected as being corrupted at the fabric port level.
linkLivelinessError: The link between the fabric port and the fabric card is not indicating liveliness.

Operator action: Run the fabric test to clear these errors.

Mib	Fabric
Set of	selfTest hardwareError portProtocolError switchClockError livelinessError dataCorruptionError linkLivelinessError
Default	No default

ATTRIBUTE Shelf Card FabricPort dependenciesInEffect

Access	Read only
Description	This attribute indicates the non-hardware problems that prevent the fabric port from using the associated fabric. It may be a combination of the following values: ***fabricLocked***: The fabric card is locked. ***fabricDisabled***: The fabric card is disabled. ***portDisabled***: The corresponding card port on the fabric is disabled.

Mib	Fabric
Set of	fabricLocked fabricDisabled portDisabled
Default	No default

ATTRIBUTE Shelf Card FabricPort cardsAvailable

Access	Read only
Description	This attribute indicates the slot numbers of the cards that the fabric port considers available through the fabric; that is, the cards that have an operational port connected to the fabric. The value of this attribute is determined automatically by the fabric port by monitoring signals generated by each fabric port connected to the fabric card. Normally, every card in the module signals its availability on both fabrics. If a card does not signal its availability on a fabric, then the card is not present or its fabric port has failed. By examining this attribute for both of a card's *FabricPort* components, it is possible to determine which cards are present in the module and which fabric each can use. Note: If *failuresInEffect* has a value of ***selfTest***, ***signalLoss***, ***synchronizationLoss***, or ***protocolError***, the fabric port is unable to monitor the availability of the fabric ports on the fabric. In such cases, *cardsAvailable* indicates that no fabric port is available on the fabric.
Mib	Fabric
Set of	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf Card FabricPort cardsTxTo

Access	Read only
Description	This attribute indicates the slot number of the cards to which the fabric port is currently configured to transmit cells. This configuration is managed automatically, and cannot be changed by the operator. By examining this attribute for both of a card's

	FabricPort components, it is possible to determine which fabric (if any) the card uses when it needs to transmits cells to a specific card in the module.
Mib	Fabric
Set of	Decimal (0..15)
Default	No default

GROUP Shelf Card FabricPort Errors

Properties	Operational
Description	This attribute group indicates errors that the fabric port has detected since the card was last rebooted. This information is intended for use in detecting and diagnosing fabric-related problems within a module.
Mib	Fabric

ATTRIBUTE Shelf Card FabricPort selfTestErrorCode

Access	Read only
Description	This attribute indicates the error code generated by the most recent self-test of the port. Zero indicates that the self-test was successful. A non-zero value indicates that the self-test failed. This information is used by the service technician when a defective card is returned for repair.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card FabricPort livelinessErrors

Access	Read only
Description	This attribute counts the liveliness errors detected on the port. Liveliness errors are failures to receive yellow cells within a certain period of time. The value wraps to zero when it exceeds the maximum value.

	Note: **Yellow cells** are special types of packets which are generated by the fabric port and detected by the fabric card and the fabric port in order to check the link liveness with the fabric card.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card FabricPort switchClockErrors

Access	Read only
Description	This attribute counts the clock errors which have occurred on this port. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card FabricPort portHardwareErrors

Access	Read only
Description	This attribute counts the errors which have occurred on the hardware which exchanges cells with the fabric card. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card FabricPort portProtocolErrors

Access	Read only
Description	This attribute counts the number of errors which affect the protocol between components of the fabric port datapath. The value wraps to zero when it exceeds the maximum value.

Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card FabricPort dataCorruptionErrors

Access	Read only
Description	This attribute counts the errors which have occurred on the corrupted cell payloads or headers at fabric port level. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf Card FabricPort linkLivelinessErrors

Access	Read only
Description	This attribute counts the errors which occurred on the link between the fabric port and the fabric card. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Shelf Card FabricPort Test

Groups	"GROUP Shelf Card FabricPort Test OsiState (State)" "GROUP Shelf Card FabricPort Test Setup" "GROUP Shelf Card FabricPort Test Results"
Scope	Device
Description	*Shelf Card/n Fabric/f Test* This component is used to verify the operation of a fabric port. A fabric port test may be run as part of a regular maintenance program or to diagnose the cause of a *FabricPort*-related problem. The *Test* component is created automatically, and

cannot be added or deleted.

The fabric port test ensures that the fabric port on a specific card is functioning properly at minimal utilization rates. The fabric port to be tested must be locked while testing is in progress. The test only involves the fabric port on the specified card. The results of the test can help to determine which portions of the fabric port system are faulty, if any.

A fabric port test comprises several different tests. The tests are performed in the following order:

port test: The fabric port selfTest

broadcast test: The fabric port ensures that it can receive a broadcast frame over the fabric card from every operational card (including itself).

ping test: The fabric port ensures that it can receive a low priority non-broadcast frame over the backplane from every operational card (including itself).

Once all of the tests have been performed, the ping test is repeated continuously until the fabric port test is terminated; this repetition helps to detect transient fabric card and fabric port faults. The fabric port test stops automatically after a specified time interval, or if it detects a port test failure, or a broadcast test failure.

Mib	Fabric
Common Verbs	Help List Display

VERB START Shelf Card FabricPort Test

Impact	Service
Description	*Start Shelf Card/n Fabric/f Test* This verb initiates the fabric port test. If the fabric port test is already running, the command has no effect and the test continues. The fabric port must be locked before the test can be run.

VERB STOP Shelf Card FabricPort Test

Impact	Service
Description	*Stop Shelf Card/n Fabric/f Test* This verb terminates the fabric port test. If the fabric port test is not running, the command has no effect.

GROUP Shelf Card FabricPort Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Fabric

ATTRIBUTE Shelf Card FabricPort Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users

only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Fabric

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Shelf Card FabricPort Test operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Fabric

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Shelf Card FabricPort Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in

use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Fabric
Values	idle active (activ) busy
Default	idle

GROUP Shelf Card FabricPort Test Setup

Properties	Operational
Description	This attribute group contains the attributes that govern the operation of a fabric card or fabric port test. These attributes cannot be changed while the fabric card or fabric port test is running.
Mib	Fabric

ATTRIBUTE Shelf Card FabricPort Test duration

Access	Read and write
Description	This attribute specifies the maximum length of time that the fabric card test is allowed to run. The maximum allowed value permits the fabric card test to be run for up to 30 days.
Mib	Fabric
Values	Decimal (1..43200)
Units	minutes
Default	2

ATTRIBUTE Shelf Card FabricPort Test type

Access	Read and write

Description	This attribute specifies the type of the test to be run. When this attribute is set to ***main***, a subsequent fabric card test verifies that the fabric ports on this card and the corresponding cards ports are functioning properly. When this attribute is set to ***scbPoll***, a subsequent fabric card test exercises all the secondary control bus (SCB) bus taps in the system corresponding to the fabric card under test.
Mib	Fabric
Values	main scbPoll
Default	main

GROUP Shelf Card FabricPort Test Results

Properties	Operational
Description	This attribute group contains the results of the fabric port test that is currently running; if no fabric port test is running, the attribute group contains the results of the most recently completed fabric port test. The attributes of the *Results* group are reset to their initial values, whenever a fabric card test is started or any attribute in the *Setup* group is set
Mib	Fabric

ATTRIBUTE Shelf Card FabricPort Test elapsedTime

Access	Read only
Description	This attribute indicates the length of time that the fabric port test has been running.
Mib	Fabric
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf Card FabricPort Test timeRemaining

Access	Read only
Description	This attribute indicates the maximum length of time that the fabric port test runs before stopping.
Mib	Fabric
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf Card FabricPort Test causeOfTermination

Access	Read only
Description	This attribute indicates the reason the fabric port test ended. It contains one of the following values: ***neverStarted***: The fabric port test has not been started. ***testRunning***: The fabric port test is currently running. ***testTimeExpired***: The fabric port test ran for the specified duration. *stoppedByOperator***:** A *Stop* command was issued. ***portTestFailure***: A failure was detected during the port test. ***fabricSelfTestFailure*:** A failure was detected during the fabric self test. ***broadcastFailure***: A failure was detected during the broadcast test.
Mib	Fabric
Values	neverStarted testRunning testTimeExpired stoppedByOperator portTestFailure fabricSelfTestFailure broadcastFailure
Default	No default

ATTRIBUTE Shelf Card FabricPort Test testsDone

Access	Read only

Description	This attribute indicates the tests that have been performed during the fabric port test. It contains zero or more of the following values: ***portTest***: The port test has been performed. ***broadcastTest***: The broadcast test has been performed. ***pingTest***: At least one ping test has been performed.
Mib	Fabric
Set of	portTest broadcastTest pingTest
Default	No default

ATTRIBUTE Shelf Card FabricPort Test portTestResults

Access	Read only
Description	This attribute indicates the results of the fabric port tested. The entry contains one of the following values. **+**: the port passed its test ***X***: the port failed its test **.**: the port was not tested The fabric port test terminates automatically if a failure is detected.
Mib	Fabric
Values	+ (pass) X (fail) . (noTest)
Default	No default

ATTRIBUTE Shelf Card FabricPort Test broadcastPortTestResults

Access	Read only
Description	This attribute indicates the results of the broadcast test of this fabric port. This test verifies that the fabric port can send a broadcast message to other operational cards in the shelf. The entry contains one of the following values. **+**: a broadcast message was successfully sent from the transmitting fabric port to the receiving fabric port

	X: a broadcast message was not successfully sent from the transmitting fabric port to the receiving fabric port **.**: the associated pair of fabric ports was not tested The fabric port test terminates automatically if a failure is detected.
Mib	Fabric
Vector of	+ (pass) X (fail) . (noTest)
Index	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf Card FabricPort Test pingTests

Access	Read only
Description	This attribute indicates the number of ping tests performed. Each test attempts to transmit a single low-priority frame from this fabric port to the fabric ports of other operational cards in the shelf.
Mib	Fabric
Vector of	Decimal (0..4294967295)
Index	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf Card FabricPort Test pingTestFailures (pingFailures)

Access	Read only
Description	This attribute indicates the number of ping test failures detected. Each failure represents a single low-priority frame that was not successfully transmitted from the fabric port to the fabric ports of other operational cards in the shelf. The fabric port test does *not* terminate automatically if a failure is detected.

Mib	Fabric
Vector of	Decimal (0..4294967295)
Index	Decimal (0..15)
Default	No default

COMPONENT Shelf Card SparedServices (SpServ)

Groups	"GROUP Shelf Card SpServ OsiState (State)"
Scope	Application
Description	*Shelf Card/n SparedServices* This component represents the rolled-up view of spared services which exist on the parent *Card*. The existence of this component is dependent on whether the parent *Card* has a mate *Card*, either in a single LP or multi-LP sparing configuration. The spared services themselves may be providing service or they may be operating in a standby mode. For an FP, the standby mode (cold or hot) is dependent on the applications present on the *Lp* component linked to the parent *Card* component. For an CP, the standby mode (cold or hot) is dependent on the provisioning of the *cpEquipmentProtection* attribute in the *Shelf* component. If *cpEquipmentProtection* is provisioned as ***hot/cold***, then the standby mode of the spared services for the standby CP is hot/cold respectively. The *SparedServices* component itself reflects the overall sparing status via its OSI *operationalState*, *availabilityStatus*, and *standbyStatus* attributes. An *operationalState* of ***enabled*** on a card with active service instances, indicates that the spared services are configured and running. On a card with standby service instances, ***enabled*** indicates that they are able to take over from the active instances if the corresponding card fails. An *operationalState* of ***disabled*** indicates that spared services are configured but are not yet running on this card. Also, on the card with standby instances of spared services, this state is entered

while an activation is in progress for any components (spared service instances or any other components, for that matter) on the card. For the standby CP, this state can also be entered if the *journaling* attribute in the *ProvisioningSystem* component becomes operationally ***disabled***. If Switchover occurs in this ***disabled*** state, then the *standby card* will reset before taking over for the *active card*. If *CP Switchover* occurs in this ***disabled*** state when the *standbyStatus* is ***hotStandby***, then the whole shelf will be reset.

An empty value for the *availabilityStatus* indicates that all instances of spared services are either providing service or are ready to take over with their normal level of switchover support, as indicated by the *standbyStatus* attribute.

An *availabilityStatus* of ***degraded*** indicates that at least one standby service instance is not ready to take over with its normal level of switchover support. This value is valid only when the *standbyStatus* attribute has a value of ***hotStandby***. Refer to alarms from the *Shelf Card SparedServices* component to determine specific applications and their problems. For the standby CP, the value of *availailityStatus* attribute can be ***degraded*** when the file systems are out of synchronization, or when the *Provisioning* system has not finished synchronizing the active CP's configuration data. Note that ***degraded*** can appear even when the value of the *operationalState* attribute is ***disabled*** due to an activation.

A *standbyStatus* of ***providingService*** indicates that all spared service instances are active.

A *standbyStatus* of ***coldStandby*** indicates that all spared service instances are standby, and the normal or expected level of switchover support for the current combination of services on this card is cold. That is, there can be extended service outage on a switchover.

A *standbyStatus* of ***hotStandby*** indicates that all spared service instances are standby, and the normal or expected level of switchover support on an FP is either warm or hot, depending on the applications involved. That is, there is no service outage on

switchover for the applications that are hot, and minimal service outage for the applications which are warm. The normal or expected level of switchover support on an CP is application dependent. Some applications can have warm or hot switchover support, other applications can have cold switchover support.

Mib BaseShelf

Common Verbs
Help
List
Display

GROUP Shelf Card SpServ OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib BaseShelf

ATTRIBUTE Shelf Card SpServ adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: BaseShelf

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Shelf Card SpServ operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: BaseShelf

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Shelf Card SpServ usageState (osiUsage)

Access: Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BaseShelf
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Shelf Card SpServ availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal

fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	BaseShelf
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Shelf Card SpServ proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: BaseShelf

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Shelf Card SpServ controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: BaseShelf

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Shelf Card SpServ alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: BaseShelf

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Shelf Card SpServ standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: BaseShelf

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Shelf Card SpServ unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	BaseShelf
Values	false true
Default	false

COMPONENT Shelf Card DaughterCard (Dcard)

Instance	Decimal (1..15)
Groups	"GROUP Shelf Card Dcard DcardOper"
Scope	Device
Description	*DaughterCard/n* The *DaughterCard* component contains the information of a daughter card located on a card. The instance value of the

	daughterCard indicates the physical location of its socket on the card.
Mib	BaseShelf
Common Verbs	Help List Display

GROUP Shelf Card Dcard DcardOper

Properties	Operational
Description	This group contains the operational attributes of the *DaughterCard* component.
Mib	BaseShelf

ATTRIBUTE Shelf Card Dcard type

Access	Read only
Description	This attributes indicates the type of a daughter card.
Mib	BaseShelf
Values	unknown ram aqm pqc aqmpqc processor
Default	No default

ATTRIBUTE Shelf Card Dcard memorySize

Access	Read only
Description	This attribute indicates the memory size in megabytes of the daughter card.
Mib	BaseShelf
Values	Decimal (0..2147483647)

Units	Mbyte
Default	No default

ATTRIBUTE Shelf Card Dcard productCode

Access	Read only
Description	This attribute indicates the product equipment code of the daughter card.
Mib	BaseShelf
Values	String (0..12, ASCII)
Default	No default

COMPONENT Shelf Card HwDiagnostics (HwDiag)

Groups	"GROUP Shelf Card HwDiag OsiState (State)" "GROUP Shelf Card HwDiag Setup" "GROUP Shelf Card HwDiag Results"
Scope	Device
Description	*Shelf Card/n HwDiagnostics* The *Shelf Card/n HwDiagnostics* component allows automated tests of the individual cards on Nortel Networks Multiservice Switch 15000 and Nortel Networks Multiservice Switch 20000. Only one FP card can be tested at a time, testing of CP cards is not supported. The performed tests are comprehensive and allow the testing of all devices and data paths on the targeted card. The performed test are a large subset of the tests conducted during manufacturing testing. In order to perform the tests the card to be tested must first be locked. This will result in a service outage for the card being tested. Once the test has completed the card can be placed back in service by unlocking it. Hardware diagnostics are not provided for standby cards that make use of single *Lp*, however diagnostics are provided for

standby cards that make use of Dual Lp Equipment Protection (*Dlep*).

Mib HwDiagnostics

Common Verbs
Help
List
Display

VERB START Shelf Card HwDiag

Impact Service

Description *Start Shelf Card/n HwDiag*
This verb initiates the hardware diagnostic test on the card.

The card to be tested must first be locked prior to starting the test. Only one FP card can be tested at any one time.

VERB STOP Shelf Card HwDiag

Impact Service

Description *Stop Shelf Card/n HwDiag*
This verb terminates the hardware diagnostic test and displays the results of the test. Once the test has completed the card may be placed in-service by unlocking it.

GROUP Shelf Card HwDiag OsiState (State)

Properties Operational

Description This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib HwDiagnostics

ATTRIBUTE Shelf Card HwDiag adminState (osiAdmin)

Access Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	HwDiagnostics
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Shelf Card HwDiag operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	HwDiagnostics

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Shelf Card HwDiag usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	HwDiagnostics
Values	idle active (activ) busy
Default	idle

GROUP Shelf Card HwDiag Setup

Properties	Operational
Description	This attribute group contains the attributes that govern the operation of the hardware diagnostic test. These attributes cannot be changed while a hardware diagnostic test is running.
Mib	HwDiagnostics

ATTRIBUTE Shelf Card HwDiag diagType

Access	Read and write
Description	This attribute specifies the type of hardware diagnostics that will be performed on the targeted FP. The selections enable the testing of devices, internal data paths (data paths that do not require an

	external loop-back), external data paths (data paths that require external loop-backs), or both devices and internal data paths as a single test. The default value is set to test both devices and internal data paths (***devPlusIntDatapaths***).
Mib	HwDiagnostics
Values	devPlusIntDatapaths devices internalDatapaths externalDatapaths
Default	devPlusIntDatapaths

ATTRIBUTE Shelf Card HwDiag displayInterval (dispInt)

Access	Read and write
Description	This attribute specifies the display of results interval while the test is running. The units are in minutes and the default value is 5 minutes.
Mib	HwDiagnostics
Values	Decimal (1..30240)
Units	minutes
Default	5

GROUP Shelf Card HwDiag Results

Properties	Operational
Description	This attribute group contains the results of the hardware diagnostic test that is currently running; if no test is running, the attribute group contains the results of the most recently completed hardware diagnostic test. The attributes of the *Results* group are reset to their initial values whenever a hardware diagnostic test is started or any attribute of the *Setup* group is set.
Mib	HwDiagnostics

ATTRIBUTE Shelf Card HwDiag status

Access	Read only

Description	This attribute records the current status of the hardware diagnostic test. ***passed*** - indicates that the hardware diagnostic test passed. ***failed*** - indicates that the hardware diagnostic test failed. ***running*** - indicates that the hardware diagnostic test is currently running. ***notYetRun*** - indicates that hardware diagnostic have not yet run on this card. ***notSupported*** - indicates that the card does not support the running of the hardware diagnostic test.
Mib	HwDiagnostics
Values	passed failed running notYetRun notSupported
Default	notYetRun

ATTRIBUTE Shelf Card HwDiag causeOfTermination

Access	Read only
Description	This attribute records the reason the hardware diagnostic test ended. It contains one of the following values: ***neverStarted***: the hardware diagnostics test has never been run on the targeted card. ***testRunning***: the hardware diagnostics test is currently running. ***testRanToCompletion***: the hardware diagnostic test ran to completion. ***stoppedByOperator***: a *Stop* command was issued. ***targetFailed***: the targeted card became non-operational as a result of some unknown problem.
Mib	HwDiagnostics
Values	neverStarted testRunning testRanToCompletion stoppedByOperator targetFailed

Default	neverStarted

ATTRIBUTE Shelf Card HwDiag startTime

Access	Read only
Description	This attribute records the time at which the test was started.
Mib	HwDiagnostics
Values	Time (DHMS)
Default	No default

ATTRIBUTE Shelf Card HwDiag elapsedTime

Access	Read only
Description	This attribute displays the number of minutes that the test has been running.
Mib	HwDiagnostics
Values	Decimal (0..1440)
Units	minutes
Default	0

COMPONENT Shelf Bus

Instance	x y
Groups	"GROUP Shelf Bus OsiState (State)" "GROUP Shelf Bus Operational (Oper)"
Scope	Device
Description	*Shelf Bus/b* A *Bus* component represents a hardware resource within a module that cards can use to communicate with each other. Each frame (or other data) to be transferred between cards is broken up into one or more cells by the sending card, placed on the bus, and reassembled by the receiving card(s).

A module's *Bus* components are created automatically, and cannot be added or deleted.

Mib: Bus

Dyn. Subcomp.: "COMPONENT Shelf Bus Test"

Common Verbs:
- Help
- List
- Display
- LOCK
- Unlock

GROUP Shelf Bus OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Bus

ATTRIBUTE Shelf Bus adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Bus

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Shelf Bus operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Bus

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Shelf Bus usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Bus
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Shelf Bus availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can

be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Bus
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Shelf Bus proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Bus

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Shelf Bus controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Bus

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Shelf Bus alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Bus

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Shelf Bus standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Bus

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Shelf Bus unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Bus
Values	false true
Default	false

GROUP Shelf Bus Operational (Oper)

Properties	Operational
Description	This attribute group contains operational attributes of a bus.
Mib	Bus

ATTRIBUTE Shelf Bus clockSource

Access	Read only
Description	This attribute records the source of the fundamental clock signal and end-of-cell synchronization signal used by the bus. It contains one of the following values. ***activeCP***: the card which is the active control processor (CP) is providing clock signals

	alternate: the card at the opposite end of the module from the active CP is providing clock signals
Mib	Bus
Values	activeCP alternate
Default	No default

ATTRIBUTE Shelf Bus utilization

Access	Read only
Description	This attribute records how much of the available bus bandwidth was actually used during the most recently sampled 1 second interval. The value is expressed as a percentage.
Mib	Bus
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Shelf Bus busTapStatus

Access	Read only
Description	This attribute records the operability of each bus tap on the bus, as reported by the associated *BusTap* component; the entries are indexed by slot number of the card. Each entry contains one of the following values. ***ok***: the bus tap is operational ***failed***: the bus tap has failed ***none***: the bus tap status is not available—the associated *BusTap* component does not currently exist
Mib	Bus
Vector of	ok failed none
Index	Decimal (0..15)

Default	No default

ATTRIBUTE Shelf Bus clockSourceStatus

Access	Read only
Description	This vector attribute, indexed with ***activeCP*** or ***alternate***, represents the state of the bus clock sources. It can be set to one of the following values: ***ok***: all operational cards can receive signals from the clock source. ***failed***: at least one operational card is unable to receive signals from the clock source. ***unknown***: status of a clock source is unknown. To determine the status of the clock source, a test must be run. ***testInProgress***: the clock source is currently being tested. ***notApplicable***: the LP state of the clock source's card is down or not provisioned.
Mib	Bus
Vector of	ok failed unknown testInProgress notApplicable
Index	activeCP alternate
Default	No default

COMPONENT Shelf Bus Test

Groups	"GROUP Shelf Bus Test OsiState (State)" "GROUP Shelf Bus Test Setup" "GROUP Shelf Bus Test Results"
Scope	Device
Description	*Shelf Bus/b Test* The *Test* component is used to verify the operation of a bus. A bus test may be run as part of a regular maintenance program, or to diagnose the cause of a bus-related problem. The *Test*

component is created automatically, and cannot be added or deleted.

The bus test ensures that the bus taps on a specific bus are functioning properly at minimal utilization rates. The bus to be tested must be locked while testing is in progress. The test only involves bus taps on operational cards (active and standby LPs). If an operational card becomes non-operational or fails to respond during the test, it is dropped from the test and is not allowed to rejoin; however, the results of any tests on its bus tap up to that point are preserved. The results of the test can help to determine which portions of the bus system are faulty, if any.

A bus test is composed of several different tests. The tests are performed in the following order.
1) Bus tap self-test: Each bus tap executes its self-test.
2) Clock source test: Each bus tap ensures that it can receive clock signals from the active control processor clock source and the alternate clock source (if present).
3) Broadcast test: Each bus tap ensures that it can receive a broadcast frame over the backplane from every operational card (including itself).
4) Ping test: Each bus tap ensures that it can receive a low priority non-broadcast frame over the backplane from every operational card (including itself).
Once all of the tests have been performed, the ping test is repeated continuously until the bus test is terminated; this repetition helps to detect transient bus faults. The bus test stops automatically after a specified time interval, or if it detects a bus tap self-test failure, an active control processor clock source test failure, or a broadcast test failure.

Mib

Bus

Common Verbs

Help
List
Display

VERB START Shelf Bus Test

Impact	Service
Description	*START Shelf Bus/b Test* This verb initiates the bus test. If the bus test is already running, the command has no effect and the test continues. The bus must be locked before the test can be run.

VERB STOP Shelf Bus Test

Impact	Service
Description	*STOP Shelf Bus/b Test* This verb terminates the bus test. If the bus test is not running, the command has no effect.

GROUP Shelf Bus Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bus

ATTRIBUTE Shelf Bus Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Bus

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Shelf Bus Test operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Bus

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Shelf Bus Test usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Bus
Values	idle active (activ) busy
Default	idle

GROUP Shelf Bus Test Setup

Properties	Operational
Description	This attribute group contains the attributes that govern the operation of a bus test. These attributes cannot be changed while the bus test is running.
Mib	Bus

ATTRIBUTE Shelf Bus Test duration

Access	Read and write
Description	This attribute specifies the maximum length of time that the bus test is allowed to run. The value is expressed in minutes. The maximum allowed value permits the bus test to be run for up to 30 days.
Mib	Bus
Values	Decimal (1..43200)
Units	minutes
Default	1

GROUP Shelf Bus Test Results

Properties	Operational

Description	This attribute group contains the results of the bus test that is currently running; if no bus test is running, the attribute group contains the results of the most recently completed bus test. The attributes of the *Results* group are reset to their initial values whenever a bus test is started or any attribute in the *Setup* group is set.
Mib	Bus

ATTRIBUTE Shelf Bus Test elapsedTime

Access	Read only
Description	This attribute records the length of time (in minutes) that the bus test has been running.
Mib	Bus
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf Bus Test timeRemaining

Access	Read only
Description	This attribute records the maximum length of time (in minutes) that the bus test will continue to run before stopping.
Mib	Bus
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf Bus Test causeOfTermination

Access	Read only
Description	This attribute records the reason the bus test ended. It contains one of the following values. ***neverStarted***: the bus test has not been started ***testRunning***: the bus test is currently running

testTimeExpired: the bus test ran for the specified duration
stoppedByOperator: a *STOP* command was issued
selfTestFailure: a failure was detected during the bus tap self-test
clockSourceFailure: a failure was detected during the test of the active control processor (CP) clock source
broadcastFailure: a failure was detected during the broadcast test

Mib: Bus

Values:
neverStarted
testRunning
testTimeExpired
stoppedByOperator
selfTestFailure
clockSourceFailure
broadcastFailure

Default: No default

ATTRIBUTE Shelf Bus Test testsDone

Access: Read only

Description: This attribute records the tests that have been performed during the bus test. It may contain zero or more of the following values.
selfTest: the bus tap self-test has been performed
clockSourceTest: the clock source test has been performed
broadcastTest: the broadcast test has been performed
pingTest: at least one ping test has been performed

Mib: Bus

Set of:
selfTest
clockSourceTest
broadcastTest
pingTest

Default: No default

ATTRIBUTE Shelf Bus Test selfTestResults

Access: Read only

Description: This attribute records the results of the bus tap self-test, indexed by the slot number of the card containing the bus tap tested. Each

	entry contains one of the following values. +: the bus tap passed its self-test X: the bus tap failed its self-test .: the bus tap was not tested The bus test terminates automatically if a failure is detected.
Mib	Bus
Vector of	+ (pass) X (fail) . (noTest)
Index	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf Bus Test clockSourceTestResults

Access	Read only
Description	This attribute records the results of the clock source test, indexed by the clock source and the slot number of the card containing the bus tap tested. Each entry contains one of the following values. +: the bus tap was able to receive clock signals from the clock source X: the bus tap was unable to receive clock signals from the clock source .: the bus tap was not tested against the clock source The bus test terminates automatically if a failure is detected involving the active control processor (CP) clock source.
Mib	Bus
Array of	+ (pass) X (fail) . (noTest)
Row	source [activeCP alternate]
Column	card [Decimal (0..15)]
Default	No default

ATTRIBUTE Shelf Bus Test broadcastTestResults

Access	Read only
Description	This attribute records the results of the broadcast test, indexed by the slot numbers of the cards containing the bus taps tested. Each entry contains one of the following values. +: a broadcast message was successfully sent from the transmitting bus tap to the receiving bus tap X: a broadcast message was not successfully sent from the transmitting bus tap to the receiving bus tap .: the associated pair of bus taps was not tested The bus test terminates automatically if a failure is detected.
Mib	Bus
Array of	+ (pass) X (fail) . (noTest)
Row	txCard [Decimal (0..15)]
Column	rxCard [Decimal (0..15)]
Default	No default

ATTRIBUTE Shelf Bus Test pingTests

Access	Read only
Description	This attribute records the number of ping tests performed, indexed by the slot numbers of the cards containing the bus taps involved. Each test attempts to transmit a single low-priority frame from the transmitting bus tap to the receiving bus tap.
Mib	Bus
Array of	Decimal (0..4294967295)
Row	txCard [Decimal (0..15)]
Column	rxCard [Decimal (0..15)]
Default	No default

ATTRIBUTE Shelf Bus Test pingTestFailures (pingFailures)

Access	Read only

Description	This attribute records the number of ping test failures detected, indexed by the slot numbers of the cards containing the bus taps involved. Each failure represents a single low-priority frame that was not successfully transmitted from the transmitting bus tap to the receiving bus tap. The bus test does *not* terminate automatically if a failure is detected.
Mib	Bus
Array of	Decimal (0..4294967295)
Row	txCard [Decimal (0..15)]
Column	rxCard [Decimal (0..15)]
Default	No default

COMPONENT Shelf Test

Groups	"GROUP Shelf Test Provisioned (Prov)" "GROUP Shelf Test Setup" "GROUP Shelf Test Results"
Scope	Device
Description	*PcsTest* The *PcsTest* component allows automated tests of the *Shelf* to be controlled for regular execution.
Mib	Bus
Common Verbs	Help List Display

VERB RUN Shelf Test

Impact	Service
Description	*RUN Shelf Test* This verb initiates the shelf test. It executes the test specified by *type* attribute.

GROUP Shelf Test Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes of the *Test* component.
Mib	Bus

ATTRIBUTE Shelf Test automaticBusClockTest (clockTest)

Access	Read and write
Description	This attribute specifies whether or not a bus clock source test is automatically executed after a clock source's LP state changes, and after failure or recovery of the active CP bus clock source. Since tests of an alternate bus clock source may cause a minor loss of traffic, the attribute is set to ***disabled*** by default. If set to ***enabled,*** a bus clock source test is automatically executed. If the status of the corresponding *Shelf Bus clockSourceStatus* is changed after the test, an alarm is issued if the status is one of the following: ***ok, failed***, or ***unknown***. If set to ***disabled***, no bus clock source test is automatically executed. However, a test can be executed by the *RUN* command. If the status is changed after the test, an alarm is issued if the status is one of the following: ***ok***, or ***failed***.
Mib	Bus
Values	enabled disabled
Default	disabled

GROUP Shelf Test Setup

Properties	Operational
Description	This attribute group contains the attributes that govern the operation of a shelf test.
Mib	Bus

ATTRIBUTE Shelf Test type

Access	Read and write
Description	type The attribute determines the test to be executed when the *RUN* command is applied to the component. Note that running a ***busClock*** test may cause a minor loss of traffic.
Mib	Bus
Values	busClock
Default	busClock

GROUP Shelf Test Results

Properties	Operational
Description	This attribute group contains the results of the *Shelf Test* that is currently running; if no test is running, the attribute group contains the results of the most recently completed *Shelf Test*. The attributes of the *Results* group are reset to their initial values whenever a corresponding *Shelf Test* is run or the corresponding attribute of the *Setup* group is set.
Mib	Bus

ATTRIBUTE Shelf Test busClockTestResult (busClock)

Access	Read only
Description	busClockTestResult This attribute records the result of the bus clock manual test. The result can be one of the following values. ***pass*** : the test passed ***fail*** : the test failed ***noTest*** : the test was not executed when *RUN* command is issued, because the shelf was in single bus mode.
Mib	Bus

Values	pass fail noTest
Default	No default

COMPONENT Shelf FabricCard

Instance	x y
Groups	"GROUP Shelf FabricCard OsiState (State)" "GROUP Shelf FabricCard Property (Prop)" "GROUP Shelf FabricCard Operational (Oper)" "GROUP Shelf FabricCard Errors" "GROUP Shelf FabricCard Banks"
Scope	Device
Description	*Shelf FabricCard/f* This component represents a hardware resource within a module that cards can use to communicate with each other. Data to be transferred between cards is broken up into one or more cells by the sending card, and reassembled by the receiving card. A module's *FabricCard* components are created automatically, and cannot be added or deleted.
Mib	Fabric
Dyn. Subcomp.	"COMPONENT Shelf FabricCard Test" "COMPONENT Shelf FabricCard CardPort"
Common Verbs	Help List Display LOCK Unlock

VERB INSTALL Shelf FabricCard

Impact	Service
Description	*Install* -file(***s***) *Shelf FabricCard*/***n*** This verb initiates loading new software in to the writable bank of the fabric card. If the fabric card is already loading, the command has no effect and the loading continues. The fabric card must be locked and the fixed bank must be active before the loading of the writable bank can be started. Loading should only take a few seconds. The software to be loaded must first be downloaded from the SDS site using *Sw Dld*. Software loading of the fabric card is rare and does not need to be done on every upgrade. All software running on this node will be compatible with any software running in the fabric card. However later releases of the fabric card software contain enhancements, robustness features, and new functionality. An alarm is raised whenever a newer version of the fabric card software is available than that which is active in the fabric card. The alarm indicates which software should be loaded onto the fabric card. Again, it is not necessary to upgrade the software on the fabric card, but the switch will run more efficiently if it is. Any failures in loading the software either indicates corrupt software, bad hardware on the fabric card, or a malfunctioning secondary control bus (SCB). On failure repeat the *Install* and look for errors and alarms indicating faulty hardware. As a general rule, it is best to perform fabric card software loading when the switch is most idle. Both fabric cards should always be running the same software. If one fabric card is loaded with new software then the other fabric card should also be loaded with this new software. An alarm is raised when there is a mismatch in the software running on the two fabric cards.

GROUP Shelf FabricCard OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Fabric

ATTRIBUTE Shelf FabricCard adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Fabric
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Shelf FabricCard operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Fabric
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Shelf FabricCard usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Fabric
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Shelf FabricCard availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to

place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Fabric
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Shelf FabricCard proceduralStatus (osiProc)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	Fabric
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Shelf FabricCard controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Fabric
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Shelf FabricCard alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Fabric
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Shelf FabricCard standbyStatus (osiStby)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Fabric
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Shelf FabricCard unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

	The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Fabric
Values	false true
Default	false

GROUP Shelf FabricCard Property (Prop)

Properties	Operational
Description	This attribute group indicates property attributes of a fabric card.
Mib	Fabric

ATTRIBUTE Shelf FabricCard productCode

Access	Read only
Description	This attribute indicates the product code (that is the PEC and revision codes) of the fabric card.
Mib	Fabric
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Shelf FabricCard serialNumber

Access	Read only
Description	This attribute indicates the serial number of the fabric card.
Mib	Fabric
Values	String (0..16, ASCII)
Default	No default

GROUP Shelf FabricCard Operational (Oper)

Properties	Operational

Description	This attribute group contains operational attributes of a *FabricCard* component.
Mib	Fabric

ATTRIBUTE Shelf FabricCard failureCause

Access	Read only
Description	This attribute indicates why the *fabric card* has failed. This attribute is meaningful when the OSI *availabilityStatus* attribute is set to ***failed***. Possible values are: ***queueFull***: The fabric card buffers are full. ***notInserted***: The fabric card is not inserted. ***failedSelfTest***: The fabric card has failed its self test. ***internalFailure***: The fabric card has internal ASIC failure. ***notResponding***: The fabric card is not responding. ***highTemperature***: The fabric card is running at high temperature. ***powerProblem***: The fabric card has a power problem. ***fabricStateUnknown***: The fabric card is inserted, but it is in an unknown state.
Mib	Fabric
Set of	queueFull notInserted failedSelfTest internalFailure notResponding highTemperature powerProblem fabricStateUnknown
Default	No default

ATTRIBUTE Shelf FabricCard utilization

Access	Read only
Description	This attribute indicates an approximation of the current fabric utilization.
Mib	Fabric

Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Shelf FabricCard operatingTemperature

Access	Read only
Description	This attribute indicates the current fabric operating temperature. When the temperature reaches the value specified by the *temperatureThreshold* attribute, the fabric card generates an alarm.
Mib	Fabric
Values	Decimal (0.1..64.0) zeroOrLessDegreeC
Units	degreeC
Default	No default

ATTRIBUTE Shelf FabricCard secondaryControlBusStatus

Access	Read only
Description	This attribute indicates the state of the fabric's secondary control bus (SCB). It may contain any combination of the following values: ***operational*** - The SCB is operational. ***locked*** - The SCB is being manually prevented from operating. ***noBus*** - The bus is down. ***failed*** - The SCB is disabled due to fault. ***bestEffort*** - The SCB is ignoring faults to allow a single channel to be operational. ***hardwareFailure*** - The bus failed due to an HSCX hardware error. ***parityOrCrcError*** - The bus failed due to a CRC error or a parity error. ***timeOutError*** - The bus failed due to an SSC message time-out. ***txOrRxError*** - The bus failed due to Tx or Rx problems. ***pollError*** - The bus failed an SCB poll. ***testMessageError*** - The bus failed a fabric card test.

Mib	Fabric
Set of	operational locked noBus failed bestEffort hardwareFailure parityOrCrcError timeOutError txOrRxError pollError testMessageError
Default	No default

ATTRIBUTE Shelf FabricCard selfTestResults

Access	Read only
Description	This attribute indicates the result of the most recent execution of the fabric card's self-tests, performed either when it initially came up, or during operation. A value of 0 indicates success, and a non-zero value indicates a failure or and absent fabric card.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard dependencyInEffect

Access	Read only
Description	This attribute indicates why the fabric card has failed. This attribute is meaningful when the OSI *availabilityStatus* attribute is set to ***depend***. Possible values are: ***portDisabled***: Card port or fabric port is disabled. ***fabricCardLocked***: The fabric card is locked.
Mib	Fabric
Set of	portDisabled fabricCardLocked

Default	No default

ATTRIBUTE Shelf FabricCard voltageAFeedDetected

Access	Read only
Description	This attribute indicates if the fabric card is detecting current on power feed A. If it is not, check that the breaker is not turned off.
Mib	Fabric
Values	yes no
Default	No default

ATTRIBUTE Shelf FabricCard voltageBFeedDetected

Access	Read only
Description	This attribute indicates if the fabric card is detecting current on power feed B. If it is not, check that the breaker is not turned off.
Mib	Fabric
Values	yes no
Default	No default

ATTRIBUTE Shelf FabricCard temperatureThreshold

Access	Read only
Description	This attributes indicates at which temperature the fabric card generates a temperature alarm.
Mib	Fabric
Values	Decimal (0.1..100.0)
Units	degreeC
Default	No default

ATTRIBUTE Shelf FabricCard secondaryControlBusCardBustaps

Access	Read only

Description	Each processor card has a bus tap on both of the system's secondary control buses. This indicates the state of each processor card's bus tap onto the secondary control bus for which clocking is supplied by this fabric card. Possible values are: ***ok*** - The SCB is operational. ***hardwareFailure - The bus failed due to an HSCX hardware error.*** ***parityOrCrcErrors - The bus failed due to a CRC error or a parity error.*** ***timeOutError - The bus failed due to an SSC message time-out.*** ***txOrRxError - The bus failed due to Tx or Rx problems.*** ***pollError - The bus failed an SCB poll.*** ***none*** - The processor card is not available.
Mib	Fabric
Vector of	ok hardwareFailure parityOrCrcErrors timeOutError txOrRxError pollError none
Index	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf FabricCard secondaryControlBusFabricBustaps

Access	Read only
Description	Each fabric card has a bus tap on both of the system's secondary control buses. This indicates the state of each fabric card's bus tap onto the secondary control bus for which clocking is supplied by this fabric card. The enumerated values describe the state of the each bus tap. Possible values are: ***ok*** - The SCB is operational. ***txOrRxError*** - The bus failed due to Tx or Rx problems. ***pollError*** - The bus failed an SCB poll. ***testMessageError - The bus failed a fabric card test.*** ***none - The processor card is not available.***

	unknown - The state cannot be determined due to faulty bustap on CP.
Mib	Fabric
Vector of	ok txOrRxError pollError testMessageError none unknown
Index	x y
Default	No default

GROUP Shelf FabricCard Errors

Properties	Operational
Description	This attribute group indicates errors that the fabric card has detected since the card was last rebooted. This information is intended for use in detecting and diagnosing the fabric-related problems within a module.
Mib	Fabric

ATTRIBUTE Shelf FabricCard voltageErrors

Access	Read only
Description	This attribute counts the voltage errors detected on the fabric. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard temperatureErrors

Access	Read only

Description	This attribute counts the temperature errors encountered on the fabric card. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard fabricInternalErrors

Access	Read only
Description	This attribute counts the internal errors encountered on the fabric card. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard fabricInterfaceCrcErrors

Access	Read only
Description	This attribute counts the CRC errors detected by the fabric card when receiving data from other cards. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

GROUP Shelf FabricCard Banks

Properties	Operational
Description	This group contains the attributes that govern the operation of a fabric card banks. These attributes cannot be changed while the fabric card writable bank is loading.
Mib	Fabric

ATTRIBUTE Shelf FabricCard fixedBankVersion

Access	Read only
Description	This attribute indicates what the fabric card software version in the fixed bank is. It is zero during start-up. After start-up it is queried from the fabric card.
Mib	Fabric
Values	Decimal (0.0..99.9)
Default	No default

ATTRIBUTE Shelf FabricCard writableBankVersion

Access	Read only
Description	This attribute indicates the software version that is loaded on the writable bank. It is zero if there is no version loaded.
Mib	Fabric
Values	Decimal (0.0..99.9)
Default	No default

ATTRIBUTE Shelf FabricCard recommendedVersionToInstall

Access	Read only
Description	This attribute indicates the recommended fabric application version to install using the *Install* command. If the current active software is up-to-date, it indicates no version is needed to install.
Mib	Fabric
Values	String (0..49, ASCII)
Default	No default

ATTRIBUTE Shelf FabricCard activeBank

Access	Read and write
Description	This attribute indicates which bank is the currently running. The writable bank can only be made active if it has been installed

using the *Install* command at least once.

writable: Indicates the writable bank is the active bank.
fixed: Indicates the fixed bank is the active bank.
unknown: The software has not yet determined which is the active bank. This normally takes a few seconds when the software is first activated.

Mib: Fabric

Values:
fixed
writable
unknown

Default: No default

ATTRIBUTE Shelf FabricCard bankOnShelfRestart

Access: Read only

Description: This attribute indicates which bank will be running when the shelf is reset or powered-down and then powered-up.

writable: Indicates the writable bank will be the bank on the next power up or reset.
fixed: Indicates the fixed bank will be the bank on the next power up or reset.
unknown: The software has not yet determined which is the bank on shelf restart. This normally takes a few seconds when the software is first activated.

Mib: Fabric

Values:
fixed
writable
unknown

Default: No default

ATTRIBUTE Shelf FabricCard writableBankStatus

Access: Read only

Description	This attribute specifies the current status of the writable bank. It is set to ***unknown*** until the status is determined by the software. It takes a few seconds at software activation time to determine the status of the writable bank. ***unknown***: The switch has not yet determined the state of the writable bank. This happens only within the first few seconds the software is activated. ***empty***: No (valid) software is loaded in the writable bank. ***loading***: Software is currently loading into the writable bank. ***loaded***: The software has successfully loaded. An example of a transition sequence for the writable bank status is: ***unknown*** -> ***empty***-> ***loading*** -> ***loaded***-> ***loading***. On a failure, the status reverts to the previous status that was successful. For example if the ***loading*** fails, the status returns to ***empty***.
Mib	Fabric
Values	unknown empty loading loaded
Default	No default

ATTRIBUTE Shelf FabricCard downloadProgressPercent

Access	Read only
Description	This attribute indicates relative progress of a fabric software download as a percentage. When ***writableBankStatus*** is loading the value is between 0 and 100 inclusive. When ***writableBankStatus*** is ***empty*** or ***unknown*** the value is 0. When ***writableBankStatus*** is loaded it is 100.
Mib	Fabric
Values	Decimal (0..100)

Units	%
Default	No default

COMPONENT Shelf FabricCard Test

Groups	"GROUP Shelf FabricCard Test OsiState (State)" "GROUP Shelf FabricCard Test Setup" "GROUP Shelf FabricCard Test Results"
Scope	Device
Description	*Shelf FabricCard/b Test* This component is used to verify the operation of a fabric card. A fabric card test may be run as part of a regular maintenance program, or to diagnose the cause of a fabric-related problem. The *Test* component is created automatically, and cannot be added or deleted. When the *type* attribute is set to ***main***, the fabric card test ensures that the fabric ports on a specific fabric card are functioning properly at minimal utilization rates. The fabric card to be tested must be locked while testing is in progress. The test only involves fabric ports on operational cards (active and standby LPs). If an operational card becomes non-operational or fails to respond during the test, it is dropped from the test and is not allowed to rejoin; however, the results of any tests on its fabric port up to that point are preserved. The results of the test can help to determine which portions of the fabric card system are faulty, if any. A ***main*** type of fabric card test comprises several different tests. The tests are performed in the following order: **self test**: The fabric card performs its self-test. **port test**: The fabric port **broadcast test**: Each fabric port ensures that it can receive a broadcast frame over the fabric card from every operational card (including itself). **ping test**: Each fabric port ensures that it can receive a low priority non-broadcast frame over the backplane from every operational card (including itself).

Once all of the tests have been performed, the ping test is repeated continuously until the fabric card test is terminated; this repetition helps to detect transient fabric faults.

When the *type* attribute is set to ***scbPoll,*** the fabric card test ensures that the X and Y fabric bus taps and the function processor bus taps on a corresponding secondary control bus (SCB) are functioning properly. The test can be run without locking the fabric card. This test only involves SCB bus taps on operational cards (active and standby LPs) and the SCB bus taps on the fabric cards. If an operational card becomes non-operational or fails to respond during the test, it is removed from the test. The results of the test can help to determine which portions of the SCB are faulty, if any.

A ***scbPoll*** type of fabric card test comprises several SCB poll queries which run continuously for the duration of the test. At the reception of a poll query, each SCB bus tap ensures that it can receive a frame over the SCB from every operational card, including itself and the fabrics.

The fabric test stops automatically after a specified time interval, or if it detects a self-test failure, a port test failure, or a broadcast test failure.

Mib	Fabric
Common Verbs	Help List Display

VERB START Shelf FabricCard Test

Impact	Service
Description	*start Shelf FabricCard/f Test* This verb initiates the fabric card test. If the fabric card test is already running, the command has no effect and the test continues. The fabric card must be locked before the test can be run.

VERB STOP Shelf FabricCard Test

Impact	Service
Description	*stop Shelf FabricCard/b Test* This verb terminates the fabric card test. If the fabric card test is not running, the command has no effect.

GROUP Shelf FabricCard Test OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Fabric

ATTRIBUTE Shelf FabricCard Test adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Fabric

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Shelf FabricCard Test operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Fabric
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Shelf FabricCard Test usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Fabric
Values	idle active (activ) busy
Default	idle

GROUP Shelf FabricCard Test Setup

Properties	Operational
Description	This attribute group contains the attributes that govern the operation of a fabric card or fabric port test. These attributes cannot be changed while the fabric card or fabric port test is running.
Mib	Fabric

ATTRIBUTE Shelf FabricCard Test duration

Access	Read and write
Description	This attribute specifies the maximum length of time that the fabric card test is allowed to run. The maximum allowed value permits the fabric card test to be run for up to 30 days.
Mib	Fabric
Values	Decimal (1..43200)
Units	minutes
Default	2

ATTRIBUTE Shelf FabricCard Test type

Access	Read and write
Description	This attribute specifies the type of the test to be run. When this attribute is set to ***main***, a subsequent fabric card test verifies that the fabric ports on this card and the corresponding cards ports are functioning properly. When this attribute is set to ***scbPoll***, a subsequent fabric card test

	exercises all the secondary control bus (SCB) bus taps in the system corresponding to the fabric card under test.
Mib	Fabric
Values	main scbPoll
Default	main

GROUP Shelf FabricCard Test Results

Properties	Operational
Description	This attribute group contains the results of the fabric card test that is currently running; if no fabric card test is running, the attribute group contains the results of the most recently completed fabric card test. The attributes of the *Results* group are reset to their initial values whenever a fabric card test is started or any attribute in the *Setup* group is set.
Mib	Fabric

ATTRIBUTE Shelf FabricCard Test elapsedTime

Access	Read only
Description	This attribute indicates the length of time that the fabric card test has been running.
Mib	Fabric
Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf FabricCard Test timeRemaining

Access	Read only
Description	This attribute indicates the maximum length of time that the fabric card test runs before stopping.
Mib	Fabric

Values	Decimal (0..43200)
Units	minutes
Default	No default

ATTRIBUTE Shelf FabricCard Test causeOfTermination

Access	Read only
Description	This attribute indicates the reason the fabric card test ended. It contains one of the following values: ***neverStarted***: The fabric card test has not been started. ***testRunning***: The fabric card test is currently running. ***testTimeExpired***: The fabric card test ran for the specified duration. ***stoppedByOperator***: A stop command was issued. ***portTestFailure***: A failure was detected during the port test. ***fabricSelfTestFailure***: A failure was detected during the fabric card self-test. ***broadcastFailure***: A failure was detected during the broadcast test.
Mib	Fabric
Values	neverStarted testRunning testTimeExpired stoppedByOperator portTestFailure fabricSelfTestFailure broadcastFailure
Default	No default

ATTRIBUTE Shelf FabricCard Test testsDone

Access	Read only
Description	This attribute indicates the tests that have been performed during the fabric card test. It contains zero or more of the following values: ***selfTest***: The fabric card self-test has been performed. ***portTest***: The port test has been performed.

broadcastTest: The broadcast test has been performed.
pingTest: At least one ping test has been performed.

This attribute is displayed only when the *type* attribute is set to ***main***

Mib: Fabric

Set of:
selfTest
portTest
broadcastTest
pingTest

Default: No default

ATTRIBUTE Shelf FabricCard Test fabricSelfTestResults

Access: Read only

Description: This attribute indicates the results of the fabric's self test. The fabric test terminates automatically if a failure is detected.
ok: The fabric self test is passed.
failed: The fabric self test is failed.
noTest: The default value indicates no self test is performed.

This attribute is displayed only when the *type* attribute is set to ***main***

Mib: Fabric

Values:
ok
failed
noTest

Default: No default

ATTRIBUTE Shelf FabricCard Test numberOfScbPolls

Access: Read only

Description: This attribute indicates the number of times the secondary control bus taps are polled since the start of the fabric card test.

This attribute is displayed only when the *type* attribute is set to ***scbPoll***

Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard Test portTestResults

Access	Read only
Description	This attribute indicates the results of the fabric port, indexed by the slot number of the card containing the fabric port tested. Each entry contains one of the following values. **+**: the port passed its test ***X***: the port failed its test **.**: the port was not tested The fabric card test terminates automatically if a failure is detected. This attribute is displayed only when the *type* attribute is set to ***main***
Mib	Fabric
Vector of	+ (pass) X (fail) . (noTest)
Index	Decimal (0..15)
Default	No default

ATTRIBUTE Shelf FabricCard Test broadcastTestResults

Access	Read only
Description	This attribute indicates the results of the broadcast test, indexed by the slot numbers of the cards containing the fabric port tested. Each entry contains one of the following values. **+**: a broadcast message was successfully sent from the transmitting fabric port to the receiving fabric port ***X***: a broadcast message was not successfully sent from the transmitting fabric port to the receiving fabric port **.**: the associated pair of fabric ports was not tested The fabric card test terminates automatically if a failure is

	detected. This attribute is displayed only when the *type* attribute is set to ***main***
Mib	Fabric
Array of	+ (pass) X (fail) . (noTest)
Row	txCard [Decimal (0..15)]
Column	rxCard [Decimal (0..15)]
Default	No default

ATTRIBUTE Shelf FabricCard Test pingTests

Access	Read only
Description	This attribute indicates the number of ping tests performed, indexed by the slot numbers of the cards containing the fabric ports involved. Each test attempts to transmit a single low-priority frame from the transmitting fabric port to the receiving fabric port. This attribute is displayed only when the *type* attribute is set to ***main***
Mib	Fabric
Array of	Decimal (0..4294967295)
Row	txCard [Decimal (0..15)]
Column	rxCard [Decimal (0..15)]
Default	No default

ATTRIBUTE Shelf FabricCard Test pingTestFailures (pingFailures)

Access	Read only
Description	This attribute indicates the number of ping test failures detected, indexed by the slot numbers of the cards containing the fabric

	ports involved. Each failure represents a single low-priority frame that was not successfully transmitted from the transmitting fabric port to the receiving fabric port. The fabric card test does *not* terminate automatically if a failure is detected. This attribute is displayed only when the *type* attribute is set to ***main***
Mib	Fabric
Array of	Decimal (0..4294967295)
Row	txCard [Decimal (0..15)]
Column	rxCard [Decimal (0..15)]
Default	No default

ATTRIBUTE Shelf FabricCard Test scbCardBustapsFailures (scbFailures)

Access	Read only
Description	This attribute indicates the number of secondary control bus (SCB) card bus tap failures, indexed by the slot numbers of the cards containing the bus tap involved. The SCB test does *not* terminate automatically if a failure is detected. This attribute is displayed only when the *type* attribute is set to ***scbPoll***

Mib	Fabric
Vector of	Decimal (0..4294967295)
Index	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Default	No default

ATTRIBUTE Shelf FabricCard Test scbFabricBustapsFailures

Access	Read only
Description	This attribute indicates the number of times the secondary control bus (SCB) fabric bus tap failures of the corresponding fabric card. The SCB test does *not* terminate automatically if a failure is detected This attribute is displayed only when the *type* attribute is set to ***scbPoll***
Mib	Fabric
Vector of	Decimal (0..4294967295)
Index	x y
Default	No default

COMPONENT Shelf FabricCard CardPort

Instance	Decimal (0..15)
Groups	"GROUP Shelf FabricCard CardPort OsiState (State)" "GROUP Shelf FabricCard CardPort Operational (Oper)" "GROUP Shelf FabricCard CardPort CardPortErrors"
Scope	Device
Description	*Shelf FabricCard/f cardPort/n* This component represents a physical port on a fabric card. A card port is the interface to the cards; it provides a pathway for the fabric card to send cells to the processor cards in the module and to receive cells sent to it from the processor cards. A fabric card's *CardPort* components are created automatically, can not be added or deleted.
Mib	Fabric
Common Verbs	Help List Display

GROUP Shelf FabricCard CardPort OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Fabric

ATTRIBUTE Shelf FabricCard CardPort adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Fabric
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Shelf FabricCard CardPort operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Fabric

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Shelf FabricCard CardPort usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Fabric

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Shelf FabricCard CardPort availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: Fabric

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Shelf FabricCard CardPort proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does

initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Fabric
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Shelf FabricCard CardPort controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Fabric

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Shelf FabricCard CardPort alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Fabric

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Shelf FabricCard CardPort standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the

role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Fabric

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Shelf FabricCard CardPort unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Fabric

Values:
false
true

Default: false

GROUP Shelf FabricCard CardPort Operational (Oper)

Properties: Operational

Description: This attribute group contains operational attributes of a card port. This information outlines what the card port is doing and why it is doing it and is primarily intended for use in diagnosing the cause of a port-related problem reported by the module.

Mib: Fabric

ATTRIBUTE Shelf FabricCard CardPort failuresInEffect

Access	Read only
Description	This attribute indicates the hardware problems that prevent the *CardPort* from using the fabric. It may contain any combination of the following values. ***selfTest***: The port has failed its self-test. ***crcError***: The port has detected too many CRC errors. ***signalLoss***: The serial link receiver is not receiving a signal. That is, the electrical connection to the far end transmitter is not valid. ***flowControlViolation***: An unacceptable number of flow control violation errors have occurred. ***synchronizationLoss***: The serial link's phase or alignment is lost. Therefore, the port's synchronization is lost. ***queueFull***: The output queue is full. ***syncLoss***: The card port has lost synchronization with the fabric port.
Mib	Fabric
Set of	selfTest crcError signalLoss flowControlViolation synchronizationLoss queueFull syncLoss
Default	No default

ATTRIBUTE Shelf FabricCard CardPort dependenciesInEffect

Access	Read only
Description	This attribute indicates the non-hardware problems that prevent the port from using the associated fabric. It may contain the following values: ***fabricLocked*** - The fabric card is locked. ***fabricDisabled*** - The fabric card is disabled. ***portDisabled*** - The corresponding fabric port is disabled.

	cardNotInserted - The corresponding processor card is not inserted.
Mib	Fabric
Set of	fabricLocked fabricDisabled portDisabled cardNotInserted
Default	No default

GROUP Shelf FabricCard CardPort CardPortErrors

Properties	Operational
Description	This attribute group indicates errors that the card port has detected since the fabric card was last rebooted. This information is intended for use in detecting and diagnosing port-related problems within a module.
Mib	Fabric

ATTRIBUTE Shelf FabricCard CardPort selfTestErrorCode

Access	Read only
Description	This attribute indicates the error code generated by the most recent self-test of the port.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard CardPort dataOrAddressCrcErrors

Access	Read only
Description	This attribute indicates the packet data or address CRC errors encountered on the port. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Shelf FabricCard CardPort flowControlViolationErrors

Access	Read only
Description	This attribute counts the flow control violations (that is “threshold exceeded errors”) detected on the port. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard CardPort livelinessErrors

Access	Read only
Description	This attribute counts the liveliness errors detected on the card port. Liveliness errors are failures to receive yellow cells within a certain period of time. The value wraps to zero when it exceeds the maximum value. *Note*: **Yellow cells** are special types of packets which are generated by the fabric port and detected by the fabric card and the fabric port in order to check the link liveness with the fabric card.
Mib	Fabric
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Shelf FabricCard CardPort lossOfSignalOrSyncErrors

Access	Read only
Description	This attribute counts the loss of signal or loss of synchronization errors on the port that caused the port to fail. The value wraps to zero when it exceeds the maximum value.
Mib	Fabric

Values	Decimal (0..4294967295)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Shelf

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component SigChan

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component SigChan

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COMPONENT SignallingChannel (SigChan)

Instance	Decimal (1..153)
Groups	"GROUP SigChan CustomerIdentifierData (CidData)" "GROUP SigChan IfEntryProv (IfEntry)" "GROUP SigChan OperationalStatus (OperStatus)" "GROUP SigChan OsiState (State)" "GROUP SigChan Provisioned (Prov)" "GROUP SigChan Operational (Oper)"
Scope	Application

Description	*SigChan/n* The *SigChan* component defines the signalling characteristics of the connection to the external equipment.
Mib	VoiceNetworking
Opt. Subcomp.	"COMPONENT SigChan E1Cas" "COMPONENT SigChan Ds1Cas" "COMPONENT SigChan J2Cas (J2)" "COMPONENT SigChan EtsiQsig (EQsig)" "COMPONENT SigChan NisSig (Nis)" "COMPONENT SigChan EuroIsdn (EIsdn)" "COMPONENT SigChan McdnSig (Mcdn)" "COMPONENT SigChan InternalCauseMap (ICmap)"
Dyn. Subcomp.	"COMPONENT SigChan Bchannel (Bch)" "COMPONENT SigChan Gateway (Gw)" "COMPONENT SigChan NcaSession (Ncas)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP SigChan CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	VoiceNetworking

ATTRIBUTE SigChan customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID).

Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib	VoiceNetworking
Values	Decimal (0; 1..8191)
Default	0

GROUP SigChan IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	VoiceNetworking

ATTRIBUTE SigChan ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing

Default	up

ATTRIBUTE SigChan ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	VoiceNetworking
Values	Decimal (1..65535)
Default	No default

GROUP SigChan OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	VoiceNetworking

ATTRIBUTE SigChan snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing
Default	up

GROUP SigChan OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE SigChan adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SigChan usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VoiceNetworking
Values	idle active (activ) busy

Default	idle

GROUP SigChan Provisioned (Prov)

Properties	Provisioned
Description	This group represents the provisionable attributes of a *SigChan*.
Mib	VoiceNetworking

ATTRIBUTE SigChan commentText

Access	Read: All Write: All
Description	Use of this attribute is at the discretion of the system administrator. Typically, this attribute specifies the name of the customer that is using this *SigChan*.
Mib	VoiceNetworking
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE SigChan octothorpeEod (eod)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the octothorpe (number sign) should be used as an end of dialling indication. When this character is received, only the digits that have been received to that point will be used for address resolution. All subsequent digits will be forwarded to the far-end, but they will not be used. The octothorpe will not be sent to the far-end.
Mib	VoiceNetworking
Values	yes no
Default	no

ATTRIBUTE SigChan forceNpiTon (fnt)

Access	Read: All Write: All
Description	This attribute, together with the *defaultNpiTon* attribute, controls Numbering Plan Identifier (NPI) and Type Of Number (TON) values to be used by the *SigChan* component for egress calls (if applicable). If set to ***yes***, NPI and TON values defined by the *defaultNpiTon* attribute unconditionally overwrite values received in the call setup message from the subnet.
Mib	VoiceNetworking
Values	yes no
Default	no

ATTRIBUTE SigChan defaultNpiTon (dnt)

Access	Read: All Write: All
Description	This attribute, together with the *forceNpiTon* attribute, controls Numbering Plan Identifier (NPI) and Type Of Number (TON) values to be used by the *SigChan* component for egress calls (if applicable). The combination of NPI and TON values defined by the *defaultNpiTon* attribute is used for an egress call whenever: - the call setup message received from subnet indicates that NPI or TON information is not supplied or doesn't make sense, or - attribute *forceNpiTon* is set to ***yes*** Mapping between values of the *defaultNpiTon* attribute and associated combinations of NPI and TON values follows: ***casUnknown***: NPI=unknown (0) TON=unknown (0) ***unknown***: NPI=E.164 (1) TON=unknown (0) ***international***: NPI=E.164 (1) TON=international (1) ***national***: NPI=E.164 (1) TON=national (2) ***subscriber***: NPI=E.164 (1) TON=subscriber (4) ***p0***: NPI=private(9) TON=0 ***p1***: NPI=private(9) TON=1

p2: NPI=private(9) TON=2
p3: NPI=private(9) TON=3
p4: NPI=private(9) TON=4
p5: NPI=private(9) TON=5
p6: NPI=private(9) TON=6
p7: NPI=private(9) TON=7

Mib: VoiceNetworking

Values:
unknown
international
national
subscriber
p0
p1
p2
p3
p4
p5
p6
p7
casUnknown

Default: casUnknown

ATTRIBUTE SigChan subroutes

Access: Read: All
Write: All

Description: This attribute identifies all of the *VoiceSubroute*s which are associated with this signalling channel.

Mib: VoiceNetworking

List of: Link (Service, signallingChannel)

List Size: 4

Default: No default

GROUP SigChan Operational (Oper)

Properties: Operational

Description	This group provides the operational components for the *SigChan* component.
Mib	VoiceNetworking

ATTRIBUTE SigChan degradedSubroutes

Access	Read: All Write: Illegal
Description	This attribute lists all of the *VoiceSubroute* components that do not have all of their *SwitchedVoiceService* subcomponents available for use.
Mib	VoiceNetworking
List of	The name of the component
List Size	4
Default	No default

COMPONENT SigChan E1Cas

Groups	"GROUP SigChan E1Cas Provisioned (Prov)" "GROUP SigChan E1Cas AbcdProv" "GROUP SigChan E1Cas TimerProv" "GROUP SigChan E1Cas LinkCallStatistics"

"COLLECTED STATS SignallingChannel E1Cas"

Scope	Application

Description	*SigChan/n E1Cas* This component defines the A,AB or ABCD bits, Digit reception and transmission and tone generation for a E1 Cas link.
Mib	VoiceNetworking
Subcomponents	"COMPONENT SigChan E1Cas Framer (Framer)"
Opt. Subcomp.	"COMPONENT SigChan E1Cas Dtmf"
Dyn. Subcomp.	"COMPONENT SigChan E1Cas TimeSlotStatus (Tslot)"
Common Verbs	Help List Display Add DELete

GROUP SigChan E1Cas Provisioned (Prov)

Properties	Provisioned
Description	This group conatins attirbutes that defines various settings that do not fall under any other group.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas toneTableSelection

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies which tone table to select when a call is to receive a given tone. 0 for North America 1 for Japan 2 for United Kingdom 3 for Germany 4 for France 5 for Central America (Brazil, Mexico) 6 for Chile 7 for Autralia

Mib	VoiceNetworking
Values	Decimal (0..7)
Default	2

GROUP SigChan E1Cas AbcdProv

Properties	Provisioned
Description	This group specifies the attributes that define what the A,AB or ABCD pattern for a particular signal should be.The input is a 1 or 2 or 4 bit (0 or 1) format of ABCD. Depending on the framing format of the E1, some bits may be ignored.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas signallingBits

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies which bits are to be used for interpretation. (A,AB or ABCD).
Mib	VoiceNetworking
Values	A AB ABCD
Default	ABCD

ATTRIBUTE SigChan E1Cas idleTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the idle signal is when transmitted. This signal must be different from the *connectTx* signal.

Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	1001

ATTRIBUTE SigChan E1Cas idleRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the idle signal when received. This signal must be different from the *connectRx* signal.
Mib	VoiceNetworking
Values	0 1 00

	01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	1001

ATTRIBUTE SigChan E1Cas faultTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the fault signal when transmitted. It is transmitted when the timeslot is undefined or locked. This signal must be different from the *idleTx* signal.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000

0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111

Default 1101

ATTRIBUTE SigChan E1Cas faultRx

Access
Read: All
Write: All

Criticality
Process

Description
This attribute specifies what the value is, in ABCD terms, of the fault signal when received. When received, the channel status for the timeslot goes to a lockout state. This signal must be different from the *idleRx* signal.

Mib
VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100

0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111

Default 1101

ATTRIBUTE SigChan E1Cas seizeTx

Access
Read: All
Write: All

Criticality
Process

Description
This attribute specifies what the value is, in ABCD terms, of the seize signal when transmitted. There is no Voice or Data call distinction unless it is provided by a leading *Discrimination* digit. This signal can not be defined if the *seizeVoiceTx* or *seizeVoiceRx* or *seizeDataTx* or *seizeDataRx* signals are defined. The *seizeRx* must also be defined along with this signal. If defined, the signal must be different from the *idleTx* signal.

Mib
VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101

0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default 0001

ATTRIBUTE SigChan E1Cas seizeRx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the seize signal when received. There is no Voice or Data call distinction unless it is provided by a leading *Discrimination* digit. This signal can not be defined if the *seizeVoiceTx* or *seizeVoiceRx* or *seizeDataTx* or *seizeDataRx* signals are defined. The *seizeTx* must also be defined along with this signal. If defined, the signal must be different from the *idleRx* signal.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101

0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default 0001

ATTRIBUTE SigChan E1Cas seizeVoiceTx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the seize Voice signal when transmitted. This signal when transmitted identifies the call as a voice call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeVoiceRx*, *seizeDataRx* and *seizeDataTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeDataTx* and *idleTx* signals.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101

0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan E1Cas seizeVoiceRx

Access Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the seize Voice signal when received. This signal when received identifies the call as a voice call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeVoiceTx*, *seizeDataRx* and *seizeDataTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeDataRx* and *idleRx* signals.

Mib VoiceNetworking

Values 0
1
00
01
10
11
0000
0001
0010
0011
0100
0101

0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan E1Cas seizeDataTx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the seize Data signal when transmitted. This signal when transmitted identifies the call as a data call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeDataRx*, *seizeVoiceRx* and *seizeVoiceTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeVoiceTx* and *idleTx* signals.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101

0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan E1Cas seizeDataRx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the seize Data signal when received. This signal when received identifies the call as a data call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeDataTx*, *seizeVoiceRx* and *seizeVoiceTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeVoiceRx* and *idleRx* signals.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010
0011
0100
0101

	0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

ATTRIBUTE SigChan E1Cas seizeAckTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seizure acknowledgment signal when transmitted. If defined, the value of the signal must be different from the *idleTx* and the *connectTx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000

	1001 1010 1011 1100 1101 1110 1111 unused
Default	1101

ATTRIBUTE SigChan E1Cas seizeAckRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seizure acknowledgment when received. If defined, the value of the signal must be different from the *idleRx* and the *connectRx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011

	1100 1101 1110 1111 unused
Default	1101

ATTRIBUTE SigChan E1Cas winkTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the wink signal when transmitted. This is a pulsed signal of *winkTime* duration. Where ***P*** specifies which bit is toggled. A pulse signal returns to the original A, AB or ABCD pattern before the start of transmission.
Mib	VoiceNetworking
Values	P PX XP PXXX XPXX XXPX XXXP unused PP PPXX PXPX PXXP XPPX XPXP XXPP PPPX PPXP PXPP XPPP PPPP

Default	unused

ATTRIBUTE SigChan E1Cas winkRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the wink signal when received. This pulsed signal must be within the *winkMinTime* and *winkMaxTime* before it is considered as valid. Where ***P*** specifies which bit is toggled. A pulse signal returns to the original A, AB or ABCD pattern before the start of reception.
Mib	VoiceNetworking
Values	P PX XP PXXX XPXX XXPX XXXP unused PP PPXX PXPX PXXP XPPX XPXP XXPP PPPX PPXP PXPP XPPP PPPP
Default	unused

ATTRIBUTE SigChan E1Cas connectTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the connect or answer signal when transmitted. The value of the signal must be different from the *idleTx* signal.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	0101

ATTRIBUTE SigChan E1Cas connectRx

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies what the value is, in ABCD terms, of the connect or answer signal when received. The value of the signal must be different from the *idleRx* signal.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	0101

ATTRIBUTE SigChan E1Cas clearBackTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear back signal when transmitted. This signal is sent, if defined, on an incoming call from the link when the network side first initiates the disconnect sequence. This value, if used, must be different from the *idleTx* and *connectTx* signals.

Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	1101

ATTRIBUTE SigChan E1Cas clearBackRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear back signal when received. This signal is received, if defined, on an outgoing call to the link when the link side first initiates the disconnect sequence. This value, if used, must be different from the *idleRx* and *connectRx* signal.
Mib	VoiceNetworking

Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	1101

ATTRIBUTE SigChan E1Cas clearFwdTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear forward signal when transmitted. This signal is sent, if defined, on an outgoing call to the link when the network side first initiates the disconnect sequence. This value, if used, must be different from the *idleTx* signal and any transmitted seize signal defined.
Mib	VoiceNetworking

Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

ATTRIBUTE SigChan E1Cas clearFwdRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear forward signal when received. This signal is received, if defined, on an incoming call from the link when the network side first initiates the disconnect sequence. This value, if used, must be different from *idleRx* signal and any transmitted seize signal defined.
Mib	VoiceNetworking

Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

GROUP SigChan E1Cas TimerProv

Properties	Provisioned
Description	This group contains the various timers used by *Ds1Cas* component to handle a particular timing events.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas guardTime

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the amount of time needed after a channel is idled before it is made available for the next outgoing call to the link.
Mib	VoiceNetworking
Values	Decimal (50..30000)
Units	msec
Default	1000

ATTRIBUTE SigChan E1Cas winkTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the length of time that a *winkTx* signal is transmitted. This attribute is only referenced if the *winkTx* signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	220

ATTRIBUTE SigChan E1Cas winkMinTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the minimum time that a *winkRx* signal, when received, must persist before being considered as a valid wink. Anything less is ignored. This value must be less than *winkMaxTime*. This attribute is only referenced if the *winkRx* Signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)

Units	msec
Default	130

ATTRIBUTE SigChan E1Cas winkMaxTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time that a *winkRx* signal, when received, may persist before it is interpreted as a GLARE condition. This value must be larger than the *winkMinTime*. This attribute is only referenced if the *winkRx* Signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	300

ATTRIBUTE SigChan E1Cas seizeAckDelayTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the delay, after receiving any particular seize signal, before responding with a *seizeAckTx* or *winkTx* signal
Mib	VoiceNetworking
Values	Decimal (30..3000)
Units	msec
Default	180

ATTRIBUTE SigChan E1Cas seizeAckSupvTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time, on an outgoing call to the link, the network will wait to receive a *seizeAckRx* or a *winkRx* signal. Should this timer time-out, the call is considered as a seize failure. This timer is not started unless either the *seizeAckRx* or a *winkRx* signals are defined.
Mib	VoiceNetworking
Values	Decimal (1000..15000)
Units	msec
Default	4000

ATTRIBUTE SigChan E1Cas outpulseDelayTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of delay, after transmitting any seize signal, before digit transmission begins. If the *seizeAckRx* or *winkRx* signal is defined, the timer is started upon complete reception of the signal. If the *seizeAckRx* or *winkRx* signal are not defined, the timer is started immediately after sending any particular seize signal.
Mib	VoiceNetworking
Values	Decimal (100..30000)
Units	msec
Default	400

ATTRIBUTE SigChan E1Cas endOfDialTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time allowed between digits after which any more digits are to be ignored.
Mib	VoiceNetworking
Values	Decimal (1000..30000)
Units	msec
Default	9000

ATTRIBUTE SigChan E1Cas disconnectTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time that a disconnect signal (*idleRx*, *clearBackRx* or *clearFwdRx*) must persist before it is interpreted as a valid disconnect signal.
Mib	VoiceNetworking
Values	Decimal (10..30000)
Units	msec
Default	500

ATTRIBUTE SigChan E1Cas disconnectSupvTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time allowed for the link to respond with a disconnect signal (*idleRx*, *clearBackRx* or

	clearFwdRx) once the network has already started the disconnect sequence.
Mib	VoiceNetworking
Values	Decimal (1000..60000)
Units	msec
Default	35000

GROUP SigChan E1Cas LinkCallStatistics

Properties	Operational
Description	This group contains the operational statistics on various call events on the link.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas totalCallsOutgoing

Access	Read only
Description	This attribute counts the outgoing node call attempts made to this link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan E1Cas totalCallsIncoming

Access	Read only
Description	This attribute counts the incoming link call attempts made to this node. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE SigChan E1Cas outgoingAnsweredCalls

Access	Read only
Description	This attribute counts the outgoing node calls to this link that were answered by the link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan E1Cas incomingAnsweredCalls

Access	Read only
Description	This attribute counts the incoming link calls that were answered by this node. That is a connect signal was transmitted by this node out to the link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan E1Cas seizeFailures

Access	Read only
Description	This attribute counts the outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal. That is, no seizure acknowledgment or wink was returned from link. This attribute does not count calls that encountered glare. Glare situations are counted via the *glareCalls* attribute. The counter wraps to zero when it exceeds its maximum value.

Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan E1Cas releaseFailures

Access	Read only
Description	This attribute counts the times that the link failed to respond correctly during the disconnect sequence of a call. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan E1Cas activeChannels

Access	Read only
Description	This attribute counts the current number of active channels. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan E1Cas peakActiveChannels

Access	Read only
Description	This attribute counts the peak number of active channels. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE SigChan E1Cas glareCalls

Access	Read only
Description	This attribute counts the outgoing node call attempts to the link that encountered glare. Glare occurs when an outgoing node call attempt and an incoming link call attempt occur on the same channel simultaneously. Priority is given to the incoming call and the outgoing call is reattempted on another channel. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

COLLECTED STATS SignallingChannel E1Cas

Description	The statistics record generated by the SignallingChannel E1Cas component.

ATTRIBUTE SigChan E1Cas totalCallsOutgoing

Description	This spooled statistic counts the number of outgoing node call attempts made to this link in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan E1Cas totalCallsIncoming

Description	This attribute counts the number of incoming link call attempts made to this node in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan E1Cas seizeFailures

Description	This spooled statistic counts the number of outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal in the last statistics collection interval. That is no seizure acknowledgment or wink was returned from link.

Values Decimal (0..65535)

ATTRIBUTE SigChan E1Cas releaseFailures

Description This spooled statistic counts the number of times that the link failed to respond correctly during the disconnect sequence of a call in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan E1Cas outgoingAnsweredCalls

Description This spooled statistic counts the number of outgoing node calls to this link that were answered by the link in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan E1Cas incomingAnsweredCalls

Description This spooled statistic counts the number of incoming link calls that were answered by this node, connect signals transmitted by this node out to the link in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan E1Cas peakActiveChannels

Description This spooled statistic counts the maximum number of channels that have been simultaneously active on this signalling channel during the last statistics collection interval.

Values Decimal (0..30)

COMPONENT SigChan E1Cas Framer (Framer)

Groups "GROUP SigChan E1Cas Framer Provisioned (Prov)"
"GROUP SigChan E1Cas Framer OsiState (State)"

Scope Application

Description *SigChan/n Ds1Cas Framer*
SigChan/n E1Cas Framer
SigChan/n J2Cas Framer
The *Framer* component controls link layer framing for application components sending and receiving data on a link

interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib VoiceNetworking

Common Verbs
Help
List
Display

GROUP SigChan E1Cas Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib VoiceNetworking

ATTRIBUTE SigChan E1Cas Framer interfaceName

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib	VoiceNetworking
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP SigChan E1Cas Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan E1Cas Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SigChan E1Cas Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	VoiceNetworking
Values	idle active (activ) busy
Default	idle

COMPONENT SigChan E1Cas Dtmf

Groups	"GROUP SigChan E1Cas Dtmf Provisioned (Prov)"
Scope	Application
Description	*SigChan/n Ds1Cas Dtmf* *SigChan/n E1Cas Dtmf* *SigChan/n J2Cas Dtmf* This component defines attributes that defines what settings are need to recognize and transmit DTMF tones.
Mib	VoiceNetworking
Common Verbs	Help List Display Add DELete

GROUP SigChan E1Cas Dtmf Provisioned (Prov)

Properties	Provisioned
Description	This group contains attributes that defines what settings are needed to transmit and recognize DTMF tones.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas Dtmf burstTime

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the length of time a tone persists for digit transmission. When a 50ms burst is selected, the inter-digit time is 50ms. When a 60ms burst is selected, the inter-digit time is 90ms. When a 70ms burst is selected, the inter-digit time is 80ms. When a 100ms burst is selected, the inter-digit time is 100ms.
Mib	VoiceNetworking
Values	Decimal (50; 60; 70; 100)
Units	msec
Default	100

COMPONENT SigChan E1Cas TimeSlotStatus (Tslot)

Instance	Decimal (1..31)
Groups	"GROUP SigChan E1Cas Tslot Channels"
Scope	Application
Description	*SigChan/n Ds1Cas Tslot/n* *SigChan/n E1Cas Tslot/n* *SigChan/n J2Cas Tslot/n* This component contains replicated attribute which displays operational attributes of individual time slots.
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan E1Cas Tslot Channels

Properties	Operational
Description	This group contains various operational attributes of every channel which is serviced by a CAS Signalling Channel.
Mib	VoiceNetworking

ATTRIBUTE SigChan E1Cas Tslot maintenanceStatus

Access	Read only
Description	This attribute specifies what the internal current channel status is. The attribute “Status” may have the following values: UnDefined, time slot has not yet been configured Locked, time slot has been locked by the operator LockOut, time slot is busied out due to some protocol failure Incoming, time slot is currently being used for a call incoming to the node Outgoing, time slot is currently being used for a call outgoing from the network Idle, time slot is currently available for use.
Mib	VoiceNetworking
Values	IDLE BUSY LCKO MBUSY DSBL UNEQ UNKNOWN INVALID
Default	No default

ATTRIBUTE SigChan E1Cas Tslot receivedBits

Access	Read only
Description	This attribute specifies what are the raw A, AB or ABCD bits being received.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010

0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111

Default No default

ATTRIBUTE SigChan E1Cas Tslot receivedSignal

Access Read only

Description This attribute indicates what signal the *rxBits* are being interpreted as.

Mib VoiceNetworking

Values
IDLE
FAULT
SEIZE
SEIZEV
SEIZED
SEZACK
WINK
CONN
CLRBCK
CLRFWD
BUSY
UNKNOWN
INVALID

Default No default

ATTRIBUTE SigChan E1Cas Tslot transmitedBits

Access Read only

Description	This attribute indicates what are the raw A, AB or ABCD bits being transmitted.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	No default

ATTRIBUTE SigChan E1Cas Tslot transmitedSignal

Access	Read only
Description	This attribute indicates what signal the *txBits* are being interpreted as.
Mib	VoiceNetworking
Values	IDLE FAULT SEIZE SEIZEV

SEIZED
SEZACK
WINK
CONN
CLRBCK
CLRFWD
BUSY
UNKNOWN
INVALID

Default: No default

COMPONENT SigChan Ds1Cas

Groups:
"GROUP SigChan Ds1Cas Provisioned (Prov)"
"GROUP SigChan Ds1Cas AbcdProv"
"GROUP SigChan Ds1Cas TimerProv"
"GROUP SigChan Ds1Cas LinkCallStatistics"
"GROUP SigChan Ds1Cas Discrimination (Discr)"

"COLLECTED STATS SignallingChannel Ds1Cas"

Scope: Application

Description: *SigChan/n Ds1Cas*
This component defines the A,AB or ABCD bits, Digit reception and transmission and tone generation for a Ds1 Cas link.

Mib: VoiceNetworking

Subcomponents: "COMPONENT SigChan Ds1Cas Framer (Framer)"

Opt. Subcomp.: "COMPONENT SigChan Ds1Cas Dtmf"

Dyn. Subcomp.: "COMPONENT SigChan Ds1Cas TimeSlotStatus (Tslot)"

Common Verbs:
Help
List
Display
Add
DELete

GROUP SigChan Ds1Cas Provisioned (Prov)

Properties	Provisioned
Description	This group conatins attirbutes that defines various settings that do not fall under any other group.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas toneTableSelection

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies which tone table to select when a call is to receive a given tone. 0 for North America 1 for Japan 2 for United Kingdom 3 for Germany 4 for France 5 for Central America (Brazil, Mexico) 6 for Chile 7 for Autralia
Mib	VoiceNetworking
Values	Decimal (0..7)
Default	0

GROUP SigChan Ds1Cas AbcdProv

Properties	Provisioned
Description	This group specifies the attributes that define what the A,AB or ABCD pattern for a particular signal should be.The input is a 1 or 2 or 4 bit (0 or 1) format of ABCD. Depending on the framing format of the DS1 some bits may be ignored.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas signallingBits

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies which bits are to be used for interpretation. (A,AB or ABCD).
Mib	VoiceNetworking
Values	A AB ABCD
Default	AB

ATTRIBUTE SigChan Ds1Cas idleTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the idle signal is when transmitted. This signal must be different from the *connectTx* signal.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110

	0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	00

ATTRIBUTE SigChan Ds1Cas idleRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the idle signal when received. This signal must be different from the *connectRx* signal.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011

	1100 1101 1110 1111
Default	00

ATTRIBUTE SigChan Ds1Cas faultTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the fault signal when transmitted. It is transmitted when the timeslot is undefined or locked. This signal must be different from the *idleTx* signal.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111

Default	11

ATTRIBUTE SigChan Ds1Cas faultRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the fault signal when received. When received, the channel status for the timeslot goes to a lockout state. This signal must be different from the *idleRx* signal.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	11

ATTRIBUTE SigChan Ds1Cas seizeTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize signal when transmitted. There is no Voice or Data call distinction unless it is provided by a leading *Discrimination* digit. This signal can not be defined if the *seizeVoiceTx* or *seizeVoiceRx* or *seizeDataTx* or *seizeDataRx* signals are defined. The *seizeRx* must also be defined along with this signal. If defined, the signal must be different from the *idleTx* signal.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	11

ATTRIBUTE SigChan Ds1Cas seizeRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize signal when received. There is no Voice or Data call distinction unless it is provided by a leading *Discrimination* digit. This signal can not be defined if the *seizeVoiceTx* or *seizeVoiceRx* or *seizeDataTx* or *seizeDataRx* signals are defined. The *seizeTx* must also be defined along with this signal. If defined, the signal must be different from the *idleRx* signal.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	11

ATTRIBUTE SigChan Ds1Cas seizeVoiceTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Voice signal when transmitted. This signal when transmitted identifies the call as a voice call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeVoiceRx*, *seizeDataRx* and *seizeDataTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeDataTx* and *idleTx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

ATTRIBUTE SigChan Ds1Cas seizeVoiceRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Voice signal when received. This signal when received identifies the call as a voice call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeVoiceTx*, *seizeDataRx* and *seizeDataTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeDataRx* and *idleRx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

ATTRIBUTE SigChan Ds1Cas seizeDataTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Data signal when transmitted. This signal when transmitted identifies the call as a data call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeDataRx*, *seizeVoiceRx* and *seizeVoiceTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeVoiceTx* and *idleTx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

ATTRIBUTE SigChan Ds1Cas seizeDataRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Data signal when received. This signal when received identifies the call as a data call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeDataTx*, *seizeVoiceRx* and *seizeVoiceTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeVoiceRx* and *idleRx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

ATTRIBUTE SigChan Ds1Cas seizeAckTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seizure acknowledgment signal when transmitted. If defined, the value of the signal must be different from the *idleTx* and the *connectTx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

ATTRIBUTE SigChan Ds1Cas seizeAckRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seizure acknowledgment when received. If defined, the value of the signal must be different from the *idleRx* and the *connectRx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

ATTRIBUTE SigChan Ds1Cas winkTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the wink signal when transmitted. This is a pulsed signal of *winkTime* duration. Where ***P*** specifies which bit is toggled. A pulse signal returns to the original A, AB or ABCD pattern before the start of transmission.
Mib	VoiceNetworking
Values	P PX XP PXXX XPXX XXPX XXXP unused PP PPXX PXPX PXXP XPPX XPXP XXPP PPPX PPXP PXPP XPPP PPPP
Default	unused

ATTRIBUTE SigChan Ds1Cas winkRx

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies what the value is, in ABCD terms, of the wink signal when received. This pulsed signal must be within the *winkMinTime* and *winkMaxTime* before it is considered as valid. Where ***P*** specifies which bit is toggled. A pulse signal returns to the original A, AB or ABCD pattern before the start of reception.
Mib	VoiceNetworking
Values	P PX XP PXXX XPXX XXPX XXXP unused PP PPXX PXPX PXXP XPPX XPXP XXPP PPPX PPXP PXPP XPPP PPPP
Default	unused

ATTRIBUTE SigChan Ds1Cas connectTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the connect or answer signal when transmitted. The value of the signal must be different from the *idleTx* signal.

Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	11

ATTRIBUTE SigChan Ds1Cas connectRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the connect or answer signal when received. The value of the signal must be different from the *idleRx* signal.
Mib	VoiceNetworking
Values	0 1 00

	01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	11

ATTRIBUTE SigChan Ds1Cas clearBackTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear back signal when transmitted. This signal is sent, if defined, on an incoming call from the link when the network side first initiates the disconnect sequence. This value, if used, must be different from the *idleTx* and *connectTx* signals.
Mib	VoiceNetworking
Values	0 1 00 01 10 11

0000
0001
0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan Ds1Cas clearBackRx

Access Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the clear back signal when received. This signal is received, if defined, on an outgoing call to the link when the link side first initiates the disconnect sequence. This value, if used, must be different from the *idleRx* and *connectRx* signal.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001

0010
0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan Ds1Cas clearFwdTx

Access
Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the clear forward signal when transmitted. This signal is sent, if defined, on an outgoing call to the link when the network side first initiates the disconnect sequence. This value, if used, must be different from the *idleTx* signal and any transmitted seize signal defined.

Mib VoiceNetworking

Values
0
1
00
01
10
11
0000
0001
0010

0011
0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111
unused

Default unused

ATTRIBUTE SigChan Ds1Cas clearFwdRx

Access Read: All
Write: All

Criticality Process

Description This attribute specifies what the value is, in ABCD terms, of the clear forward signal when received. This signal is received, if defined, on an incoming call from the link when the network side first initiates the disconnect sequence. This value, if used, must be different from *idleRx* signal and any transmitted seize signal defined.

Mib VoiceNetworking

Values 0
1
00
01
10
11
0000
0001
0010
0011

	0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111 unused
Default	unused

GROUP SigChan Ds1Cas TimerProv

Properties	Provisioned
Description	This group contains the various timers used by *Ds1Cas* component to handle a particular timing events.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas guardTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time needed after a channel is idled before it is made available for the next outgoing call to the link.
Mib	VoiceNetworking
Values	Decimal (50..30000)
Units	msec
Default	1000

ATTRIBUTE SigChan Ds1Cas winkTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the length of time that a *winkTx* signal is transmitted. This attribute is only referenced if the *winkTx* signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	220

ATTRIBUTE SigChan Ds1Cas winkMinTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the minimum time that a *winkRx* signal, when received, must persist before being considered as a valid wink. Anything less is ignored. This value must be less than *winkMaxTime*. This attribute is only referenced if the *winkRx* Signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	130

ATTRIBUTE SigChan Ds1Cas winkMaxTime

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the maximum time that a *winkRx* signal, when received, may persist before it is interpreted as a GLARE condition. This value must be larger than the *winkMinTime*. This attribute is only referenced if the *winkRx* Signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	300

ATTRIBUTE SigChan Ds1Cas seizeAckDelayTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the delay, after receiving any particular seize signal, before responding with a *seizeAckTx* or *winkTx* signal
Mib	VoiceNetworking
Values	Decimal (30..3000)
Units	msec
Default	1000

ATTRIBUTE SigChan Ds1Cas seizeAckSupvTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time, on an outgoing call to the link, the network will wait to receive a *seizeAckRx* or a *winkRx* signal. Should this timer time-out, the call is considered as a seize failure. This timer is not started unless either the *seizeAckRx* or a *winkRx* signals are defined.
Mib	VoiceNetworking

Values	Decimal (1000..15000)
Units	msec
Default	4000

ATTRIBUTE SigChan Ds1Cas outpulseDelayTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of delay, after transmitting any seize signal, before digit transmission begins. If the *seizeAckRx* or *winkRx* signal is defined, the timer is started upon complete reception of the signal. If the *seizeAckRx* or *winkRx* signal are not defined, the timer is started immediately after sending any particular seize signal.
Mib	VoiceNetworking
Values	Decimal (100..30000)
Units	msec
Default	400

ATTRIBUTE SigChan Ds1Cas endOfDialTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time allowed between digits after which any more digits are to be ignored.
Mib	VoiceNetworking
Values	Decimal (1000..30000)
Units	msec
Default	9000

ATTRIBUTE SigChan Ds1Cas disconnectTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time that a disconnect signal (*idleRx*, *clearBackRx* or *clearFwdRx*) must persist before it is interpreted as a valid disconnect signal.
Mib	VoiceNetworking
Values	Decimal (10..30000)
Units	msec
Default	500

ATTRIBUTE SigChan Ds1Cas disconnectSupvTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time allowed for the link to respond with a disconnect signal (*idleRx*, *clearBackRx* or *clearFwdRx*) once the network has already started the disconnect sequence.
Mib	VoiceNetworking
Values	Decimal (1000..60000)
Units	msec
Default	35000

GROUP SigChan Ds1Cas LinkCallStatistics

Properties	Operational
Description	This group contains the operational statistics on various call events on the link.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas totalCallsOutgoing

Access	Read only
Description	This attribute counts the outgoing node call attempts made to this link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas totalCallsIncoming

Access	Read only
Description	This attribute counts the incoming link call attempts made to this node. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas outgoingAnsweredCalls

Access	Read only
Description	This attribute counts the outgoing node calls to this link that were answered by the link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas incomingAnsweredCalls

Access	Read only
Description	This attribute counts the incoming link calls that were answered by this node. That is a connect signal was transmitted by this node out to the link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas seizeFailures

Access	Read only
Description	This attribute counts the outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal. That is, no seizure acknowledgment or wink was returned from link. This attribute does not count calls that encountered glare. Glare situations are counted via the *glareCalls* attribute. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas releaseFailures

Access	Read only
Description	This attribute counts the times that the link failed to respond correctly during the disconnect sequence of a call. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas activeChannels

Access	Read only
Description	This attribute counts the current number of active channels. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas peakActiveChannels

Access	Read only
Description	This attribute counts the peak number of active channels. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Ds1Cas glareCalls

Access	Read only
Description	This attribute counts the outgoing node call attempts to the link that encountered glare. Glare occurs when an outgoing node call attempt and an incoming link call attempt occur on the same channel simultaneously. Priority is given to the incoming call and the outgoing call is reattempted on another channel. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)

Default	0

GROUP SigChan Ds1Cas Discrimination (Discr)

Properties	Provisioned
Description	This group provides the attributes necessary to implement voice and data call discrimination via the first received or transmitted digit of a call.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas voiceDataDiscr

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether voice and data calls are to be identified via the *voiceCallDigit* or *dataCallDigit*.
Mib	VoiceNetworking
Values	off on
Default	off

ATTRIBUTE SigChan Ds1Cas voiceCallDigit

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the digit that will identify a call to be a voice call via the first digit. This value must be different than *dataCallDigit*.
Mib	VoiceNetworking
Values	Decimal (0..9)
Default	1

ATTRIBUTE SigChan Ds1Cas dataCallDigit

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the digit that will identify a call to be a data call via the first digit. This value must be different than *voiceCallDigit*.
Mib	VoiceNetworking
Values	Decimal (0..9)
Default	2

COLLECTED STATS SignallingChannel Ds1Cas

Description	The statistics record generated by the SignallingChannel Ds1Cas component.

ATTRIBUTE SigChan Ds1Cas totalCallsOutgoing

Description	This spooled statistic counts the number of outgoing node call attempts made to this link in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas totalCallsIncoming

Description	This attribute counts the number of incoming link call attempts made to this node in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas seizeFailures

Description	This spooled statistic counts the number of outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal in the last statistics collection interval. That is no seizure acknowledgment or wink was returned from link.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas releaseFailures

Description	This spooled statistic counts the number of times that the link failed to respond correctly during the disconnect sequence of a call in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas outgoingAnsweredCalls

Description	This spooled statistic counts the number of outgoing node calls to this link that were answered by the link in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas incomingAnsweredCalls

Description	This spooled statistic counts the number of incoming link calls that were answered by this node, connect signals transmitted by this node out to the link in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Ds1Cas peakActiveChannels

Description	This spooled statistic counts the maximum number of channels that have been simultaneously active on this signalling channel during the last statistics collection interval.
Values	Decimal (0..30)

COMPONENT SigChan Ds1Cas Framer (Framer)

Groups	"GROUP SigChan Ds1Cas Framer Provisioned (Prov)" "GROUP SigChan Ds1Cas Framer OsiState (State)"
Scope	Application
Description	*SigChan/n Ds1Cas Framer* *SigChan/n E1Cas Framer* *SigChan/n J2Cas Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib VoiceNetworking

Common Verbs
- Help
- List
- Display

GROUP SigChan Ds1Cas Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib VoiceNetworking

ATTRIBUTE SigChan Ds1Cas Framer interfaceName

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib VoiceNetworking

Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP SigChan Ds1Cas Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE SigChan Ds1Cas Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SigChan Ds1Cas Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VoiceNetworking

Values	idle active (activ) busy
Default	idle

COMPONENT SigChan Ds1Cas Dtmf

Groups	"GROUP SigChan Ds1Cas Dtmf Provisioned (Prov)"
Scope	Application
Description	*SigChan/n Ds1Cas Dtmf* *SigChan/n E1Cas Dtmf* *SigChan/n J2Cas Dtmf* This component defines attributes that defines what settings are need to recognize and transmit DTMF tones.
Mib	VoiceNetworking
Common Verbs	Help List Display Add DELete

GROUP SigChan Ds1Cas Dtmf Provisioned (Prov)

Properties	Provisioned
Description	This group contains attributes that defines what settings are needed to transmit and recognize DTMF tones.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas Dtmf burstTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the length of time a tone persists for digit transmission. When a 50ms burst is selected, the inter-digit time is 50ms.

	When a 60ms burst is selected, the inter-digit time is 90ms. When a 70ms burst is selected, the inter-digit time is 80ms. When a 100ms burst is selected, the inter-digit time is 100ms.
Mib	VoiceNetworking
Values	Decimal (50; 60; 70; 100)
Units	msec
Default	100

COMPONENT SigChan Ds1Cas TimeSlotStatus (Tslot)

Instance	Decimal (1..24)
Groups	"GROUP SigChan Ds1Cas Tslot Channels"
Scope	Application
Description	*SigChan/n Ds1Cas Tslot/n* *SigChan/n E1Cas Tslot/n* *SigChan/n J2Cas Tslot/n* This component contains replicated attribute which displays operational attributes of individual time slots.
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan Ds1Cas Tslot Channels

Properties	Operational
Description	This group contains various operational attributes of every channel which is serviced by a CAS Signalling Channel.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ds1Cas Tslot maintenanceStatus

Access	Read only

Description	This attribute specifies what the internal current channel status is. The attribute “Status” may have the following values: UnDefined, time slot has not yet been configured Locked, time slot has been locked by the operator LockOut, time slot is busied out due to some protocol failure Incoming, time slot is currently being used for a call incoming to the node Outgoing, time slot is currently being used for a call outgoing from the network Idle, time slot is currently available for use.
Mib	VoiceNetworking
Values	IDLE BUSY LCKO MBUSY DSBL UNEQ UNKNOWN INVALID
Default	No default

ATTRIBUTE SigChan Ds1Cas Tslot receivedBits

Access	Read only
Description	This attribute specifies what are the raw A, AB or ABCD bits being received.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011

0100
0101
0110
0111
1000
1001
1010
1011
1100
1101
1110
1111

Default No default

ATTRIBUTE SigChan Ds1Cas Tslot receivedSignal

Access Read only

Description This attribute indicates what signal the *rxBits* are being interpreted as.

Mib VoiceNetworking

Values
IDLE
FAULT
SEIZE
SEIZEV
SEIZED
SEZACK
WINK
CONN
CLRBCK
CLRFWD
BUSY
UNKNOWN
INVALID

Default No default

ATTRIBUTE SigChan Ds1Cas Tslot transmitedBits

Access Read only

Description	This attribute indicates what are the raw A, AB or ABCD bits being transmitted.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	No default

ATTRIBUTE SigChan Ds1Cas Tslot transmitedSignal

Access	Read only
Description	This attribute indicates what signal the *txBits* are being interpreted as.
Mib	VoiceNetworking
Values	IDLE FAULT SEIZE SEIZEV

SEIZED
SEZACK
WINK
CONN
CLRBCK
CLRFWD
BUSY
UNKNOWN
INVALID

Default: No default

COMPONENT SigChan J2Cas (J2)

Groups:
"GROUP SigChan J2 Provisioned (Prov)"
"GROUP SigChan J2 AbcdProv"
"GROUP SigChan J2 TimerProv"
"GROUP SigChan J2 LinkCallStatistics"

"COLLECTED STATS SignallingChannel J2Cas"

Scope: Application

Description: *SigChan/n J2Cas*
This component defines the A,AB or ABCD bits, Digit reception and transmission and tone generation for a J2 Cas link.

Mib: VoiceNetworking

Subcomponents: "COMPONENT SigChan J2 Framer (Framer)"

Opt. Subcomp.: "COMPONENT SigChan J2 Dtmf"

Dyn. Subcomp.: "COMPONENT SigChan J2 TimeSlotStatus (Tslot)"

Common Verbs:
Help
List
Display
Add
DELete

GROUP SigChan J2 Provisioned (Prov)

Properties: Provisioned

Description	This group conatins attirbutes that defines various settings that do not fall under any other group.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 toneTableSelection

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies which tone table to select when a call is to receive a given tone. 0 for North America 1 for Japan 2 for United Kingdom 3 for Germany 4 for France 5 for Central America (Brazil, Mexico) 6 for Chile 7 for Autralia
Mib	VoiceNetworking
Values	Decimal (0..7)
Default	1

GROUP SigChan J2 AbcdProv

Properties	Provisioned
Description	This group specifies the attributes that define what the A bit pattern for a particular signal should be. The input is a 1 bit (0 or 1) format.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 signallingBits

Access	Read only
Criticality	Process

Description	This attribute specifies which bits are to be used for interpretation. (A,AB or ABCD).
Mib	VoiceNetworking
Values	A AB ABCD
Default	A

ATTRIBUTE SigChan J2 idleTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in A bit terms, of the idle signal is when transmitted. This signal must be different from the *connectTx* signal.
Mib	VoiceNetworking
Values	0 1
Default	1

ATTRIBUTE SigChan J2 idleRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in A bit terms, of the idle signal when received. This signal must be different from the *connectRx* signal.
Mib	VoiceNetworking
Values	0 1

Default	1

ATTRIBUTE SigChan J2 faultTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the fault signal when transmitted. It is transmitted when the timeslot is undefined or locked. This signal must be different from the *idleTx* signal.
Mib	VoiceNetworking
Values	0 1
Default	0

ATTRIBUTE SigChan J2 faultRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the fault signal when received. When received, the channel status for the timeslot goes to a lockout state. This signal must be different from the *idleRx* signal.
Mib	VoiceNetworking
Values	0 1
Default	0

ATTRIBUTE SigChan J2 seizeTx

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies what the value is, in A bit terms, of the seize signal when transmitted. This signal must be different from the *idleTx* signal.
Mib	VoiceNetworking
Values	0 1
Default	0

ATTRIBUTE SigChan J2 seizeRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in A bit terms, of the seize signal when received. This signal must be different from the *idleRx* signal.
Mib	VoiceNetworking
Values	0 1
Default	0

ATTRIBUTE SigChan J2 seizeVoiceTx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Voice signal when transmitted. This signal when transmitted identifies the call as a voice call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeVoiceRx*, *seizeDataRx* and *seizeDataTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeDataTx* and *idleTx* signals.
Mib	VoiceNetworking
Values	unused

Default	unused

ATTRIBUTE SigChan J2 seizeVoiceRx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Voice signal when received. This signal when received identifies the call as a voice call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeVoiceTx*, *seizeDataRx* and *seizeDataTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeDataRx* and *idleRx* signals.
Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 seizeDataTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Data signal when transmitted. This signal when transmitted identifies the call as a data call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeDataRx*, *seizeVoiceRx* and *seizeVoiceTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeVoiceTx* and *idleTx* signals.
Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 seizeDataRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seize Data signal when received. This signal when received identifies the call as a data call. This signal can not be defined if the *seizeTx* or *seizeRx* are defined. The *seizeDataTx*, *seizeVoiceRx* and *seizeVoiceTx* must also be defined along with this signal. If defined, the value of the signal must be different from the *seizeVoiceRx* and *idleRx* signals.
Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 seizeAckTx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seizure acknowledgment signal when transmitted. If defined, the value of the signal must be different from the *idleTx* and the *connectTx* signals.
Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 seizeAckRx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the seizure acknowledgment when received. If defined, the value

of the signal must be different from the *idleRx* and the *connectRx* signals.

Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 winkTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in A bit terms, of the wink signal when transmitted. This is a pulsed signal of *winkTime* duration. Where ***P*** specifies which bit is toggled. A pulse signal returns to the original A bit pattern before the start of transmission.
Mib	VoiceNetworking
Values	P unused
Default	P

ATTRIBUTE SigChan J2 winkRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in A bit terms, of the wink signal when received. This pulsed signal must be within the *winkMinTime* and *winkMaxTime* before it is considered as valid. Where ***P*** specifies which bit is toggled. A pulse signal returns to the original A bit pattern before the start of reception.
Mib	VoiceNetworking
Values	P unused

Default	P

ATTRIBUTE SigChan J2 connectTx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the connect or answer signal when transmitted. The value of the signal must be different from the *idleTx* signal.
Mib	VoiceNetworking
Values	0 1
Default	0

ATTRIBUTE SigChan J2 connectRx

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the connect or answer signal when received. The value of the signal must be different from the *idleRx* signal.
Mib	VoiceNetworking
Values	0 1
Default	0

ATTRIBUTE SigChan J2 clearBackTx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear back signal when transmitted. This signal is sent, if defined, on an incoming call from the link when the network side

	first initiates the disconnect sequence. This value, if used, must be different from the *idleTx* and *connectTx* signals.
Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 clearBackRx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear back signal when received. This signal is received, if defined, on an outgoing call to the link when the link side first initiates the disconnect sequence. This value, if used, must be different from the *idleRx* and *connectRx* signal.
Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 clearFwdTx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear forward signal when transmitted. This signal is sent, if defined, on an outgoing call to the link when the network side first initiates the disconnect sequence. This value, if used, must be different from the *idleTx* signal and any transmitted seize signal defined.
Mib	VoiceNetworking
Values	unused
Default	unused

ATTRIBUTE SigChan J2 clearFwdRx

Access	Read only
Criticality	Process
Description	This attribute specifies what the value is, in ABCD terms, of the clear forward signal when received. This signal is received, if defined, on an incoming call from the link when the network side first initiates the disconnect sequence. This value, if used, must be different from *idleRx* signal and any transmitted seize signal defined.
Mib	VoiceNetworking
Values	unused
Default	unused

GROUP SigChan J2 TimerProv

Properties	Provisioned
Description	This group contains the various timers used by *Ds1Cas* component to handle a particular timing events.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 guardTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time needed after a channel is idled before it is made available for the next outgoing call to the link.
Mib	VoiceNetworking
Values	Decimal (0..30000)
Units	msec
Default	1000

ATTRIBUTE SigChan J2 winkTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the length of time that a *winkTx* signal is transmitted. This attribute is only referenced if the *winkTx* signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	220

ATTRIBUTE SigChan J2 winkMinTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the minimum time that a *winkRx* signal, when received, must persist before being considered as a valid wink. Anything less is ignored. This value must be less than *winkMaxTime*. This attribute is only referenced if the *winkRx* Signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	130

ATTRIBUTE SigChan J2 winkMaxTime

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the maximum time that a *winkRx* signal, when received, may persist before it is interpreted as a GLARE condition. This value must be larger than the *winkMinTime*. This attribute is only referenced if the *winkRx* Signal is defined
Mib	VoiceNetworking
Values	Decimal (100..1000)
Units	msec
Default	300

ATTRIBUTE SigChan J2 seizeAckDelayTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the delay, after receiving any particular seize signal, before responding with a *seizeAckTx* or *winkTx* signal
Mib	VoiceNetworking
Values	Decimal (30..30000)
Units	msec
Default	180

ATTRIBUTE SigChan J2 seizeAckSupvTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time, on an outgoing call to the link, the network will wait to receive a *seizeAckRx* or a *winkRx* signal. Should this timer time-out, the call is considered as a seize failure. This timer is not started unless either the *seizeAckRx* or a *winkRx* signals are defined.
Mib	VoiceNetworking

Values	Decimal (1000..15000)
Units	msec
Default	4000

ATTRIBUTE SigChan J2 outpulseDelayTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of delay, after transmitting any seize signal, before digit transmission begins. If the *seizeAckRx* or *winkRx* signal is defined, the timer is started upon complete reception of the signal. If the *seizeAckRx* or *winkRx* signal are not defined, the timer is started immediately after sending any particular seize signal.
Mib	VoiceNetworking
Values	Decimal (100..30000)
Units	msec
Default	1000

ATTRIBUTE SigChan J2 endOfDialTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time allowed between digits after which any more digits are to be ignored.
Mib	VoiceNetworking
Values	Decimal (1000..30000)
Units	msec
Default	9000

ATTRIBUTE SigChan J2 disconnectTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time that a disconnect signal (*idleRx*, *clearBackRx* or *clearFwdRx*) must persist before it is interpreted as a valid disconnect signal.
Mib	VoiceNetworking
Values	Decimal (10..30000)
Units	msec
Default	500

ATTRIBUTE SigChan J2 disconnectSupvTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the amount of time allowed for the link to respond with a disconnect signal (*idleRx*, *clearBackRx* or *clearFwdRx*) once the network has already started the disconnect sequence.
Mib	VoiceNetworking
Values	Decimal (1000..60000)
Units	msec
Default	35000

GROUP SigChan J2 LinkCallStatistics

Properties	Operational
Description	This group contains the operational statistics on various call events on the link.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 totalCallsOutgoing

Access	Read only
Description	This attribute counts the outgoing node call attempts made to this link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 totalCallsIncoming

Access	Read only
Description	This attribute counts the incoming link call attempts made to this node. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 outgoingAnsweredCalls

Access	Read only
Description	This attribute counts the outgoing node calls to this link that were answered by the link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 incomingAnsweredCalls

Access	Read only
Description	This attribute counts the incoming link calls that were answered by this node. That is a connect signal was transmitted by this node out to the link. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 seizeFailures

Access	Read only
Description	This attribute counts the outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal. That is, no seizure acknowledgment or wink was returned from link. This attribute does not count calls that encountered glare. Glare situations are counted via the *glareCalls* attribute. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 releaseFailures

Access	Read only
Description	This attribute counts the times that the link failed to respond correctly during the disconnect sequence of a call. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 activeChannels

Access	Read only
Description	This attribute counts the current number of active channels. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 peakActiveChannels

Access	Read only
Description	This attribute counts the peak number of active channels. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan J2 glareCalls

Access	Read only
Description	This attribute counts the outgoing node call attempts to the link that encountered glare. Glare occurs when an outgoing node call attempt and an incoming link call attempt occur on the same channel simultaneously. Priority is given to the incoming call and the outgoing call is reattempted on another channel. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)

Default 0

COLLECTED STATS SignallingChannel J2Cas

Description The statistics record generated by the SignallingChannel J2Cas component.

ATTRIBUTE SigChan J2 totalCallsOutgoing

Description This spooled statistic counts the number of outgoing node call attempts made to this link in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 totalCallsIncoming

Description This attribute counts the number of incoming link call attempts made to this node in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 seizeFailures

Description This spooled statistic counts the number of outgoing node call attempts to this link for which the link failed to respond correctly upon receiving a seize signal in the last statistics collection interval. That is no seizure acknowledgment or wink was returned from link.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 releaseFailures

Description This spooled statistic counts the number of times that the link failed to respond correctly during the disconnect sequence of a call in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 outgoingAnsweredCalls

Description This spooled statistic counts the number of outgoing node calls to this link that were answered by the link in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan J2 incomingAnsweredCalls

Description: This spooled statistic counts the number of incoming link calls that were answered by this node, connect signals transmitted by this node out to the link in the last statistics collection interval.

Values: Decimal (0..65535)

ATTRIBUTE SigChan J2 peakActiveChannels

Description: This spooled statistic counts the maximum number of channels that have been simultaneously active on this signalling channel during the last statistics collection interval.

Values: Decimal (0..30)

COMPONENT SigChan J2 Framer (Framer)

Groups: "GROUP SigChan J2 Framer Provisioned (Prov)"
"GROUP SigChan J2 Framer OsiState (State)"

Scope: Application

Description: *SigChan/n Ds1Cas Framer*
SigChan/n E1Cas Framer
SigChan/n J2Cas Framer
The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link

interface datapath statistics (such as frame counts and aborts).

Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan J2 Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	VoiceNetworking
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP SigChan J2 Framer OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan J2 Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SigChan J2 Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VoiceNetworking
Values	idle active (activ) busy
Default	idle

COMPONENT SigChan J2 Dtmf

Groups	"GROUP SigChan J2 Dtmf Provisioned (Prov)"
Scope	Application

Description	*SigChan/n Ds1Cas Dtmf* *SigChan/n E1Cas Dtmf* *SigChan/n J2Cas Dtmf* This component defines attributes that defines what settings are need to recognize and transmit DTMF tones.
Mib	VoiceNetworking
Common Verbs	Help List Display Add DELete

GROUP SigChan J2 Dtmf Provisioned (Prov)

Properties	Provisioned
Description	This group contains attributes that defines what settings are needed to transmit and recognize DTMF tones.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 Dtmf burstTime

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the length of time a tone persists for digit transmission. When a 50ms burst is selected, the inter-digit time is 50ms. When a 60ms burst is selected, the inter-digit time is 90ms. When a 70ms burst is selected, the inter-digit time is 80ms. When a 100ms burst is selected, the inter-digit time is 100ms.
Mib	VoiceNetworking
Values	Decimal (50; 60; 70; 100)
Units	msec
Default	100

COMPONENT SigChan J2 TimeSlotStatus (Tslot)

Instance	Decimal (1..31)
Groups	"GROUP SigChan J2 Tslot Channels"
Scope	Application
Description	*SigChan/n Ds1Cas Tslot/n* *SigChan/n E1Cas Tslot/n* *SigChan/n J2Cas Tslot/n* This component contains replicated attribute which displays operational attributes of individual time slots.
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan J2 Tslot Channels

Properties	Operational
Description	This group contains various operational attributes of every channel which is serviced by a CAS Signalling Channel.
Mib	VoiceNetworking

ATTRIBUTE SigChan J2 Tslot maintenanceStatus

Access	Read only
Description	This attribute specifies what the internal current channel status is. The attribute “Status” may have the following values: UnDefined, time slot has not yet been configured Locked, time slot has been locked by the operator LockOut, time slot is busied out due to some protocol failure Incoming, time slot is currently being used for a call incoming to the node Outgoing, time slot is currently being used for a call outgoing from the network Idle, time slot is currently available for use.

Mib	VoiceNetworking
Values	IDLE BUSY LCKO MBUSY DSBL UNEQ UNKNOWN INVALID
Default	No default

ATTRIBUTE SigChan J2 Tslot receivedBits

Access	Read only
Description	This attribute specifies what are the raw A, AB or ABCD bits being received.
Mib	VoiceNetworking
Values	0 1 00 01 10 11 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101

	1110 1111
Default	No default

ATTRIBUTE SigChan J2 Tslot receivedSignal

Access	Read only
Description	This attribute indicates what signal the *rxBits* are being interpreted as.
Mib	VoiceNetworking
Values	IDLE FAULT SEIZE SEIZEV SEIZED SEZACK WINK CONN CLRBCK CLRFWD BUSY UNKNOWN INVALID
Default	No default

ATTRIBUTE SigChan J2 Tslot transmitedBits

Access	Read only
Description	This attribute indicates what are the raw A, AB or ABCD bits being transmitted.
Mib	VoiceNetworking
Values	0 1 00 01 10 11

	0000 0001 0010 0011 0100 0101 0110 0111 1000 1001 1010 1011 1100 1101 1110 1111
Default	No default

ATTRIBUTE SigChan J2 Tslot transmitedSignal

Access	Read only
Description	This attribute indicates what signal the *txBits* are being interpreted as.
Mib	VoiceNetworking
Values	IDLE FAULT SEIZE SEIZEV SEIZED SEZACK WINK CONN CLRBCK CLRFWD BUSY UNKNOWN INVALID
Default	No default

COMPONENT SigChan EtsiQsig (EQsig)

Groups	"GROUP SigChan EQsig Layer2Options (L2)" "GROUP SigChan EQsig Layer3Options (L3)" "GROUP SigChan EQsig Provisioned (Prov)" "GROUP SigChan EQsig OsiState (State)" "GROUP SigChan EQsig Statistics (Stats)" "GROUP SigChan EQsig Operational (Oper)" "GROUP SigChan EQsig Tools" "GROUP SigChan EQsig EQsigSpecificProv" "GROUP SigChan EQsig EQsigSpecificOp"

"COLLECTED STATS SignallingChannel EtsiQsig"

Scope	Device
Description	*SigChan/n EtsiQsig* The *EtsiQsig* component defines the operational characteristics of the signalling channel's connection to the external equipment.
Mib	VnetEtsiQsig
Subcomponents	"COMPONENT SigChan EQsig Framer (Framer)"
Common Verbs	Help List Display Add DELete

GROUP SigChan EQsig Layer2Options (L2)

Properties	Provisioned
Description	This group specifies the provisionable layer 2 attributes of the Q.931 ITU-T protocol.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer 2 enable request timer.
Mib	VnetEtsiQsig
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE SigChan EQsig t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgment.
Mib	VnetEtsiQsig
Values	Decimal (1..20)
Units	seconds
Default	1

ATTRIBUTE SigChan EQsig n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer 2 frame.
Mib	VnetEtsiQsig
Values	Decimal (1..8)

Default	3

ATTRIBUTE SigChan EQsig t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time for which layer 2 frames may be absent. Expiry triggers a check on whether the far end is alive.
Mib	VnetEtsiQsig
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE SigChan EQsig circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of sequentially numbered I frames (that is, window size (k)) that may be unacknowledged at any given time for a SAP supporting primary rate (64kbit/s) signalling.
Mib	VnetEtsiQsig
Values	Decimal (1..127)
Default	7

GROUP SigChan EQsig Layer3Options (L3)

Properties	Provisioned
Description	This group represents the provisionable Layer 3 timer attributes of the ETSI Qsig protocol.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig t309

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the data link failure timer; used to ride out temporary failures.
Mib	VnetEtsiQsig
Values	Decimal (15..120)
Units	seconds
Default	90

ATTRIBUTE SigChan EQsig t310

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the call proceeding state timer.
Mib	VnetEtsiQsig
Values	Decimal (10..120)
Units	seconds
Default	30

GROUP SigChan EQsig Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the D-channel signalling link.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig side

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the interface is the network or user side of the connection. The parameter applies to both the layer 2 and layer 3 of the interface. If this attribute is set to ***network***, then the interface is master during channel negotiation. If this attribute is set to ***user***, then the interface is slave during channel negotiation.
Mib	VnetEtsiQsig
Values	network user
Default	network

ATTRIBUTE SigChan EQsig maxNonCallConcurrent (nonCall)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of simultaneous active non-call messages that are allowed.
Mib	VnetEtsiQsig
Values	Decimal (1..30)
Default	30

ATTRIBUTE SigChan EQsig overlapSendingEnabled (ose)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether overlap sending to the PBX is enabled.

Mib	VnetEtsiQsig
Values	enabled disabled
Default	enabled

ATTRIBUTE SigChan EQsig overlapReceivingEnabled (ore)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether overlap receiving from the PBX is enabled.
Mib	VnetEtsiQsig
Values	enabled disabled
Default	enabled

GROUP SigChan EQsig OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or

Lock command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: VnetEtsiQsig

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE SigChan EQsig operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: VnetEtsiQsig

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE SigChan EQsig usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VnetEtsiQsig
Values	idle active (activ) busy
Default	idle

GROUP SigChan EQsig Statistics (Stats)

Properties	Operational
Description	This group provides the operational components for the *EtsiQsig* component.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig totalCallsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls that have been made to the interface. This counter wraps to zero when it exceeds its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE SigChan EQsig totalCallsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls from the interface. This counter wraps to zero when it exceeds its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig nonCallAssocSessionsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non-call associated sessions to the interface. This counter wraps to zero when it exceeds its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig nonCallAssocSessionsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non-call associated sessions from the interface. This counter wraps to zero when it exceeds its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)

Default	0

GROUP SigChan EQsig Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the EtsiQsig protocol.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	VnetEtsiQsig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EQsig activeVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently carrying voice.
Mib	VnetEtsiQsig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EQsig activeDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently carrying data. This does not include modem data.

Mib	VnetEtsiQsig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EQsig peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	VnetEtsiQsig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EQsig peakActiveVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of voice channels that have been active on this signalling channel during the last polling period.
Mib	VnetEtsiQsig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EQsig peakActiveDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of data channels that have been active on this signalling channel during the last polling period.
Mib	VnetEtsiQsig

Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EQsig dChanStatus (dCh)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	VnetEtsiQsig
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP SigChan EQsig Tools

Properties	Operational
Description	This contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig tracing

Access
Read: All
Write: All

Description
This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in *Col/debug* must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (ex. *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously.

Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages.

Types of tracing include:
protocolErrors - get details of any protocol errors which are occurring. Protocol errors are also reported in summary form as alarms.
q931Summary - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes).
q931Hex - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Messages in hex format being sent and received on the link.

Mib	VnetEtsiQsig
Set of	protocolErrors q931Summary q931Hex q931Symbolic portHex
Default	No default

GROUP SigChan EQsig EQsigSpecificProv

Properties	Provisioned
Description	This group provides EtsiQsig protocol specific provisioning.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig msgSegmentation

Access	Read: All Write: All
Criticality	Process
Description	This attribute allows users to enable/disable the EtsiQsig message segmentation service.
Mib	VnetEtsiQsig
Values	enabled disabled
Default	disabled

ATTRIBUTE SigChan EQsig e1ChannelNumbers

Access	Read: All Write: All
Criticality	Process
Description	This attribute is applicable to E1 interfaces only. It specifies the mapping scheme between channel numbers (identified in Layer 3 messages) and time slot numbers on the E1 link.

When the attribute value is ***skip16***, channel numbers map directly to actual E1 time slots; therefore only channel numbers 1 - 15 and 17 - 31 are expected.

When the value is ***contiguous***, channel numbers from 1 - 30 are expected, and the following mapping is used: channels 1 - 15 are mapped to time slots 1 - 15, and channels 16 - 30 are mapped to time slots 17 - 31.

On T1 interfaces, channel numbers are always expected in the range 1 - 23.

Mib	VnetEtsiQsig
Values	skip16 contiguous
Default	skip16

GROUP SigChan EQsig EQsigSpecificOp

Properties	Operational
Description	This group provides specific operational attributes for the Etsi Qsig protocol.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig segmentationAccepted

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times a long Etsi Qsig message has been received from a PBX and forwarded to a subnet. This counter wraps to zero when it exceeds its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig segmentationFailed

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times a long Etsi Qsig message has been received from a PBX and could not be forwarded as is to a subnet due to end-to-end incompatibility. This counter wraps to zero when it exceeds its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

COLLECTED STATS SignallingChannel EtsiQsig

Description	The statistics record generated by the SignallingChannel EtsiQsig component.

ATTRIBUTE SigChan EQsig peakActiveChannels

Description	This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan EQsig peakActiveVoiceChannels

Description	This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan EQsig peakActiveDataChannels

Description	This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan EQsig totalCallsToIf

Description This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan EQsig totalCallsFromIf

Description This collected statistic counts the number of calls from the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan EQsig nonCallAssocSessionsToIf

Description This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan EQsig nonCallAssocSessionsFromIf

Description This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan EQsig frmToIf

Description This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan EQsig frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan EQsig octetFromIf

Description	The number of bytes received from the link interface by *Framer* in the last statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SigChan EQsig octetToIf

Description	The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT SigChan EQsig Framer (Framer)

Groups	"GROUP SigChan EQsig Framer Provisioned (Prov)" "GROUP SigChan EQsig Framer OsiState (State)" "GROUP SigChan EQsig Framer Statistics (Stats)"
Scope	Application
Description	*SigChan/n EQsig Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to data path aspects of the hardware interface (such as crc and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link

interface data path statistics (such as frame counts and aborts).

Mib	VnetEtsiQsig
Common Verbs	Help List Display

GROUP SigChan EQsig Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	VnetEtsiQsig
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP SigChan EQsig Framer OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VnetEtsiQsig
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan EQsig Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: VnetEtsiQsig

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE SigChan EQsig Framer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: VnetEtsiQsig

Values: idle
active (activ)
busy

Default: idle

GROUP SigChan EQsig Framer Statistics (Stats)

Properties: Operational

Description	This group contains the operational statistics data for a *Framer* component.
Mib	VnetEtsiQsig

ATTRIBUTE SigChan EQsig Framer frmToIf

Access	Read only
Description	This attribute counts the number of frames transmitted to the link interface by *Framer.* This counter wraps to zero when it exceeds its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer frmFromIf

Access	Read only
Description	This attribute counts the number of frames received from the link interface by *Framer.* This count wraps to zero after reaching its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by *Framer.*
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer aborts

Access	Read only
Description	This attribute counts the total number of aborts received. This count wraps to zero after reaching its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors. This count wraps to zero after reaching its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer lrcErrors

Access	Read only
Description	This attribute counts the total number of frames with LRC errors. This count wraps to zero after reaching its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EQsig Framer nonOctetErrors

Access	Read only

Description

This attribute counts the total number of frames that were non octet aligned.
This count wraps to zero after reaching its maximum value.

Mib VnetEtsiQsig

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE SigChan EQsig Framer overruns

Access Read only

Description

This attribute counts the total number of frames received from the link for which overruns occurred.
This count wraps to zero after reaching its maximum value.

Mib VnetEtsiQsig

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE SigChan EQsig Framer underruns

Access Read only

Description

This attribute counts the total number of frames transmitted to the link for which underruns occurred.
This count wraps to zero after reaching its maximum value.

Mib VnetEtsiQsig

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE SigChan EQsig Framer largeFrmErrors

Access Read only

Description

This attribute counts the total number of frames received which

	were too large (longer than 500 bytes). This count wraps to zero after reaching its maximum value.
Mib	VnetEtsiQsig
Values	Decimal (0..4294967295)
Default	0

COMPONENT SigChan Bchannel (Bch)

Instance	Decimal (1..331)
Groups	"GROUP SigChan Bch Operational (Oper)"
Scope	Application
Description	*SigChan/n Bchannel/n* This component contains operational attributes of an individual B-channel serviced by the *SigChan* component. The *Bchannel* component instance value reflects the external (protocol specific) channel number. In nB+D configurations, channel number also reflects the related interface: *Bchannel/1-xx* - primary interface, *Bchannel/101-1xx* - secondary interface, *Bchannel/201-2xx* - tertiary interface, *Bchannel/301-3xx* - quaternary interface
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan Bch Operational (Oper)

Properties	Operational
Description	This group contains various operational attributes of a B-channel serviced by a Signalling Channel.
Mib	VoiceNetworking

ATTRIBUTE SigChan Bch status

Access	Read only
Description	This attribute indicates what is current internal B-channel state. The attribute may have the following values for any supported access signalling protocol: ***unknown***, the B-channel has not registered yet for *SigChan* services ***maintB***, the B-channel is undergoing a maintenance action ***idle***, the B-channel is available for ingress/egress calls ***busy***, the B-channel is currently being used for an ingress or egress call ***ingress***, the B-channel is currently being used for an ingress call (from the external network to the subnet) ***egress***, the B-channel is currently being used for an egress call (from the subnet to the external network) In addition, CCS protocols supporting SERVICE messaging may also use the following values: ***idleMaintenance***, the B-channel received a SERVICE message placing the channel in maintenance, and no calls are active on the channel ***ingressMaintenance***, the B-channel received a SERVICE message placing the channel in maintenance, and an incoming call is active on the channel ***egressMaintenance***, the B-channel received a SERVICE message placing the channel in maintenance, and an outgoing call is active on the channel ***outOfService***, a SERVICE message to or from the PBX has placed the channel out of service
Mib	VoiceNetworking
Values	unknown maintB idle busy ingress egress idleMaintenance ingressMaintenance

	egressMaintenance outOfService
Default	unknown

ATTRIBUTE SigChan Bch timeSlot

Access	Read only
Description	This attribute indicates which timeslot the B-channel uses.
Mib	VoiceNetworking
Values	Decimal (0..100)
Default	0

ATTRIBUTE SigChan Bch vsrInstance

Access	Read only
Description	This attribute indicates the component instance of the *VoiceSubroute* to which the B-channel belongs.
Mib	VoiceNetworking
Values	Decimal (0..255)
Default	0

ATTRIBUTE SigChan Bch calledDirectoryNumber (calledDn)

Access	Read: All Write: Illegal
Description	This attribute indicates the dialled number for the currently active call on this B-channel.
Mib	VoiceNetworking
Values	BCD (1..32)
Default	No default

COMPONENT SigChan NisSig (Nis)

Groups	"GROUP SigChan Nis Layer2Options (L2)" "GROUP SigChan Nis Layer3Options (L3)"

"GROUP SigChan Nis Provisioned (Prov)"
"GROUP SigChan Nis OsiState (State)"
"GROUP SigChan Nis Statistics (Stats)"
"GROUP SigChan Nis Operational (Oper)"
"GROUP SigChan Nis Tools"
"GROUP SigChan Nis NisSpecificProv"

"COLLECTED STATS SignallingChannel NisSig"

Scope	Device
Description	*SigChan/n NisSig* The *NisSig* component defines the operational characteristics of the signalling channel's connection to the external equipment.
Mib	VnetNisSig
Subcomponents	"COMPONENT SigChan Nis Framer (Framer)"
Common Verbs	Help List Display Add DELete

GROUP SigChan Nis Layer2Options (L2)

Properties	Provisioned
Description	This group specifies the provisionable layer 2 attributes of the Q.931 ITU-T protocol.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer 2 enable request timer.
Mib	VnetNisSig

Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE SigChan Nis t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgment.
Mib	VnetNisSig
Values	Decimal (1..20)
Units	seconds
Default	1

ATTRIBUTE SigChan Nis n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer 2 frame.
Mib	VnetNisSig
Values	Decimal (1..8)
Default	3

ATTRIBUTE SigChan Nis t203

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the maximum time for which layer 2 frames may be absent. Expiry triggers a check on whether the far end is alive.
Mib	VnetNisSig
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE SigChan Nis circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of sequentially numbered I frames (that is, window size (k)) that may be unacknowledged at any given time for a SAP supporting primary rate (64kbit/s) signalling.
Mib	VnetNisSig
Values	Decimal (1..127)
Default	7

GROUP SigChan Nis Layer3Options (L3)

Properties	Provisioned
Description	This group represents the provisionable Layer 3 timer attributes of a the Nis signalling protocol.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis t309

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the data link failure timer; used to ride out temporary failures.
Mib	VnetNisSig
Values	Decimal (15..120)
Units	seconds
Default	90

ATTRIBUTE SigChan Nis t310

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the call proceeding state timer.
Mib	VnetNisSig
Values	Decimal (10..120)
Units	seconds
Default	10

GROUP SigChan Nis Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the D-channel signalling link.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis side

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the interface is the network or user side of the connection. The parameter applies to both the layer 2 and layer 3 of the interface. If this attribute is set to

	network, then the interface is master during channel negotiation. If this attribute is set to ***user***, then the interface is slave during channel negotiation.
Mib	VnetNisSig
Values	network user
Default	network

ATTRIBUTE SigChan Nis maxNonCallConcurrent (nonCall)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of simultaneous active non-call messages that are allowed.
Mib	VnetNisSig
Values	Decimal (1..30)
Default	30

GROUP SigChan Nis OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: VnetNisSig

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE SigChan Nis operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: VnetNisSig

Values:
enabled (ena)
disabled (dis)

Default	disabled

ATTRIBUTE SigChan Nis usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VnetNisSig
Values	idle active (activ) busy
Default	idle

GROUP SigChan Nis Statistics (Stats)

Properties	Operational
Description	This group provides the operational components for the *NisSig* component.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis totalCallsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls that have been made to the interface. The value wraps when it reaches its maximum.
Mib	VnetNisSig
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE SigChan Nis totalCallsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls from the interface. The value wraps when it reaches its maximum.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis nonCallAssocSessionsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non-call associated sessions to the interface. The value wraps when it reaches its maximum.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis nonCallAssocSessionsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non-call associated sessions from the interface. The value wraps when it reaches its maximum.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

GROUP SigChan Nis Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the NisSig protocol.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	VnetNisSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Nis activeVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently carrying voice.
Mib	VnetNisSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Nis activeDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently carrying data. This does not include modem data.
Mib	VnetNisSig

Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Nis peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	VnetNisSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Nis peakActiveVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of voice channels that have been active on this signalling channel during the last polling period.
Mib	VnetNisSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Nis peakActiveDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of data channels that have been active on this signalling channel during the last polling period.
Mib	VnetNisSig
Values	Decimal (0..128)

Default	0

ATTRIBUTE SigChan Nis dChanStatus (dCh)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	VnetNisSig
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP SigChan Nis Tools

Properties	Operational
Description	This contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis tracing

Access
Read: All
Write: All

Description
This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in *Col/debug* must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (ex. *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously.

Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages.

Types of tracing include:
protocolErrors - get details of any protocol errors which are occurring. Protocol errors are also reported in summary form as alarms.
q931Summary - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes).
q931Hex - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Messages in hex format being sent and received on the link.

Mib	VnetNisSig
Set of	protocolErrors q931Summary q931Hex q931Symbolic portHex
Default	No default

GROUP SigChan Nis NisSpecificProv

Properties	Provisioned
Description	This group provides NIS protocol specific provisioning.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis chanMaintenanceHandling (cmh)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies how channel maintenance events should be handled upon startup. Channel maintenance events include locking and unlocking a channel or channel registration. The decision is either to send individual channel RESTART messages, SERVICE messages, or nothing. Note that channel registration only occurs after the global interface restart at startup. Setting this attribute to enable SERVICE messages ensures that SERVICE messages occur at startup and whenever a channel goes into or out of service. If this attribute is not set to enable SERVICE messaging, a RESTART is always sent on unlocking a channel. ***globalOnStartup*** provides the minimum required functionality at startup, without any individual channel confirmation. Note that when this is set, channel RESTART is still used for channel unlock. ***globalOnStartup*** applies to *SigChan* startup only. ***serviceMessage*** enables sending and receiving SERVICE

messages. If this attribute is set to ***serviceMessage***, SERVICE messages are used for channel maintenance on channel lock, channel unlock, and startup.

restartMessage specifies that individual channel RESTARTs when the SigChan starts up. If this attribute is set to ***restartMessage***, a RESTART message is used to send at startup and channel unlock.

Mib: VnetNisSig

Values: globalOnStartup (gbl)
serviceMessage (svc)
restartMessage (rest)

Default: restartMessage

COLLECTED STATS SignallingChannel NisSig

Description: The statistics record generated by the SignallingChannel NisSig component.

ATTRIBUTE SigChan Nis peakActiveChannels

Description: This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.

Values: Decimal (0..30)

ATTRIBUTE SigChan Nis peakActiveVoiceChannels

Description: This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.

Values: Decimal (0..30)

ATTRIBUTE SigChan Nis peakActiveDataChannels

Description: This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.

Values: Decimal (0..30)

ATTRIBUTE SigChan Nis totalCallsToIf

Description This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan Nis totalCallsFromIf

Description This collected statistic counts the number of calls from the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan Nis nonCallAssocSessionsToIf

Description This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan Nis nonCallAssocSessionsFromIf

Description This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE SigChan Nis frmToIf

Description This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Nis frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Nis octetFromIf

Description	The number of bytes received from the link interface by *Framer* in the last statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SigChan Nis octetToIf

Description	The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.
Values	Decimal (0..4294967295)

COMPONENT SigChan Nis Framer (Framer)

Groups	"GROUP SigChan Nis Framer Provisioned (Prov)" "GROUP SigChan Nis Framer OsiState (State)" "GROUP SigChan Nis Framer Statistics (Stats)"
Scope	Application
Description	*SigChan/n Nis Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface. The *Framer* component provides provisionable attributes related to data path aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for link

interface data path statistics (such as frame counts and aborts).

Mib	VnetNisSig
Common Verbs	Help List Display

GROUP SigChan Nis Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	VnetNisSig
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP SigChan Nis Framer OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VnetNisSig
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan Nis Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: VnetNisSig

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE SigChan Nis Framer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: VnetNisSig

Values: idle
active (activ)
busy

Default: idle

GROUP SigChan Nis Framer Statistics (Stats)

Properties: Operational

Description	This group contains the operational statistics data for a *Framer* component.
Mib	VnetNisSig

ATTRIBUTE SigChan Nis Framer frmToIf

Access	Read only
Description	This attribute counts the number of frames transmitted to the link interface by *Framer.* This count wraps to zero after reaching its maximum value.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer frmFromIf

Access	Read only
Description	This attribute counts the number of frames received from the link interface by *Framer.* This count wraps to zero after reaching its maximum value.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by *Framer.*
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer aborts

Access	Read only
Description	This attribute counts the total number of aborts received. This count wraps to zero after reaching its maximum value.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors. This count wraps to zero after reaching its maximum value.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer lrcErrors

Access	Read only
Description	This attribute counts the total number of frames with LRC errors. This count wraps to zero after reaching its maximum value.
Mib	VnetNisSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Nis Framer nonOctetErrors

Access	Read only

Description

This attribute counts the total number of frames that were non octet aligned.
This count wraps to zero after reaching its maximum value.

Mib VnetNisSig

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE SigChan Nis Framer overruns

Access Read only

Description

This attribute counts the total number of frames received from the link for which overruns occurred.
This count wraps to zero after reaching its maximum value.

Mib VnetNisSig

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE SigChan Nis Framer underruns

Access Read only

Description

This attribute counts the total number of frames transmitted to the link for which underruns occurred.
This count wraps to zero after reaching its maximum value.

Mib VnetNisSig

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE SigChan Nis Framer largeFrmErrors

Access Read only

Description

This attribute counts the total number of frames received which

were too large (longer than 500 bytes).
This count wraps to zero after reaching its maximum value.

Mib: VnetNisSig

Values: Decimal (0..4294967295)

Default: 0

COMPONENT SigChan EuroIsdn (EIsdn)

Groups:
"GROUP SigChan EIsdn Layer2Options (L2)"
"GROUP SigChan EIsdn Layer3Options (L3)"
"GROUP SigChan EIsdn Provisioned (Prov)"
"GROUP SigChan EIsdn OsiState (State)"
"GROUP SigChan EIsdn Statistics (Stats)"
"GROUP SigChan EIsdn Operational (Oper)"
"GROUP SigChan EIsdn Tools"
"GROUP SigChan EIsdn Options (Opt)"
"GROUP SigChan EIsdn EuroSpecificProv"

"COLLECTED STATS SignallingChannel EuroIsdn"

Scope: Device

Description:
SigChan/n EuroIsdn
The *EuroIsdn* component defines the characteristics of the signalling channel's connection to the external equipment on the Euro ISDN UNI (ETSI-T Interface).

Mib: VnetEuroIsdn

Subcomponents: "COMPONENT SigChan EIsdn Framer (Framer)"

Common Verbs:
Help
List
Display
Add
DELete

GROUP SigChan EIsdn Layer2Options (L2)

Properties: Provisioned

Description	This group specifies the provisionable layer 2 attributes of the Euro ISDN (ETSI-T) protocol.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies duration of the layer 2 enable request timer.
Mib	VnetEuroIsdn
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE SigChan Elsdn t200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum elapsed time between a layer 2 frame and its acknowledgment.
Mib	VnetEuroIsdn
Values	Decimal (1..20)
Units	seconds
Default	1

ATTRIBUTE SigChan Elsdn n200

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the maximum number of re-transmissions of a layer 2 frame.
Mib	VnetEuroIsdn
Values	Decimal (1..8)
Default	3

ATTRIBUTE SigChan EIsdn t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time during which layer 2 frames may be absent. Expiry triggers a check on whether the far end is alive.
Mib	VnetEuroIsdn
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE SigChan EIsdn circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of sequentially numbered I frames (that is, window size (k)) that may be unacknowledged at any given time for a SAP supporting primary rate (64kbit/s) signalling.
Mib	VnetEuroIsdn
Values	Decimal (1..127)
Default	7

GROUP SigChan Elsdn Layer3Options (L3)

Properties	Provisioned
Description	This group represents the provisionable Layer 3 timer attributes of a the Euro ISDN (ETSI-T) protocol.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn t310

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies duration of the call proceeding state timer.
Mib	VnetEuroIsdn
Values	Decimal (10..120)
Units	seconds
Default	30

GROUP SigChan Elsdn Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the D-channel signalling link.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn side

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the interface is the network or user side of the connection. The parameter applies to both the layer 2 and layer 3 of the interface. In addition, if this attribute is set to ***network***, then the interface is master during channel

	negotiation. If this attribute is set to ***user***, then the interface is slave during channel negotiation.
Mib	VnetEuroIsdn
Values	network user
Default	network

ATTRIBUTE SigChan Elsdn maxNonCallConcurrent (nonCall)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of simultaneous active non call-associated sessions that are allowed. Reduction of the value does not impact NCAS sessions already in progress.
Mib	VnetEuroIsdn
Values	Decimal (0..30)
Default	30

ATTRIBUTE SigChan Elsdn overlapSending (ovls)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether overlap sending to the PBX is enabled.
Mib	VnetEuroIsdn
Values	enabled disabled
Default	enabled

ATTRIBUTE SigChan EIsdn overlapReceiving (ovlr)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether overlap receiving from the PBX is enabled.
Mib	VnetEuroIsdn
Values	enabled disabled
Default	enabled

GROUP SigChan EIsdn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan EIsdn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: VnetEuroIsdn

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE SigChan EIsdn operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: VnetEuroIsdn

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE SigChan EIsdn usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	VnetEuroIsdn
Values	idle active (activ) busy
Default	idle

GROUP SigChan EIsdn Statistics (Stats)

Properties	Operational
Description	This group provides the statistical attributes for the *SigChan/x EuroIsdn* component.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan EIsdn totalCallsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls that have been made to the interface. The value wraps to zero when it exceeds its maximum.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EIsdn totalCallsFromIf

Access	Read: All Write: Illegal

Description	This attribute counts the total number of calls that have been made from the interface. The value wraps to zero when it exceeds its maximum.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EIsdn nonCallAssocSessionsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non call-associated sessions that have been made to the interface. The value wraps to zero when it exceeds its maximum.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EIsdn nonCallAssocSessionsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non call-associated sessions that have been made from the interface. The value wraps to zero when it exceeds its maximum.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

GROUP SigChan EIsdn Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the *SigChan/x EuroIsdn* component.

Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes channels used by both, data and voice calls.
Mib	VnetEuroIsdn
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Elsdn activeVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently used by voice calls. This includes modem calls.
Mib	VnetEuroIsdn
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Elsdn activeDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently used by data calls. This does not include modem data.
Mib	VnetEuroIsdn
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EIsdn peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum value of the *activeChannels* attribute during the last polling period.
Mib	VnetEuroIsdn
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EIsdn peakActiveVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum value of the *activeVoiceChannels* attribute during the last polling period.
Mib	VnetEuroIsdn
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EIsdn peakActiveDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum value of the *activeDataChannels* attribute during the last polling period.
Mib	VnetEuroIsdn
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan EIsdn dChanStatus (dCh)

Access	Read: All Write: Illegal

Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgment from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being initialized.
Mib	VnetEuroIsdn
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP SigChan Elsdn Tools

Properties	Operational
Description	This contains a series of operational attributes which turn on and off several kinds of tracing.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn tracing

Access	Read: All Write: All
Description	This attribute defines which types of tracing are active on the signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueueSize* attribute of the

Lp/x Eng Ds/debug component must be greater than 0 and the operator's NMIS session must have the debug stream included in its data stream list (for example: *set Nmis Telnet Session/1 dataStreams deb*). Several types of tracing can be enabled simultaneously.

Note that tracing consumes additional CPU resources and slows down call processing on a heavily loaded card. If there is message block exhaustion tracing is suspended for a period of time and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages.

Types of tracing include:
protocolErrors - get details of any protocol errors which are occurring. Protocol errors are also reported in summary form as alarms.
q931Summary - summary of the Q.931 messages on the signalling link.
q931Hex - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Q.921 messages in hex format being sent and received on the link.

Mib	VnetEuroIsdn
Set of	protocolErrors q931Summary q931Hex q931Symbolic portHex
Default	No default

GROUP SigChan EIsdn Options (Opt)

Properties	Provisioned
Description	This group specifies the provisionable attributes specific to the Euro ISDN (ETSI-T) protocol.

Mib	VnetEuroIsdn

ATTRIBUTE SigChan EIsdn variant

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the specific variant of the Euro ISDN (ETSI-T) protocol. Supported variants are: ***etsiGeneric*** - provides generic ETSI-T protocol. Only proxy of the NETWORK side of the protocol is implemented, ***austria*** - provides ETSI-T protocol variant as per the Austrian national specification. Only the USER side of the protocol is implemented, ***germany*** - provides ETSI-T protocol variant as per the German national specification. Only the USER side of the protocol is implemented.
Mib	VnetEuroIsdn
Values	etsiGeneric austria germany
Default	etsiGeneric

ATTRIBUTE SigChan EIsdn connectServiceTimer (cst)

Access	Read: All Write: All
Description	This attribute specifies duration of the “await connection” supervisory timer which applies to non call-associated sessions providing bearer-independent connection-oriented transport for supplementary services. The timer is started at the ingress node when a REGISTER message is received from the source PBX and stopped when a virtual circuit with the egress node is established. If the timer expires, the non call-associated session is cleared. The “await connection” timer (attribute *connectServiceTimer*) together with “await response” timer (attribute

	responseServiceTimer) provide equivalent of the T-ACTIVATE timer described in the relevant supplementary service specifications. A change of the timer value does not apply to timers already running.
Mib	VnetEuroIsdn
Values	Decimal (1..10)
Units	seconds
Default	8

ATTRIBUTE SigChan EIsdn responseServiceTimer (rst)

Access	Read: All Write: All
Description	This attribute specifies duration of the “await response” supervisory timer which applies to non call-associated sessions providing bearer-independent connection-oriented transport for supplementary services. The timer is started at the ingress node when creation of a virtual circuit with the egress node is confirmed and stopped when the first message from the destination PBX is received. If the timer expires, the non call-associated session is cleared. The “await connection” timer (attribute *connectServiceTimer*) together with “await response” timer (attribute *responseServiceTimer*) provide equivalent of the T-ACTIVATE timer described in the relevant supplementary service specifications. A change of the timer value does not apply to timers already running.
Mib	VnetEuroIsdn
Values	Decimal (1..10)
Units	seconds
Default	8

ATTRIBUTE SigChan Elsdn lifetimeServiceTimer (lst)

Access	Read: All Write: All
Description	This attribute specifies duration of the service lifetime supervisory timer which applies to non call-associated sessions providing bearer-independent connection-oriented transport for supplementary services. The timer limits the duration of a virtual call. It is started at the ingress node at the moment the first response message from the destination PBX has been received and stopped when the non call-associated session is released. If the timer expires, the non call-associated session is cleared. This timer is equivalent to the T-CCBS6 timer described in the relevant supplementary service specifications. A change of the timer value does not apply to timers already running.
Mib	VnetEuroIsdn
Values	Decimal (1..200)
Units	minutes
Default	60

GROUP SigChan Elsdn EuroSpecificProv

Properties	Provisioned
Description	This group provides Euro ISDN protocol specific provisioning.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn chanMaintenanceHandling (cmh)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies how channel maintenance events should be handled upon startup. Channel maintenance events include

locking and unlocking a channel or channel registration. The decision is either to send individual channel RESTART message, or global interface restart at startup.

A RESTART is always sent on unlocking a channel.

globalOnStartup provides the minimum required functionality at startup, without any individual channel confirmation. Note that when this is set, channel RESTART is still used for channel unlock. ***globalOnStartup*** applies to *SigChan* startup only.

restartMessage specifies that individual channel RESTARTs when the SigChan starts up. If this attribute is set to ***restartMessage***, a RESTART message is used to send at startup and channel unlock, Global Restart is implemented first for in this choice.

restartOnlyMessage specifies that individual channel RESTARTs when the SigChan starts up. If this attribute is set to ***restartOnlyMessage***, a RESTART message is used to send at startup and channel unlock, Global Restart is not implemented for this choice.

Mib	VnetEuroIsdn
Values	globalOnStartup (gbl) restartMessage (rest) restartOnlyMessage (reso)
Default	globalOnStartup

COLLECTED STATS SignallingChannel EuroIsdn

Description	The statistics record generated by the SignallingChannel EuroIsdn component.

ATTRIBUTE SigChan EIsdn peakActiveChannels

Description	This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan Elsdn peakActiveVoiceChannels

Description	This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan Elsdn peakActiveDataChannels

Description	This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan Elsdn totalCallsToIf

Description	This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Elsdn totalCallsFromIf

Description	This collected statistic counts the number of calls from the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Elsdn nonCallAssocSessionsToIf

Description	This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Elsdn nonCallAssocSessionsFromIf

Description	This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan EIsdn frmToIf

Description: This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE SigChan EIsdn frmFromIf

Description: This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE SigChan EIsdn octetFromIf

Description: The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE SigChan EIsdn octetToIf

Description: The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.

Values: Decimal (0..4294967295)

COMPONENT SigChan EIsdn Framer (Framer)

Groups: "GROUP SigChan EIsdn Framer Provisioned (Prov)"
"GROUP SigChan EIsdn Framer OsiState (State)"
"GROUP SigChan EIsdn Framer Statistics (Stats)"

Scope: Application

Description: *SigChan/n EuroIsdn Framer*

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to data path aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface data path statistics (such as frame counts and aborts).

Mib: VnetEuroIsdn

Common Verbs:
- Help
- List
- Display

GROUP SigChan EIsdn Framer Provisioned (Prov)

Properties: Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib: VnetEuroIsdn

ATTRIBUTE SigChan EIsdn Framer interfaceName

Access: Read and write

Criticality: Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib: VnetEuroIsdn

Values: Link (Hardware, applicationFramerName)

Default	No default

GROUP SigChan Elsdn Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VnetEuroIsdn
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan Elsdn Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VnetEuroIsdn
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE SigChan Elsdn Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VnetEuroIsdn
Values	idle active (activ) busy

Default	idle

GROUP SigChan Elsdn Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *Framer* component.
Mib	VnetEuroIsdn

ATTRIBUTE SigChan Elsdn Framer frmToIf

Access	Read only
Description	This attribute counts the frames transmitted to the link interface by the *Framer.* The counter wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer frmFromIf

Access	Read only
Description	This attribute counts the frames received from the link interface by the *Framer.* The counter wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer octetFromIf

Access	Read only
Description	This attribute counts the bytes received from the link interface by the *Framer.*

	The counter wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer aborts

Access	Read only
Description	This attribute counts the aborts received.
	The counter wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer crcErrors

Access	Read only
Description	This attribute counts the frames with CRC errors.
	The counter wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer lrcErrors

Access	Read only
Description	This attribute counts the frames with LRC errors.
	This count wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer nonOctetErrors

Access	Read only
Description	This attribute counts the frames that were non octet aligned. This count wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer overruns

Access	Read only
Description	This attribute counts the frames received from the link for which overruns occurred. The counter wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Elsdn Framer underruns

Access	Read only
Description	This attribute counts the frames transmitted to the link for which underruns occurred. The counter wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan EIsdn Framer largeFrmErrors

Access	Read only
Description	This attribute counts the frames received which were too large (longer than 500 bytes). The counter wraps to zero when it exceeds its maximum value.
Mib	VnetEuroIsdn
Values	Decimal (0..4294967295)
Default	0

COMPONENT SigChan Gateway (Gw)

Groups	"GROUP SigChan Gw Operational (Oper)" "GROUP SigChan Gw Statistics (Stats)"
Scope	Application
Description	*SigChan/n Gateway* This component contains operational attributes which describe gateway capabilities of the *SigChan* component as well as the basic statistics related to calls requiring signalling protocol conversion.
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan Gw Operational (Oper)

Properties	Operational
Description	This group contains an operational attribute which indicates signalling protocol conversion capabilities of the *SigChan* component.
Mib	VoiceNetworking

ATTRIBUTE SigChan Gw gatewayCapability (gwc)

Access	Read only
Description	This attribute indicates the *SigChan* component's capability to convert from one access signalling type to another. Access signalling protocols (protocols between a node and external switching equipment, for example a PBX) are grouped into protocol groups. Protocols within the same protocol group are considered completely compatible. This means that no extra processing is needed when a call originates from an ingress link using protocol A and terminates on an egress link using protocol B if protocols A and B belong to the same protocol group. The following protocol groups are defined: ***etsiQsigPG*** - ETSI QSIG protocol group containing ETSI QSIG protocol, ***mcdnFamilyPG*** - MCDN Family protocol group containing NIS, Meridian Customer Defined Network (MCDN) peer to peer, and MCDN User to Network (UNI) protocols, ***analogAndCasPG*** - Analog and CAS protocol group containing most of the analog and channel associated signalling protocols with steady state line signalling and DTMF register signalling, ***euroIsdnPG*** - EURO ISDN protocol group containing most of the European national ISDN protocols based on ETSI ISDN (ETSI-T) standard. For every of the protocols group this attribute indicates what is the level of protocol conversion support available on the *SigChan* component: ***noGw*** - no protocol conversion available for the protocol group, ***singleEndedGw*** - only full protocol conversion available for the protocol group (that is the *SigChan* component on the other side of the subnet does not have to get involved in the gateway processing), ***doubleEndedGw*** - only partial protocol conversion available for the protocol group (that is both *SigChan* components, ingress and egress, have to get involved in signalling conversion), ***singleOrDoubleEndedGw*** - both, full and partial protocol conversions available for the protocol group, ***nativePG*** - the protocol group is the native protocol group for the *SigChan* component.

Mib	VoiceNetworking
Vector of	noGw singleEndedGw doubleEndedGw singleOrDoubleEndedGw nativePG
Index	etsiQsigPG mcdnPG analogAndCasPG euroIsdnPG
Default	No default

GROUP SigChan Gw Statistics (Stats)

Properties	Operational
Description	This group provides signalling gateway related statistical attributes for the *SigChan* component.
Mib	VoiceNetworking

ATTRIBUTE SigChan Gw requiredConversions (rc)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls that have been made from the subnet to the interface (that is external equipment, for example a PBX) which needed signalling protocol conversion. The value wraps to zero when it exceeds its maximum. The count includes both, supported and unsupported conversions.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Gw unsupportedConversions (uc)

Access	Read: All Write: Illegal

Description	This attribute counts the total number of calls that have been made from the subnet to the interface (that is external equipment, for example a PBX) which needed signalling protocol conversion but were rejected since the requested conversion was not supported. The value wraps to zero when it exceeds its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

COMPONENT SigChan NcaSession (Ncas)

Instance	Hex (H.0..H.ffff)
Groups	"GROUP SigChan Ncas Operational (Oper)"
Scope	Application
Description	*SigChan/n NcaSession/n* This component represents a single Non Call-Associated signalling Session (NCAS) serviced by the *SigChan* component. Non call-associated signalling sessions are only supported on some Common Channel Signalling (CCS) protocols (for example ETSI QSIG, ETSI UNI ISDN). The instance value of a *NcaSession* component is an arbitrary number which does not change during an individual NCAS session.
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP SigChan Ncas Operational (Oper)

Properties	Operational
Description	This group contains various operational attributes of a non call-associated signalling session serviced by a *SigChan* component.
Mib	VoiceNetworking

ATTRIBUTE SigChan Ncas direction

Access	Read only
Description	This attribute indicates what is the direction of the non call-associated signalling session. The attribute may have the following values: ***ingress***, the NCAS session is originated by the external equipment into the subnet ***egress***, the NCAS session is originated by the subnet into the external equipment
Mib	VoiceNetworking
Values	ingress egress
Default	No default

ATTRIBUTE SigChan Ncas callReference

Access	Read only
Description	This attribute indicates which call reference the NCAS session uses.
Mib	VoiceNetworking
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE SigChan Ncas calledDirectoryNumber (calledDn)

Access	Read: All Write: Illegal
Description	This attribute indicates the dialled number for the NCAS session.
Mib	VoiceNetworking
Values	BCD (1..32)
Default	No default

ATTRIBUTE SigChan Ncas duration

Access	Read only
Description	This attribute indicates duration of the NCAS session since its establishment.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Units	minutes
Default	0

COMPONENT SigChan McdnSig (Mcdn)

Groups	"GROUP SigChan Mcdn Layer2Options (L2)" "GROUP SigChan Mcdn Layer3Options (L3)" "GROUP SigChan Mcdn Provisioned (Prov)" "GROUP SigChan Mcdn OsiState (State)" "GROUP SigChan Mcdn Statistics (Stats)" "GROUP SigChan Mcdn Operational (Oper)" "GROUP SigChan Mcdn Tools" "GROUP SigChan Mcdn ConnectionlessFeatures (Cls)" "GROUP SigChan Mcdn ConnectionOrientedFeatures (Co)"

"COLLECTED STATS SignallingChannel McdnSig"

Scope	Device
Description	*SigChan/n McdnSig* The *McdnSig* component defines the operational characteristics of the signalling channel's connection to the external equipment.

	This is the proprietary MCDN protocol as based on Nortel specification TR-88-5003.
Mib	VnetMcdnSig
Subcomponents	"COMPONENT SigChan Mcdn Framer (Framer)"
Common Verbs	Help List Display Add DELete

GROUP SigChan Mcdn Layer2Options (L2)

Properties	Provisioned
Description	This group specifies the provisionable layer 2 attributes of the Q.931 ITU-T protocol.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn t23

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the layer 2 enable request timer.
Mib	VnetMcdnSig
Values	Decimal (1..15)
Units	seconds
Default	10

ATTRIBUTE SigChan Mcdn t200

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the maximum time between a layer 2 frame and its acknowledgment.
Mib	VnetMcdnSig
Values	Decimal (1..20)
Units	seconds
Default	1

ATTRIBUTE SigChan Mcdn n200

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of re-transmissions of a layer 2 frame.
Mib	VnetMcdnSig
Values	Decimal (1..8)
Default	3

ATTRIBUTE SigChan Mcdn t203

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum time for which layer 2 frames may be absent. Expiry triggers a check on whether the far end is alive.
Mib	VnetMcdnSig
Values	Decimal (2..40)
Units	seconds
Default	10

ATTRIBUTE SigChan Mcdn circuitSwitchedK

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of sequentially numbered I frames (that is, window size (k)) that may be unacknowledged at any given time for a SAP supporting primary rate (64kbit/s) signalling.
Mib	VnetMcdnSig
Values	Decimal (1..127)
Default	7

GROUP SigChan Mcdn Layer3Options (L3)

Properties	Provisioned
Description	This group represents the provisionable Layer 3 timer attributes of the MCDN signalling protocol.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn t302

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the overlap receiving timer; in a UNI, this is network to user, but for Peer to Peer it is all incoming calls. This attribute is ignored if overlap signalling is disabled.
Mib	VnetMcdnSig
Values	Decimal (10..30)
Units	seconds
Default	15

ATTRIBUTE SigChan Mcdn t304

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the overlap sending timer; in a UNI, this is user to network, but for Peer to Peer it is all outgoing calls. This attribute is ignored if overlap signalling is disabled.
Mib	VnetMcdnSig
Values	Decimal (10..30)
Units	seconds
Default	10

ATTRIBUTE SigChan Mcdn t309

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the data link disconnect timer; used to ride out temporary failures.
Mib	VnetMcdnSig
Values	Decimal (15..120)
Units	seconds
Default	90

ATTRIBUTE SigChan Mcdn t310

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the call proceeding state timer.
Mib	VnetMcdnSig

Values	Decimal (10..120)
Units	seconds
Default	10

ATTRIBUTE SigChan Mcdn t316

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the restart request response timer. It must be set greater than *t317*.
Mib	VnetMcdnSig
Values	Decimal (31..180)
Units	seconds
Default	120

ATTRIBUTE SigChan Mcdn t317

Access	Read: All Write: Illegal
Criticality	Process
Description	This attribute specifies the restart operation timer, used when a RESTART was received.
Mib	VnetMcdnSig
Values	Decimal (30..179)
Units	seconds
Default	30

GROUP SigChan Mcdn Provisioned (Prov)

Properties	Provisioned
Description	This group defines the general options of the D-channel signalling link.

Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn side

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether the interface provides layer 2 and 3 services equivalent to the ITU-T network or user side of the connection. If this attribute is set to ***network***, then the interface is master during channel negotiation, and uses network side layer 2 command/response bits. If this attribute is set to ***user***, then the interface is slave during channel negotiation, and uses user side layer 2 command/response bits. Note that although a peer to peer protocol has no true network or user side, for channel negotiation and layer 2 handling the peer to peer and UNI protocols have identical function. A true UNI may also have uni-directional messages and/or message elements; the peer to peer has all elements bidirectional.
Mib	VnetMcdnSig
Values	network user
Default	network

ATTRIBUTE SigChan Mcdn maxNonCallConcurrent (nonCall)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of simultaneous active non-call transactions that are allowed.
Mib	VnetMcdnSig
Values	Decimal (1..30)
Default	30

ATTRIBUTE SigChan Mcdn overlapSending (ovls)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether overlap sending to the PBX is enabled.
Mib	VnetMcdnSig
Values	enabled disabled
Default	enabled

ATTRIBUTE SigChan Mcdn overlapReceiving (ovlr)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether overlap receiving from the PBX is enabled.
Mib	VnetMcdnSig
Values	enabled disabled
Default	enabled

ATTRIBUTE SigChan Mcdn chanMaintenanceHandling (cmh)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies handling of channel maintenance events such as locking and unlocking a channel or channel registration on start-up. The decision here is whether to send individual channel RESTART messages, SERVICE messages, or nothing. Note that channel registration only occurs after the global

interface restart at startup.

The attribute controls start-up handling absolutely, and channel lock and unlock conditionally. That is, setting this to enable SERVICE messages ensures SERVICE messages at start-up and whenever a channel goes into or out of service. However, if this is not set to enable SERVICE messaging, a RESTART is always sent on unlocking a channel.

globalOnStartup provides the minimum required function at start-up, without any individual channel confirmation. Note that when this is set, channel RESTART is still used for channel unlock. ***globalOnStartup*** applies to *SigChan* start-up only.

serviceMessage enables sending and receiving SERVICE messages. If enabled, SERVICE messages are always used for channel maintenance on channel lock, channel unlock and start-up.

restartMessage provides individual channel RESTARTs when a *SigChan* starts up. If enabled, the RESTART is used at start-up and channel unlock. However, if both SERVICE and RESTART messages are disabled, the RESTART will still be used when a channel unlocks.

Mib	VnetMcdnSig
Values	globalOnStartup (gbl) serviceMessage (svc) restartMessage (rest)
Default	restartMessage

GROUP SigChan Mcdn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VnetMcdnSig
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan Mcdn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: VnetMcdnSig

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE SigChan Mcdn usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: VnetMcdnSig

Values: idle
active (activ)
busy

Default: idle

GROUP SigChan Mcdn Statistics (Stats)

Properties: Operational

Description: This group provides the operational components for the *McdnSig* component.

Mib: VnetMcdnSig

ATTRIBUTE SigChan Mcdn totalCallsToIf

Access: Read: All
Write: Illegal

Description	This attribute counts the total number of calls that have been made to the interface. The value wraps when it reaches its maximum.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn totalCallsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls from the interface. The value wraps when it reaches its maximum.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn nonCallAssocSessionsToIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non-call associated sessions to the interface. The value wraps when it reaches its maximum.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn nonCallAssocSessionsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts the total number of non-call associated sessions from the interface. The value wraps when it reaches its maximum.

Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

GROUP SigChan Mcdn Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the MCDN signalling.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active channels. This includes data and voice channels.
Mib	VnetMcdnSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Mcdn activeVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of channels that are currently carrying voice.
Mib	VnetMcdnSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Mcdn activeDataChannels

Access	Read: All Write: Illegal

Description	This attribute indicates the number of channels that are currently carrying data. This does not include modem data.
Mib	VnetMcdnSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Mcdn peakActiveChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of channels that have been active on this signalling channel during the last polling period.
Mib	VnetMcdnSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Mcdn peakActiveVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of voice channels that have been active on this signalling channel during the last polling period.
Mib	VnetMcdnSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Mcdn peakActiveDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of data channels that have been active on this signalling channel during the last polling period.

Mib	VnetMcdnSig
Values	Decimal (0..128)
Default	0

ATTRIBUTE SigChan Mcdn dChanStatus (dCh)

Access	Read: All Write: Illegal
Description	This attribute indicates the state of the D-channel. ***outOfService*** means that there is no layer 2 or layer 3 connectivity to the PBX. ***establishing*** means that the signalling channel is attempting to stage the layer 2. ***established*** means that the layer 2 is enabled. If the signalling channel stays in the ***established*** state, then it is waiting for a restart from the PBX. ***enabling*** means that the resources for processing calls are being initialized. If the signalling channel stays in the ***enabling*** state then it is waiting for a restart acknowledgement from the PBX. ***inService*** means that the resources for processing calls are available. ***restarting*** means that the resources for call processing are being re-initialized.
Mib	VnetMcdnSig
Values	outOfService establishing established enabling inService restarting
Default	No default

GROUP SigChan Mcdn Tools

Properties	Operational
Description	This contains a series of operational attributes which turn on and off several kinds of tracing.

Mib VnetMcdnSig

ATTRIBUTE SigChan Mcdn tracing

Access Read: All
Write: All

Description This attribute defines which types of tracing are active for this signalling channel. The tracing messages are sent to the debug stream. To see the messages the *agentQueue* attribute in *Col/debug* must be greater than 0 and a Telnet NMIS session must list the debug stream in its data streams (ex. *set nmis telnet session/1 dataStreams debug*). Different types of tracing can be enabled simultaneously.

Note that tracing consumes additional CPU resources and will slow down call processing on a heavily loaded card. If there is message block exhaustion tracing will be suspended for a period and then automatically re-enabled. An alarm is generated on tracing suspension and resumption. This mechanism protects the function processor against excessive numbers of tracing messages.

Types of tracing include:
protocolErrors - get details of any protocol errors which are occurring. Protocol errors are also reported in summary form as alarms.
q931Summary - Summary of the Q.931 messages on the signalling link, including certain call details (calling number, called number, release codes).
q931Hex - Q.931 messages displayed in hex format. Useful to determine protocol compliance in case of errors reported on local or remote ends.
q931Symbolic - Q.931 messages parsed to give maximum detail. Useful for understanding content of messages flowing on the link.
portHex - Messages in hex format being sent and received on the link.

Mib	VnetMcdnSig
Set of	protocolErrors q931Summary q931Hex q931Symbolic portHex
Default	No default

ATTRIBUTE SigChan Mcdn messageTraced (msgtrc)

Access	Read: All Write: All
Description	This attribute specifies the type of ISDN messages that are to be traced.
Mib	VnetMcdnSig
Set of	alerting callProceeding (callProc) connectionlessFacility (clsFac) congestionControl (contCtrl) connect connectAcknowledge (connectAck) disconnect facility (fac) facilityAcknowledge (facAck) facilityReject (facRej) information (info) notify progress register

	releaseComp (relComp) release restart restartAcknowledge (restartAck) service serviceAcknowledge (serviceAck) setup setupAcknowledge (setupAck) status statusEnquiry userInformation (userInfo) all
Default	(alerting, callProceeding, connectionlessFacility, congestionControl, connect, connectAcknowledge, disconnect, facility, facilityAcknowledge, facilityReject, information, notify, progress, register, releaseComp, release, restart, restartAcknowledge, service, serviceAcknowledge, setup, setupAcknowledge, status, statusEnquiry, userInformation)

ATTRIBUTE SigChan Mcdn directionTraced (dirt)

Access	Read: All Write: All
Description	This attribute indicates whether the incoming (from PBX), outgoing (to PBX), or both incoming and outgoing messages are traced.
Mib	VnetMcdnSig
Set of	incoming outgoing
Default	(incoming, outgoing)

GROUP SigChan Mcdn ConnectionlessFeatures (Cls)

Properties	Provisioned
Description	This group enables and disables the support of the MCDN proprietary signalling for connectionless features on the local signalling channel.

Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn clsFeaturesSupported (clsfsup)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the features to be supported by MCDN "TCAP" connection-less messaging. Note that some features such as Network ACD combine connection-less and connection oriented. In the NACD case, the connection-less messaging enables the source and target PBXs to establish the networked relationship, and calls sent across the network (connection oriented) will contain basic information relating the call to the feature. Feature Definitions: ***networkAcd***: transfer of a call from a pool of agents to a second pool of agents across the network. ***networkMessageService***: message waiting capability (for example, lamps on sets). Also includes signalling for voice mail, but is not limited to voice mail. ***networkVoiceMail***: a specific subset of Network Message Service, separated functionally as it always terminates on an interactive voice response mailbox application. ***networkRingAgain***: ring again to remote sets. ***electronicLock***: change of set capabilities by a remote user dialling the applicable code and password. ***remoteCallForward***: call forwarding a phone via applicable code and password. ***callPickupNetworkWide*** (call pickup world wide): scan for a ringing call on another node, to enable the scanning set to pick up the call. ***networkPackage1***: a collection of other features including but not limited to network clock synchronization. Note that on the Meridian 1, this is a general purpose group used for very small features not requiring a new ISDN Facility feature type. ***isdnApplicationInterface***: network wide support of a number of Meridian 1 Application Module Link features. ***mobilityMultisiteNetworking***: the capability to use a wireless

phone in multiple sites, by having the phone register on arrival at the new site, and having the PBX at the new site negotiate the set "relocation" with the base PBX.
miscellaneous: Any feature that is not listed above.

Mib: VnetMcdnSig

Set of:
networkAcd (nacd)
networkMessageService (nms)
networkRingAgain (nrag)
networkVoiceMail (nvm)
electronicLock (elck)
remoteCallForward (rcf)
callPickupWorldWide (cpww)
networkPackage1 (net1)
isdnApplicationInterface (isdnapi)
mobilityMultisiteNetworking (mmn)
miscellaneous (misc)

Default: (networkAcd, networkMessageService, networkRingAgain, networkVoiceMail, electronicLock, remoteCallForward, callPickupWorldWide, networkPackage1, isdnApplicationInterface, mobilityMultisiteNetworking, miscellaneous)

GROUP SigChan Mcdn ConnectionOrientedFeatures (Co)

Properties: Provisioned

Description: This group enables and disables the support of the MCDN proprietary signalling for the listed features on the local signalling channel.

Mib: VnetMcdnSig

ATTRIBUTE SigChan Mcdn dropBackCongestion (dbb)

Access: Read: All
Write: All

Criticality: Process

Description: This attribute specifies if the Meridian 1 Drop Back Congestion Handling for trunks is enabled, and what type is being supported.

Mib	VnetMcdnSig
Values	noDropBackAllowed (ndbb) dropBackToOriginator (dborig) dropBackToPriorNode (dbnode)
Default	dropBackToOriginator

ATTRIBUTE SigChan Mcdn networkNameDisplay (name)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies what Name Display is supported. ***nd1*** corresponds to the Meridian 1 RCAP (Remote CAPability) ***nd1***. This translates as caller provides name info in SETUP, ringing party name in ALERTING, redirection name in NOTIFY, and answering party name in CONNECT (as applicable, and if the name changes). ***nd2*** corresponds to the Meridian 1 RCAP (Remote CAPability) ***nd2***. This translates as caller provides name info in SETUP, answering party provides name in NOTIFY on answer. ***nd3*** corresponds to the Meridian 1 RCAP (Remote CAPability) ***nd3***, which is ***nd1*** plus name information in call clearing messages (busy user, etc.) where a specific user was found but either could not answer or cleared the call. This corresponds to the QSIG name display.
Mib	VnetMcdnSig
Set of	nameDisplay1 (nd1) nameDisplay2 (nd2) nameDisplay3 (nd3)
Default	No default

ATTRIBUTE SigChan Mcdn multisiteBusinessGroup (mbg)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies whether to enable transport for the Meridian 1 Multisite Business Group IE. The Meridian 1 allows multiple "Tenants" to exist on a single PBX. These Tenants have limited access to each other and to system resources. That is, users associated with “Tenant group one” cannot use trunks, attendants, and features from another group, and so forth. The Multi-Site Business Group is a single Tenant existing on more than one PBX. As an example, “tenant one” on a PBX may "own" resources belonging to “tenant one” on another PBX. The Multi-Site Business Group IE as used in the Meridian 1 Network Tenant Services feature enables linking the two tenants together.
Mib	VnetMcdnSig
Values	transport discard
Default	transport

ATTRIBUTE SigChan Mcdn conOrFeaturesSupported (confsup)

Access	Read: All Write: All
Criticality	Process
Description	This attribute indicates the features to be supported by MCDN “ROSE” connection oriented messaging. Feature Definitions: ***networkAttendantService***: network wide support of Attendant (“operator”) services. ***classOfServiceTransport***: this is not a ROSE feature. Class of Service transport takes place in the called party number when provisioned on the Meridian 1 to use an ESN signalling type. ***trunkRouteOptimization***: dropping of redundant links in a call, when a set call forwards a call prior to answer.

remoteVirtualQueuing: queuing at a remote node without requiring a B channel to be kept up.
offHookQueuing: Queuing by maintaining the speech path to the queuing node.
networkCallTrace: call progress tracing across a network (that is, call reached node a, node b, terminated at c,...).
networkIntercom: network wide access to an intercom system on a Meridian 1.
callPickupNetworkWide: connection oriented messages associated with the TCAP call pickup scan operation. The messages that actually pick up the ringing call.
radioPaging: access to a radio paging system network wide, allowing single radio paging facilities in a relatively dense local PBX network.
networkAccess: information to enable access to PBX features from outside the network. Additional data is provided to identify access capabilities for a specific call. (Similar to transmitting authorization code capabilities network wide.)
antiTromboning: actually includes two capabilities - NAS (Network Attendant Service) and Trunk Anti-Tromboning. Calls that exit the subnet to a PBX and are transferred back to a network number via the same D channel can be optimized. If PBX A (node A) calls across the subnet to node B, D channel Z, to PBX B, and PBX B transfers across D channel Z to node B and therefore to PBX C/node C, this allows that call to simplify to PBX/node A to PBX/node C.
miscellaneous: Any feature that is not listed above.

Mib	VnetMcdnSig
Set of	networkAttendantService (nas) classOfServiceTransport (cos) trunkRouteOptimization (tro) remoteVirtualQueuing (rvq) networkCallId (nci) offHookQueuing (ohq) networkCallTrace (nctrc) networkIntercom (nint) callPickupNetworkWide (cpnw) radioPaging (radpag) networkAccess (netacc) antiTromboning (at) miscellaneous (misc)
Default	(networkAttendantService, classOfServiceTransport, trunkRouteOptimization, remoteVirtualQueuing, networkCallId, offHookQueuing, networkCallTrace, networkIntercom, callPickupNetworkWide, radioPaging, networkAccess, antiTromboning, miscellaneous)

COLLECTED STATS SignallingChannel McdnSig

Description	The statistics record generated by the SignallingChannel McdnSig component.

ATTRIBUTE SigChan Mcdn peakActiveChannels

Description	This collected statistic counts the maximum number of channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan Mcdn peakActiveVoiceChannels

Description	This collected statistic counts the maximum number of voice channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan Mcdn peakActiveDataChannels

Description	This collected statistic counts the maximum number of data channels that have been active on this signalling channel in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE SigChan Mcdn totalCallsToIf

Description	This collected statistic counts the total number of calls that have been made to the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Mcdn totalCallsFromIf

Description	This collected statistic counts the number of calls from the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Mcdn nonCallAssocSessionsToIf

Description	This collected statistic counts the number of non-call associated sessions to the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Mcdn nonCallAssocSessionsFromIf

Description	This collected statistic counts the number of non-call associated sessions from the interface in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE SigChan Mcdn frmToIf

Description	This collected statistic counts the number of frames transmitted to the link interface by *Framer* in the last statistics collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE SigChan Mcdn frmFromIf

Description

This collected statistic counts the number of frames received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Mcdn octetFromIf

Description The number of bytes received from the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE SigChan Mcdn octetToIf

Description The number of bytes sent to the link interface by *Framer* in the last statistics collection interval.

Values Decimal (0..4294967295)

COMPONENT SigChan Mcdn Framer (Framer)

Groups "GROUP SigChan Mcdn Framer Provisioned (Prov)"
"GROUP SigChan Mcdn Framer OsiState (State)"
"GROUP SigChan Mcdn Framer Statistics (Stats)"

Scope Application

Description *SigChan/n Mcdn Framer*

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to data path aspects of the hardware interface (such as CRC and frame length). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link

interface data path statistics (such as frame counts and aborts).

Mib	VnetMcdnSig
Common Verbs	Help List Display

GROUP SigChan Mcdn Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name. The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	VnetMcdnSig
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP SigChan Mcdn Framer OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VnetMcdnSig
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE SigChan Mcdn Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: VnetMcdnSig

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE SigChan Mcdn Framer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: VnetMcdnSig

Values: idle
active (activ)
busy

Default: idle

GROUP SigChan Mcdn Framer Statistics (Stats)

Properties: Operational

Description	This group contains the operational statistics data for a *Framer* component.
Mib	VnetMcdnSig

ATTRIBUTE SigChan Mcdn Framer frmToIf

Access	Read only
Description	This attribute counts the number of frames transmitted to the link interface by *Framer.* This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn Framer frmFromIf

Access	Read only
Description	This attribute counts the number of frames received from the link interface by *Framer.* This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn Framer octetFromIf

Access	Read only
Description	This attribute counts the number of bytes received from the link interface by *Framer.* This count wraps to zero when it exceeds its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE SigChan Mcdn Framer aborts

Access	Read only
Description	This attribute counts the total number of aborts received. This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn Framer crcErrors

Access	Read only
Description	This attribute counts the total number of frames with CRC errors. This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn Framer lrcErrors

Access	Read only
Description	This attribute counts the total number of frames with LRC errors. This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE SigChan Mcdn Framer nonOctetErrors

Access	Read only

Description

This attribute counts the total number of frames that were non octet aligned.
This count wraps to zero after reaching its maximum value.

Mib VnetMcdnSig

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE SigChan Mcdn Framer overruns

Access Read only

Description

This attribute counts the total number of frames received from the link for which overruns occurred.
This count wraps to zero after reaching its maximum value.

Mib VnetMcdnSig

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE SigChan Mcdn Framer underruns

Access Read only

Description

This attribute counts the total number of frames transmitted to the link for which underruns occurred.
This count wraps to zero after reaching its maximum value.

Mib VnetMcdnSig

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE SigChan Mcdn Framer largeFrmErrors

Access Read only

Description

This attribute counts the total number of frames received which

	were too large (longer than 500 bytes). This count wraps to zero after reaching its maximum value.
Mib	VnetMcdnSig
Values	Decimal (0..4294967295)
Default	0

COMPONENT SigChan InternalCauseMap (ICmap)

Groups	"GROUP SigChan ICmap InternalCauseCode (IntCause)"
Scope	Application
Description	*SigChan/n VnetInternalCauseManipulation* This component represents the provisionable attributes for the internal, node, and subnet generated cause codes of an establishing call. This component can be added for most of the ISDN (common channel signalling) protocols (*EtsiQsig*, *NisSig*, *EuroIsdn*) and cannot be added for a channel associated signalling protocol. This component is useful in a network where the originating PBX has restricted conditions to initiating alternate rerouting (rerouting on just one, specific, clearing cause code).
Mib	VoiceNetworking
Common Verbs	Help List Display Add DELete

GROUP SigChan ICmap InternalCauseCode (IntCause)

Properties	Provisioned
Description	This group contains the provisionable, node-generated clearing reasons of an establishing call.
Mib	VoiceNetworking

ATTRIBUTE SigChan ICmap egressLinkOutOfServCause

Access	Read: All Write: All
Description	This attribute specifies the cause code sent to the originating PBX when the data link to the remote PBX is down or when remote channels are in maintenance. If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 27.
Mib	VoiceNetworking
Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

ATTRIBUTE SigChan ICmap chanOrCircNotAvailCause

Access	Read: All Write: All
Description	This attribute specifies the cause code sent to the originating PBX if no timeslot is available for an incoming call. If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 34.
Mib	VoiceNetworking
Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

ATTRIBUTE SigChan ICmap tempFailureCause

Access	Read: All Write: All

Description	This attribute specifies the cause code sent to the originating PBX when PORS fails to establish a call due to congestion or a disabled trunk. It is also generated when the calling side fails to decode payload capabilities sent by the called side. If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 41.
Mib	VoiceNetworking
Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

ATTRIBUTE SigChan ICmap switchCongestCause

Access	Read: All Write: All
Description	This attribute specifies the cause code sent to the originating PBX when the allocation of internal resources for an incoming call fails. If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, typical cause code values sent back to the originating PBX are 42 for NIS and 41 for ETSI.
Mib	VoiceNetworking
Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

ATTRIBUTE SigChan ICmap reqChanOrCircNotAvailCause

Access	Read: All Write: All
Description	This attribute specifies the cause code sent to the originating PBX when an exclusively requested channel is not in service or a channel request is unsuccessful.

If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 44.

Mib: VoiceNetworking

Values: Decimal (0..127)
autoConfigure (auto)

Default: autoConfigure

ATTRIBUTE SigChan ICmap resourceUnavailCause

Access: Read: All
Write: All

Description: This attribute specifies the cause code sent to the originating PBX when the path establishing timer expires, when the switched voice service associated to a call is locked by CAS or when an H-channel is requested.
If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, typical cause code values sent back to the originating PBX are 47 for NIS and 44 for ETSI.

Mib: VoiceNetworking

Values: Decimal (0..127)
autoConfigure (auto)

Default: autoConfigure

ATTRIBUTE SigChan ICmap servNotAllowedCause

Access: Read: All
Write: All

Description: This attribute specifies the cause code sent to the originating PBX when the requested call type (voice or data) is not compatible with *Vroute typeOfRoute* at the calling side.
If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent

to the originating PBX is not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 63.

Mib: VoiceNetworking

Values: Decimal (0..127)
autoConfigure (auto)

Default: autoConfigure

ATTRIBUTE SigChan ICmap noSuchChannelCause

Access: Read: All
Write: All

Description: This attribute specifies the cause code sent to the originating PBX when a requested channel does not exist.
If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 82.

Mib: VoiceNetworking

Values: Decimal (0..127)
autoConfigure (auto)

Default: autoConfigure

ATTRIBUTE SigChan ICmap incompatDestCause

Access: Read: All
Write: All

Description: This attribute specifies the cause code sent to the originating PBX when the calling and called side capabilities do not match.
If the component is not added or if the default value ***autoConfigure*** is provisioned for the attribute the cause code sent to the originating PBX is not manipulated and the clearing process is not influenced. For this case, a typical cause code value sent back to the originating PBX is 88.

Mib: VoiceNetworking

Values	Decimal (0..127) autoConfigure (auto)
Default	autoConfigure

Nortel Networks Multiservice Switch 7400/15000/20000

Component SigChan

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component SrvTrace

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component SrvTrace

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COMPONENT ServiceTrace (SrvTrace)

Scope	Application
Description	*ServiceTrace* This component provides the ability to perform and monitor active service traces on a node. A semantic check that ensures that at least one receiver element exists and has been correctly provisioned.
Mib	TraceBase
Opt. Subcomp.	"COMPONENT SrvTrace Receiver (Rcvr)"
Dyn. Subcomp.	"COMPONENT SrvTrace Session"
Common Verbs	Help List Display Add DELete

COMPONENT SrvTrace Receiver (Rcvr)

Instance	String (1..8, ASCII)
Scope	Application
Description	*SrvTrace Receiver/<string>* This component identifies a remote receiver for traced data. The instance identification of the *Receiver* component is used to uniquely identify each receiver.

A semantic check that ensures that the receiver interface type has been added before activating the Service Trace feature.

Mib: TraceBase

Opt. Subcomp.:
"COMPONENT SrvTrace Rcvr X25"
"COMPONENT SrvTrace Rcvr FrameRelay (Fr)"
"COMPONENT SrvTrace Rcvr FrAtm"
"COMPONENT SrvTrace Rcvr Atm"

Common Verbs:
Help
List
Display
Add
DELete

COMPONENT SrvTrace Rcvr X25

Scope: Application

Description:
SrvTrace Rcvr/<string> X25
This component identifies the access method used by the receiver of the trace data as X.25.

Mib: X25TraceRcvr

Subcomponents:
"COMPONENT SrvTrace Rcvr X25 DataNetworkAddress (Dna)"
"COMPONENT SrvTrace Rcvr X25 DirectCall (Dc)"

Common Verbs:
Help
List
Display
Add
DELete

COMPONENT SrvTrace Rcvr X25 DataNetworkAddress (Dna)

Groups:
"GROUP SrvTrace Rcvr X25 Dna Address"
"GROUP SrvTrace Rcvr X25 Dna OutgoingOptions"

	"GROUP SrvTrace Rcvr X25 Dna IncomingOptions" "GROUP SrvTrace Rcvr X25 Dna CallOptions"
Scope	Application
Description	*SrvTrace Rcvr/<string> X25 DataNetworkAddress* This component defines the calling end of the trace connection. It includes the set of attributes that apply to a VC connection to an X.25 trace receiver.
Mib	X25TraceRcvr
Opt. Subcomp.	"COMPONENT SrvTrace Rcvr X25 Dna ClosedUserGroup (Cug)"
Common Verbs	Help List Display

GROUP SrvTrace Rcvr X25 Dna Address

Properties	Provisioned
Description	This group contains attributes common to all *Dna*s. This group is composed of two attributes that define a DNA. These attributes are used to interpret the format of the address digits.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Rcvr X25 Dna numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the DNA that is entered. The address may belong to an E.164 or X.121 plan.
Mib	X25TraceRcvr
Values	x121 e164
Default	x121

ATTRIBUTE SrvTrace Rcvr X25 Dna dataNetworkAddress (dna)

Access	Read and write
Description	The attribute contains digits which form a unique identifier for the calling end of the trace connection. DNA digits are selected and assigned by network operators. The maximum DNA length is 15 digits.
Mib	X25TraceRcvr
Values	BCD (1..15)
Default	No default

GROUP SrvTrace Rcvr X25 Dna OutgoingOptions

Properties	Provisioned
Description	This group defines call options for outgoing calls.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Rcvr X25 Dna outCalls (ouc)

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that outgoing calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Outgoing Calls Barred' feature. At least one of *outCalls* and *incCalls* must be set to a value of ***allowed*** for this Dna to be usable.
Mib	X25TraceRcvr
Values	disallowed allowed
Default	allowed

ATTRIBUTE SrvTrace Rcvr X25 Dna outDefaultPriority (odf)

Access	Read and write

Description	This attribute, if set to a value of ***normal***, indicates that the default priority for outgoing calls (from the DTE to the network) using this particular *Dna* is normal priority - if the priority is not specified in the call. If this attribute is set to a value of ***high*** then the default priority for outgoing calls using this particular *Dna* is high priority.
Mib	X25TraceRcvr
Values	normal high
Default	high

ATTRIBUTE SrvTrace Rcvr X25 Dna outIntl (oic)

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that outgoing international calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute also currently controls access to the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls are allowed. This attribute is ignored if the corresponding attribute *outCalls* is set to a value of ***disallowed***.
Mib	X25TraceRcvr
Values	disallowed allowed
Default	allowed

ATTRIBUTE SrvTrace Rcvr X25 Dna outDefaultPathReliability (opr)

Access	Read only
Description	This attribute specifies the default reliability class of routing for all calls (from the DTE to the network) using this particular *Dna*. The chosen default reliability class of routing normally applies to

all packets (including the call packets) travelling into the network. If the *outPathReliabilityOverRide* attribute is subscribed to, the default reliability class of routing is chosen by the calling party.

This attribute, if set to a value of ***normal***, indicates that the default class of routing is normal reliability routing. If set to a value of ***high***, then the default class of routing is high reliability routing.
High reliability is the standard choice for most DPN and Nortel Networks Multiservice Switch services. It usually indicates that packets are overflowed or retransmitted at various routing levels. Typically high reliability results in duplication and disordering of packets in the network when errors are detected or during link congestion. However, the VC handles the duplication and disordering to ensure that packets are delivered to the DTE properly.

Mib	X25TraceRcvr
Values	normal high
Default	high

ATTRIBUTE SrvTrace Rcvr X25 Dna outPathReliabilityOverRide (oro)

Access	Read only
Description	This attribute, if set to a value of ***no***, specifies that the called end of the connection will not use the calling end provisioning data for reliability class of routing to override the provisioning data at the called end.
Mib	X25TraceRcvr
Values	yes no
Default	no

ATTRIBUTE SrvTrace Rcvr X25 Dna outPathReliabilitySignal (ores)

Access	Read only

Description	This attribute, if set to a value of ***disallowed***, specifies that reliability routing signaling is not used.
Mib	X25TraceRcvr
Values	allowed disallowed
Default	disallowed

ATTRIBUTE SrvTrace Rcvr X25 Dna outAccess (oua)

Access	Read and write
Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed***, indicates that outgoing calls (from the DTE to the network) to the open (non-CUG) part of the network are permitted. It also permits outgoing calls to DTEs that have Incoming Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Closed User Group with Outgoing Access' feature.
Mib	X25TraceRcvr
Values	disallowed allowed
Default	disallowed

GROUP SrvTrace Rcvr X25 Dna IncomingOptions

Properties	Provisioned
Description	This group defines the call options for incoming calls.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Rcvr X25 Dna incCalls (inc)

Access	Read only

Description	This attribute, if set to a value of ***allowed***, indicates that incoming calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then incoming calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for DNAs in that incoming calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	X25TraceRcvr
Values	disallowed allowed
Default	disallowed

GROUP SrvTrace Rcvr X25 Dna CallOptions

Properties	Provisioned
Description	This group defines additional options for calls which are not specific to the direction of the call.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Rcvr X25 Dna packetSizes (pks)

Access	Read only
Description	This attribute specifies the allowable packet sizes supported for call setup using this DNA. ITU-T recommends that packet size 128 be always supported. The bit placement for the packet sizes is as follows: Bit 0 - Packet Size 16 Bit 1 - Packet Size 32 Bit 2 - Packet Size 64 Bit 3 - Packet Size 128 Bit 4 - Packet Size 256 Bit 5 - Packet Size 512 Bit 6 - Packet Size 1024

Bit 7 - Packet Size 2048
Bit 8 - Packet Size 4096

This list of allowable packet sizes must always include the default packet sizes: *defaultRecvFrmNetworkPacketSize* and *defaultSendToNetworkPacketSize*.

Mib: X25TraceRcvr

Set of:
16
32
64
128
256
512
1024
2048
4096

Default: (2048)

ATTRIBUTE SrvTrace Rcvr X25 Dna defaultRecvFrmNetworkPacketSize (rps)

Access: Read only

Description: This attribute specifies the default local receive packet size from network to DTE for calls using this particular *Dna*. The *packetSizes* attribute must be set with corresponding value.

Mib: X25TraceRcvr

Values:
16
32
64
128
256
512
1024
2048
4096

Default: 2048

ATTRIBUTE SrvTrace Rcvr X25 Dna defaultSendToNetworkPacketSize (sps)

Access	Read only
Description	This attribute specifies the default local send packet size from DTE to network for all calls using this particular *Dna*. The *packetSizes* attribute must be set with corresponding value.
Mib	X25TraceRcvr
Values	16 32 64 128 256 512 1024 2048 4096
Default	2048

ATTRIBUTE SrvTrace Rcvr X25 Dna defaultRecvFrmNetworkThruputClass (drt)

Access	Read and write
Description	This attribute specifies the default receive throughput class, (towards the interface) for all calls using this particular *Dna*.
Mib	X25TraceRcvr
Values	Decimal (0..15)
Default	10

ATTRIBUTE SrvTrace Rcvr X25 Dna defaultSendToNetworkThruputClass (dst)

Access	Read and write
Description	This attribute specifies the default send throughput class (towards the network) for all calls using this particular *Dna*.
Mib	X25TraceRcvr
Values	Decimal (0..15)
Default	10

ATTRIBUTE SrvTrace Rcvr X25 Dna defaultRecvFrmNetworkWindowSize (rws)

Access	Read only
Description	This attribute specifies the default number of data packets that can be received by the DTE from the DCE before more packets can be received. This view is oriented with respect to the DTE.
Mib	X25TraceRcvr
Values	Decimal (1..7)
Default	1

ATTRIBUTE SrvTrace Rcvr X25 Dna defaultSendToNetworkWindowSize (sws)

Access	Read only
Description	This attribute specifies the default number of data packets that can be transmitted from the DTE to the DCE and must be acknowledged before more packets can be transmitted.
Mib	X25TraceRcvr
Values	Decimal (1..7)
Default	1

ATTRIBUTE SrvTrace Rcvr X25 Dna packetSizeNegotiation (psn)

Access	Read only
Description	This attribute, if set to a value of ***local***, indicates that packet sizes can be negotiated locally at the interface irrespective of the setting at the remote interface. If set to ***endtoEnd***, then the packet size negotiation is between the local and remote interface (i.e. packet sizes are the same on both interfaces).
Mib	X25TraceRcvr
Values	endToEnd local
Default	local

ATTRIBUTE SrvTrace Rcvr X25 Dna cugFormat (cft)

Access	Read only

Description	This attribute specifies which CUG format is used when DTE signals CUG indices, ***basic*** or ***extended***. A ***basic*** CUG index format is two digits long. An ***extended*** CUG index format is four digits long. This attribute, if set to ***extended***, indicates that the DTE signals and receives CUG indices in extended CUG format. If set to a value of ***basic***, then the DTE signals and receives CUG indices in the basic CUG format.
Mib	X25TraceRcvr
Values	basic extended
Default	basic

COMPONENT SrvTrace Rcvr X25 Dna ClosedUserGroup (Cug)

Instance	Decimal (1..1)
Groups	"GROUP SrvTrace Rcvr X25 Dna Cug CugOptions"
Scope	Application
Description	*SrvTrace Rcvr/<string> X25 Dna ClosedUserGroup* The component defines options associated with a national or international CUG (Closed User Group) identifier. Other DNAs in the network can have CUGs defined which groups these DNAs by their *Cug interlockCode* attribute value. If DNAs are defined with CUGs, calls from DNAs which do not have the same *interlockCode* attribute value defined are refused. Attributes *incAccess* and *outAccess* can override this rule. If this component is present, the X.25 interface which connects to

the X.25 trace receiver must be provisioned with the same *Cug interlockCode* attribute value.

Mib X25TraceRcvr

Common Verbs
Help
List
Display
Add
DELete

GROUP SrvTrace Rcvr X25 Dna Cug CugOptions

Properties Provisioned

Description Attributes in this group define the *ClosedUserGroup* component options associated with the *interlockCode* attribute. DNAs with the same CUG (*interlockCode*) can make calls within this group. Various combinations of attributes are defined under this option which permit or prevent calls in the same CUG group.

Mib X25TraceRcvr

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug type

Access Read and write

Description This attribute specifies the CUG type - the CUG is either a national CUG, or an international CUG. International closed user groups are usually established between DTEs for which there is an intermediary X.75 Gateway, whereas national closed user groups are usually established between DTEs for which there is no intermediary X.75 Gateway. (National CUGs cannot normally traverse an X.75 Gateway).

If this attribute is set to ***national***, then the CUG is a national CUG, in which case, the *dnic* attribute should be left at its default value since it is not part of a national CUG. If this attribute is set to ***international***, then the CUG is an international CUG, in which case, the *dnic* attribute should be set appropriately as part of the *Cug interlockCode* attribute value.

Mib X25TraceRcvr

Values	national international
Default	national

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug dnic

Access	Read and write
Description	This attribute specifies the DNIC (Data Network ID Code) of the *Cug* by which packet networks are identified. This attribute is not applicable if the CUG is a national CUG, as specified by the *Cug type* attribute. There are usually 1 or 2 DNICs assigned per country, for public networks. The U.S. is an exception where each BOC has a DNIC. Also, a group of private networks can have its own DNIC. DNIC value is not an arbitrary number. It is assigned by international agreement and controlled by ITU-T.
Mib	X25TraceRcvr
Values	BCD (4)
Default	0000

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug interlockCode (ilc)

Access	Read and write
Description	This attribute specifies the CUG identifier of a national or international CUG call. It is an arbitrary number and it can also be called CUG in some descriptions. Interfaces (*Dna*s) defined with this number can only make calls to *Dna*s defined with the same *interlockCode* attribute value.
Mib	X25TraceRcvr
Values	Decimal (0..65535)
Default	0

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug preferential (pre)

Access	Read only

Description	This attribute, if set to a value of ***yes***, indicates that this *Cug* is the preferential CUG, in which case it will be used during the call establishment phase if the DTE has not explicitly specified a CUG index in the call request packet. If set to a value of ***no***, then this *Cug* is not the preferential CUG. Only one of the *Cug* components associated with a particular DNA can be the preferential CUG - only one *Cug* component can have this attribute set to ***yes***.
Mib	X25TraceRcvr
Values	no yes
Default	yes

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug outCalls (ouc)

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that outgoing calls (from the DTE into the network) can be made using this particular *Cug*. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Cug* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Outgoing Calls Barred' feature for CUG*s* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***.
Mib	X25TraceRcvr
Values	disallowed allowed
Default	allowed

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug incCalls (inc)

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that incoming calls (from the network to the DTE) can be made using this particular *Cug*. If set to a value of ***disallowed***, then incoming calls

cannot be made using this *Cug* - such calls will be cleared by the local DCE.

This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for CUG*s* in that incoming calls are barred if this attribute is set to a value of ***disallowed***.

Mib	X25TraceRcvr
Values	disallowed allowed
Default	disallowed

ATTRIBUTE SrvTrace Rcvr X25 Dna Cug privileged (pri)

Access	Read and write
Description	This attribute, if set to a value of ***yes***, indicates that this *Cug* is a privileged CUG. In DPN, at least one side of a call setup within a CUG must have the CUG as a privileged CUG. If set to a value of ***no***, then the *Cug* is not privileged. If both the local DTE and the remote DTE subscribe to the CUG, but it is not privileged, then the call will be cleared. This attribute is typically used for a host DTE which must accept calls from many other DTE’s in which case the other DTE’s cannot call one another, but can call the host. In this example, the host would have the privileged CUG, and the other DTE’s would belong to the same CUG, but it would not be privileged.
Mib	X25TraceRcvr
Values	no yes
Default	yes

COMPONENT SrvTrace Rcvr X25 DirectCall (Dc)

Groups	"GROUP SrvTrace Rcvr X25 Dc Options"
Scope	Application

Description	*SrvTrace Rcvr/<string> X25 DirectCall* This component defines direct call options for the call to the X.25 trace receiver. The connection is initiated on receipt of a *Start FrUni/n SrvTrace* command.
Mib	X25TraceRcvr
Common Verbs	Help List Display

GROUP SrvTrace Rcvr X25 Dc Options

Properties	Provisioned
Description	The *Options* group defines attributes associated with the SVC direct call.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Rcvr X25 Dc remoteNpi (rnpi)

Access	Read and write
Description	This attribute indicates the numbering plan used for the *remoteDna*.
Mib	X25TraceRcvr
Values	x121 e164
Default	x121

ATTRIBUTE SrvTrace Rcvr X25 Dc remoteDna (rdna)

Access	Read and write
Description	This attribute specifies the Data Network Address (DNA) of the remote end of the connection. This is the DNA of the X.25 trace receiver that receives the trace data.
Mib	X25TraceRcvr
Values	BCD (1..15)

Default	No default

ATTRIBUTE SrvTrace Rcvr X25 Dc type

Access	Read only
Description	This attribute specifies the type of call as ***switched***. For a ***switched*** call, no information is defined at the remote end about the local end of the connection.
Mib	X25TraceRcvr
Values	switched (svc) permanentMaster (master) permanentSlave (slave) permanentBackupSlave (backSl)
Default	switched

ATTRIBUTE SrvTrace Rcvr X25 Dc userData (usd)

Access	Read and write
Description	This attribute contains the user data. It is a 0 to 16 byte length string which is appended to the call request packet that is presented to the called (destination) DTE.
Mib	X25TraceRcvr
Values	String (0..16, Hex)
Default	""

COMPONENT SrvTrace Rcvr FrameRelay (Fr)

Scope	Application

Description	*SrvTrace Rcvr/<string> FrameRelay* This component identifies the access method used by the receiver of the trace data as Frame Relay.
Mib	FrTraceRcvr
Subcomponents	"COMPONENT SrvTrace Rcvr Fr DataNetworkAddress (Dna)" "COMPONENT SrvTrace Rcvr Fr DirectCall (Dc)"
Common Verbs	Help List Display Add DELete

COMPONENT SrvTrace Rcvr Fr DataNetworkAddress (Dna)

Groups	"GROUP SrvTrace Rcvr Fr Dna Address" "GROUP SrvTrace Rcvr Fr Dna OutgoingOptions" "GROUP SrvTrace Rcvr Fr Dna IncomingOptions" "GROUP SrvTrace Rcvr Fr Dna CallOptions"
Scope	Application
Description	*SrvTrace Rcvr/<string> Fr DataNetworkAddress* This component defines the calling end of the trace connection. It includes the set of attributes that apply to a VC connection with a Frame Relay trace receiver.
Mib	FrTraceRcvr
Opt. Subcomp.	"COMPONENT SrvTrace Rcvr Fr Dna ClosedUserGroup (Cug)"
Common Verbs	Help List Display

GROUP SrvTrace Rcvr Fr Dna Address

Properties	Provisioned

Description	This group contains attributes common to all *Dnas*. This group is composed of two attributes that define a DNA. These attributes are used to interpret the format of the address digits.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Rcvr Fr Dna numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the DNA that is entered. The address may belong to either the E.164 or X.121 plan. X.121 is used in packet-switched data networks.
Mib	FrTraceRcvr
Values	x121 e164
Default	x121

ATTRIBUTE SrvTrace Rcvr Fr Dna dataNetworkAddress (dna)

Access	Read and write
Description	This attribute specifies digits that form a unique identifier of the calling end of the trace connection. DNA digits are selected and assigned by network operators.
Mib	FrTraceRcvr
Values	BCD (1..15)
Default	No default

GROUP SrvTrace Rcvr Fr Dna OutgoingOptions

Properties	Provisioned
Description	This group defines the call options for outgoing calls.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Rcvr Fr Dna outCalls (ouc)

Access	Read only

Description	This attribute, if set to a value of ***allowed***, indicates that outgoing calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Dna* - such calls will be cleared by the local DCE.
Mib	FrTraceRcvr
Values	disallowed allowed
Default	allowed

ATTRIBUTE SrvTrace Rcvr Fr Dna outDefaultPriority (odf)

Access	Read and write
Description	This attribute, if set to a value of ***normal***, indicates that the default priority for outgoing calls (from the DTE to the network) using this particular *Dna* is normal priority - if the priority is not specified by the DTE. If this attribute is set to a value of ***high,*** then the default priority for outgoing calls using this particular *Dna* is high priority.
Mib	FrTraceRcvr
Values	normal high
Default	high

ATTRIBUTE SrvTrace Rcvr Fr Dna outIntl (oic)

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that outgoing international calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute also currently controls access to the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls are allowed.

This attribute is ignored if the corresponding attribute *outCalls* is set to a value of ***disallowed***.

Mib: FrTraceRcvr

Values: disallowed
allowed

Default: allowed

ATTRIBUTE SrvTrace Rcvr Fr Dna outDefaultPathReliability (opr)

Access: Read only

Description: This attribute specifies the default class of routing for reliability routing for all outgoing calls (from the DTE to the network) using this particular *Dna*. The chosen default class of routing applies to all outgoing calls established using this *Dna*, and applies to the packets travelling in both directions on all outgoing calls (local to remote, and remote to local). For incoming calls, the default class of routing is chosen by the calling party (as opposed to DPN, where either end of the call can choose the default routing class).

This attribute, if set to a value of ***normal***, indicates that the default class of routing is normal reliability routing. If set to a value of ***high***, then the default class of routing is high reliability routing.
High reliability is the standard choice for most DPN and Nortel Networks Multiservice Switch services. It usually indicates that packets are overflowed or retransmitted at various routing levels. Typically high reliability results in duplication and disordering of packets in the network when errors are detected or during link congestion. However, the VC handles the duplication and disordering to ensure that packets are delivered to the DTE properly.

For the Frame Relay service, duplication of packets is not desired, in which case, normal reliability may be chosen as the preferred class of routing.

Mib: FrTraceRcvr

Values	normal high
Default	high

ATTRIBUTE SrvTrace Rcvr Fr Dna outPathReliabilityOverRide (oro)

Access	Read only
Description	This attribute, if set to a value of ***no***, specifies that the called end of the connection will not use the calling end provisioning data for reliability class of routing to override the provisioning data at the called end.
Mib	FrTraceRcvr
Values	yes no
Default	no

ATTRIBUTE SrvTrace Rcvr Fr Dna outPathReliabilitySignal (ores)

Access	Read only
Description	This attribute, if set to a value of ***disallowed***, specifies that reliability routing signaling is not used.
Mib	FrTraceRcvr
Values	allowed disallowed
Default	disallowed

ATTRIBUTE SrvTrace Rcvr Fr Dna outAccess (oua)

Access	Read and write
Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed,*** indicates that outgoing calls (from the DTE to the network) to the open (non-CUG) part of the network are permitted. It also permits outgoing calls to DTEs that have Incoming Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE.

	This attribute corresponds to the ITU-T 'Closed User Group with Outgoing Access' feature for DNAs in that outgoing access is granted if this attribute is set to a value of ***allowed***.
Mib	FrTraceRcvr
Values	disallowed allowed
Default	disallowed

GROUP SrvTrace Rcvr Fr Dna IncomingOptions

Properties	Provisioned
Description	This group defines the call options for incoming calls.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Rcvr Fr Dna incCalls (inc)

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that incoming calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then incoming calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for DNAs in that incoming calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	FrTraceRcvr
Values	disallowed allowed
Default	disallowed

GROUP SrvTrace Rcvr Fr Dna CallOptions

Properties	Provisioned

Description	This group defines additional options for calls not related directly to the direction of a call.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Rcvr Fr Dna packetSizes (pks)

Access	Read only
Description	This attribute indicates the allowable packet sizes supported for calls setup using this *Dna*. To set a given packet size to be allowed on the *Dna*, the packet size is entered, and the corresponding bit in the structure is set to a value of 1. To set a given packet size to be disallowed on the *Dna*, the packet size is entered preceded with the '~' character, and the corresponding bit in the structure is set to a value of 0. ITU-T recommends that packet size 128 always be supported. The bit placement for the packet sizes is as follows: Bit 0 - Packet Size 16 Bit 1 - Packet Size 32 Bit 2 - Packet Size 64 Bit 3 - Packet Size 128 Bit 4 - Packet Size 256 Bit 5 - Packet Size 512 Bit 6 - Packet Size 1024 Bit 7 - Packet Size 2048 Bit 8 - Packet Size 4096 This attribute relates to the *defaultRecvFrmNetworkPacketSize* and *defaultSendToNetworkPacketSize* attributes.
Mib	FrTraceRcvr
Set of	16 32 64 128 256 512 1024 2048 4096

Default	(2048)

ATTRIBUTE SrvTrace Rcvr Fr Dna defaultRecvFrmNetworkPacketSize (rps)

Access	Read only
Description	This attribute indicates the default local receive packet size from the network to the DTE for all calls using this particular *Dna*. The *packetSizes* attribute must be set with the corresponding value.
Mib	FrTraceRcvr
Values	16 32 64 128 256 512 1024 2048 4096
Default	2048

ATTRIBUTE SrvTrace Rcvr Fr Dna defaultSendToNetworkPacketSize (sps)

Access	Read only
Description	This attribute indicates the default local send packet size from the DTE to the network for all calls using this particular *Dna*. The *packetSizes* attribute must be set with the corresponding value.
Mib	FrTraceRcvr
Values	16 32 64 128 256 512 1024 2048 4096

Default	2048

ATTRIBUTE SrvTrace Rcvr Fr Dna cugFormat (cft)

Access	Read only
Description	This attribute specifies which CUG format is used when DTE signals CUG indices, ***basic*** or ***extended***. A ***basic*** CUG index format is two digits long and an ***extended*** format is four digits long. This attribute, if set to a value of ***extended***, indicates that the DTE signals and receives CUG indices in extended CUG format. If set to a value of ***basic***, then the DTE signals and receives CUG indices in the basic CUG format.
Mib	FrTraceRcvr
Values	basic extended
Default	basic

COMPONENT SrvTrace Rcvr Fr Dna ClosedUserGroup (Cug)

Instance	Decimal (1..1)
Groups	"GROUP SrvTrace Rcvr Fr Dna Cug CugOptions"
Scope	Application
Description	*SrvTrace Rcvr/<string> Fr Dna ClosedUserGroup* This component defines options associated with national or international CUG Identifier. Other DNAs in the network can have CUGs defined which groups these DNAs by their *Cug interlockCode* attribute value. If DNAs are defined with CUGs, calls from DNAs which do not have the same *interlockCode* attribute value defined are refused. Attributes *incAccess* and *outAccess* can override this rule. If this component is present, the Frame Relay interface which

connects to the Frame Relay trace receiver must be provisioned with the same *Cug interlockCode* attribute value.

Mib FrTraceRcvr

Common Verbs
Help
List
Display
Add
DELete

GROUP SrvTrace Rcvr Fr Dna Cug CugOptions

Properties Provisioned

Description Attributes in this group define the *ClosedUserGroup* component options associated with the *interlockCode* attribute. DNAs with the same CUG (*interlockCode*) can make calls within this group. Various combinations which permit or prevent calls in the same CUG group are defined here.

Mib FrTraceRcvr

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug type

Access Read and write

Description This attribute specifies the CUG type - the CUG is either a national CUG, or an international CUG. International closed user groups are usually established between DTEs for which there is an intermediary X.75 Gateway, whereas national closed user groups are usually established between DTEs for which there is no intermediary X.75 Gateway. (National CUGs cannot normally traverse an X.75 Gateway).

This attribute, if set to a value of ***national***, then the CUG is a national CUG, in which case, the *dnic* attribute should be left at its default value since it is not part of a national CUG. If set to a value of ***international***, then the CUG is an international CUG, in which case, the *dnic* attribute should be set appropriately as part of the *Cug interlockCode* attribute.

Mib FrTraceRcvr

Values	national international
Default	national

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug dnic

Access	Read and write
Description	This attribute specifies the DNIC (Data Network ID Code) of the *Cug* by which packet networks are identified. This attribute is not applicable if the CUG is a national CUG, as specified by the *Cug type* attribute. There are usually 1 or 2 DNICs assigned per country, for public networks. The U.S. is an exception where each BOC has a DNIC. Also, a group of private networks can have its own DNIC. DNIC value is not an arbitrary number. It is assigned by international agreement and controlled by ITU-T.
Mib	FrTraceRcvr
Values	BCD (4)
Default	0000

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug interlockCode (ilc)

Access	Read and write
Description	This attribute specifies the CUG identifier of a national or international CUG call. It is an arbitrary number and it also can be called CUG in some descriptions. Interfaces (DNAs) defined with this number can only make calls to DNAs defined with the same *interlockCode* attribute value.
Mib	FrTraceRcvr
Values	Decimal (0..65535)
Default	0

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug preferential (pre)

Access	Read only

Description	This attribute, if set to a value of ***yes***, indicates that this *Cug* is the preferential CUG, in which case it will be used during the call establishment phase if the DTE has not explicitly specified a CUG index in the call request packet. If set to a value of ***no***, then this *Cug* is not the preferential CUG. Only one of the *Cug* components associated with a particular DNA can be the preferential CUG - only one *Cug* component can have this attribute set to ***yes***.
Mib	FrTraceRcvr
Values	no yes
Default	yes

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug outCalls (ouc)

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that outgoing calls (from the DTE into the network) can be made using this particular *Cug*. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Cug* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Outgoing Calls Barred' feature for CUG*s* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***.
Mib	FrTraceRcvr
Values	disallowed allowed
Default	allowed

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug incCalls (inc)

Access	Read only
Description	This attribute, if set to a value of ***allowed***, indicates that incoming calls (from the network to the DTE) can be made using this particular *Cug*. If set to a value of ***disallowed***, then incoming calls

cannot be made using this *Cug* - such calls will be cleared by the local DCE.

This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for CUG*s* in that incoming calls are barred if this attribute is set to a value of ***disallowed***.

Mib	FrTraceRcvr
Values	disallowed allowed
Default	disallowed

ATTRIBUTE SrvTrace Rcvr Fr Dna Cug privileged (pri)

Access	Read only
Description	This attribute, if set to a value of ***yes***, indicates that this *Cug* is a privileged CUG. In DPN, at least one side of a call setup within a CUG must have the CUG as a privileged CUG. If set to a value of ***no***, then this *Cug* is not privileged. If both the local DTE and the remote DTE subscribe to the CUG, but it is not privileged, then the call will be cleared. This attribute is typically used for a host DTE which must accept calls from many other DTEs, in which case the other DTEs cannot call each other, but can call the host. In this example, the host would have the privileged CUG, and the other DTEs would belong to the same CUG, but it would not be privileged.
Mib	FrTraceRcvr
Values	no yes
Default	yes

COMPONENT SrvTrace Rcvr Fr DirectCall (Dc)

Groups	"GROUP SrvTrace Rcvr Fr Dc Options"
Scope	Application

Description	*SrvTrace Rcvr/<string> Fr DirectCall* This component defines direct call options for the call to the Frame Relay trace receiver. The connection is initiated on receipt of a *Start FrUni/n SrvTrace* command.
Mib	FrTraceRcvr
Common Verbs	Help List Display

GROUP SrvTrace Rcvr Fr Dc Options

Properties	Provisioned
Description	The *Options* group defines attributes associated with the SVC direct call.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Rcvr Fr Dc remoteNpi (rnpi)

Access	Read and write
Description	This attribute indicates the numbering plan used for the *remoteDna*.
Mib	FrTraceRcvr
Values	x121 e164
Default	x121

ATTRIBUTE SrvTrace Rcvr Fr Dc remoteDna (rdna)

Access	Read and write
Description	This attribute specifies the Data Network Address (DNA) of the remote end of the connection. This is the DNA of the Frame Relay trace receiver that will receive the trace data.
Mib	FrTraceRcvr
Values	BCD (1..15)

Default	No default

ATTRIBUTE SrvTrace Rcvr Fr Dc type

Access	Read only
Description	This attribute specifies the type of call as ***switched***. For a ***switched*** call, no information is defined at the remote end about the local end of the connection.
Mib	FrTraceRcvr
Values	switched (svc) permanentMaster (master) permanentSlave (slave) permanentBackupSlave (backSl)
Default	switched

ATTRIBUTE SrvTrace Rcvr Fr Dc userData (usd)

Access	Read and write
Description	This attribute contains the user data. It is a 0 to 16 byte length string which is appended to the call request packet that is presented to the called (destination) DTE.
Mib	FrTraceRcvr
Values	String (0..16, Hex)
Default	""

COMPONENT SrvTrace Rcvr FrAtm

Groups	"GROUP SrvTrace Rcvr FrAtm Provisioned (Prov)" "GROUP SrvTrace Rcvr FrAtm TrafficManagement (Tm)"
Scope	Application
Description	*SrvTrace Rcvr/<string> FrAtm* This component represents the characteristics of FrAtm service trace receiver. If this component is provisioned, the *X25*, *Fr*, or *Atm* component cannot be provisioned under the same *SrvTrace*

Rcvr component. If this component is deleted, all active *SrvTrace Session*s associated with this component are not affected.

Mib FrAtmTraceRcvr

Common Verbs
- Help
- List
- Display
- Add
- DELete

GROUP SrvTrace Rcvr FrAtm Provisioned (Prov)

Properties Provisioned

Description This group contains general provisioned information of the FrAtm service trace receiver.

When started, service trace attempts to establish a connection to the FR-ATM service specified by *calledAddress* attribute. Every time a different DLCI ranging between *minimumDlci* and *maximumDlci* attributes is specified in call setup message, until a successful connection is established or all available DLCIs are tried.

To reduce the number of useless connection attempt, a consecutive set of DLCI should be provisioned in the FR-ATM service, and with the *minimumDlci* and *maximumDlci* attributes of *PtsFrAtmProv* group corresponding to the minimum and maximum instance number of *Dlci* provisioned in the FR-ATM service.

Mib FrAtmTraceRcvr

ATTRIBUTE SrvTrace Rcvr FrAtm calledAddress (addr)

Access Read and write

Description This attribute specifies the NSAP address of the FR-ATM service through which the FrAtm trace receiver is connected. Changing this attribute does not impact active *SrvTrace Session*s associated with this receiver. This change takes effect when *SrvTrace Session*s are restarted (*stop* and then *start*)

Mib	FrAtmTraceRcvr
Values	String (6..44, AESANsapAddress)
Default	No default

ATTRIBUTE SrvTrace Rcvr FrAtm tracedLength (len)

Access	Read and write
Description	This attribute specifies the maximum number of octets to trace per frame starting from the octet following the frame flag. If the frame length is longer than the value specified by this attribute, then the traced frame is truncated to *tracedLength*. If set to ***disabled***, the traced frame is not truncated. Changing this attribute does not affect active *SrvTrace Session*s. The *SrvTrace Sessions* need to be restarted (*Stop* and then *Start*) for this attribute to take effect.
Mib	FrAtmTraceRcvr
Values	Decimal (1..4000) disabled
Units	octets
Default	2000

ATTRIBUTE SrvTrace Rcvr FrAtm minimumDlci (min)

Access	Read and write
Description	This attribute specifies the minimum provisioned *Dlci* instance number in the FR-ATM service specified by *calledAddress*.
Mib	FrAtmTraceRcvr
Values	Decimal (16..1007)
Default	16

ATTRIBUTE SrvTrace Rcvr FrAtm maximumDlci (max)

Access	Read and write

Description	This attribute specifies the maximum provisioned *Dlci* instance number in the FR-ATM service specified by *calledAddress*.
Mib	FrAtmTraceRcvr
Values	Decimal (16..1007)
Default	16

GROUP SrvTrace Rcvr FrAtm TrafficManagement (Tm)

Properties	Provisioned
Description	This group contains basic traffic parameters used for ATM connection setup procedure.
Mib	FrAtmTraceRcvr

ATTRIBUTE SrvTrace Rcvr FrAtm serviceCategory (service)

Access	Read and write
Description	This attribute specifies the service category of the ATM connection. Currently, the service trace receiver feature only supports ATM connections whose service category is UBR, RT-VBR or NRT-VBR.
Mib	FrAtmTraceRcvr
Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	unspecifiedBitRate

ATTRIBUTE SrvTrace Rcvr FrAtm peakCellRate (pcr)

Access	Read and write
Description	The attribute specifies the peak cell rate allowed on the ATM connection.
Mib	FrAtmTraceRcvr
Values	Decimal (1..2147483647)

Units	cell/s
Default	No default

COMPONENT SrvTrace Rcvr Atm

Groups	"GROUP SrvTrace Rcvr Atm Provisioned (Prov)" "GROUP SrvTrace Rcvr Atm TrafficManagement (Tm)"
Scope	Application
Description	*SrvTrace Rcvr/<string> Atm* This component represents the characteristics of ATM service trace receiver. If this component is provisioned, the *X25*, *Fr*, or *FrAtm* component cannot be provisioned under the same *SrvTrace Rcvr* component. If this component is deleted, all active *SrvTrace Session*s associated with this component are not affected.
Mib	AtmTraceRcvr
Common Verbs	Help List Display Add DELete

GROUP SrvTrace Rcvr Atm Provisioned (Prov)

Properties	Provisioned
Description	This group contains general provisioned information of the ATM service trace receiver.
Mib	AtmTraceRcvr

ATTRIBUTE SrvTrace Rcvr Atm calledAddress (addr)

Access	Read and write
Description	This attribute specifies the NSAP address of the ATM service trace receiver. Changing this attribute does not impact active *SrvTrace Session*s associated with this receiver. This change

	takes effect when *SrvTrace Session*s are restarted (*stop* and then *start*).
Mib	AtmTraceRcvr
Values	String (6..44, AESANsapAddress)
Default	No default

ATTRIBUTE SrvTrace Rcvr Atm tracedLength (len)

Access	Read and write
Description	This attribute specifies the maximum number of octets to trace per frame starting from the octet following the frame flag. If the frame length is longer than the value specified by this attribute, then the traced frame is truncated to *tracedLength*. If set to ***disabled***, the traced frame is not truncated. Changing this attribute does not affect active *SrvTrace Session*s. The *SrvTrace Sessions* need to be restarted (*Stop* and then *Start*) for this attribute to take effect. When this *SrvTrace Rcvr* is used for Frame Relay trace services, the [*FrUni* | *FrNni] SrvTrace Filter tracedLength* attribute overrides this attribute.
Mib	AtmTraceRcvr
Values	Decimal (1..4000) disabled
Units	octets
Default	2000

GROUP SrvTrace Rcvr Atm TrafficManagement (Tm)

Properties	Provisioned
Description	This group contains basic traffic parameters used for ATM connection setup procedure.
Mib	AtmTraceRcvr

ATTRIBUTE SrvTrace Rcvr Atm serviceCategory (service)

Access	Read and write
Description	This attribute specifies the service category of the ATM connection. Currently, the service trace receiver feature only supports ATM connections whose service category is UBR, RT-VBR or NRT-VBR.
Mib	AtmTraceRcvr
Values	unspecifiedBitRate (ubr) rtVariableBitRate (rtvbr) nrtVariableBitRate (nrtvbr)
Default	unspecifiedBitRate

ATTRIBUTE SrvTrace Rcvr Atm peakCellRate (pcr)

Access	Read and write
Description	The attribute specifies the peak cell rate allowed on the ATM connection.
Mib	AtmTraceRcvr
Values	Decimal (1..2147483647)
Units	cell/s
Default	No default

COMPONENT SrvTrace Session

Instance	Decimal (1..50)
Groups	"GROUP SrvTrace Session Operational"
Scope	Application

Description	*SrvTrace Session/n* The *Session* component provides information about an active trace.
Mib	TraceBase
Dyn. Subcomp.	"COMPONENT SrvTrace Session X25" "COMPONENT SrvTrace Session FrameRelay (Fr)" "COMPONENT SrvTrace Session FrAtm" "COMPONENT SrvTrace Session Atm"
Common Verbs	Help List Display

GROUP SrvTrace Session Operational

Properties	Operational
Description	This group provides the operational attributes for the *Session* component. It displays the service being traced and the destination for the traced data.
Mib	TraceBase

ATTRIBUTE SrvTrace Session serviceTraced (service)

Access	Read only
Description	This attribute identifies the service being traced. An example is *FrUni/5*.
Mib	TraceBase
Values	The name of the component
Default	No default

ATTRIBUTE SrvTrace Session receiver (rcvr)

Access	Read only
Description	This attribute identifies the trace receiver which is the destination for the traced data.

Mib	TraceBase
Values	The name of the component
Default	No default

ATTRIBUTE SrvTrace Session sessionState

Access	Read only
Description	This attribute indicates the state of the trace session. The ***active*** value is the normal state for a running trace session. The ***waitingForSession***, ***waitingForProvisioningData***, ***callingReceiver*** and ***binding*** values are all normal transient states used to establish a session with the trace receiver on receipt of a *Start* command. In the ***waitingForSession*** state, a trace session is being allocated. In the ***waitingForProvisioningData*** state, a trace session has been allocated and receiver provisioning data, used to setup the call to the receiver, is being retrieved. In the ***callingReceiver*** state, the call to the receiver is being established. In the ***binding*** state, the call to the receiver has been established and the service data path is being adjusted to include trace. The ***unbinding***, ***clearingCallToReceiver*** and ***releasingSession*** values are all normal transient states used to disconnect a session with the trace receiver on receipt of a *Stop* command. In the ***unbinding*** state, the service data path is being adjusted to remove trace. In the ***clearingCallToReceiver*** state, the call to the receiver is being cleared. In the ***releasingSession*** state, a trace session is being deallocated. A value of ***abortingDueToCallFailure*** indicates that the call to the trace receiver has disconnected unexpectedly and trace is stopping. The clear cause and diagnostic for the failure is reported. Correct the fault indicated and retry the *Start* command. Values of ***initializing*** and ***idle*** can never be seen since these states occur before a *Session* component is created and after it is destroyed.
Mib	TraceBase
Values	initializing idle waitingForSession releasingSession

waitingForProvisioningData
callingReceiver
clearingCallToReceiver
abortingDueToCallFailure
binding
unbinding
active

Default: No default

ATTRIBUTE SrvTrace Session callState

Access: Read only

Description: This attribute indicates the state of the trace call to the receiver.
The ***dataTransfer*** value is the normal state for the call.
The ***initializing***, ***creatingVc***, ***waitingApiUp***, ***calling***, and ***enteringDataTransfer*** values are all normal transient states used to establish a call to the trace receiver on receipt of a *Start* command. These states occur during the ***callingReceiver*** state of the *sessionState* attribute. In the ***initializing*** state, receiver provisioning data, used to setup the call to the receiver, is being retrieved. In the ***creatingVc*** state, the local VC is being created. In the ***calling*** state, the direct call to the receiver is being connected. In the ***enteringDataTransfer*** state, the call to the receiver has been accepted and the data path is being established.
The ***clearing***, ***terminatingVc*** and ***terminated*** values are all normal transient states used to disconnect a call with the trace receiver on receipt of a *Stop* command. These states occur during the ***clearingCallToReceiver*** state of the *sessionState* attribute. In the ***clearing*** state, the call to the receiver is being cleared. In the ***terminatingVc*** state, the local VC is being destroyed. In the ***terminated*** state, the call is down and all cleanup is complete.
A value of ***reseting*** indicates a data sequencing problem has occurred on the call. This value is applicable for sessions to X.25 trace receivers only and indicates an incompatibility with the receiver. Tracing continues, however some trace data may have been lost.
A value of ***terminating*** is a normal transient state which occurs if a *Stop* command is received before the local VC has been created.

Mib: TraceBase

Values	initializing creatingVc calling clearing enteringDataTransfer terminatingVc dataTransfer reseting terminating terminated waitingApiUp
Default	No default

ATTRIBUTE SrvTrace Session queueState

Access	Read only
Description	This attribute indicates the state of the trace queue. A value of ***normal*** indicates that traced data is being queued normally. A value of ***full*** indicates that trace data is being discarded because the queue is full. A value of ***blocked*** indicates that trace data is being discarded because the trace VC is not able to transport the data.
Mib	TraceBase
Values	normal full blocked
Default	normal

ATTRIBUTE SrvTrace Session framesQueued

Access	Read only
Description	This attribute indicates the number of traced frames that are currently queued to be sent to the VC.
Mib	TraceBase
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SrvTrace Session framesSent

Access	Read only
Description	This attribute counts the number of traced frames sent to the VC. The counter wraps when it exceeds its maximum value.
Mib	TraceBase
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SrvTrace Session framesDiscarded

Access	Read only
Description	This attribute counts the number of discarded trace frames while the trace queue is full. Frames discarded while the queue is blocked are not counted. The counter wraps when it exceeds its maximum value.
Mib	TraceBase
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE SrvTrace Session framesTruncated

Access	Read only
Description	This attribute counts the number of truncated frames that require truncation. Truncation is needed when the traced frame length exceeds the limitation specified for this service trace session. If a *Filter* component exists under the service *SrvTrace*, the limitation is specified by *SrvTrace Filter tracedLength* attribute; otherwise the limitation is specified by the *tracedLength* attribute under component *SrvTrace Rcvr/<string> [FrAtm | Atm]*. This counter wraps when it exceeds its maximum value.
Mib	TraceBase
Values	Decimal (0..4294967295)

Default	No default

COMPONENT SrvTrace Session X25

Scope	Application
Description	*SrvTrace Session/<n> X25* This component identifies the access method used by the receiver of the trace data as X.25.
Mib	X25TraceRcvr
Dyn. Subcomp.	"COMPONENT SrvTrace Session X25 Vc"
Common Verbs	Help List Display

COMPONENT SrvTrace Session X25 Vc

Groups	"GROUP SrvTrace Session X25 Vc CallData (Cad)" "GROUP SrvTrace Session X25 Vc IntervalData (Intd)" "GROUP SrvTrace Session X25 Vc Statistics (Stats)"
Scope	Application
Description	... *Vc()* This component defines display of general Vc dynamic attributes
Mib	X25TraceRcvr
Common Verbs	Help List Display

GROUP SrvTrace Session X25 Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to General *Vc*. It can be displayed only for General *Vc* which is created by application.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Session X25 Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc*** or ***svc***. *type* is provided at provisioning time.
Mib	X25TraceRcvr
Values	pvc svc
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc state

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	X25TraceRcvr
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	X25TraceRcvr

Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc diagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	X25TraceRcvr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	X25TraceRcvr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	X25TraceRcvr

Values	x121 e164
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	X25TraceRcvr
Values	BCD (1..15)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	X25TraceRcvr
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	X25TraceRcvr
Values	x121 e164
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	X25TraceRcvr
Values	BCD (1..15)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc callingLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	X25TraceRcvr
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	X25TraceRcvr
Values	yes no
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	X25TraceRcvr

Values	yes no
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc localRxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of send packets.
Mib	X25TraceRcvr
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc localTxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of send packets.
Mib	X25TraceRcvr
Values	unknown 16 32 64 128 256 512 1024 2048 4096

Default	No default

ATTRIBUTE SrvTrace Session X25 Vc localTxWindowSize

Access	Read only
Description	This attribute displays the send window size provided on incoming call packets or the default when a call request packet does not explicitly provide the window size.
Mib	X25TraceRcvr
Values	Decimal (0..127)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc localRxWindowSize

Access	Read only
Description	This attribute displays the receive window size provided on incoming call packets or the default when a call request does not explicitly provide the window sizes.
Mib	X25TraceRcvr
Values	Decimal (0..127)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	X25TraceRcvr
Values	high normal
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc accountingEnd

Access	Read only

Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	X25TraceRcvr
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	X25TraceRcvr
Values	normal high
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	X25TraceRcvr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc subnetTxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of the data packets on this *Vc*.
Mib	X25TraceRcvr

Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc subnetTxWindowSize

Access	Read only
Description	This attribute displays the current send window size of *Vc*.
Mib	X25TraceRcvr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc subnetRxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of receive packets.
Mib	X25TraceRcvr
Values	unknown 16 32 64 128 256 512 1024 2048 4096

Default	No default

ATTRIBUTE SrvTrace Session X25 Vc subnetRxWindowSize

Access	Read only
Description	This attribute displays the receive window size provided on incoming call packets and to the default when a call request does not explicitly provide the window sizes.
Mib	X25TraceRcvr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc maxSubnetPktSize

Access	Read only
Description	This attribute displays the maximum packet size allowed on *Vc*.
Mib	X25TraceRcvr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc transferPriorityToNetwork

Access	Read only
Description	This attribute displays the priority in which data is transferred to the network. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput). When the transfer priority is set at ***high***, the trunk queue is set to high, the routing metric is set to delay.

When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput.

Mib X25TraceRcvr

Values normal
high

Default No default

ATTRIBUTE SrvTrace Session X25 Vc transferPriorityFromNetwork

Access Read only

Description This attribute displays the priority in which data is transferred from the network.

The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority.

Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput).

When the transfer priority is set at ***high***, and the trunk queue is set to high, the routing metric is set to delay.

When the transfer priority is set at ***normal***, the trunk queue is set to normal, and the routing metric is set to throughput.

Mib X25TraceRcvr

Values normal
high

Default No default

GROUP SrvTrace Session X25 Vc IntervalData (Intd)

Properties Operational

Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Session X25 Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	X25TraceRcvr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	X25TraceRcvr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained

	by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	X25TraceRcvr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	X25TraceRcvr
Values	Time (DHMS)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	X25TraceRcvr
Values	Decimal (0..4294967295)
Default	No default

GROUP SrvTrace Session X25 Vc Statistics (Stats)

Properties	Operational
Description	... *Statistics(Stats)* This group defines general attributes collected by general *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods.
Mib	X25TraceRcvr

ATTRIBUTE SrvTrace Session X25 Vc ackStackingTimeouts

Access	Read only
Description	This attribute counts the number of ack stacking timer expiries. It is used as an indicator of the acknowledgment behavior across the subnet when ack stacking is in effect. If it expires often, usually this means end users will experience longer delay. The ack stacking timer specifies how long the *Vc* will wait before finally sending the subnet acknowledgment. if this attribute is set to a value of 0, then the *Vc* will automatically return acknowledgment packets without delay. If this attribute is set to a value other than zero, then the *Vc* will wait for this amount of time in an attempt to piggyback the acknowledgment packet on another credit or data packet. If the *Vc* cannot piggyback the acknowledgment packet within this time, then the packet is returned without piggybacking.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc outOfRangeFrmFromSubnet

Access	Read only

Description	This attribute counts the number of subnet frames discarded due to the sequence number being out of range. Two Categories apply for the General *Vc* 1) lost Acks (previous Range) 2) unexpected Packets (next Range) *Vc* internally maintains its own sequence number of packet order and sequencing. Due to packet retransmission, *Vc* may receive duplicate packets that have the same *Vc* internal sequence number. Only 1 copy is accepted by the *Vc* and other copies of the same packets are detected through this count. This attribute can be used to record the frequency of packet retransmission due to *Vc* and other part of the subnet.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc duplicatesFromSubnet

Access	Read only
Description	This attribute counts the number of subnet packets discarded due to duplication. It is used to detect software error fault or duplication caused by retransmitting.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc frmRetryTimeouts

Access	Read only
Description	This attribute counts the number of frames which have retransmission time-out. If packets from *Vc* into the subnet are discarded by the subnet, the source *Vc* will not receive any acknowledgment. The retransmission timer then expires and packets will be retransmitted again. Note that the *Vc* idle probe may be retransmitted and is included in this count. This statistics does not

	show the distribution of how many times packets are retransmitted (e.g. first retransmission results in successful packet forwarding).
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc peakRetryQueueSize

Access	Read only
Description	This attribute indicates the peak size of the retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. It records the largest body of unacknowledged packets.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc peakOoSeqQueueSize

Access	Read only
Description	This attribute indicates the peak size of the out of sequence queue. This attribute is used as an indicator of the sequencing behavior across the subnet. It records the largest body of out of sequence packets.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute indicates the peak size of the sequence packet queue.

	This attribute is used as an indicator of the sequencing behavior across the subnet. It records the largest body of out of sequence packets, which by the receipt of an expected packet have been transformed to expected packets. The number of times this peak is reached is not recorded as it is traffic dependent.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc peakStackedAcksRx

Access	Read only
Description	This attribute indicates the peak size of wait acks. This attribute is used as an indicator of the acknowledgment behavior across the subnet. It records the largest collective acknowledgment.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc subnetRecoveries

Access	Read only
Description	This attribute counts the number of successful *Vc* recovery attempts. This attribute is used as an indicator of how many times the *Vc* path is broken but can be recovered. This attribute is useful to record the number of network path failures.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc windowClosuresToSubnet

Access	Read only

Description	This attribute counts the number of window closures to subnet. A packet may have been sent into the subnet but its acknowledgment from the remote *Vc* has not yet been received. This is a 8 bit sequence number.This number is useful in detecting whether the *Vc* is sending any packet into the subnet.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc windowClosuresFromSubnet

Access	Read only
Description	This attribute counts the number of window closures from subnet. This attribute is useful in detecting whether the *Vc* is receiving any packet from the subnet.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session X25 Vc wrTriggers

Access	Read only
Description	This attribute displays the number of times the *Vc* stays within the W-R region. The W-R region is a value used to determined the timing of credit transmission. Should the current window size be beneath this value, the credits will be transmitted immediately. Otherwise, they will be transmitted later with actual data. The wrTriggers statistic is therefore used to analyze the flow control and credit mechanism.
Mib	X25TraceRcvr
Values	Decimal (0..5000)
Default	No default

COMPONENT SrvTrace Session FrameRelay (Fr)

Scope	Application

Description	*SrvTrace Session/<n> FrameRelay* This component identifies the access method used by the receiver of the trace data as Frame Relay.
Mib	FrTraceRcvr
Dyn. Subcomp.	"COMPONENT SrvTrace Session Fr Vc"
Common Verbs	Help List Display

COMPONENT SrvTrace Session Fr Vc

Groups	"GROUP SrvTrace Session Fr Vc CallData (Cad)" "GROUP SrvTrace Session Fr Vc IntervalData (Intd)" "GROUP SrvTrace Session Fr Vc FrameRelayData (Frd)"
Scope	Application
Description	This component defines attributes collected by Frame Relay *Vc*.
Mib	FrTraceRcvr
Common Verbs	Help List Display

VERB Ping SrvTrace Session Fr Vc

Impact	Passive
Description	Ping *[-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)]* FrUni/<*n*> Dlci/<*n*> Vc

Ping causes a query packet to be sent to the destination module where the Frame Relay DLCI VC terminates. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the ping query packet will be the same as that of the Frame Relay data except at the source and destination module. The ping packets originate from the CP rather than the Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the Frame Relay FP.

Note that this command does not provide any information regarding the status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified.

The ping command can be issued with or without options. If no options are specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the roundTripDelay option is specified, the command reports the time taken to reach the destination and back. For the roundTripDelay option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the ping packets are generated and bounced back by the CP rather than the Frame Relay DLCI's FP.

The ping command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the sendPktSize and returnPktSize options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Nortel Networks proprietary common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the

value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default value is 64 octets if *transferPriority* of the *Frame Relay DLCI Dc* is 11, and 128 octets otherwise. This option is ignored if the -rtd option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

GROUP SrvTrace Session Fr Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Session Fr Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.
Mib	FrTraceRcvr
Values	pvc svc spvc frf10spvc
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc state

Access	Read only

Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	FrTraceRcvr
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	FrTraceRcvr
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc diagnosticCode

Access	Read only

Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrTraceRcvr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	FrTraceRcvr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	FrTraceRcvr
Values	x121 e164
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	FrTraceRcvr
Values	BCD (1..15)

Default	No default

ATTRIBUTE SrvTrace Session Fr Vc calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	FrTraceRcvr
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	FrTraceRcvr
Values	x121 e164
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	FrTraceRcvr
Values	BCD (1..15)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc callingLcn

Access	Read only

Description	This attribute displays the Logical Channel Number of the calling end.
Mib	FrTraceRcvr
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	FrTraceRcvr
Values	yes no
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	FrTraceRcvr
Values	yes no
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	FrTraceRcvr

Values	high normal
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	FrTraceRcvr
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	FrTraceRcvr
Values	normal high
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	FrTraceRcvr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc maxSubnetPktSize

Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	FrTraceRcvr
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc rcosToNetwork (rcosto)

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	FrTraceRcvr
Values	throughput delay multimedia
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc rcosFromNetwork (rcosfrom)

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	FrTraceRcvr
Values	throughput delay multimedia
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc emissionPriorityToNetwork (epto)

Access	Read only

Description	This attribute displays the network internal emission priority to the network.
Mib	FrTraceRcvr
Values	normal high interrupting
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc emissionPriorityFromNetwork (epfrom)

Access	Read only
Description	This attribute displays the network internal emission priority from the network.
Mib	FrTraceRcvr
Values	normal high interrupting
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc dataPath (dapa)

Access	Read only
Description	This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed value of this attribute can be different from the provisioned value. If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system) If the connection is using ***dprsMcsOnly*** data path, the string ***dprsMcsOnly*** is displayed. If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.

Mib	FrTraceRcvr
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc dprsMcsEndPoint (dmep)

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components. If the connection is using ***dprsOnly*** data path, this attribute is empty. If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.
Mib	FrTraceRcvr
List of	The name of the component
Default	No default

GROUP SrvTrace Session Fr Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	FrTraceRcvr

ATTRIBUTE SrvTrace Session Fr Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	FrTraceRcvr

Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	FrTraceRcvr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	FrTraceRcvr
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	FrTraceRcvr
Values	Time (DHMS)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	FrTraceRcvr
Values	Decimal (0..4294967295)
Default	No default

GROUP SrvTrace Session Fr Vc FrameRelayData (Frd)

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be

reset. Attributes cannot be reset through other methods.
Frame Relay *Vc* uses a best effort data packet delivery protocol and a different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*. Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers

Mib FrTraceRcvr

ATTRIBUTE SrvTrace Session Fr Vc frmCongestedToSubnet

Access Read only

Description This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.

Mib FrTraceRcvr

Values Decimal (0..5000)

Default No default

ATTRIBUTE SrvTrace Session Fr Vc cannotForwardToSubnet

Access Read only

Description This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion. Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.

Mib FrTraceRcvr

Values Decimal (0..5000)

Default	No default

ATTRIBUTE SrvTrace Session Fr Vc notDataXferToSubnet

Access	Read only
Description	This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.
Mib	FrTraceRcvr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc combErrorsFromSubnet

Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc duplicatesFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc notDataXferFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc frmLossTimeouts

Access	Read only
Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc ooSeqByteCntExceeded

Access	Read only

Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc peakOoSeqPktCount

Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal subnet packet disorder (not due to subnet packet discard). Current implementation also uses

	this statistics to set a maximum size for the out-of-sequenced queue.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc sendSequenceNumber

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	FrTraceRcvr
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc pktRetryTimeouts

Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc peakRetryQueueSize

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.

Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc subnetRecoveries

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.
Mib	FrTraceRcvr
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc ooSeqPktCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	FrTraceRcvr
Values	Decimal (0..255)
Default	No default

ATTRIBUTE SrvTrace Session Fr Vc peakOoSeqByteCount

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.

Mib	FrTraceRcvr
Values	Decimal (0..50000)
Default	No default

COMPONENT SrvTrace Session FrAtm

Groups	"GROUP SrvTrace Session FrAtm Operational"
Scope	Application
Description	*SrvTrace Session/<n> FrAtm* This component indicates that this *SrvTrace Session* uses FR-ATM (FrameRelay-ATM Interworking) service to connect with the service trace receiver
Mib	FrAtmTraceRcvr
Dyn. Subcomp.	"COMPONENT SrvTrace Session FrAtm AtmConnection (AtmCon)"
Common Verbs	Help List Display

GROUP SrvTrace Session FrAtm Operational

Properties	Operational
Description	This group contains the attributes of the FrAtm connection used by the service trace session.
Mib	FrAtmTraceRcvr

ATTRIBUTE SrvTrace Session FrAtm activeDlci (dlci)

Access	Read only
Description	This attribute indicates the DLCI (Data Link Connection Identifier) of remote FR-ATM (FrameRelay-ATM Interworking) service associated with the service trace connection.
Mib	FrAtmTraceRcvr
Values	Decimal (16..1007)

Default	No default

COMPONENT SrvTrace Session FrAtm AtmConnection (AtmCon)

Groups	"GROUP SrvTrace Session FrAtm AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	FrAtmTraceRcvr
Common Verbs	Help List Display

GROUP SrvTrace Session FrAtm AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	FrAtmTraceRcvr

ATTRIBUTE SrvTrace Session FrAtm AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	FrAtmTraceRcvr
Values	The name of the component
Default	No default

COMPONENT SrvTrace Session Atm

Scope	Application

Description	*SrvTrace Session/<n> Atm* This component indicates that this *SrvTrace Session* uses ATM services to connect with the service trace receiver.
Mib	AtmTraceRcvr
Dyn. Subcomp.	"COMPONENT SrvTrace Session Atm AtmConnection (AtmCon)"
Common Verbs	Help List Display

COMPONENT SrvTrace Session Atm AtmConnection (AtmCon)

Groups	"GROUP SrvTrace Session Atm AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	AtmTraceRcvr
Common Verbs	Help List Display

GROUP SrvTrace Session Atm AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	AtmTraceRcvr

ATTRIBUTE SrvTrace Session Atm AtmCon nextHop

Access	Read only

Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	AtmTraceRcvr
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component SrvTrace

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Ss7

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Ss7

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COMPONENT SignallingSystem7 (Ss7)

Scope	Application
Description	*SignallingSystem7* This component represents the Signalling System 7.
Mib	Ss7
Opt. Subcomp.	"COMPONENT Ss7 MessageTransferPartLayer3 (Mtp3)" "COMPONENT Ss7 SignallingConnControlPart (Sccp)" "COMPONENT Ss7 AccessLinkControlApplicationPart (Alcap)" "COMPONENT Ss7 SaalNni (SaalNni)"
Common Verbs	Help List Display Add DELete

COMPONENT Ss7 MessageTransferPartLayer3 (Mtp3)

Instance	Decimal (1..16)
Groups	"GROUP Ss7 Mtp3 Provisioned (Prov)" "GROUP Ss7 Mtp3 OsiState (State)" "GROUP Ss7 Mtp3 Operational (Oper)" "GROUP Ss7 Mtp3 WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS SignallingSystem7 MessageTransferPartLayer3"

Scope	Application

Description	Ss7 MessageTransferPartLayer3/n This component represents an MTP 3 layer of the SS7 stack.
Mib	Ss7
Subcomponents	"COMPONENT Ss7 Mtp3 Linkset (Ls)"
Opt. Subcomp.	"COMPONENT Ss7 Mtp3 ServiceIndicator (ServInd)" "COMPONENT Ss7 Mtp3 Routeset (Rs)"
Common Verbs	Help List Display Add DELete

GROUP Ss7 Mtp3 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Mtp3* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 mtpType

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the type of MTP3. The possible values for *mtpType* are: ***mtp3*** - This is the standard MTP layer 3 from Q.704 that supports signalling units up to 272 octets in length. ***mtp3b*** - This is the MTP layer 3 broadband variant that supports signalling units up to 4096 octets in length. For the SS7 stack on the Iu interface this attribute must be set to ***mtp3b***.

For the SS7 stack on the Call Server interface this attribute must be set to ***mtp3***.

Changing the value of this attribute causes all the linksets associated with the MTP3 layer to be restarted.

Mib	Ss7
Values	mtp3 mtp3b
Default	mtp3b

ATTRIBUTE Ss7 Mtp3 origPointCode (opc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the point code of the node that the MTP3 layer manages. The point code must be provisioned in one of the following formats: basic***:*** The point code is provisioned as a decimal number in the range ***1***..***16383***. A value of ***0*** is not valid. segmented: The point code is provisioned as three integers, separated by dots. The first integer must be in the range ***0***..***7***, the second integer must be in the range ***0***..***255***, and the third integer must be in the range ***0***..***7***. A value of ***0.0.0*** is not valid. This attribute must not specify a point code identical to that specified by *adjPointCode*. Changing the value of this attribute causes all the linksets associated with this MTP3 layer to be restarted.
Mib	Ss7
Values	Integer Sequence
Default	No default

ATTRIBUTE Ss7 Mtp3 changeoverHoldoffTimer (t1)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T1 defined in ITU-T recommendation Q.704. This timer value determines how long to wait for a failed link to become available when changeover is required, but there is no alternate link. It is used to avoid message mis-sequencing on changeover. This timer is started when a link goes down and a changeover is required, but changeover messages cannot be exchanged on an alternate link. This timer is stopped when the failed link becomes available. Upon timer expiration, it sends all the retrieved (layer 2) and buffered (layer 3) messages down the new link and marks changeover as complete.
Mib	Ss7
Values	Decimal (500..1200)
Units	msec
Default	500

ATTRIBUTE Ss7 Mtp3 changeoverAckTimer (t2)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T2 defined in ITU-T recommendation Q.704. This timer is started when MTP layer 3 receives a Backward Sequence Number of the next signalling unit to be Transmitted (BSNT) from a link in the changeover process. This timer is stopped when the link becomes available, or when a changeover message is received while waiting for an ack.

Upon timer expiration, the link is released.

The number of expiries of this timer is indicated by the attribute *changeoverAckTimeouts*.

Mib	Ss7
Values	Decimal (700..2000)
Units	msec
Default	700

ATTRIBUTE Ss7 Mtp3 changebackDiversionDelayTimer (t3)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T3 defined in ITU-T recommendation Q.704. It provides time controlled diversion-delay to avoid mis-sequencing on changeback. This timer is started when a link is in changeback and the signalling point at the remote end of newly available link is not accessible via an alternative link. Upon timer expiry, traffic is restarted on the link.
Mib	Ss7
Values	Decimal (500..1200)
Units	msec
Default	500

ATTRIBUTE Ss7 Mtp3 firstAttemptChangebackAckTImer (t4)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T4 defined in ITU-T recommendation Q.704. This timer is started when a link is in changeback and the

Signalling Point (SP) at the remote end of the newly available link is accessible via an alternative link.

This timer is stopped when a link has attempted changeback for the first time and receives a changeback ack for every changeback declaration sent.

Upon timer expiration, *secondAttemptChangebackAckTimer* is started and all the unacknowledged changeback declarations are re-sent.

The number of resends of the changeback declarations is indicated by the attribute *changebackDeclarationTimeouts*.

Mib	Ss7
Values	Decimal (500..1200)
Units	msec
Default	500

ATTRIBUTE Ss7 Mtp3 secondAttemptChangebackAckTimer (t5)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T5 defined in ITU-T recommendation Q.704. It creates a delay to avoid oscillation of initial alignment failure and link restart. The timer is started when a link does not changeback in the first attempt with *firstAttemptChangeBackAckTimer*. The timer is stopped when a link is in the second attempt of changeback and receives a changeback ack for every changeback declaration sent. Upon timer expiration, changeback is terminated. The number of expiries of this timer is indicated by the attribute *secondAttemptChangebackAckTimeouts*.

Mib	Ss7
Values	Decimal (500..1200)
Units	msec
Default	500

ATTRIBUTE Ss7 Mtp3 uninhibitAckTimer (t12)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T12 defined in ITU-T recommendation Q.704. The timer is started every time a link *Uninhibit* command is executed. The timer is stopped when the link uninhibit is acknowledged by the remote end. Upon timer expiry, the uninhibit is started again for a maximum of one more time. If it fails this time, the uninhibit is cancelled. The number of expiries of this timer is indicated by the attribute *uninhibitAckTimeouts*.
Mib	Ss7
Values	Decimal (800..1500)
Units	msec
Default	800

ATTRIBUTE Ss7 Mtp3 forceUninhibitTimer (t13)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T13 defined in ITU-T recommendation Q.704. The timer is started when this end initiates a link force uninhibit.

	The timer is stopped when the signalling link uninhibit is acknowledged. Upon timer expiry, the uninhibit is started again one more time. If it fails this time, the uninhibit is cancelled. The number of expiries of this timer is indicated by the attribute *forceUninhibitTimeouts*.
Mib	Ss7
Values	Decimal (800..1500)
Units	msec
Default	800

ATTRIBUTE Ss7 Mtp3 inhibitAckTimer (t14)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T14 defined in ITU-T recommendation Q.704. This timer waits for inhibition acknowledgement. The timer is started when an *Inhibit* command is executed. The timer is stopped when the local link inhibit is denied or successful. Upon expiry, the local link inhibit request is cancelled.
Mib	Ss7
Values	Decimal (2..3)
Units	seconds
Default	2

ATTRIBUTE Ss7 Mtp3 initialAlignmentDelayTimer (t17)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T17 defined in ITU-T recommendation Q.704. It creates a delay to avoid oscillation of initial alignment failure and link restart. This timer is started when a signalling link is started. Upon timer expiry, it sends a START message to layer 2.
Mib	Ss7
Values	Decimal (800..1500)
Units	msec
Default	800

ATTRIBUTE Ss7 Mtp3 localInhibitTestTimer (t22)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T22 (Local inhibit test timer) defined in ITU-T recommendation Q.704. This timer is started when a link becomes locally inhibited. Upon timer expiry, if the link is still unavailable and locally inhibited, the timer is restarted, and a local inhibit test message is sent to the remote end.
Mib	Ss7
Values	Decimal (180..360)
Units	seconds
Default	180

ATTRIBUTE Ss7 Mtp3 remoteInhibitTestTimer (t23)

Access	Read: All Write: All

Description	This attribute specifies the value of the timer T23 (Remote inhibit test timer) defined in ITU-T recommendation Q.704. This timer is started when a link becomes remote inhibited. Upon timer expiry, if the link is still unavailable and remotely inhibited, the timer is restarted, and a remote inhibit test message is sent to the remote end
Mib	Ss7
Values	Decimal (180..360)
Units	seconds
Default	180

ATTRIBUTE Ss7 Mtp3 sltAckTimer (tQ707T1)

Access	Read: All Write: All
Description	This attribute specifies the value of the Supervision timer to wait for a signalling link test acknowledgement message. This timer is started every time a Signalling Link Test Controller (SLTC) sends out a test message. The timer is stopped when the SLTC receives an acknowledge message from the peer MTP3 layer. Upon timer expiration, if this is the first attempt, this timer is restarted and a second attempt is made. If the timer expires after the second attempt, the MTP3 layer is informed of a broken link.
Mib	Ss7
Values	Decimal (4..12)
Units	seconds
Default	4

ATTRIBUTE Ss7 Mtp3 sltIntervalTimer (tQ707T2)

Access	Read: All Write: All
Description	This attribute specifies the value of the Interval timer defined in ITU-T recommendation Q.707 for sending signalling link test messages. The timer is started when a link comes in service, and each time the timer expires if the link is still good. The timer is stopped when the link fails, as determined by the *sltAckTimer*. Upon timer expiry, another test message is sent to the peer and the timer is restarted.
Mib	Ss7
Values	Decimal (30..90)
Units	seconds
Default	30

ATTRIBUTE Ss7 Mtp3 reroutingHoldOffTimer (t6)

Access	Read: All Write: All
Description	This attribute specifies the timer value for the timer T6 defined in ITU-T recommendation Q.704. It provides delay to avoid message mis-sequencing on controlled rerouting. This timer is started when a signalling route toward a given destination becomes available and the controlled rerouting procedure is invoked. Upon timer expiry, traffic is restarted on the route made available.
Mib	Ss7
Values	Decimal (500..1200)

Units	msec
Default	800

ATTRIBUTE Ss7 Mtp3 routeSetTestRepeatTimer (t10)

Access	Read: All Write: All
Description	This attribute specifies the value of the timer T10 defined in ITU-T recommendation Q.704. It indicates the repeat frequency of the route set test message. This timer is started when a signalling-route-set-test message is sent after receiving a transfer-prohibited (TFP) message for a specific destination. Upon timer expiry, the signalling-route-set-test message is resent. The timer is sopped when a transfer-allowed (TFA) message is received, indicating that the destination has become accessible.
Mib	Ss7
Values	Decimal (30..60)
Units	seconds
Default	30

GROUP Ss7 Mtp3 OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ss7
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ss7 Mtp3 operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ss7

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Ss7 Mtp3 usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Ss7

Values: idle
active (activ)
busy

Default: idle

GROUP Ss7 Mtp3 Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *PsSs7MessageTransferPartLayer3* component.

Mib: Ss7

ATTRIBUTE Ss7 Mtp3 changeoverAckTimeouts (t2Tmouts)

Access: Read: All
Write: Illegal

Description	This attribute counts the timeouts of timer T2, specified by the attribute *changeoverAckTimer*. The counter wraps to zero when its maximum value is exceeded.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 firstAttemptChangebackAckTmouts (t4Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of timer T4, specified by the attribute *firstAttemptChangebackAckTimer*. The counter wraps to zero when its maximum value is exceeded.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 secondAttemptChangebackAckTmouts (t5Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of timer T5, specified by the attribute *secondAttemptChangebackAckTimer*. The counter wraps to zero when its maximum value is exceeded.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 forceUninhibitAckTimeouts (t13Tmouts)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of timer T13, specified by the attribute *forceUninhibitAckTimer*. The counter wraps to zero when its maximum value is exceeded.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

GROUP Ss7 Mtp3 WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 customCounter2 (customCntr2)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS SignallingSystem7 MessageTransferPartLayer3

Description	The statistics record generated by the SignallingSystem7 MessageTransferPartLayer3 component.

ATTRIBUTE Ss7 Mtp3 linkSetsUnavailable (lsUnavail)

Description	This attribute indicates the number of linkset unavailable conditions over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Ss7 Mtp3 Linkset (Ls)

Instance	Decimal (0..63)

Groups	"GROUP Ss7 Mtp3 Ls Provisoned (Prov)" "GROUP Ss7 Mtp3 Ls OsiState (State)" "GROUP Ss7 Mtp3 Ls WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	Ss7 Mtp3/n Linkset/n This component represents an MTP3 linkset. A linkset is a grouping of signalling links that are used to transfer signalling between this node and a specific adjacent signalling point.
Mib	Ss7
Subcomponents	"COMPONENT Ss7 Mtp3 Ls Link (Lk)"
Opt. Subcomp.	"COMPONENT Ss7 Mtp3 Ls RouteInfo (Ri)"
Common Verbs	Help List Display Add DELete Unlock

VERB LOCK Ss7 Mtp3 Ls

Impact	Service
Description	*Lock [-force] Mtp3/n Linkset/n* This verb causes the specified *Ss7LinkSet* component to immediately enter the OSI ***locked*** administrative state. **Options:** *-force* If this option is specified, the *Link*Set is locked. Otherwise, the lock command failed for the *linkSet*.

GROUP Ss7 Mtp3 Ls Provisoned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes of the *Ss7LinkSet* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls adjPointCode (apc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the point code of the node that this node directly connects to through this linkset. The point code must be provisioned in one of the following formats: basic***:*** The point code is provisioned as a decimal number in the range ***1***..***16383***. A value of ***0*** is not valid. segmented: The point code is provisioned as three integers, separated by dots. The first integer must be in the range ***0***..***7***, the second integer must be in the range ***0***..***255***, and the third integer must be in the range ***0***..***7***. A value of ***0.0.0*** is not valid. This attribute must not specify a point code identical to that specified by *origPointCode*. Changing the value of this attribute causes all the linksets associated with the MTP3 layer to be restarted.
Mib	Ss7
Values	Integer Sequence
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls networkIndicator (netInd)

Access	Read: All Write: All
Criticality	Component

Description	This attribute specifies whether the network is a national network, or an international network. This attribute determines the value that is filled in the Network Indicator field of the messages sent to the remote end.This attribute must match what the peer MTP3 layer on the remote end expects in the messages. Changing the value of this attribute causes all the linksets associated with this MTP3 layer to be restarted.Each meaning of each valid value for *networkIndicator* is described in SS7 Mtp3 specification Q.704. ***international*** - MTP3 node is a member of an “International” network. ***internationalSpare*** - MTP3 node is a member of an “International Spare” network. ***national*** - MTP3 node is a member of a “National” network. ***nationalSpare*** - MTP3 node is a member of a “National Spare” network.
Mib	Ss7
Values	international internationalSpare national nationalSpare
Default	international

GROUP Ss7 Mtp3 Ls OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls adminState (osiAdmin)

Access	Read only

Description

This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib

Ss7

Values

locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default

unlocked

ATTRIBUTE Ss7 Mtp3 Ls operationalState (osiOper)

Access

Read only

Description

This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

	The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ss7 Mtp3 Ls usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Ss7 Mtp3 Ls availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: Ss7

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Ss7 Mtp3 Ls proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does

initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Ss7

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Ss7 Mtp3 Ls controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Ss7

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Ss7 Mtp3 Ls alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Ss7

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Ss7 Mtp3 Ls standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the

role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Ss7

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Ss7 Mtp3 Ls unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Ss7

Values:
false
true

Default: false

GROUP Ss7 Mtp3 Ls WlcCustomCounters (WlcCustomCntr)

Properties: Operational

Description: This group contains the spare counters that can be dynamically patched.

Mib: Ss7

ATTRIBUTE Ss7 Mtp3 Ls customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Ss7 Mtp3 Ls Link (Lk)

Instance	Decimal (0..15)
Groups	"GROUP Ss7 Mtp3 Ls Lk Provisoned (Prov)" "GROUP Ss7 Mtp3 Ls Lk OsiState (State)" "GROUP Ss7 Mtp3 Ls Lk Operational (Oper)" "GROUP Ss7 Mtp3 Ls Lk WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS SignallingSystem7 MessageTransferPartLayer3 Linkset Link"

Scope	Application
Description	Ss7 Mtp3/n Linkset/n Link/n This component represents a SS7 signalling link that conveys signalling information between two signalling points.
Mib	Ss7
Common Verbs	Help List Display Add DELete Unlock

VERB LOCK Ss7 Mtp3 Ls Lk

Impact	Service
Description	*Lock [-force] Mtp3/n Linkset/n Link/n* This verb causes the specified *Ss7Link* component to immediately enter the OSI ***locked*** administrative state. Traffic flow ceases on the newly locked *Link* and is diverted to the remaining unlocked *Links* of the *LinkSet.* The *Lock* command fails if executed on the last ***unlocked*** *Link* of a *LinkSet*. The last ***unlocked*** *Link* of a *LinkSet* must be locked using the *force* option. **Options:** *-force* If this option is specified, the *Link* is locked even if it is the only unlocked *Link* in the *LinkSet*.

GROUP Ss7 Mtp3 Ls Lk Provisoned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7Link* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls Lk linkToSaalNni (saalNni)

Access	Read and write
Criticality	Component
Description	This attribute specifies a link to an *Ss7 SaalNni* component for each *Ss7Link* component in a LinkSet (for example, *SaalNni/n).*
Mib	Ss7
Values	Link (Service, linkToLinkInLinkset)
Default	No default

GROUP Ss7 Mtp3 Ls Lk OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls Lk adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ss7 Mtp3 Ls Lk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ss7 Mtp3 Ls Lk usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	Ss7
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Ss7 Mtp3 Ls Lk availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The

operationalState is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Ss7
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk proceduralStatus (osiProc)

Access	Read only

Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***. The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.
Mib	Ss7
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Ss7
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the

user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Ss7
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	Ss7
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Ss7 Mtp3 Ls Lk unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.

Mib	Ss7
Values	false true
Default	false

GROUP Ss7 Mtp3 Ls Lk Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ss7Link* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls Lk pdusRx

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) received from layer 2. This includes the PDUs with and without user payload. The counter wraps to 0 when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk payloadPdusRx (plPdusRx)

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) with payload received from layer 2. The counter wraps to 0 when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk pdusTx

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units sent to layer 2. This includes the PDUs with and without user payload. The counter wraps to 0 when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk payloadPdusTx (plPdusTx)

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) with payload sent to layer 2. The counter wraps to 0 when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk invalidPdusRx (invPdusRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of invalid Protocol Data Units received from Layer 2. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7

Values	Decimal (0..4294967295)
Default	No default

GROUP Ss7 Mtp3 Ls Lk WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls Lk customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 Ls Lk customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS SignallingSystem7 MessageTransferPartLayer3 Linkset Link
Description	The statistics record generated by the SignallingSystem7 MessageTransferPartLayer3 Linkset Link component.

ATTRIBUTE Ss7 Mtp3 Ls Lk pdusRx

Description	This attribute indicates the number of Protocol Data Units (PDUs) received from layer 2 over the collection interval. This includes the PDUs with and without user payload.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk payloadPdusRx

Description	This attribute indicates the number of Protocol Data Units (PDUs) with payload received from layer 2 over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk pdusTx

Description	This attribute indicates the number of Protocol Data Units (PDUs) sent to layer 2 over the collection interval. This includes PDUs with and without user payload.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk payloadPdusTx

Description	This attribute indicates the number of Protocol Data Units (PDUs) with payload sent to layer 2 over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk invalidPdusRx

Description	This attribute indicates the number of number of invalid Protocol Data Units received over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk sltFailures

Description	This attribute indicates the number of signalling link test message failure conditions over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Mtp3 Ls Lk changeovers

Description	This attribute indicates the number of link changeover conditions over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Ss7 Mtp3 Ls RouteInfo (Ri)

Groups	"GROUP Ss7 Mtp3 Ls Ri Provisioned (Prov)"
Scope	Application
Description	Ss7 Mtp3/n Linkset/n Routeinfo This component identifies a list of routes that are using this linkset to reach a destination signalling point. One linkset can be used by more than one route.
Mib	Ss7
Common Verbs	Help List Display Add DELete

GROUP Ss7 Mtp3 Ls Ri Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7 RouteInfo* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Ls Ri linkToRoute (lToR)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a list of links to routes that use this linkset to reach one of several destination signalling points.
Mib	Ss7
List of	Link (Service, linkToLinkset)
List Size	64
Default	No default

COMPONENT Ss7 Mtp3 ServiceIndicator (ServInd)

Instance	Decimal (3; 12)
Groups	"GROUP Ss7 Mtp3 ServInd Provisioned (Prov)" "GROUP Ss7 Mtp3 ServInd WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Ss7 Mtp3/n ServiceIndicator/<service indicator>* This component represents an MTP layer 3 service indicator. A service indicator is a logical identifier that represents a particular user of MTP layer 3 services. The SS7 specifications define which users are required to use a given service indicator.

	Only one application can use a particular MTP layer 3 service indicator.
Mib	Ss7
Common Verbs	Help List Display Add DELete

GROUP Ss7 Mtp3 ServInd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *SS7ServiceIndicator* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 ServInd linkToMtp3Connection (lToMtp3Conn)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a link to the application using the service represented by this service indicator. This attribute must specify either *Ss7 Sccp Mtp3Connection* or *Ss7 Alcap Mtp3Connection*. *Ss7 SccpMtp3Connection* must be used for *Ss7 Mtp3/n ServiceIndicator/3* and *Ss7 Alcap Mtp3Connection* must be used for *Ss7 Mtp3/n ServiceIndicator/12*. Changing the value of this attribute causes all the linksets associated with this MTP3 layer to be restarted.
Mib	Ss7
Values	Link (Service, linkToServiceIndicator)

Default	No default

GROUP Ss7 Mtp3 ServInd WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 ServInd customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 ServInd customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Mtp3 ServInd customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Ss7 Mtp3 Routeset (Rs)

Instance	Decimal (0..63)
Groups	"GROUP Ss7 Mtp3 Rs Provisoned (Prov)" "GROUP Ss7 Mtp3 Rs OsiState (State)"
Scope	Application
Description	Ss7 Mtp3/n Routeset/n This component represents an MTP3 routeset. A routeset is a grouping of routes that are used to transfer signalling between this node and a specific destination signalling point.
Mib	Ss7
Subcomponents	"COMPONENT Ss7 Mtp3 Rs Route (Ro)"
Common Verbs	Help List Display Add DELete Unlock

VERB LOCK Ss7 Mtp3 Rs

Impact	Service
Description	*Lock [-force] Mtp3/n Routeset/n* This verb causes the specified *Ss7Routeset* component to immediately enter the OSI ***locked*** administrative state. **Options:** *-force* If this option is specified, the *Route*set is locked. Otherwise, the lock command failed for the *Routeset*.

GROUP Ss7 Mtp3 Rs Provisoned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7Routeset* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Rs destPointCode (dpc)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the point code of the destination node that is reached through this routeset. The point code must be provisioned in one of the following formats: basic***:*** The point code is provisioned as a decimal number in the range ***1***..***16383***. A value of ***0*** is not valid. segmented: The point code is provisioned as three integers, separated by dots. The first integer must be in the range ***0***..***7***, the second integer must be in the range ***0***..***255***, and the third integer must be in the range ***0***..***7***. A value of ***0.0.0*** is not valid. This attribute must not specify a point code identical to that

specified by *origPointCode*.

Changing the value of this attribute causes this routeset and associated routes to be restarted.

Mib: Ss7

Values: Integer Sequence

Default: No default

ATTRIBUTE Ss7 Mtp3 Rs networkIndicator (netInd)

Access: Read: All
Write: All

Criticality: Component

Description: This attribute specifies whether the network is a national network, or an international network.
Changing the value of this attribute causes the routeset to be restarted.
Each meaning of each valid value for *networkIndicator* is described in SS7 Mtp3 specification Q.704.

international - MTP3 node is a member of an “International” network.
internationalSpare - MTP3 node is a member of an “International Spare” network.
national - MTP3 node is a member of a “National” network.
nationalSpare - MTP3 node is a member of a “National Spare” network.

Mib: Ss7

Values: international
internationalSpare
national
nationalSpare

Default: international

GROUP Ss7 Mtp3 Rs OsiState (State)

Properties: Operational

Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Rs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ss7 Mtp3 Rs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ss7 Mtp3 Rs usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Ss7

Values	idle active (activ) busy
Default	idle

ATTRIBUTE Ss7 Mtp3 Rs availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Ss7
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Ss7 Mtp3 Rs proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is

defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Ss7
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Ss7 Mtp3 Rs controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***. The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***. The value ***suspended*** indicates that the service has been administratively suspended.
Mib	Ss7
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Ss7 Mtp3 Rs alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Ss7
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Ss7 Mtp3 Rs standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Ss7

Values:
hotStandby (hot)
coldStandby (cold)
providingService (serv)
notSet (nSet)

Default: notSet

ATTRIBUTE Ss7 Mtp3 Rs unknownStatus (osiUnknw)

Access: Read only

Description: This attribute indicates the OSI Unknown status of the component.

The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate.

The value ***true*** indicates that the actual state of the component is not known for sure.

Mib: Ss7

Values	false true
Default	false

COMPONENT Ss7 Mtp3 Rs Route (Ro)

Instance	Decimal (0..1)
Groups	"GROUP Ss7 Mtp3 Rs Ro Provisoned (Prov)" "GROUP Ss7 Mtp3 Rs Ro OsiState (State)"
Scope	Application
Description	Ss7 Mtp3/n Routeset/n Route/n This component represents an MTP3 route that conveys signalling information between two signalling points using a specific adjacent signalling point.
Mib	Ss7
Common Verbs	Help List Display Add DELete Unlock

VERB LOCK Ss7 Mtp3 Rs Ro

Impact	Service
Description	*Lock [-force] Mtp3/n Routeset/n Route/n* This verb causes the specified *Ss7Route* component to immediately enter the OSI ***locked*** administrative state. Traffic flow ceases on the newly locked Route and is diverted to the unlocked Route of the RouteSet. The Lock command fails if executed on the last unlocked Route of a RouteSet. The last unlocked Route of a ROuteSet must be locked using the force option. Options: *-force* If this option is specified, the *Route* is locked even if it is the only unlocked Route in the RouteSet.

GROUP Ss7 Mtp3 Rs Ro Provisoned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7Route* component.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Rs Ro linkToLinkset (lToLS)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the link to the linkset that this route uses to reach the next transfer point. This attribute must specify a *Ss7 Mtp3/n Linkset/n Routeinfo* component. Changing the value of this attribute causes the route to be restarted.
Mib	Ss7
Values	Link (Service, linkToRoute)

Default	No default

ATTRIBUTE Ss7 Mtp3 Rs Ro priority (pri)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the route priority in relation to the other routes defined under the routeset. The route with the lower priority value (for example “1”) is used to carry the traffic. If two routes are defined with equal priority then loadsharing is performed across the two routes.
Mib	Ss7
Values	Decimal (1..2)
Default	1

GROUP Ss7 Mtp3 Rs Ro OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 Mtp3 Rs Ro adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Ss7

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Ss7 Mtp3 Rs Ro operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Ss7

Values:
enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE Ss7 Mtp3 Rs Ro usageState (osiUsage)

Access Read only

Description This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib Ss7

Values idle
active (activ)
busy

Default idle

ATTRIBUTE Ss7 Mtp3 Rs Ro availabilityStatus (osiAvail)

Access Read only

Description If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is

reservedForTest. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	Ss7
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Ss7 Mtp3 Rs Ro proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***. The value ***reporting*** indicates the resource has completed some

processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: Ss7

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Ss7 Mtp3 Rs Ro controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Ss7

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Ss7 Mtp3 Rs Ro alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Ss7

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Ss7 Mtp3 Rs Ro standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: Ss7

Values:
hotStandby (hot)
coldStandby (cold)

	providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Ss7 Mtp3 Rs Ro unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Ss7
Values	false true
Default	false

COMPONENT Ss7 SignallingConnControlPart (Sccp)

Instance	Decimal (1..16)
Groups	"GROUP Ss7 Sccp Provisioned (Prov)" "GROUP Ss7 Sccp OsiState (State)" "GROUP Ss7 Sccp Operational (Oper)" "GROUP Ss7 Sccp WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS SignallingSystem7 SignallingConnControlPart"

Scope	Application

Description	*Ss7 SignallingConnControlPart/n* This component represents the SCCP layer of the SS7 stack.
Mib	Ss7
Subcomponents	"COMPONENT Ss7 Sccp Mtp3Connection (Mtp3Conn)"
Opt. Subcomp.	"COMPONENT Ss7 Sccp LocalSubsystem (Loc)" "COMPONENT Ss7 Sccp RemoteSubsystem (Rem)"
Common Verbs	Help List Display Add DELete

GROUP Ss7 Sccp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7SignallingConnControlPart* component.
Mib	Ss7

ATTRIBUTE Ss7 Sccp maxConnections (maxC)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of signalling connections supported by an SCCP instance across all the local subsystems. The current number of open signalling connections is indicated by the attribute *activeConnections*. The number of times a signalling connection establishment was refused because the number of open connections has reached the maximum value is indicated by the attribute *rejectedConnections*. Changes to this attribute affect only new connections. No existing

connections will be affected by any changes made to this attribute.

Mib: Ss7

Values: Decimal (1000..200000)

Default: 16000

ATTRIBUTE Ss7 Sccp timerConnEst (tConnEst)

Access: Read: All
Write: All

Description: This attribute specifies the value of the TConnEst timer defined in the ITU-T spec Q.714. This is the period of time to wait for a CONNECTION CONFIRM message from the remote user of SCCP.

This timer is started when a CONNECT REQUEST message is sent to the remote SCCP layer.

This timer is stopped when either a CONNECT CONFIRM, RELEASED, or CONNECT REFUSED message is received, or when a routing failure happens.

Upon timer expiration, the resources associated with the connection are released and a disconnect message is sent to the local user(s).

The number of timeouts of this timer is indicated by the attribute *connEstTmouts*.

Mib: Ss7

Values: Decimal (60..120)

Units: seconds

Default: 60

ATTRIBUTE Ss7 Sccp timerInactivitySend (tIas)

Access: Read: All
Write: All

Description	This attribute specifies the value of the Tias timer defined in Q.714. This is the period of time to wait before sending an INACTIVITY TEST message for a connection when there are no messages to send. The timer is started when a CONNECT CONFIRM or CONNECT RESPONSE message is received. The timer is restarted if a DATA FORM 1 message is transmitted. This timer is stopped when a DISCONNECT, RELEASE COMPLETE or ERROR message is received, or when a routing failure occurs. If the timer expires on an open connection, an INACTIVITY TEST message is sent. It is recommended that the timer be set to a value that is half as long as the *tIarTimer.*
Mib	Ss7
Values	Decimal (300..600)
Units	seconds
Default	300

ATTRIBUTE Ss7 Sccp timerInactivityReceive (tIar)

Access	Read: All Write: All
Description	This attribute specifies the value of the inactivity receive timer defined in Q.714. This is the period of time to wait on receiving a message for a connection, before releasing the connection. This timer is started when a CONNECT CONFIRM or CONNECT RESPONSE message is received. This timer is restarted if a DATA FORM 1 or INACTIVITY TEST message is received.

This timer is stopped when a DISCONNECT, RELEASED, or ERROR message is received, or when a routing failure occurs.

If this timer expires on an open connection, a DISCONNECT message is sent and the resources are released.

It is recommended that the timer be set to a value that is twice as long as *tIasTimer*.

The number of timeouts of this timer is indicated by the attribute *inactivityReceiveTimeouts*.

Mib	Ss7
Values	Decimal (660..1260)
Units	seconds
Default	660

ATTRIBUTE Ss7 Sccp timerRel (tRel)

Access	Read: All Write: All
Description	This attribute specifies the value of the release timer defined in Q.714. This is the period of time to wait for a RELEASE COMPLETE message in response to the initial release attempt. This timer is started when a RELEASED message is sent. This timer is stopped when a RELEASE COMPLETE or ERROR message is received, or on a routing failure. Upon timer expiration, a RELEASE message is sent and the *tRepeatRelTimer* is started. The number of timeouts of this timer is indicated by the attribute *tRelTimeouts*.
Mib	Ss7
Values	Decimal (10..20)

Units	seconds
Default	10

ATTRIBUTE Ss7 Sccp timerRepeatRel (tRepeatRel)

Access	Read: All Write: All
Description	This attribute specifies the value of the repeat release timer. This is the period of time to wait for a RELEASE COMPLETE message after *tRelTimer* has expired. This timer determines the interval between successive release retries. This timer is started when *tRelTimer* expires. This timer is stopped when a RELEASE COMPLETE or an ERROR message is received, or when a routing failure occurs. Upon timer expiration, the timer is restarted for a maximum of ten times. Upon the tenth timer expiration, the resources are released. The number of timeouts of this timer is indicated by the attribute *tRepeatRelTimeouts*.
Mib	Ss7
Values	Decimal (10..20)
Units	seconds
Default	10

ATTRIBUTE Ss7 Sccp classOfService (classOfServ)

Access	Read: All Write: All
Description	This attribute specifies the type of service provided by the SCCP layer. The different service classes are: ***0*** - This class represents basic connectionless service. ***2***- This class represents basic connection-oriented service.

	Any combination of these classes can be provisioned by the user, but at least one class must be specified.
Mib	Ss7
Set of	0 2
Default	(0, 2)

GROUP Ss7 Sccp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 Sccp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	Ss7
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ss7 Sccp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ss7
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ss7 Sccp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ss7
Values	idle active (activ) busy
Default	idle

GROUP Ss7 Sccp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ss7SignallingConnControlPart* component.
Mib	Ss7

ATTRIBUTE Ss7 Sccp timerConnEstTimeouts (tConnEstTo)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the *tConnEstTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp timerInactivityReceiveTimeouts (tIarTo)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the timer specified by the attribute *timerInactivityReceive*. The counter wraps to zero when it exceeds the maximum value
Mib	Ss7

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp timerRelTimeouts (tRelTo)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the timer specified by the attribute *tRelTimer.* The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp timerRepeatRelTimeouts (repRelTo)

Access	Read: All Write: Illegal
Description	This attribute counts the timeouts of the timer specified by the attribute *tRepeatRelTimer.* The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp activeConnections (actConn)

Access	Read: All Write: Illegal
Description	This attribute indicates the current open signalling connections for the *Ss7SignallingConnControlPart* component. The maximum number of open signalling connections is set by the attribute *maxConnections.*

Mib	Ss7
Values	Decimal (0..1000000)
Default	No default

ATTRIBUTE Ss7 Sccp rejectedConnections (rejConn)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times a signalling connection establishment request by the application was refused. The reasons include the subsystem being down, the number of open connections exceeding the limit specified by the attribute *maxConnections* and so on. This includes the number of rejected connections indicated by the attribute *maxConnExhausted*. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp maxConnectionsExhausted (maxConnEx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times a signalling connection establishment request by the application was refused because the number of open connections reached the limit specified by the attribute *maxConnection.* The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp lostConnections (lostConn)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the open signalling connections lost due to unavailability of the SCCP Subsystem. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp unsupportedMessages (unsuppMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of unsupported (class1, class3) messages received. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp gttRequests (gttRqsts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages received that require Global Title Translation. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp segmentationRequests (segRqsts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages received that require segmentation. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp reassemblyRequests (reassemblyRqsts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of messages received that require reassembly. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp localRoutingFailures (localRoutFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the routing failures to the local subsystem. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp remoteRoutingFailures (remRoutFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the routing failures to the remote subsystem. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp messagesTx (msgsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the messages sent to layer 3. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp payloadMessagesTx (plMsgsTx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages transmitted. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp messagesRx (msgsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of the messages received from layer 3. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp payloadMessagesRx (plMsgsRx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload messages received from layer 3. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp invalidMessages (invMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the number of invalid (syntax error or undecodable) messages received. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp attemptedConnections (attCon)

Access	Read: All Write: Illegal
Description	This attribute counts the number of signalling connections that this *Ss7SignallingConnControlPart* component has attempted to establish. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

GROUP Ss7 Sccp WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Sccp customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp customCounter2 (customCntr2)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS SignallingSystem7 SignallingConnControlPart

Description	The statistics record generated by the SignallingSystem7 SignallingConnControlPart component.

ATTRIBUTE Ss7 Sccp activeConnections

Description	This attribute indicates the number of the current open signalling connections for the *Ss7SignallingConnControlPart* component at the end of the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp rejectedConnections

Description	This attribute indicates the number of rejected signalling connections for the *Ss7SignallingConnControlPart* component over the collection interval. The reasons include the

subsystem being down, the number of open connections exceeding the limit specified by the attribute *maxConnections* and so on, at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp maxConnectionsExhausted

Description This attribute indicates the number of times a signalling connection establishment request by the application was refused because the number of open connections reached the limit specified by the attribute *maxConnections*, over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp lostConnections

Description This attribute indicates the number of the open signalling connections lost due to unavailability of the SCCP Subsystem over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp invalidMessages

Description This attribute indicates the number of invalid (syntax error or undecodable) messages received over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp messagesTx

Description This attribute indicates the number of the messages sent to layer 3 over the collection interval. This includes maintenance messages.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp payloadMessagesTx

Description This attribute indicates the number of payload messages transmitted over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp messagesRx

Description	This attribute indicates the number of the messages received from layer 3 over the collection interval. This includes maintenance messages.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp payloadMessagesRx

Description	This attribute indicates the number of payload messages received over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp localRoutingFailures

Description	This attribute indicates the number of the routing failures to the local subsystem over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp remoteRoutingFailures

Description	This attribute indicates the number of the routing failures to the remote subsystem over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 Sccp attemptedConnections (attCon)

Description	This attribute indicates the number of signalling connections that this *Ss7SignallingConnControlPart* component has attempted to establish during the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Ss7 Sccp LocalSubsystem (Loc)

Instance	Decimal (0..255)
Groups	"GROUP Ss7 Sccp Loc Provisioned (Prov)" "GROUP Ss7 Sccp Loc OsiState (State)" "GROUP Ss7 Sccp Loc WlcCustomCounters (WlcCustomCntr)"
Scope	Application

Description	*Ss7 Sccp/n LocalSubsystem* This component represents a local subsystem that is providing services using this *Ss7SignallingConnControlPart* component.
Mib	Ss7
Common Verbs	Help List Display Add DELete

GROUP Ss7 Sccp Loc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7LocalSubsystem* component.
Mib	Ss7

ATTRIBUTE Ss7 Sccp Loc subsystemNumber (ssn)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the subsystem number of the local subsystem represented by the *Ss7LocalSubsystem* component.
Mib	Ss7
Values	ranap rnsap
Default	ranap

GROUP Ss7 Sccp Loc OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 Sccp Loc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ss7
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ss7 Sccp Loc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Ss7
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ss7 Sccp Loc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ss7
Values	idle active (activ) busy
Default	idle

GROUP Ss7 Sccp Loc WlcCustomCounters (WlcCustomCntr)

Properties	Operational

Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Sccp Loc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp Loc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp Loc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Ss7 Sccp RemoteSubsystem (Rem)

Instance	Decimal (0..255)
Groups	"GROUP Ss7 Sccp Rem Provisioned (Prov)" "GROUP Ss7 Sccp Rem WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Ss7 Sccp/n RemoteSubsystem* This optional component represents a remote subsystem that can be accessed by this *Ss7SignallingConnControlPart* component.
Mib	Ss7
Common Verbs	Help List Display Add DELete

GROUP Ss7 Sccp Rem Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7RemoteSubsystem* component.
Mib	Ss7

ATTRIBUTE Ss7 Sccp Rem subsystemNumber (ssn)

Access	Read: All Write: All
Criticality	Component

Description	This attribute specifies the subsystem number of the remote subsystem represented by the *Ss7RemoteSubsystem* component.
Mib	Ss7
Values	ranap rnsap
Default	ranap

ATTRIBUTE Ss7 Sccp Rem pointCodeList (pcl)

Access	Read: All Write: All
Description	This attribute specifies a list of point codes associated with this *Ss7RemoteSubsystem* component.
Mib	Ss7
List of	Integer Sequence
List Size	64
Default	No default

GROUP Ss7 Sccp Rem WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Sccp Rem customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp Rem customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp Rem customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Ss7 Sccp Mtp3Connection (Mtp3Conn)

Groups	"GROUP Ss7 Sccp Mtp3Conn Provisioned (Prov)" "GROUP Ss7 Sccp Mtp3Conn WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	Ss7 Alcap/n Mtp3Connection Ss7 Sccp/n Mtp3Connection

This component represents a connection to an MTP3 layer.

Mib	Ss7
Common Verbs	Help List Display

GROUP Ss7 Sccp Mtp3Conn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Mtp3Connection*component.
Mib	Ss7

ATTRIBUTE Ss7 Sccp Mtp3Conn linkToServiceIndicator (lToSI)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a link to an *Ss7 Mtp3/n ServiceIndicator/n* component for MTP 3 services. Changing this attribute will cause the application using the MTP3 layer's services to be restarted.
Mib	Ss7
Values	Link (Service, linkToMtp3Connection)
Default	No default

GROUP Ss7 Sccp Mtp3Conn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Sccp Mtp3Conn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp Mtp3Conn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Sccp Mtp3Conn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)

Default	No default

COMPONENT Ss7 AccessLinkControlApplicationPart (Alcap)

Instance	Decimal (1..16)
Scope	Application
Description	*Ss7 AccessLinkControlApplicationPart/n* This component represents the ALCAP layer of the SS7 stack.
Mib	Ss7
Subcomponents	"COMPONENT Ss7 Alcap Mtp3Connection (Mtp3Conn)"
Common Verbs	Help List Display Add DELete

COMPONENT Ss7 Alcap Mtp3Connection (Mtp3Conn)

Groups	"GROUP Ss7 Alcap Mtp3Conn Provisioned (Prov)" "GROUP Ss7 Alcap Mtp3Conn WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	Ss7 Alcap/n Mtp3Connection Ss7 Sccp/n Mtp3Connection This component represents a connection to an MTP3 layer.
Mib	Ss7
Common Verbs	Help List Display

GROUP Ss7 Alcap Mtp3Conn Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes of the *Mtp3Connection*component.
Mib	Ss7

ATTRIBUTE Ss7 Alcap Mtp3Conn linkToServiceIndicator (lToSI)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a link to an *Ss7 Mtp3/n ServiceIndicator/n* component for MTP 3 services. Changing this attribute will cause the application using the MTP3 layer's services to be restarted.
Mib	Ss7
Values	Link (Service, linkToMtp3Connection)
Default	No default

GROUP Ss7 Alcap Mtp3Conn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 Alcap Mtp3Conn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Ss7 Alcap Mtp3Conn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 Alcap Mtp3Conn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Ss7 SaalNni (SaalNni)

Instance	Decimal (1..1024)
Groups	"GROUP Ss7 SaalNni Provisioned (Prov)" "GROUP Ss7 SaalNni SscopProv (Sscop)" "GROUP Ss7 SaalNni SscfProv (Sscf)" "GROUP Ss7 SaalNni OsiState (State)" "GROUP Ss7 SaalNni Operational (Oper)" "GROUP Ss7 SaalNni WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS SignallingSystem7 SaalNni"

Scope	Application
Description	*Ss7 SaalNni/n* This component represents the SAAL-NNI layer that provides an adaptation layer to run signalling traffic over ATM using AAL5.
Mib	Ss7
Subcomponents	"COMPONENT Ss7 SaalNni NailedupAdaptationPoint (Nap)"
Common Verbs	Help List Display Add DELete

GROUP Ss7 SaalNni Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *SS7SaalNni* component.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni linkToLinkInLinkset (link)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a linkage between an *Ss7 Mtp3/n LinkSet/n Link/n* component and an *Ss7 SaalNni/n* component.
Mib	Ss7
Values	Link (Service, linkToSaalNni)
Default	No default

GROUP Ss7 SaalNni SscopProv (Sscop)

Properties	Provisioned

Description	This group contains the provisionable attributes needed by the SSCOP sub-layer of SAAL-NNI.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni maxPdusBetweenPolls (maxPdus)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of Signalling Data PDUs that can be sent without sending a POLL PDU, as defined in ITU-T recommendation Q.2110.
Mib	Ss7
Values	Decimal (1..1000)
Default	500

ATTRIBUTE Ss7 SaalNni ccTimer (cc)

Access	Read: All Write: All
Description	This attribute specifies the time between transmissions of ‘BGN’, ‘END’, ‘RS’ and ‘ER’ PDUs, as defined in ITU-T recommendation Q.2110. The timer is started when any one of these PDUs is transmitted. The timer is stopped when a proper acknowledgement is received (e.g. BGNAK, ENDAK, RSACK, or ERACK). Upon timer expiry the PDU will be retransmitted. The PDU is transmitted a maximum of *maxCc* times. If the timer expires *maxCc* times, the link will be released, and the and the number of times this happens will be indicated by the attribute *maxCcReached.* Layer 3 will attempt to bring the link back up.
Mib	Ss7

Values	Decimal (100..1000)
Units	msec
Default	200

ATTRIBUTE Ss7 SaalNni maxCc

Access	Read: All Write: All
Description	This attribute specifies the maximum number of allowed unacknowledged transmissions of ‘BGN’, ‘END’, ‘ER’ or ‘RS’ Protocol Data Units (PDUs) as defined in ITU-T recommendation Q.2110. If the number of unacknowledged transmissions exceeds this value, the link will be released, and the number of times this happens will be indicated by the attribute *maxCcReached*.
Mib	Ss7
Values	Decimal (1..1000)
Default	4

ATTRIBUTE Ss7 SaalNni keepAliveTimer (tKeepAl)

Access	Read: All Write: All
Description	This attribute specifies the time between sending of POLL PDUs when there is no activity on the link, as defined in ITU-T recommendation Q.2110. The timer is started when either the *pollTimer* or the *keepAliveTimer* expires and there are no PDUs queued for sending. The timer is stopped when a data request (SD PDU) is ready to be sent. Upon expiry this timer sends a POLL PDU.

The value of *keepAliveTimer* should be set to a value greater that *pollTimer* and greater than the round-trip delay of a PDU.

Mib: Ss7

Values: Decimal (100..1000)

Units: msec

Default: 100

ATTRIBUTE Ss7 SaalNni noResponseTimer (noResp)

Access: Read: All
Write: All

Description: This attribute specifies the time interval during which at least one STAT PDU should be received.

The timer is started when a POLL PDU is sent.

The timer is stopped when a STAT PDU is received.

Upon timer expiry, the link is released, that is, brought out of service. Layer 3 will then attempt to bring it back to service.

The value of the *noResponseTimer* must not be less than the sum of the *keepAliveTimer* and one round-trip delay of a Protocol Data Unit (PDU).

The number of expiries of this timer is indicated by the attribute *noResponseTimeouts*.

Mib: Ss7

Values: Decimal (500..2000)

Units: msec

Default: 1500

ATTRIBUTE Ss7 SaalNni pollTimer

Access: Read: All
Write: All

Description	This attribute specifies the time between sending of POLL PDUs when the link has traffic, as defined in ITU-T recommendation Q.2110. The timer is started when the link enters the Data Transfer Ready State. The timer is stopped when the link is released. Upon expiry, a POLL PDU is sent and *pollTimer* is restarted if the link has traffic.
Mib	Ss7
Values	Decimal (100..1000)
Units	msec
Default	100

ATTRIBUTE Ss7 SaalNni idleTimer

Access	Read: All Write: All
Description	This attribute specifies the idle time after receipt of a STAT PDU, as defined in ITU-T recommendation Q.2110. The timer is started when a STAT PDU is received. The timer is stopped when data is sent or received on the link. Upon expiry, a POLL PDU is sent and the *noResponseTimer* is started. The value of the *idleTimer* must be greater that the sum of the *pollTimer* and the maximum round trip delay of a PDU.
Mib	Ss7
Values	Decimal (100..1000)
Units	msec

Default	100

GROUP Ss7 SaalNni SscfProv (Sscf)

Properties	Provisioned
Description	This group contains provisionable attributes needed by the SSCF sub layer of SAAL-NNI.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni provingMode

Access	Read: All Write: All
Description	This attribute allows the operator to place the link into one of the link proving modes defined in ITU-T recommendation Q.2140. ***normal*** - This mode corresponds to the MAAL-FORCE_PROVING-request. It forces the SAAL-NNI layer to utilize proving when bringing up the link. ***neutral*** - This mode corresponds to the MAAL-CLEAR_FORCE_MODES-request.It specifies that the layer using SAAL-NNI will select the proving mode. ***emergency*** - This mode corresponds to the MAAL-FORCE_EMERGENCY-request. It causes proving to be skipped. When this attribute is set to ***neutral,*** the layer that uses SAAL_NNI (MTP3) selects the proving mode, but when the attribute is set to ***normal*** or ***emergency***, instructions from the entity which uses SAAL-NNI are ignored.
Mib	Ss7
Values	normal neutral emergency
Default	neutral

ATTRIBUTE Ss7 SaalNni linkReEstablishTimer (t1)

Access	Read: All Write: All
Description	This attributes specifies the time between the link release action and the next link re-establish action during alignment, as defined in ITU-T recommendation Q.2140. This timer is started when a release indication or confirmation is received while the link is in the Alignment or InService state. This timer is stopped in one of two cases: If the SAAL-NNI layer successfully receives an establish request or establish confirm from the peer SAAL-NNI layer. If the SAAL_NNI layer receives a stop indication or release request from the layer 3 user or layer management respectively. Upon timer expiration, link alignment and proving is re-started.
Mib	Ss7
Values	Decimal (0..30)
Units	seconds
Default	5

ATTRIBUTE Ss7 SaalNni alignmentAcceptTimer (t2)

Access	Read: All Write: All
Description	This attributes specifies the total time to attempt alignment and is defined in ITU-T recommendation Q.2140. This timer is started when a start request is received. If the link is put in service before the expiry of this timer, no action is performed. This timer is stopped in one of two cases. If the SAAL-NNI layer successfully passes from the link proving state to the InService state.

If the SAAL-NNI layer receives a stop indication from the layer 3, or a release request from layer management.

Upon timer expiration, link establishment is cancelled and link is taken out of service. Layer 3 will attempt to bring the link back in service.

The value of this timer can be adjusted if link proving fails due to an inability to send the target number proving PDUs indicated by the attribute *targetProvingPdus.* The current number of proving PDUs sent successfully is indicated by the attribute *currentProvingPdus*.

Mib	Ss7
Values	Decimal (5..150)
Units	seconds
Default	30

GROUP Ss7 SaalNni OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or

Lock command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	Ss7
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Ss7 SaalNni operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ss7
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Ss7 SaalNni usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ss7
Values	idle active (activ) busy
Default	idle

GROUP Ss7 SaalNni Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *SS7SaalNni* component.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni state (provSt)

Access	Read: All Write: Illegal
Description	This attribute indicates the proving state of the link. The different states are: ***notStarted*** - Proving has not started. ***incomplete*** - Proving is in progress, but not completed yet. ***completeSuccess*** - Proving has been completed successfully. ***completeFailed*** - This proving attempt failed.
Mib	Ss7

Values	notStarted inComplete completeSuccess completeFailed
Default	No default

ATTRIBUTE Ss7 SaalNni targetProvingPdus (n1)

Access	Read: All Write: Illegal
Description	This attribute indicates the target number of proving PDUs to be sent across the link during the proving period. The current number of proving PDUs that have been sent is indicated by the attribute *currentProvingPdus*.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni currentProvingPdus (c1)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of proving PDUs that have been sent across the link during this proving period. The target number of proving PDUs that must be sent is indicated by the attribute *targetProvingPdus*
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni inSrvDuration (inSrvDur)

Access	Read: All Write: Illegal

Description	This attribute indicates the time that the signalling link has remained in the in-service state since it was most recently brought in service.
Mib	Ss7
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Ss7 SaalNni maxCcReached (maxCcR)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the signalling link has been released because the number of unacknowledeged transmissions of ‘BGN’, ‘END’, ‘ER’ or ‘RS’ Protocol Data Units (PDUs) has exceeded the value provisioned in the attribute *maxCc*. The counter wraps to zero when it exceeds its maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni noResponseTimeouts (noRespTo)

Access	Read: All Write: Illegal
Description	This attribute counts the expiries of the No Response timer, specified by the attribute *noResponseTimer.* The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni pdusTx (pduTx)

Access	Read: All Write: Illegal
Description	This attribute counts the protocol data units transmitted. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni pdusRx (pduRx)

Access	Read: All Write: Illegal
Description	This attribute counts the protocol data units received. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni pduOctetsTx (pduOctTx)

Access	Read: All Write: Illegal
Description	This attribute counts the payload PDU octets transmitted. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni pduOctetsRx (pduOctRx)

Access	Read: All Write: Illegal
Description	This attribute counts the payload PDU octets received over the collection interval.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni insvFailures (insvFail)

Access	Read: All Write: Illegal
Description	This attribute counts the in-service link outages. It does not include failures which occur during the alignment process. The counter wraps to zero when it exceeds the maximum value.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

GROUP Ss7 SaalNni WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS SignallingSystem7 SaalNni

Description	The statistics record generated by the SignallingSystem7 SaalNni component.

ATTRIBUTE Ss7 SaalNni insvFailures

Description	This attribute indicates the number of in-service link outages over the collection interval. It does not include failures which occur during the alignment process.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pdusTx

Description	This attribute indicates the number of protocol data units transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pdusRx

Description	This attribute indicates the number of protocol data units received over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pduOctetsTx

Description	This attribute indicates the number of payload PDU octets transmitted over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Ss7 SaalNni pduOctetsRx

Description	This attribute indicates the number of payload PDU octets received over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Ss7 SaalNni NailedupAdaptationPoint (Nap)

Groups	"GROUP Ss7 SaalNni Nap Provisioned (Prov)" "GROUP Ss7 SaalNni Nap WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Ss7 SaalNni/n NailedupAdaptationPoint*

	This component is used to provide access to a nailed-up ATM connection (an *Atmif/n Vcc/n Nep*).
Mib	Ss7
Common Verbs	Help List Display

GROUP Ss7 SaalNni Nap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Ss7NailedupAdaptationPoint* component.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni Nap atmConnection (atmConn)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies a link to an *AtmIf Vcc Nep* component that provides access to an ATM network.
Mib	Ss7
Values	Link (Service, applicationName)
Default	No default

GROUP Ss7 SaalNni Nap WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	Ss7

ATTRIBUTE Ss7 SaalNni Nap customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni Nap customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Ss7 SaalNni Nap customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	Ss7
Values	Decimal (0..4294967295)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Ss7

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Sw

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COMPONENT Software (Sw)

Groups	"GROUP Sw Provisioned (Prov)" "GROUP Sw Operational (Oper)"
Scope	Device
Description	*SW* The *SW* component is the top-level component of all software configuration components.
Mib	Software
Subcomponents	"COMPONENT Sw Autopatch (Ap)"
Opt. Subcomp.	"COMPONENT Sw LogicalProcessorType (Lpt)"
Dyn. Subcomp.	"COMPONENT Sw Download (Dld)" "COMPONENT Sw ApplicationVersion (Av)"
Common Verbs	Help List Display

VERB Tidy Sw

Impact	Configuration
Description	*Tidy Sw* This verb is used to remove all unreferenced *AV* operational subcomponents along with all their associated software files from the disk. This means that an *AV* can be removed only if all of the following conditions are met: 1) The AV is not specified in the AVL in the Current view (that is, the one currently activated). 2) The AV is not specified in the AVL of the Edit view if it has been semantically checked. 3) The AV is not specified in any AVL which would become active if an existing semantically-checked provisioning file is loaded and activated. 4) The AV is not specified in any *AVL* in the journaling files. 5) The AV is not the parent AV of a patched AV that is ineligible for *Tidy*ing because it doesn't meet one or more of the above criteria. The *Tidy* command is mutually exclusive with *Check Prov*, *Download*, *Check Sw AutoPatch* and *Remove* commands. It will fail, not removing any *AVs*, if either a *Check Prov*, a *Download*, a *Remove, a Check Sw AutoPatch, or a Tidy* command is still in progress, or the file system is locked or otherwise unavailable.

GROUP Sw Provisioned (Prov)

Properties	Provisioned
Description	This group contains the Provisionable attributes for the *SW* component.
Mib	Software

ATTRIBUTE Sw avList (avl)

Access	Read and write
Description	This attribute specifies, for each application, which version of its *Features* and the associated software will be loaded when any of its *Features* are selected in an *LPT*. A version of the "base" application must be specified. All names specified by the user must actually be *AV* names.

	All *AVs* specified must be compatible with each other. No more than one version of a single application can be specified
Mib	Software
List of	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw patchList (patl)

Access	Read and write
Description	This attribute specifies which patches are to be loaded and enabled. Only patches for *Av*'s that appear in the *AvList* may be specified. Only patches appearing as instances of *Sw Av Patch* may be specified. Patch names are case insensitive. Except for case, patch names must be typed as they appear as instances of *Sw Av Patch*. All patches specified must be compatible with one another. Any prerequisite patches for specified patches, must themselves be specified. A patch must be specified only once in the list.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

GROUP Sw Operational (Oper)

Properties	Operational
Description	This group contain the operational attributes for the *SW* component.
Mib	Software

ATTRIBUTE Sw tidyStatus

Access	Read only
Description	This attribute indicates the tidy or remove status. If the value is ***inactive***, no tidy or remove is in progress. If the value is

	inProgress or ***querying***, the tidy or remove process has begun and therefore no further *Tidy Sw or Remove sw/<avName>* command is allowed until status returns to inactive.
Mib	Software
Values	inactive inProgress querying
Default	No default

ATTRIBUTE Sw avBeingTidied

Access	Read only
Description	This attribute indicates the name of the AV currently being tidied or removed. An empty string indicates there is no AV being tidied.
Mib	Software
Values	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw avListToTidy

Access	Read only
Description	This attribute holds the list of names of AVs to be tidied or removed. As AVs are successfully cleaned, they are removed from this list and added to *avListTidied*.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw avListTidied

Access	Read only
Description	This attribute holds the list of names of AVs which have been successfully tidied or removed as a result of the last *Tidy Sw or*

	Remove Sw av/<avName> command. It is cleared each time a new *Tidy Sw or Remove Sw av/<avName>* command is issued.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

COMPONENT Sw Download (Dld)

Groups	"GROUP Sw Dld Operational (Oper)"
Scope	Device
Description	*Sw Dld* The *Download* component manages the retrieval of software from the Software Distribution Site (SDS). The module initiates the connection to the SDS and retrieves the files it wants according to the *AVs* specified by the user in *avListToDownload*.
Mib	Software
Common Verbs	Help List Display

VERB Start Sw Dld

Impact	Configuration
Description	*Start -u(<userid>) -p(<password>) -h(<host>) Sw Dld* This command is used to start a download. Before starting the download, the *avListToDownload* should be set up, specifying what to download. The *Start* will fail if a *Remove*, a *Tidy*, *a Check Sw AutoPatch*, or a *Check Prov* are in progress.

VERB Stop Sw Dld

Impact	Configuration
Description	*Stop Sw Dld* This command is used to stop a download. Note that it may not be possible to start another download immediately since it may take some time to tear down the IP connection (that is, the entity handling the connection may be suspended and not be able to even detect that a stoppage was requested).

GROUP Sw Dld Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Download* component.
Mib	Software

ATTRIBUTE Sw Dld avBeingDownloaded

Access	Read only
Description	This attribute indicates the name of the AV currently being downloaded. If the download is ***inProgress***, this attribute will indicate the same as the first AV in the list of AV's to be downloaded. If there is no AV being downloaded, this attribute will indicate an empty string.
Mib	Software
Values	String (0..30, ASCII)
Default	No default

ATTRIBUTE Sw Dld status

Access	Read only
Description	This attribute indicates the download status. If the value is ***inactive***, no download is in progress. This is the value required in order to issue a *Start* command. If the value is ***inProgress***, the download procedure has begun. This process starts from the time a Software Distribution Site (SDS) login is attempted and continues through the time during

	which files are actually being transferred. If the value is ***stopping***, a user has requested a stoppage but the connections have not yet been completely torn down.
Mib	Software
Values	inactive inProgress stopping
Default	No default

ATTRIBUTE Sw Dld filesToTransfer

Access	Read only
Description	This attribute indicates the number of files which are still left to transfer for the *AV* currently being downloaded. It is cleared each time a new *AV* is processed from the *avListToDownload*. Note that for each *AV*, the value of this attribute will be 0 until the actual number of files to transfer has been computed.
Mib	Software
Values	Decimal (0..1000)
Default	No default

ATTRIBUTE Sw Dld processorTargets

Access	Read and write
Description	This attribute indicates the processor based object file to download on switch. After a CP restart or software migration, this attribute is initialized to the processor targets present on the CP disk for the current provisioned Application Versions (*AVs)*. This attribute can have the following values: ***i960*** - Object files for cards with an i960 processor are to be downloaded. ***ppc*** - Object files for cards with a PowerPC processor are to be downloaded.

Mib	Software
Set of	i960 ppc
Default	No default

ATTRIBUTE Sw Dld avListToDownload (dldList)

Access	Read and write
Description	This attribute holds the list of names of *AVs* to be downloaded. If a download is in progress, the first one in the list is the one currently being downloaded. As *AVs* are successfully downloaded, they are removed from this list and added to the *downloadedAvList*. The user cannot specify an *AV* which already exists on disk. It must first be removed before re-downloading it (see the *Tidy* and *Remove* commands).
Mib	Software
List of	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw Dld downloadedAvList

Access	Read only
Description	This attribute holds the list of names of *AVs* which have been successfully downloaded as a result of the last *Start* command. It is cleared each time the *Start* command is issued.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

COMPONENT Sw ApplicationVersion (Av)

Instance	String (1..30, ASCII)
Groups	"GROUP Sw Av Operational (Oper)"
Scope	Device

Description	*Sw Av/<name>* This component represents a particular version of an application that is available to use in the *AVL*. They can only be created by downloading and can only be deleted by using the *Tidy* or *Remove* commands. The *PatchVersion* subcomponent only exists for the patch *AV.* The component contains the patch version files which are used to determine the status and category of a given patch. It is used in conjunction with the *AutoPatch* component for the auto-patch feature. An *AV* has one or more *Feature* subcomponents, and it may have one or more Patch subcomponents which belong to it.
Mib	Software
Dyn. Subcomp.	"COMPONENT Sw Av Feature (Feat)" "COMPONENT Sw Av Patch (Patch)" "COMPONENT Sw Av PatchVersion (PatchVersion)"
Common Verbs	Help List Display

VERB Remove Sw Av

Impact	Configuration
Description	*Remove Sw Av/<name>* This command is used to remove an AV component and the associated software files from the disk as long as it is unreferenced. This means that an *AV* can be removed only if all of the following conditions are met: 1) The AV is not specified in the *AVL* in the Current view (that is, the one currently activated). 2) The AV is not specified in the *AVL* in the Edit view if it has been semantically checked. 3) The AV is not specified in any *AVL* which would become active if an existing semantically-checked provisioning file is loaded and activated. 4) The AV is not specified in any *AVL* in the journaling files. 5) The AV is not a parent AV to a patched AV. To remove an AV that has patched AVs based upon it, first remove the patched AVs. To clean up unused provisioning files, see the “Tidy Prov” command. To clean up journaling files, see the “Commit Prov” command. The *Remove* command is mutual exclusive with *Check Prov*, *Download*, *Check Sw AutoPatch*, and *Tidy* command. It will fail, not removing this *AV*, if either a *Check Prov*, a *Download*, a *Tidy*, *a Check Sw AutoPatch*, or a *Remove* command is still in progress, or if the file system is locked or otherwise unavailable.

GROUP Sw Av Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for an *AV* component.
Mib	Software

ATTRIBUTE Sw Av processorTargets

Access	Read only
Description	This is a list of the processor based object file types which exist on disk for a given AV. Semantic check will validate that the

	object files needed for a provisioned card type are present as part of an application.
Mib	Software
Set of	i960 ppc
Default	No default

ATTRIBUTE Sw Av description (descr)

Access	Read only
Description	This attribute describes the functionality of the *AV*. If the *AV* is a patched *AV*, this attribute describes the new behavior delivered by the patched *AV*.
Mib	Software
Values	String (0..512, ASCII)
Default	No default

ATTRIBUTE Sw Av compatibleAvList

Access	Read only
Description	This is a list of the *AV* names which specify the minimum version of all other applications that can be used in conjunction with this *AV* in an *AVL*. Semantic checks will validate that *AVs* within the *AVL* are indeed compatible.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

COMPONENT Sw Av Feature (Feat)

Instance	String (1..30, ASCII)
Scope	Device
Description	*Sw Av/<name> Feat/<name>* There is one of these components for each provisionable feature

of the parent AV component. Each feature's name can be used in an Lpt's feature list attribute. A feature component does not have any attributes of its own.

Mib: Software

Common Verbs:
Help
List
Display

COMPONENT Sw Av Patch (Patch)

Instance: String (1..30, ASCII)

Groups: "GROUP Sw Av Patch Operational (Oper)"

Scope: Device

Description: *Sw Av/<name> Patch/<name>*
There is one of these components for each patch of the parent AV component that has been downloaded to the switch.

Mib: Software

Common Verbs:
Help
List
Display

GROUP Sw Av Patch Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for the *Patch* component.

Mib: Software

ATTRIBUTE Sw Av Patch description (descr)

Access: Read only

Description: This attribute indicates the new behavior that the patch provides. The availability of this description is dependent on the disk being available.

Mib	Software
Values	String (0..512, ASCII)
Default	No default

ATTRIBUTE Sw Av Patch patchType (type)

Access	Read only
Description	This attribute indicates the patch type. This attribute can have a value of ***tap*** (transparent application), ***cpReset***, or ***fpReset.*** TAP patches do not require a card reset in order for the patch to become active, whereas Reset patches involve the full replacement of an executable file and therefore necessitate the reloading of the cards on which that file is active. Because the *patchType* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
Set of	tap cpReset fpReset
Default	No default

ATTRIBUTE Sw Av Patch patchStatus (status)

Access	Read only
Description	This attribute indicates the current status of a patch. The patch status can be one of three values: ***released*** (denoting a patch that is GA), ***verification*** (denoting a patch that is still in Beta testing) and ***none*** (default, when the system is not sure of the patch status). Because the *patchStatus* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
Values	released verification none

Default	No default

ATTRIBUTE Sw Av Patch patchCategory (category)

Access	Read only
Description	This attribute indicates the current category of a patch. The patch category can be one of six values: ***GEN*** (General Availability), ***LTD*** (Limited Distribution), ***DBG*** (Debug Content in the patch), ***OBS*** (Standard Obsolete patch), ***OBE*** (Emergency Obsolete patch), and ***NONE*** (default, when the system is not sure of the patch category). Because the *patchCategory* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
Values	gen ltd dbg obs obe none
Default	No default

ATTRIBUTE Sw Av Patch autoEligible (auto)

Access	Read only
Description	This attribute indicates whether a patch is eligible for auto-application. If the value of this attribute is ***no***, it overrides any other eligibility considerations and the patch is ineligible. However, if the value of this attribute is ***yes***, the patch must still meet all of the other criteria for auto-application eligibility. Because the *autoEligible* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
Values	yes no

Default	No default

ATTRIBUTE Sw Av Patch mutuallyExclusive (mutEx)

Access	Read only
Description	This attribute indicates patches that are mutually exclusive to the patch being displayed. Because the *mutuallyExclusive* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw Av Patch prerequisites (prereq)

Access	Read only
Description	This attribute indicates patches that are prerequisites to the patch being displayed. Prerequisite patches must appear in the *Sw patchList* along with the patch in question. Because the *prerequisites* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw Av Patch activateAfter (actAft)

Access	Read only
Description	This attribute indicates the patch or patches that are activated prior to the patch currently being displayed, when all patches are provisioned (that is, the patch being displayed is activated following the activation of the patches listed in this attribute). For example, if patch A is the patch listed in patch B's *activateAfter* attribute, patch A is activated before patch B, when both patch A and B are present in the *Sw patchList* attribute. Since the

	activateAfter attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw Av Patch supersedes (super)

Access	Read only
Description	This attribute indicates patches that are superseded by the patch being displayed. This patch and any of the patches that it supersedes are mutually exclusive to the patch being displayed. Because the *supersedes* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

COMPONENT Sw Av PatchVersion (PatchVersion)

Instance	String (1..30, ASCII)
Groups	"GROUP Sw Av PatchVersion Operational (Oper)"
Scope	Device
Description	*Sw Av/<name> PatchVersion/<version>* The *PatchVersion* component is only applicable with respect to the patch *AV*, all other *AV*s will ignore this component. Accessing this component will list the patch version files on the CP disk.
Mib	Software
Common Verbs	Help List Display

GROUP Sw Av PatchVersion Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *PatchVersion* component.
Mib	Software

ATTRIBUTE Sw Av PatchVersion patches

Access	Read only
Description	This attribute lists the patches available in the given patch version. Because the *patches* attribute is not stored in memory and must be retrieved from the CP disk, the availability of this attribute is dependent on the disk being available.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

COMPONENT Sw LogicalProcessorType (Lpt)

Instance	String (1..25, ASCII)
Groups	"GROUP Sw Lpt Provisioned (Prov)"
Scope	Device
Description	*Sw Lpt/<name>* This component is the Logical Processor Type, specifying characteristics of the software to be loaded on a card. Minimally, *LPT/CP* is required to exist. If it is deleted, semantic checks will fail.
Mib	Software
Common Verbs	Help List Display Add DELete

GROUP Sw Lpt Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *LPT* component.
Mib	Software

ATTRIBUTE Sw Lpt commentText (text)

Access	Read and write
Description	An arbitrary string used to enter a comment about an *LPT*.
Mib	Software
Values	String (0..80, ASCII)
Default	No default

ATTRIBUTE Sw Lpt systemConfig (systemConfig)

Access	Read and write
Description	This attribute specifies which set of pre-configured system parameters to use for the set of *Features* selected in *featureList*.
Mib	Software
Values	default
Default	default

ATTRIBUTE Sw Lpt featureList (fl)

Access	Read and write
Description	This attribute specifies a list of names of *Features* that define a particular configuration of application functionality that the user wants to load on a single processor. The combination of *Features* selected must be compatible (for example, none can be mutually exclusive with another in the list). All *Features* must belong to an *AV* specified in the *AVL*. All *Features* must be able to be loaded on any of the *Cards* which are linked to *LPs* which are linked to this *LPT*.

	All prerequisite *Features* of the ones in this list will also be loaded.
Mib	Software
List of	String (1..30, ASCII)
Default	No default

ATTRIBUTE Sw Lpt logicalProcessors

Access	Read only
Description	This attribute shows which *LPs* are configured to load the *Feature* files associated with this *LPT*. It is the opposite side of the *LP* component's *logicalProcessorType* link attribute.
Mib	Software
List of	Link (Service, logicalProcessorType)
List Size	16
Default	No default

COMPONENT Sw Autopatch (Ap)

Groups	"GROUP Sw Ap AutoPatchProv (App)"
Scope	Device
Description	*Sw Ap* The *Autopatch* component is a child component of the *SW* component. The *AutoPatch* component holds attributes and commands pertinent to the operation of the *Patch Auto-Application* feature. This component is used to determine which patches can be applied based on the current configuration.
Mib	Software
Common Verbs	Help List Display

VERB Check Sw Ap

Impact	Configuration
Description	*Check Sw AutoPatch* This verb, *Check*, is used to determine which patches should be active on a switch based on the status of the patch, the type of patch, and the software provisioned in the edit view. The *Check Sw AutoPatch* command is mutually exclusive with the *Tidy*, *Remove*, *Download*, and *Check Prov* commands. It will abort the command if any of the above commands or another *Check Sw AutoPatch* command is already in progress, or if the file system is locked or otherwise unavailable. The output of this command may be used to update the *Sw patchList* attribute with applicable patches.

GROUP Sw Ap AutoPatchProv (App)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *AutoPatch* component
Mib	Software

ATTRIBUTE Sw Ap patchVersion (version)

Access	Read and write
Description	This attribute specifies which patch version file is used to determine the status and the category of a given patch. Patch version files can be listed using *l sw av/patch_<load> patchVersion/**. The '***latest***' refers to the alphanumeric property of the name.
Mib	Software
Values	String (0..30, ASCII)
Default	latest

Nortel Networks Multiservice Switch 7400/15000/20000

Component Sw

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Tcap

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Tcap

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COMPONENT TcapStack (Tcap)

Instance	Decimal (1..15)
Groups	"GROUP Tcap Provisioned (Prov)" "GROUP Tcap SccpUserInfoProv (SccpProv)" "GROUP Tcap OsiState (State)" "GROUP Tcap Operational (Oper)" "GROUP Tcap SigRegistrationOp" "GROUP Tcap WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS TcapStack"

Scope	Application
Description	*Tcap/n* This component represents Transaction Capability Application Part (TCAP) Stack functionality. The TCAP Stack provides transaction services to applications such as Mobile Application Part(MAP) and Camel Application Part(CAP) on the UMTS and GPRS Serving GPRS Support Node (SGSN and USGSN).

	At most one *Tcap* component can be linked to given *Lp* at a time.
Mib	WirelessTcap
Subcomponents	"COMPONENT Tcap Ss7IpInterface (Ss7IpIf)"
Opt. Subcomp.	"COMPONENT Tcap MapStack (Map)"
Dyn. Subcomp.	"COMPONENT Tcap RemoteApplicationConnection (RaConn)"
Common Verbs	Help List Display Add DELete

GROUP Tcap Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *Tcap* component.
Mib	WirelessTcap

ATTRIBUTE Tcap linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor on which the *Tcap* component process will be created.
Mib	WirelessTcap
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Tcap maxTransactionsPerSubsystem (maxTransPerSs)

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the maximum number of concurrent TCAP Transactions that are supported by the TCAP stack for each subsystem receiving service. The value specified for each subsystem must be less than that specified by the *maxInvokesPerSubsystem* attribute for the same subsystem. Furthermore, the total number of transactions specified over all subsystems must not be greater than 4000. If the value of the maxTransactionsPerSubsystem attribute is zero, the maxInvokesPerSubsystem attribute must also be zero. The ratio of the maxTransactionsPerSubsystem attribute value to the maxInvokesPerSubsystem attribute value should be provisioned based on a low or high resource level. For a high resource level, a ratio of 1:1.5 is recommended as a large number of transactions and invokes is provisioned. For a low resource level, a ratio of 1:2 is recommended as a small to average number of transactions and invokes is provisioned. The current number of TCAP transactions active for each subsystem is indicated by the *currentTransactionsPerSubsystem* operational attribute. If the current number of active transactions for a given subsystem reaches the maximum, new requests for service from that subsystem are ignored. A Critical alarm is set when the current number of transactions for a subsystem reaches 95% of the value specified for that subsystem by this attribute. Altering the value specified by this attribute after initial activation will result in an interruption of service for all clients while the TCAP stack is restarted. Transactions in progress are lost and new transactions cannot be serviced.
Mib	WirelessTcap
Vector of	Decimal (0..4000)
Index	sgsnSubsystem (sgsn) capSubsystem (cap) mscEmulationSubsystem (mscE)

Default	(sgsnSubsystem: 2000, capSubsystem: 1000, mscEmulationSubsystem: 1000)

ATTRIBUTE Tcap maxInvokesPerSubsystem (maxInvokePerSs)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of concurrent TCAP invokes that are supported by the TCAP Stack for each subsystem receiving service. The value specified for each subsystem must be greater than that specified by the *maxTransactionsPerSubsystem* attribute for the same subsystem. Furthermore, the total number of invokes specified over all subsystems must not be greater than 6000. If the value of the maxTransactionsPerSubsystem attribute is zero, the maxInvokesPerSubsystem attribute must also be zero. The ratio of the maxTransactionsPerSubsystem attribute value to the maxInvokesPerSubsystem attribute value should be provisioned based on a low or high resource level. For a high resource level, a ratio of 1:1.5 is recommended as a large number of transactions and invokes is provisioned. For a low resource level, a ratio of 1:2 is recommended as a small to average number of transactions and invokes is provisioned. The current number of TCAP invokes active for each subsystem is indicated by the *currentInvokesPerSubsystem* operational attribute. If the current number of active invokes for a given subsystem reaches the maximum, new requests for service from that subsystem are ignored. A Minor alarm is set when the current number of transactions reaches 90% of the value specified by this attribute. A Critical alarm is set at 95%. Altering the value specified by this attribute after initial activation will result in an interruption of service for all clients while the

	TCAP stack is restarted. Transactions in progress are lost and new transactions cannot be serviced.
Mib	WirelessTcap
Vector of	Decimal (0..6000)
Index	sgsnSubsystem (sgsn) capSubsystem (cap) mscEmulationSubsystem (mscE)
Default	(sgsnSubsystem: 2000, capSubsystem: 1000, mscEmulationSubsystem: 1000)

ATTRIBUTE Tcap linkToTcapStackUsers (users)

Access	Read: All Write: All
Description	This attribute specifies components that utilize the services of this *TcapStack* component.
Mib	WirelessTcap
List of	Link (Service, linkToTcapStack)
Default	No default

GROUP Tcap SccpUserInfoProv (SccpProv)

Properties	Provisioned
Description	This group contains provisionable attributes that specify SCCP User Information for the *Tcap* component.
Mib	WirelessTcap

ATTRIBUTE Tcap sccpVariant

Access	Read: All Write: All
Description	This attribute specifies the SCCP variant used by the TCAP Stack for the SCCP Called Party Address that is based on the E.164 SGSN number.

itu - use ITU SCCP Standards
ansi - use ANSI SCCP Standards
ituChinese - use ITU Chinese SCCP Standard

Mib: WirelessTcap

Values:
itu
ansi
ituChinese

Default: itu

ATTRIBUTE Tcap natureOfAddress (noa)

Access:
Read: All
Write: All

Description: This attribute specifies the Nature of Address for Global Titles in the Calling Party Address (CGPA) and the Called Party Address (CDPA) in the SCCP header. This attribute directly maps to the Nature of Address parameter of the SCCP CgPA/CdPA described in SCCP specifications. It is used to qualify the type (nature) of global title address digits. The Nature of Address must match the corresponding global title translation tables on the SS7/Ip Gateway (SIG) or Universal Signalling Point (USP).

Possible values are:
subNum **-** Subscriber number
resNationalUse **-** Reserved National Use
natSpecNum - National Specific number
intlNum - International number

Mib: WirelessTcap

Values:
subNum
resNationalUse
natSpecNum
intlNum

Default: intlNum

ATTRIBUTE Tcap sccpClassOfOperation (sccpCOP)

Access	Read: All Write: All
Description	This attribute specifies the class of operation used in the SCCP layer for TCAP messaging. It must match SS7/IP Gateway (SIG) or Universal Signalling Point (USP) settings. Possible values are: ***nonSequenced(nonSeq)***: non-sequenced message delivery ***sequenced(seq):*** sequenced message delivery.
Mib	WirelessTcap
Values	nonSequenced (nonSeq) sequenced (seq)
Default	sequenced

ATTRIBUTE Tcap e164TransType (e164tt)

Access	Read: All Write: All
Description	This attribute specifies the Global Title Translation type used for E.164 Numbering Plan global titles. This value is used for all message types except Mobile Originated Forward Short Message. For the Mobile Originated Forward Short Message, the attribute *e164MofsmTransType* is used. When set to ***autoConfig***, the value used is based on the *sccpVariant* attribute. If the value specified by *sccpVariant* is ***itu*** or ***ituChinese***, a value of 0 is used for the E164 Translation Type. If the *sccpVariant* specifies ***ansi***, a value of 10 is used.
Mib	WirelessTcap
Values	Decimal (0..255) autoConfig
Default	autoConfig

ATTRIBUTE Tcap e164MofsmTransType (e164Mtt)

Access	Read: All Write: All
Description	This attribute specifies the Global Title Translation type to be used for E.164 Numbering Plan global titles for the Mobile Originated Forward Short Message only. When set to ***autoConfig***, the value used is based on the *sccpVariant* attribute. If the value specified by *sccpVariant* is ***itu*** or ***ituChinese***, a value of 0 is used for the E164 Translation Type. If the *sccpVariant* specifies ***ansi***, a value of 10 is used.
Mib	WirelessTcap
Values	Decimal (0..255) autoConfig
Default	autoConfig

ATTRIBUTE Tcap e212TransType

Access	Read: All Write: All
Description	This attribute specifies the Global Title Translation type to be used for E.212 Numbering Plan global titles. When set to ***autoConfig***, the value used is based on the *sccpVariant* attribute. If the value specified by *sccpVariant* is ***itu*** or ***ituChinese***, a value of 0 is used for the E164 Translation Type. If the *sccpVariant* specifies ***ansi***, a value of 9 is used.
Mib	WirelessTcap
Values	Decimal (0..255) autoConfig
Default	autoConfig

ATTRIBUTE Tcap e214TransType

Access	Read: All Write: All

Description	This attribute specifies the Global Title Translation Type to be used for E.214 Numbering Plan global titles. For ITU networks, it is recommended that a value of 0 be used for the E.214 Translation Type. This attribute is not applicable and not used for ANSI networks.
Mib	WirelessTcap
Values	Decimal (0..255)
Default	0

ATTRIBUTE Tcap sccpReturnOption

Access	Read: All Write: All
Description	This attribute specifies the SCCP return option used by the TCAP Stack. ***noReturn*** - undeliverable messages are discarded. ***return*** - undeliverable messages are returned.
Mib	WirelessTcap
Values	noreturn return
Default	return

ATTRIBUTE Tcap hopCounter

Access	Read: All Write: All
Description	This attribute specifies the number of hops before a message is discarded. It is used for circular route prevention. Each SS7 node will decrement the hop counter by one and will discard the message if the counter equals zero.
Mib	WirelessTcap

Values	Decimal (1..15)
Default	15

ATTRIBUTE Tcap xudtOption

Access	Read: All Write: All
Description	This attribute specifies whether or not XUDT (extended unitdata) messages can be used. The specified value is used to determine the type of message the SS7 IP Gateway uses for transmission of SCCP connectionless data. ***off*** **-** an SCCP XUDT (extended unitdata) message is transmitted only when the data size is such that segmentation is required, otherwise an SCCP UDT (unitdata) message is transmitted. ***on*** **-** an XUDT message is transmitted for all connectionless data regardless of data size**.** Usually, this attribute should specify ***off*** so that XUDT is only used when needed. An operator may desire to set this value to ***on*** so that this SS7 node can use XUDT messages to indicate to other nodes that it supports Whitebook (ITU-T 96/ANSI-96) SCCP.
Mib	WirelessTcap
Values	off on
Default	off

GROUP Tcap OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	WirelessTcap

ATTRIBUTE Tcap adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	WirelessTcap
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Tcap operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	WirelessTcap
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Tcap usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	WirelessTcap
Values	idle active (activ) busy
Default	idle

GROUP Tcap Operational (Oper)

Properties	Operational
Description	This group contains the operational data of the *Tcap*.
Mib	WirelessTcap

ATTRIBUTE Tcap currentTransactions (currTrans)

Access	Read: All Write: Illegal

Description	This attribute indicates the number of TCAP Transactions that are currently active. The provisionable attribute, *maxTransactionsPerSubsystem*, specifies the maximum number of transactions supported for each subsystem. This attribute will never be greater than the sum of the maximum transactions for each subsystem.
Mib	WirelessTcap
Values	Decimal (0..12000)
Default	No default

ATTRIBUTE Tcap currentInvokes (currInvokes)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of TCAP Invokes that are currently active. The provisionable attribute, *maxInvokesPerSubsystem*, specifies the maximum number of invokes supported for each subsystem. This attribute will never be greater than the sum of the maximum transactions for each subsystem.
Mib	WirelessTcap
Values	Decimal (0..15000)
Default	No default

ATTRIBUTE Tcap beginSent (txBegin)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Begin messages sent to all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap beginReceived (rxBegin)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Begin messages received from all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap continueSent (txContinue)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Continue messages sent to all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap continueReceived (rxContinue)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Continue messages received from all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap endSent (txEnd)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP End messages sent to all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap endReceived (rxEnd)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP End messages received from all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap uabortSent (txUabort)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP User Abort messages sent to all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap uabortReceived (rxUabort)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP User Abort messages received from all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap pabortReceived (rxPabort)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Provider Abort messages received from all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap noticeReceived (rxNotice)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Notice messages received from all peer nodes. Notices are received when messages cannot be delivered to a remote node. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap invokeSent (txInvoke)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Invoke Components sent to all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap invokeReceived (rxInvoke)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Invoke Components received from all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap resultLastSent (txResultLast)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Result Last Components sent to all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap resultLastReceived (rxResultLast)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Result Last Components received from all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap returnErrorSent (txReturnError)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Return Error Components sent to all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap returnErrorReceived (rxReturnError)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Return Error Components received from all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap rejectsSent (txRejects)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Reject Components sent to all peer nodes. A Reject Component is sent when an invalid TCAP message is received from a peer node. The *rejectReason* attribute indicates the reason for the most recent reject. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap rejectsReceived (rxRejects)

Access	Read: All Write: Illegal
Description	This attribute counts the number of TCAP Reject Components received from all peer nodes. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap rejectReason

Access	Read: All Write: Illegal
Description	This attribute indicates the reason for the most recent Reject message sent to a peer node. ***none*** - no rejects have been received. ***duplicateInvokeId*** - a duplicate Invoke Id was received from the peer.

unrecognizedComponent **-** an unrecognized component was received from the peer.

mistypedParameter **-** a mistyped parameter was received from the peer.

badlyStructuredComponent **-** a badly structured component was received from the peer.

unrecognizedOperation **-** an unrecognized operation was received from the peer.

unexpectedLinkedOperation **-** an unexpected linked operation was received from the peer.

resourceLimitation **-** a resource limitation forced a reject to be sent.

initRelease **-** the corresponding dialogue has been released.

unrecognizedLinkedId **-** an unrecognized linked Id was received from the peer.

linkedResponseUnexpected **-** an unexpected linked response was received from the peer.

unrecognizedInvokeId **-** an unrecognized invoke Id was received from the peer.

returnResultUnexpected **-** an unexpected return result was received from the peer.

returnErrorUnexpected **-** an unexpected return error was received from the peer.

unrecognizedError **-** an unrecognized error was received from the peer.

unexpectedError **-** an unexpected error message was received from the peer.

Mib	WirelessTcap
Values	duplicateInvokeId unrecognizedComponent mistypedParameter badlyStructuredComponent unrecognizedOperation unexpectedLinkedOperation resourceLimitation initRelease unrecognizedLinkedId linkedResponseUnexpected unrecognizedInvokeId returnResultUnexpected returnErrorUnxepected unrecognizedError unexpectedError none
Default	No default

ATTRIBUTE Tcap currentTransactionsBySubsystem (currTransBySs)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of TCAP Transactions that are currently active for each subsystem. ***sgsn*** - the SGSN subsystem ***cap*** - the CAP subsystem ***mscE*** - the MSC Emulation subsystem.
Mib	WirelessTcap
Vector of	Decimal (0..4000)
Index	sgsn cap mscEmulationSubsystem (mscE)
Default	No default

ATTRIBUTE Tcap currentInvokesBySubsystem (currInvokesBySs)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of TCAP Invokes that are currently active for each subsystem. ***sgsn*** - the SGSN subsystem ***cap*** - the CAP subsystem ***mscE***- the MSC Emulation subsystem.
Mib	WirelessTcap
Vector of	Decimal (0..6000)
Index	sgsn cap mscEmulationSubsystem (mscE)
Default	No default

GROUP Tcap SigRegistrationOp

Properties	Operational
Description	This group contains operational attributes for any component that monitors SS7 IP Gateway (SIG) registration statistics.
Mib	WirelessTcap

ATTRIBUTE Tcap sigRegisterAttempts (regAttempts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of SCIP registrations attempted with the SIG. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap sigRegisterSuccessAcks (regAcks)

Access	Read: All Write: Illegal
Description	This attribute counts the number of successful registration responses received from the SIG. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap sigRegisterFailures (regFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of unsuccessful registration responses received from the SIG. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap sigDeregisterAttempts (deregAttempts)

Access	Read: All Write: Illegal
Description	This attribute counts the number of SCIP deregistrations attempted with the SIG. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap sigDeregisterSuccessAcks (deregAcks)

Access	Read: All Write: Illegal
Description	This attribute counts the number of successful deregistration responses received from the SIG. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap sigDeregisterFailures (deregFail)

Access	Read: All Write: Illegal
Description	This attribute counts the number of unsuccessful deregistration responses received from the SIG. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap sigSccpNoticeIndications (sccpNotice)

Access	Read: All Write: Illegal
Description	This attribute counts the number of SCCP Notice Indications that have been received from the SIG. SCCP Notice Indications are received from the SIG when there are errors in the messages being sent to it. The counter wraps to 0 when it exceeds its maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

GROUP Tcap WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessTcap

ATTRIBUTE Tcap customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS TcapStack

Description	The statistics record generated by the TcapStack component.

ATTRIBUTE Tcap registerAttempts (regAttempts)

Description	This attribute indicates the number of SCIP registrations attempted with the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap registerSuccessAcks (regAcks)

Description	This attribute indicates the number of successful registration responses received from the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap registerFailures (regFail)

Description	This attribute indicates the number of unsuccessful registration responses received from the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap deregisterAttempts (deregAttempts)

Description	This attribute indicates the number of SCIP deregistrations attempted with the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap deregisterSuccessAcks (deregAcks)

Description	This attribute indicates the number of successful deregistration responses received from the SIG during the collection interval.

Values	Decimal (0..4294967295)

ATTRIBUTE Tcap deregisterFailures (deregFail)

Description	This attribute indicates the number of unsuccessful deregistration responses received from the SIG during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap sigSccpNoticeIndications (sccpNotice)

Description	This attribute indicates the number of SCCP Notice Indications that have been received from the SIG during the collection interval. SCCP Notice Indications are received from the SIG when there are errors in the messages being sent to it.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap concurrentTransactionsLowBySs (transLowBySs)

Description	This attribute indicates the lowest number of simultaneous TCAP Transactions active during the collection interval for each subsystem. ***sgsn*** - the SGSN subsystem ***cap*** - the CAP subsystem ***mscE***- the MSC Emulation subsystem.
Vector of	Decimal (0..4000)
Index	sgsn cap mscEmulationSubsystem (mscE)

ATTRIBUTE Tcap concurrentTransactionsAvgBySs (transAvgBySs)

Description	This attribute indicates the average number of simultaneous Tcap Transactions active over the collection interval for each subsystem. The average for each subsystem is computed based on the cumulative total of the values of the *currentTransactionsBySubsystem* attribute for that subsystem at each event that causes the attribute to change, divided by the total number of such events during the collection interval.

sgsn - the SGSN subsystem
cap - the CAP subsystem
mscE- the MSC Emulation subsystem.

Vector of: Decimal (0..4000)

Index:
sgsn
cap
mscEmulationSubsystem (mscE)

ATTRIBUTE Tcap concurrentTransactionsHighBySs (transHighBySs)

Description: This attribute indicates the highest number of simultaneous TCAP Transactions active during the collection interval for each subsystem.

sgsn - the SGSN subsystem
cap - the CAP subsystem
mscE- the MSC Emulation subsystem.

Vector of: Decimal (0..4000)

Index:
sgsn
cap
mscEmulationSubsystem (mscE)

ATTRIBUTE Tcap concurrentInvokesLowBySs (invksLowBySs)

Description: This attribute indicates the lowest number of simultaneous Tcap Invokes active during the collection interval for each subsystem.

sgsn - the SGSN subsystem
cap - the CAP subsystem
mscE- the MSC Emulation subsystem.

Vector of: Decimal (0..6000)

Index:
sgsn
cap
mscEmulationSubsystem (mscE)

ATTRIBUTE Tcap concurrentInvokesAvgBySs (invksAvgBySs)

Description	This attribute indicates the average number of simultaneous Tcap Invokes active during the collection interval. The average is computed for each subsystem based on the cumulative total of the values of the *currentInvokesBySubsystem* attribute for that subsystem at each event that causes the attribute to change, divided by the total number of such events during the collection interval. ***sgsn*** - the SGSN subsystem ***cap*** - the CAP subsystem ***mscE***- the MSC Emulation subsystem
Vector of	Decimal (0..6000)
Index	sgsn cap mscEmulationSubsystem (mscE)

ATTRIBUTE Tcap concurrentInvokesHighBySs (invksHighBySs)

Description	This attribute indicates the highest number of simultaneous Tcap Invokes active during the collection interval for each subsystem. ***sgsn*** - the SGSN subsystem ***cap*** - the CAP subsystem ***mscE***- the MSC Emulation subsystem
Vector of	Decimal (0..6000)
Index	sgsn cap mscEmulationSubsystem (mscE)

ATTRIBUTE Tcap beginSent (txBegin)

Description	This attribute counts the number of TCAP Begin messages sent to all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap beginReceived (rxBegin)

Description	This attribute counts the number of TCAP Begin messages received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap continueSent (txContinue)

Description	This attribute counts the number of TCAP Continue messages sent to all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap continueReceived (rxContinue)

Description	This attribute counts the number of TCAP Continue messages received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap endSent (txEnd)

Description	This attribute counts the number of TCAP End messages sent to all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap endReceived (rxEnd)

Description	This attribute counts the number of TCAP End messages received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap uabortSent (txUabort)

Description	This attribute counts the number of TCAP User Abort messages sent to all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap uabortReceived (rxUabort)

Description	This attribute counts the number of TCAP User Abort messages received from all peer nodes during the collection interval.

Values	Decimal (0..4294967295)

ATTRIBUTE Tcap pabortReceived (rxPabort)

Description	This attribute counts the number of TCAP Provider Abort messages received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap noticeReceived (rxNotice)

Description	This attribute counts the number of TCAP Notice messages received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap invokeSent (txInvoke)

Description	This attribute counts the number of TCAP Invoke Components sent to all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap invokeReceived (rxInvoke)

Description	This attribute counts the number of TCAP Invoke Components received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap resultLastSent (txResultLast)

Description	This attribute counts the number of TCAP Result Last Components sent to all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap resultLastReceived (rxResultLast)

Description	This attribute counts the number of TCAP Result Last Components received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap returnErrorSent (txReturnError)

Description	This attribute counts the number of TCAP Return Error Components sent to all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap returnErrorReceived (rxReturnError)

Description	This attribute counts the number of TCAP Return Error Components received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap rejectsSent (rejsent)

Description	This attribute counts the number of TCAP REJECT Components sent to all peer nodes during the collection interval. A Peer is an application on a different node using data from the same protocol layer.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap rejectsReceived (rejRcvd)

Description	This attribute counts the number of TCAP REJECT Components received from all peer nodes during the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Tcap Ss7IpInterface (Ss7IpIf)

Instance	Decimal (1)
Groups	"GROUP Tcap Ss7IpIf Provisioned (Prov)" "GROUP Tcap Ss7IpIf OsiState (State)" "GROUP Tcap Ss7IpIf WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Tcap/n Ss7IpIf/n* *Gsc/n Bssap Ss7IpIf/n* This component represents an interface to the HP or USP SS7-IP Gateway (SIG). The HP SIG and Universal Signalling Point

(USP) SIG are referred to generically as the SIG.

The SIG is a “stateless” message routing gateway used by many wireless components to communicate with other SS7 nodes in the wireless network such as the Home Location Register (HLR) and Visitor Location Register (VLR).

A single instance of the *Ss7IpIf* provides connectivity to the SIG, but an additional instance can be added for redundancy.

Mib	WirelessTcap
Common Verbs	Help List Display Add DELete

GROUP Tcap Ss7IpIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *Ss7IpIf* component.
Mib	WirelessTcap

ATTRIBUTE Tcap Ss7IpIf linkToPort (lToPort)

Access	Read: All Write: All
Description	This attribute specifies a link to a *Gips/n Ip/address Tcp Port/n* component. This determines the IP Address and port used by this component for communication with the SIG.
Mib	WirelessTcap
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Tcap Ss7IpIf ss7IpGatewayAddress (sigIpAddr)

Access	Read: All Write: All
Description	This attribute specifies the SS7-IP Gateway (SIG) IP address. The value must match the IP address specified on the SIG and must not be set to 0.0.0.0. Changing this value causes the *Ss7IpIf* to redirect data using the new IP address. Current transactions being processed using this interface may be affected.
Mib	WirelessTcap
Values	IP address
Default	No default

ATTRIBUTE Tcap Ss7IpIf ss7IpGatewayTcpPort (sigTcpPort)

Access	Read: All Write: All
Description	This attribute specifies the SS7-IP Gateway (SIG) TCP port number. The value must match the TCP port number specified on the SIG. Changing this value causes the *Ss7IpIf* to redirect data using the new TCP Port number. Current transactions being processed using this interface may be affected.
Mib	WirelessTcap
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Tcap Ss7IpIf heartbeatTimer (heartBTmr)

Access	Read: All Write: All

Description	This attribute specifies the amount of time between heartbeat messages sent to the SIG by the *Ss7IpIf*. Specifying ***disabled*** indicates that the heartbeat timer is disabled, that is, heartbeat messages are not sent to the SIG. The value specified by this attribute should be less than the keep-alive timer specified on the SIG. It is recommended that this attribute specify a value that is one-third the value of that specified by the keep-alive timer on the SIG.
Mib	WirelessTcap
Values	Decimal (1..100) disabled
Units	seconds
Default	20

ATTRIBUTE Tcap Ss7IpIf keepAliveTimer (keepAliveTmr)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the *Ss7IpIf* waits to receive heartbeat messages from the USP SIG before timing out. If the *Ss7IpIf* does not receive a heartbeat message from the SIG within the amount of time specified, it transitions into the OSI ***disabled*** operational state until connectivity with the SIG can be reestablished. If the *Ss7IpIf* is provisioned to connect to an HP SIG, this attribute should be set to ***disabled***. Setting this attribute to ***disabled*** indicates that the *Ss7IpIf* will not monitor heartbeat messages from the SIG. This attribute should specify a value greater than that specified by the heartbeat timer on the SIG. It is recommended that this attribute specify a value that is three times the value specified by the heartbeat timer on the SIG.
Mib	WirelessTcap

Values	Decimal (1..300) disabled
Units	seconds
Default	60

GROUP Tcap Ss7lplf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	WirelessTcap

ATTRIBUTE Tcap Ss7lplf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	WirelessTcap

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Tcap Ss7lplf operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	WirelessTcap
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Tcap Ss7lplf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	WirelessTcap
Values	idle active (activ) busy
Default	idle

GROUP Tcap Ss7Iplf WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessTcap

ATTRIBUTE Tcap Ss7Iplf customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Ss7Iplf customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessTcap
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Tcap Ss7Iplf customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Tcap MapStack (Map)

Groups	"GROUP Tcap Map Timers" "GROUP Tcap Map Operational (Oper)" "GROUP Tcap Map OsiState (State)" "GROUP Tcap Map WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS TcapStack MapStack"

Scope	Application
Description	*Tcap/n MapStack* This component represents the Mobile Application Part (MAP) Stack functionality. Mobile Application Part (MAP) Stack provides MAP Protocol

services for the MAP client on the (UMTS) Serving GPRS Support Node (SGSN and USGSN).

Mib: WirelessTcap

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Tcap Map Timers

Properties: Provisioned

Description: This group contains general provisioning data for the *MapStack* component.

Mib: WirelessTcap

ATTRIBUTE Tcap Map uglSanityTimer (ugltim)

Access: Read: All
Write: All

Description: This attribute specifies the amount of time the MAP Stack waits for the UPDATE GPRS LOCATION RESPONSE from the HLR.

The timer is started when the UPDATE GPRS LOCATION message is sent to the HLR.

The number of timeouts of this timer is indicated by the attribute *uglTimeouts*.

The number of retries is specified by the attribute *uglRetries* in the *MapClient* component that is associated with this MAP Stack.

Mib: WirelessTcap

Values: Decimal (1..30)

Units: seconds

Default: 25

ATTRIBUTE Tcap Map saiSanityTimer (saitim)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Stack waits for the SEND AUTHENTICATION INFORMATION RESPONSE from the HLR. The timer is started when the SEND AUTHENTICATION INFORMATION message is sent to the HLR. The number of timeouts of this timer is indicated by the attribute *saiTimeouts*. The number of retries is specified by the attribute *saiRetries* in the *MapClient* component that is associated with this MAP Stack
Mib	WirelessTcap
Values	Decimal (1..30)
Units	seconds
Default	25

ATTRIBUTE Tcap Map clSanityTimer (cltim)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Stack waits for the CANCEL LOCATION RESPONSE from the MAP Client. The timer is started when the CANCEL LOCATION message is received from the HLR. The number of timeouts of this timer is indicated by the attribute *clTimeouts*. The number of retries is specified by the HLR provisioning which is external to the SGSN.

Mib	WirelessTcap
Values	Decimal (1..30)
Units	seconds
Default	25

ATTRIBUTE Tcap Map dsdSanityTimer (dsdtim)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Stack waits for the DELETE SUBSCRIBER DATA RESPONSE from the MAP Client. The timer is started when the DELETE SUBSCRIBER DATA message is received from the HLR. The number of timeouts of this timer is indicated by the attribute *dsdTimeouts*. The number of retries is specified by the attribute *dsdRetries* in the *MapClient* component that is associated with this MAP Stack
Mib	WirelessTcap
Values	Decimal (1..30)
Units	seconds
Default	25

ATTRIBUTE Tcap Map isdSanityTimer (isdtim)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Stack waits for the INSERT SUBSCRIBER DATA RESPONSE from the MAP Client. The timer is started when the INSERT SUBSCRIBER DATA message is received from the HLR.

	The number of timeouts of this timer is indicated by the attribute *isdTimeouts*. The number of retries is specified by HLR provisioning which is external to the SGSN.
Mib	WirelessTcap
Values	Decimal (1..30)
Units	seconds
Default	25

ATTRIBUTE Tcap Map mtfsmSanityTimer (mtfsmtim)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Stack waits for the MOBILE TERMINATED FORWARD SHORT MESSAGE RESPONSE from the MAP Client. The timer is started when the MOBILE TERMINATED FORWARD SHORT MESSAGE message is received from the Short Message Service Center (SMSC). The number of timeouts of this timer is indicated by the attribute *mtfsmTimeouts*. The number of retries is specified by SMSC provisioning which is external to the SGSN.
Mib	WirelessTcap
Values	Decimal (1..600)
Units	seconds
Default	60

ATTRIBUTE Tcap Map mofsmSanityTimer (mofsmtim)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Stack waits for the MOBILE ORIGINATED FORWARD SHORT MESSAGE RESPONSE from the SMSC. The timer is started when the MOBILE ORGINATED FORWARD SHORT MESSAGE message is sent to the SMSC. The number of timeouts of this timer is indicated by the attribute *mofsmTimeouts*. There are no retries associated with this message.
Mib	WirelessTcap
Values	Decimal (1..600)
Units	seconds
Default	60

ATTRIBUTE Tcap Map fsmSanityTimer (fsmtim)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Stack waits for the FORWARD SHORT MESSAGE RESPONSE from the MAP Client. The timer is started when the FORWARD SHORT MESSAGE message is received from the Short Message Service Center (SMSC). The number of timeouts of this timer is indicated by the attribute *fsmTimeouts*. The number of retries is specified by SMSC provisioning which is external to the SGSN.

Mib	WirelessTcap
Values	Decimal (1..600)
Units	seconds
Default	60

ATTRIBUTE Tcap Map rfsmSanityTimer (rfsmtim)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Stack waits for the READY FOR FORWARD SHORT MESSAGE RESPONSE from the HLR. The timer is started when the READY FOR FORWARD SHORT MESSAGE message is sent to the HLR. The number of timeouts of this timer is indicated by the attribute *rfsmTimeouts*. There are no retries associated with this message.
Mib	WirelessTcap
Values	Decimal (1..30)
Units	seconds
Default	25

ATTRIBUTE Tcap Map afrSanityTimer (afrtim)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Stack waits for the AUTHENTICATION FAILURE REPORT RESPONSE from the HLR. The timer is started when the AUTHENTICATION FAILURE REPORT message is sent to the HLR.

	The number of timeouts of this timer is indicated by the attribute *afrTimeouts*. The number of retries is specified by the attribute *afrRetries* in the *MapClient* component that is associated with this MAP Stack.
Mib	WirelessTcap
Values	Decimal (1..30)
Units	seconds
Default	25

ATTRIBUTE Tcap Map pmsSanityTimer (pmstim)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Stack waits for the MOBILE SUBSCRIBER PURGE RESPONSE from the HLR. The timer is started when the MOBILE SUBSCRIBER PURGE REQUEST message is sent to the HLR. The number of timeouts of this timer is indicated by the attribute pmsTimeouts.
Mib	WirelessTcap
Values	Decimal (1..60)
Units	seconds
Default	50

ATTRIBUTE Tcap Map pslSanityTimer (pslTimer)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Stack waits for the PROVIDE SUBSCRIBER LOCATION RESPONSE message from the MAP Client. The timer is started when the PROVIDE SUBSCRIBER LOCATION message is received from the Gateway Mobile Location Center (GMLC).

	The number of timeouts of this timer is indicated by the *pslTimeouts* attribute. In the GPRS network, this attribute value must be greater than the value of the *pagingTimer* attribute. In the UMTS network, this attribute value must be greater than the sum of the *pagingTimer* attribute and either the *locationReportTimer* attribute or the *locationNotifyTimer* attribute, depending on which of the two has the higher value.
Mib	WirelessTcap
Values	Decimal (1..600)
Units	seconds
Default	60

ATTRIBUTE Tcap Map linkToMapStackUsers (users)

Access	Read: All Write: All
Description	This attribute specifies components that utilize the services of this *MapStack* component.
Mib	WirelessTcap
List of	Link (Service, linkToMapStack)
Default	No default

GROUP Tcap Map Operational (Oper)

Properties	Operational
Description	This group contains the operational data of the *MapStack.*
Mib	WirelessTcap

ATTRIBUTE Tcap Map uglTimeouts (uglTo)

Access	Read: All Write: Illegal

Description	This attribute counts the expiries of the timer specified by he attribute *uglSanityTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Map saiTimeouts (saiTo)

Access	Read: All Write: Illegal
Description	This attribute counts the expiries of the *saiSanityTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Map clTimeouts (clTo)

Access	Read: All Write: Illegal
Description	This attribute counts the expiries of the *clSanityTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Map isdTimeouts (isdTo)

Access	Read: All Write: Illegal

Description	This attribute counts the expiries of the *isdSanityTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Map dsdTimeouts (dsdTo)

Access	Read: All Write: Illegal
Description	This attribute counts the expiries of the *dsdSanityTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Map mtfsmTimeouts (mtfsmTo)

Access	Read: All Write: Illegal
Description	This attribute counts the expiries of the *mtfsmSanityTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Map mofsmTimeouts (mofsmTo)

Access	Read: All Write: Illegal

Description	This attribute counts the expiries of the *mofsmSanityTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Map fsmTimeouts (fsmTo)

Access	Read: All Write: Illegal
Description	This attribute counts the expiries of the *fsmSanityTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Map rfsmTimeouts (rfsmTo)

Access	Read: All Write: Illegal
Description	This attribute counts the expiries of the *rfsmSanityTimer*. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Map afrTimeouts (afrTo)

Access	Read: All Write: Illegal

Description	This attribute counts the expiries of the *afrSanityTimer.* The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Map pmsTimeouts (pmsTo)

Access	Read: All Write: Illegal
Description	This attribute counts the expiries of the *pmsSanityTimer* attribute. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Map pslTimeouts (pslTo)

Access	Read: All Write: Illegal
Description	This attribute counts theexpiries of the *pslSanityTimer* attribute. The counter wraps to zero when it exceeds the maximum value.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

GROUP Tcap Map OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state

combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib WirelessTcap

ATTRIBUTE Tcap Map adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib WirelessTcap

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Tcap Map operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be

providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	WirelessTcap
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Tcap Map usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	WirelessTcap
Values	idle active (activ) busy
Default	idle

GROUP Tcap Map WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessTcap

ATTRIBUTE Tcap Map customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Map customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap Map customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessTcap
Values	Decimal (0..4294967295)

Default No default

COLLECTED STATS TcapStack MapStack

Description The statistics record generated by the TcapStack MapStack component.

ATTRIBUTE Tcap Map uglTimeouts (uglTo)

Description This attribute indicates the number of expiries of the timer specified by the attribute *uglSanityTimer* over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Tcap Map saiTimeouts (saiTo)

Description This attribute indicates the number of expiries of the timer specified by the attribute *saiSanityTimer* over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Tcap Map clTimeouts (clTo)

Description This attribute indicates the number of expiries of the timer specified by the attribute *clSanityTimer* over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Tcap Map isdTimeouts (isdTo)

Description This attribute indicates the number of expiries of the timer specified by the attribute *isdSanityTimer* in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Tcap Map dsdTimeouts (dsdTo)

Description This attribute indicates the number of expiries of the timer specified by the attribute *dsdSanityTimer* in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Tcap Map mtfsmTimeouts (mtfsmTo)

Description	This attribute indicates the number of expiries of the timer specified by the attribute *mtfsmSanityTimer* in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap Map mofsmTimeouts (mofsmTo)

Description	This attribute indicates the number of expiries of the timer specified by the attribute *mofsmSanityTimer* in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap Map fsmTimeouts (fsmTo)

Description	This attribute indicates the number of expiries of the timer specified by the attribute *fsmSanityTimer* in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap Map rfsmTimeouts (rfsmTo)

Description	This attribute indicates the number of expiries of the timer specified by the attribute *rfsmSanityTimer* in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap Map afrTimeouts (afrTo)

Description	This attribute indicates the number of expiries of the timer specified by the attribute *afrSanityTimer* in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap Map pmsTimeouts (pmsTo)

Description	This attribute indicates the number of expiries of the *pmsSanityTimer* attribute in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Tcap Map pslTimeouts (pslTo)

Description	This attribute counts the expiries of the timer specified by the *pslSanityTimer* attribute in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Tcap RemoteApplicationConnection (RaConn)

Instance	appType [String (1..8, ASCII)] shelfId [Decimal (0..15)] n [Decimal (1..15)]
Groups	"GROUP Tcap RaConn OsiState (State)" "GROUP Tcap RaConn WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	... *RemoteApplicationConnection/<appType, shelfId, n>* This component represents the Remote Application Connection information of an application that talks to applications on other shelves. For each application that it can communicate with, one of these connection components is created and is instantiated with the name of the remote application, the Id of the shelf on which the application runs, and the instance number of the application. ShelfId ***0*** represents the Master shelf.
Mib	WirelessTcap
Dyn. Subcomp.	"COMPONENT Tcap RaConn AtmConnection (AtmCon)"
Common Verbs	Help List Display

GROUP Tcap RaConn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib WirelessTcap

ATTRIBUTE Tcap RaConn adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib WirelessTcap

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Tcap RaConn operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	WirelessTcap
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Tcap RaConn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	WirelessTcap
Values	idle active (activ) busy
Default	idle

GROUP Tcap RaConn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	WirelessTcap

ATTRIBUTE Tcap RaConn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap RaConn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessTcap
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Tcap RaConn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	WirelessTcap
Values	Decimal (0..4294967295)

Default	No default

COMPONENT Tcap RaConn AtmConnection (AtmCon)

Groups	"GROUP Tcap RaConn AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	WirelessTcap
Common Verbs	Help List Display

GROUP Tcap RaConn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	WirelessTcap

ATTRIBUTE Tcap RaConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	WirelessTcap
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Tcap

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component TdmaBc

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Nortel Networks Multiservice Switch 7400/15000/20000

Component TdmaBc

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COMPONENT TdmaIwfBearerChannel (TdmaBc)

Instance	csIndex [Decimal (1..10)] bcIndex [Decimal (1..14030)]
Groups	"GROUP TdmaBc Operational (Oper)" "GROUP TdmaBc CustomerIdentifierData (CidData)" "GROUP TdmaBc OsiState (State)"
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex>* This component represents an individual bearer channel resource for a given *TdmaIwfCallServer*. Depending on the call type requested, the *TdmaIwfCallServer* links one or more *TdmaIwfBearerChannel*s in a single DMS-MTX InterWorking Function (IWF) call. Each *TdmaIwfBearerChannel* is linked to a channel on a DS1 or E1 port on a *TdmaIwfLogicalProcessor* (one *TdmaIwfBearerChannel* per channel). The instance value *csIndex* is the logical identifier for the DMS-MTX and is used for associating the call server with this *TdmaIwfBearerChannel* instance. The instance value *bcIndex* is the logical identifier for the *TdmaIwfBearerChannel*. It and the csIndex together define a unique *TdmaIwfBearerChannel*.

	This component is specific to the ***tdmaIwfBearerChannel*** feature of the ***tdmaIwf*** application.
Mib	TdmaIwf
Subcomponents	"COMPONENT TdmaBc Framer"
Dyn. Subcomp.	"COMPONENT TdmaBc Modem" "COMPONENT TdmaBc Fax" "COMPONENT TdmaBc DataServiceControl (Dsc)" "COMPONENT TdmaBc RadioLinkProtocol1 (Rlp1)" "COMPONENT TdmaBc V42" "COMPONENT TdmaBc V42Bis" "COMPONENT TdmaBc UpperRelay (Ur)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP TdmaBc Operational (Oper)

Properties	Operational
Description	This group contains operational attributes concerning the operation of this particular *TdmaIwfBearerChannel* for the current or most recent call.
Mib	TdmaIwf

ATTRIBUTE TdmaBc state

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the MSC/IWF Interface Protocol (MIP) Message Router (MMR) for an IWF element. This attribute has one of the following values: ***idle***: Startup state of IWF element. ***setup***: This call half is being set up.

active: This call half has been connected by both the MTX and IWF and is active.
release: This call half is being released.

Mib TdmaIwf

Values
idle
setup
active
release

Default No default

ATTRIBUTE TdmaBc callType

Access
Read: All
Write: Illegal

Description
This attribute indicates the current call type. This attribute has one of the following values:
analogSpeech: Analog speech calls.
digitalSpeech: Digital speech calls.
analogPrefSpeech: Analog preferred speech calls.
digitalPrefSpeech: Digital preferred speech calls.
asyncData: Asynchronous data service calls.
g3Fax: Group 3 fax calls.
rejected: Rejected calls.
stuIII: STU III calls.
notUsedYet: Bearer Channel has not been used in a call yet.
directAsyncData: FastConnect or Direct Async Data Service (DADS) calls.

Mib TdmaIwf

Values
analogSpeech
digitalSpeech
analogPrefSpeech
digitalPrefSpeech
asyncData
g3Fax
rejected
stuIII

notUsedYet
directAsyncData

Default — No default

ATTRIBUTE TdmaBc lastResponseCode (respCode)

Access — Read: All
Write: Illegal

Description — This attribute indicates the MSC/IWF Interface Protocol (MIP) Message Router (MMR) response code returned for the last call which was active on this particular *TdmaIwfBearerChannel*. This attribute has one of the following values:
noCause: No cause available.
unassignedNumber: Unallocated or unassigned number.
noRouteToDest: No route to destination.
normalClearing: The call was terminated normally.
userBusy: User busy.
noResponse: No carrier.
userNoAnswer: No answer from user.
invalidNumberFormat: Translation or routing problem.
unspecNormal: Normal, unspecified.
temporaryFailure: Temporary failure.
channelUnavailable: Channel unavailable.
resourceUnavailable: Resources unavailable to handle call.
qosUnavailabled: Specified rate of call unavailable.
serviceUnavailable: Service not implemented.
unimplementedOption: Option not implemented.
invalidCallRefValue: Invalid call reference value.
invalidChannel: Identified channel does not exist.
unspecInvalidMessage: Invalid message, unspecified.
missingMandatoryIe: Missing mandatory information element.
invalidMessageType: Message type not implemented.
incompatibleMessage: Message not compatible with call state.
timerRecovery: Recovery on timer expiration.
protocolError: Protocol error, unspecified.

Mib — TdmaIwf

Values — noCause
unassignedNumber

noRouteToDest
normalClearing
userBusy
noResponse
userNoAnswer
invalidNumberFormat
unspecNormal
temporaryFailure
channelUnavailable
resourceUnavailable
qosUnavailable
serviceUnavailable
unimplementedOption
invalidCallRefValue
invalidChannel
unspecInvalidMessage
missingMandatoryIe
invalidMessageType
incompatibleMessage
timerRecovery
unspecProtocolError

Default: No default

ATTRIBUTE TdmaBc mateBearerChannel (mateBc)

Access: Read: All
Write: Illegal

Description: This attribute contains the name of the mate *TdmaIwfBearerChannel* that this *TdmaIwfBearerChannel* is involved with in the currently active call. In the case of a FastConnect call, this mate is a *TdmaIwfFcBearerChannel*.

Mib: TdmaIwf

Values: The name of the component

Default: No default

GROUP TdmaBc CustomerIdentifierData (CidData)

Properties: Provisioned

Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	TdmaIwf

ATTRIBUTE TdmaBc customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	TdmaIwf
Values	Decimal (0; 1..8191)
Default	0

GROUP TdmaBc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	TdmaIwf

ATTRIBUTE TdmaBc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	TdmaIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE TdmaBc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: TdmaIwf

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE TdmaBc usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: TdmaIwf

Values: idle
active (activ)
busy

Default: idle

COMPONENT TdmaBc Framer

Groups: "GROUP TdmaBc Framer Provisioned (Prov)"
"GROUP TdmaBc Framer Statistics (Stats)"
"GROUP TdmaBc Framer LinkOptions (Link)"
"GROUP TdmaBc Framer OsiState (State)"

Scope: Device

Description: *TdmaBc/<csIndex>,<bcIndex> Framer*
The *TdmaIwfFramer* component controls link layer framing for application components sending and receiving data on a link

interface. The *TdmaIwfFramer* component provides provisionable attributes related to datapath aspects of the hardware interface rather than interface specific attributes which are associated with hardware components. The *TdmaIwfFramer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

Mib TdmaIwf

Common Verbs
Help
List
Display

GROUP TdmaBc Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib TdmaIwf

ATTRIBUTE TdmaBc Framer interfaceName

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib TdmaIwf

Values Link (Hardware, applicationFramerName)

Default No default

GROUP TdmaBc Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a *TdmaIwfFramer* component.
Mib	TdmaIwf

ATTRIBUTE TdmaBc Framer txFrames

Access	Read only
Description	This attribute counts the number of frames transmitted to the link interface by *TdmaIwfFramer*. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Framer rxFrames

Access	Read only
Description	This attribute counts the number of frames received from the link interface by *TdmaIwfFramer*. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Framer rxBytes

Access	Read only
Description	This attribute counts the number of bytes received from the link interface by *TdmaIwfFramer*. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf

Values	Decimal (0..4294967295)
Default	0

GROUP TdmaBc Framer LinkOptions (Link)

Properties	Provisioned
Description	This group contains provisionable attributes for the *TdmaIwfFramer* which controls link layer framing for application components sending and receiving data on a link interface for this particular *TdmaIwfBearerChannel*.
Mib	TdmaIwf

ATTRIBUTE TdmaBc Framer framingType

Access	Read: All Write: Service
Criticality	Process
Description	This attribute indicates the type of framing for the link layer data received and transmitted on this channel. This attribute has one of the following values: ***btdsFraming***: Bit transparent framing for the *TdmaIwfBearerChannel* components on MVP cards. ***mtxFraming***: DMS-MTX InterSystem Link Protocol (ISLP) framing required for the *TdmaIwfBearerChannel* components on DS1C/E1C cards.
Mib	TdmaIwf
Values	btdsFraming mtxFraming
Default	No default

GROUP TdmaBc Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state

combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib TdmaIwf

ATTRIBUTE TdmaBc Framer adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib TdmaIwf

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE TdmaBc Framer operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be

providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	TdmaIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE TdmaBc Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	TdmaIwf
Values	idle active (activ) busy
Default	idle

COMPONENT TdmaBc Modem

Groups	"GROUP TdmaBc Modem Operational (Oper)" "GROUP TdmaBc Modem Statistics (Stats)"
Scope	Application

Description	*TdmaBc/<csIndex>,<bcIndex> Modem* This component represents the group of measurements for the modem protocol established for a DMS-MTX IWF call (on the IWF to PSTN modem link) on this particular *TdmaIwfBearerChannel*. Note that this component is present only if the current or most recent call involved this protocol.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaBc Modem Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure performance of the *modem* component for this particular *TdmaIwfBearerChannel*.
Mib	TdmaIwf

ATTRIBUTE TdmaBc Modem voiceLaw

Access	Read: All Write: Illegal
Description	This attribute indicates the active voice law associated with the *modem* component. This attribute has one of the following values: ***aLaw*** and ***muLaw***. Both protocols are utilized for encoding voice-band audio. For additional information on each, refer to ITU-T G.711 “Pulse Code Modulation (PCM) of Voice Frequencies”.
Mib	TdmaIwf
Values	aLaw muLaw
Default	No default

ATTRIBUTE TdmaBc Modem rate

Access	Read: All Write: Illegal
Description	This attribute indicates the transmission rate of the current modem in use. All rates are the same in both the transmit and receive directions.
Mib	TdmaIwf
Values	50 300 600 1200 2400 4800 7200 9600 12000 14400 16800 19200 21600 24000 26400 28800 31200 32000 33600 38400 43200 48000 56000 57600 64000
Units	bit/s
Default	No default

ATTRIBUTE TdmaBc Modem modemAlgorithmInUse (algorithm)

Access	Read: All Write: Illegal
Description	This attribute indicates the current modem algorithm(s) active for the channel. This attribute has one of the following values: ***t30***: T.30 is active. T.30 is the Group 3 fax protocol. ***v17***: V.17 is active.V.17 is an ITU-T 14400bit/s modem standard. ***v21***: V.21 is active. V.21 is an ITU-4 300bit/s modem standard. ***v22***: V.22 ia active. V.22 is an ITU-T modem standard that operates at 1200bit/s and 600 baud. ***v22bis***: V.22bis is active. V.22bis is an ITU-T modem standard that operates at 2400bit/s and 600 baud. ***v27ter***: V.27ter is active. V.27ter is an ITU-T 7200bit/s modem standard. ***v29***: V.29 is active. V.29 is an ITU-T 9600bit/s modem standard. ***v32***: V.32 is active. V.32 is an ITU-T modem standard that operates at 9600bit/s and 2400 baud. ***v32bis***: V.32bis is an ITU-T modem standard that operates at a speed of 14.4kbit/s.
Mib	TdmaIwf
Set of	t30 v17 v21 v22 v22bis v27ter v29 v32 v32bis
Default	No default

ATTRIBUTE TdmaBc Modem protocolState (state)

Access	Read: All Write: Illegal
Description	This attribute indicates the active protocol state of the modem in use.This attribute has one of the following values:

idle: Modem is in an inactive state and has no current connection established.
training: Modem is attempting to establish a connection with the far end modem via handshaking.
connected: Modem has establish a connection with the far end modem.
releasing: Modem has begun tearing down the connection.

Mib: TdmaIwf

Values:
idle
training
connected
releasing

Default: No default

ATTRIBUTE TdmaBc Modem mobileSideFlowControlState (mobileFlow)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the state of flow control based on whether flow control was requested by the mobile side of the connection and an indication was sent to an upper layer protocol. This attribute has one of the following values:
on: Flow control is active towards the mobile side of the call.
off: Flow control is not active towards the mobile side of the call.

Mib: TdmaIwf

Values:
on
off

Default: No default

ATTRIBUTE TdmaBc Modem pstnSideFlowControlState (pstnFlow)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the state of flow control based on whether flow control was requested by the PSTN side of the connection and an indication was sent to the Digital Signal Processor. This attribute has one of the following values:

on: Flow control is active towards the DSP (PSTN side of the call).
off: Flow control is not active towards the DSP (PSTN side of the call).

Mib: TdmaIwf

Values: on
off

Default: No default

ATTRIBUTE TdmaBc Modem asyncMode (async)

Access: Read: All
Write: Illegal

Description: This attribute indicates whether conversion between synchronous and asynchronous data format (specifically, the stripping or insertion of start and stop bits) is being performed. The value is ***on*** unless the V.42 layer is active or it is a fax call. This attribute has one of the following values:
on: Conversion between synchronous and asynchronous data is being performed.
off: Conversion between synchronous and asynchronous data is not being performed.

Mib: TdmaIwf

Values: on
off

Default: No default

ATTRIBUTE TdmaBc Modem outbandFlowControl (outbandFlow)

Access: Read: All
Write: Illegal

Description: This attribute indicates whether outband flow control conversions are being performed. If outband flow control is on, then when the Modem Application Layer (MAL) receives an xon or xoff from the PSTN, the MAL converts the instruction into a primitive and sends it to the Data Service Control (DSC). In the opposite direction with outband flow control on, when the MAL receives a

	primitive from the DSC, the MAL converts the primitive into an xon or xoff and forwards it to the PSTN. If outband flow control is off, then all flow control is handled inband. The modem performs either inband or outband flow control unless V.42 layer is active, it is a fax call, or no flow control was specified by the DMS-MTX. This attribute has one of the following values: ***on***: Conversion to and from out-of-band signaling is enabled. ***off***: Conversion to and from out-of-band signaling is disabled.
Mib	TdmaIwf
Values	on off
Default	No default

ATTRIBUTE TdmaBc Modem outbandBreak (outbandBrk)

Access	Read: All Write: Illegal
Description	This attribute indicates whether inband or outband break control conversions are being performed. If outband break control is on, when the modem detects a break condition coming from the PSTN, the Modem Application Layer (MAL) converts the instruction into a primitive and forwards it to the Data Service Control (DSC). In the opposite direction with outband break control on, when the MAL receives a primitive from the DSC, the MAL converts the primitive into a break and forwards it to the PSTN. When a break condition is discovered all subsequent incoming data is discarded until a start bit is received.
Mib	TdmaIwf
Values	on off
Default	No default

ATTRIBUTE TdmaBc Modem autobaud

Access	Read: All Write: Illegal

Description	This attribute indicates whether autobaud is active. The modem is instructed at call setup time by the DMS-MTX on the following: (1) the initial modem data rate value, and (2) whether a modem is allowed to perform autobauding (***on***) or not (***off***). With autobauding on, the modem is allowed to connect using a valid modem data rate less than or equal to the initial rate specified to the modem by the DMS-MTX. If a modem cannot perform autobauding and the carrier cannot be established at the initial data rate, the modem is disabled.
Mib	TdmaIwf
Values	on off
Default	No default

GROUP TdmaBc Modem Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure performance of the modem component for this particular *TdmaIwfBearerChannel*.
Mib	TdmaIwf

ATTRIBUTE TdmaBc Modem txBytes

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload bytes transmitted. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Modem rxBytes

Access	Read: All Write: Illegal
Description	This attribute counts the number of payload bytes received. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Modem framingErrors (frmErr)

Access	Read: All Write: Illegal
Description	This attribute counts the number of framing errors detected by the hardware. This is the absence of a stop bit after a start bit and eight bits of data. All incoming data is discarded until the next start bit is received. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

COMPONENT TdmaBc Fax

Groups	"GROUP TdmaBc Fax Operational (Oper)" "GROUP TdmaBc Fax Statistics (Stats)"
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> Fax* This component represents the group of measurements for the fax protocol established for a DMS-MTX IWF call (on the mobile station to IWF link or the IWF to PSTN fax modem/machine link) on this particular *TdmaIwfBearerChannel.*

Note that this component is present only if the current or most recent call involved this protocol.

Mib TdmaIwf

Common Verbs
Help
List
Display

GROUP TdmaBc Fax Operational (Oper)

Properties Operational

Description This group contains operational attributes which measure the performance of the fax protocol.

Mib TdmaIwf

ATTRIBUTE TdmaBc Fax activeMode (mode)

Access
Read: All
Write: Illegal

Description This attribute indicates the mode of the fax T.30 protocol, determined during Exchange Identification (XID) negotiations. The following modes are supported:
normal: Normal T.30 protocol, Error Correction Mode (ECM) not used.
ecm: Error Correction Mode used. Fax error correction is done using a half-duplex page selective repeat technique.

Mib TdmaIwf

Values
normal
ecm

Default No default

ATTRIBUTE TdmaBc Fax protocolState (state)

Access
Read: All
Write: Illegal

Description This attribute indicates the protocol state of the fax adaptor. This attribute has one of the following values:

setup: Call setup state.
idle: Idle state only transmitting Synchronize (SYNC) frames.
bcsRx: Receiving Binary Coded Signal (BCS) packet from modem.
bcsTx: Transmitting BCS packet to modem.
msgRx: Receiving fax message from modem.
msgTx: Transmitting fax message to modem.

Mib	TdmaIwf
Values	setup idle bcsRx bcsTx msgRx msgTx
Default	No default

ATTRIBUTE TdmaBc Fax messageRate (msgRate)

Access	Read: All Write: Illegal
Description	This attribute indicates the fax message rate used for sending fax documents.
Mib	TdmaIwf
Values	Decimal (0..65000)
Units	bit/s
Default	No default

GROUP TdmaBc Fax Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes which measure the performance of the fax protocol.
Mib	TdmaIwf

ATTRIBUTE TdmaBc Fax txPagesToMobile (txPages)

Access	Read: All Write: Illegal
Description	The attribute counts the number of fax pages transmitted to the mobile. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Fax rxPagesFromMobile (rxPages)

Access	Read: All Write: Illegal
Description	This attribute counts the number of fax pages received from the mobile. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

COMPONENT TdmaBc DataServiceControl (Dsc)

Groups	"GROUP TdmaBc Dsc Operational (Oper)" "GROUP TdmaBc Dsc Statistics (Stats)"
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> Dsc* This component represents the group of measurements for the DMS-MTX DSC Protocol established for a DMS-MTX IWF call (on the mobile station to the IWF link) on this particular *TdmaIwfBearerChannel.*

Note that this component is present only if the current or most recent call involved this protocol.

Mib TdmaIwf

Common Verbs
Help
List
Display

GROUP TdmaBc Dsc Operational (Oper)

Properties Operational

Description This group contains operational attributes that measure the performance of the DSC asynchronous data service.

Mib TdmaIwf

ATTRIBUTE TdmaBc Dsc p0CompressionDirection (p0)

Access Read: All
Write: Illegal

Description This attribute indicates the direction of compression requested from logical link 0 (LL0). This attribute has one of the following values:
noCpmpression: No data compression.
compInitrResp: Compression initiator to responder.
compRespInitr: compression responder to initiator.
compBoth: compression in both directions.

Mib TdmaIwf

Values noCompression
compInitrResp
compRespInitr
compBoth

Default No default

ATTRIBUTE TdmaBc Dsc p1CompressionMaximumCodewords (p1)

Access Read: All
Write: Illegal

Description	This attribute indicates the maximum number of codewords to be requested from logical link 0 (LL0) for compression. A codeword is a binary number that represents a string of characters.
Mib	TdmaIwf
Values	Decimal (512..65535)
Default	No default

ATTRIBUTE TdmaBc Dsc p2CompressionMaximumCharacters (p2)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of characters that can be represented by a single codeword to be requested from logical link 0 (LL0) for compression.
Mib	TdmaIwf
Values	Decimal (6..250)
Default	No default

GROUP TdmaBc Dsc Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes that measure the performance of the DSC asynchronous data service.
Mib	TdmaIwf

ATTRIBUTE TdmaBc Dsc txBytes

Access	Read: All Write: Illegal
Description	This attribute counts the number of data bytes relayed by DSC in the transmit direction (towards the mobile). The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE TdmaBc Dsc rxBytes

Access	Read: All Write: Illegal
Description	This attribute counts the number of data bytes relayed by DSC in the receive direction (from the mobile). The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

COMPONENT TdmaBc RadioLinkProtocol1 (Rlp1)

Groups	"GROUP TdmaBc Rlp1 Operational (Oper)" "GROUP TdmaBc Rlp1 Statistics (Stats)"
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> Rlp1* This component represents the group of measurements for the Radio Link Protocol 1 (RLP1) established for a DMS-MTX IWF call (on the mobile station to IWF link) on this particular *TdmaIwfBearerChannel.* Note that this component is present only if the current or most recent call involved this protocol.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaBc Rlp1 Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure performance of the *TdmaIwfBearerChannel*.

Mib	TdmaIwf

ATTRIBUTE TdmaBc Rlp1 layer3L0ReqWinSize (l3ReqW0)

Access	Read: All Write: Illegal
Description	This attribute indicates the window size for Service Access Point (SAP) 0 requested by layer 3. The window size is the maximum number of sequentially numbered Information (I) frames that may be unacknowledged at any given time.
Mib	TdmaIwf
Values	Decimal (1..64)
Default	No default

ATTRIBUTE TdmaBc Rlp1 layer3L1ReqWinSize (l3ReqW1)

Access	Read: All Write: Illegal
Description	This attribute indicates the window size for Service Access Point (SAP) 1 requested by layer 3. The window size is the maximum number of sequentially numbered Information (I) frames that may be unacknowledged at any given time.
Mib	TdmaIwf
Values	Decimal (1..64)
Default	No default

ATTRIBUTE TdmaBc Rlp1 t1ResponseTimer (t1)

Access	Read: All Write: Illegal
Description	This attribute indicates the current T1 timer for Service Access Points (SAP) 0 and 1 negotiated by the Radio Link Protocol 1 (RLP1), during Exchange Information (XID). This attribute specifies the time the receiving RLP1 entity shall wait for a response from the peer TIA-136-310 (formerly IS-130) application. The value used for XID negotiations can be provisioned in the *TdmaCs/* Rlp1 t1ResponseTimer* attribute.

Mib	TdmaIwf
Values	Decimal (5..20)
Units	seconds
Default	No default

ATTRIBUTE TdmaBc Rlp1 t2LinkActivityTimer (t2)

Access	Read: All Write: Illegal
Description	This attribute indicates the current T2 timer for Service Access Points (SAP) 0 and 1 negotiated by the Radio Link Protocol 1 (RLP1), during Exchange Information (XID). This attribute specifies the maximum time the receiving RLP1 entity shall wait for link activity. The value used for XID negotiations can be provisioned in the *TdmaCs/* Rlp1 t2LinkActivityTimer* attribute.
Mib	TdmaIwf
Values	Decimal (10..120)
Units	seconds
Default	No default

ATTRIBUTE TdmaBc Rlp1 t3PeerAckTimer (t3)

Access	Read: All Write: Illegal
Description	This attribute indicates the current T3 timer for Service Access Points (SAP) 0 and 1 negotiated by the Radio Link Protocol 1 (RLP1), during Exchange Information (XID). The attribute specifies the maximum time the receiving RLP1 entity shall wait for the peer to ACK or NAK data. The value used for XID negotiations can be provisioned in the *TdmaCs/* Rlp1 t3PeerAckTimer* attribute.
Mib	TdmaIwf
Values	Decimal (5..20)
Units	seconds

Default	No default

GROUP TdmaBc Rlp1 Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure performance of the *TdmaIwfBearerChannel*.
Mib	TdmaIwf

ATTRIBUTE TdmaBc Rlp1 txFrames

Access	Read: All Write: Illegal
Description	This attribute counts the number of valid frames transmitted to the mobile. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Rlp1 rxFrames

Access	Read: All Write: Illegal
Description	This attributes counts the number of valid frames received from the mobile. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Rlp1 badRxFrames

Access	Read: All Write: Illegal

Description	This attribute count the total number of bad RLP1 frames received from the mobile. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

COMPONENT TdmaBc V42

Groups	"GROUP TdmaBc V42 Operational (Oper)" "GROUP TdmaBc V42 Statistics (Stats)"
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> V42* This component represents the group of measurements for the ITU-T V.42 error correcting protocol established for a DMS-MTX IWF call (on the IWF to PSTN modem link) on this particular *TdmaIwfBearerChannel.* Note that this component is present only if the current or most recent call involved this protocol.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaBc V42 Operational (Oper)

Properties	Operational
Description	This group contains operational attributes which measure V.42 error detection and correction performance.
Mib	TdmaIwf

ATTRIBUTE TdmaBc V42 protocolState (state)

Access	Read: All Write: Illegal

Description	This attribute indicates the state of V.42. Valid states are: ***notActive***: The V.42 link connection with the PSTN modem is not established. None of the V.42 functions including the error detection, error correction, and flow control is provided to the data call. This is the initial state of V.42. ***disconnected***: This means that the V42 link is disconnected. ***linkSetup***: The V.42 operation enters this state from the disconnected state after the V.42 sends to the PSTN modem a Set Asynchronous Balanced Mode Extended (SABME) frame in an attempt to establish the error control connection with the PSTN modem. ***frameReject***: The V.42 operation enters into this state after it identifies an invalid frame sent by the peer and it sends back a frame reject (FRMR) frame to the peer. ***disconnectRequest***: The V.42 operation enters into this state after it sends to the peer a disconnect (DISC) frame with the attempt to disconnect the V.42 error control link. ***informationTransfer***: The V.42 enters into this state after it receives a UA (unnumbered acknowledgment) frame which the peer sent upon receipt of the SAMBE frame from IWF V.42. Once in this state, the V.42 can exchange data and supervisory information with its peer. ***waitingAck***: The V.42 enters this state after it sends polling enquiry to its peer. The V.42 sends the polling enquiry when it receives a reject frame (REJ) from its peer or either its acknowledgment timer or inactivity timer timed out on the information frames sent out.
Mib	TdmaIwf
Values	notActive disconnected (disc) linkSetup frameReject (frmRej) disconnectRequest (discReq) informationTransfer (infoXfer) waitingAck (waitAck)
Default	No default

ATTRIBUTE TdmaBc V42 txN401FrameSize (txN401)

Access	Read: All Write: Illegal
Description	This attribute indicates the current value of parameter N401 for V.42 which is negotiated during Exchange Information (XID). This is the maximum number of octets that can be carried in the information field of an information frame that the IWF V.42 transmits to the PSTN modem. The IWF V.42 puts this or even smaller size of data into the outgoing information frame. The value used for XID negotiations can be provisioned via *TdmaCs/* * V42*.
Mib	TdmaIwf
Values	Decimal (0..65355)
Units	octets
Default	No default

ATTRIBUTE TdmaBc V42 rxN401FrameSize (rxN401)

Access	Read: All Write: Illegal
Description	This attribute indicates the current value of N401, that is negotiated during Exchange Identification (XID). This is the maximum number of octets that can be carried in the information field of an information frame received from the PSTN modem. An incoming information frame carrying data octets more than this size shall be rejected by the IWF V.42. The value used for XID negotiations can be provisioned via *TdmaCs/* V42*.
Mib	TdmaIwf
Values	Decimal (1..255)
Units	octets
Default	No default

ATTRIBUTE TdmaBc V42 txKWindowSize (txK)

Access	Read: All Write: Illegal
Description	This attribute indicates the current value of k, that is negotiated during Exchange Identification (XID). This is the size of flow control sliding window used for the information frames that the V.42 transmits to the PSTN modem. This size governs the maximum number of information frames that the IWF V.42 error-correcting entity can have outstanding (that is, unacknowledged). The value used for XID negotiations can be provisioned via *TdmaCs/* V42*.
Mib	TdmaIwf
Values	Decimal (0..127)
Default	No default

ATTRIBUTE TdmaBc V42 rxKWindowSize (rxK)

Access	Read: All Write: Illegal
Description	This attribute indicates the current value of k that is negotiated during Exchange Identification (XID). This is the size of flow control sliding window used for information frames transmitted from the PSTN modem. This size governs the maximum number of information frames that the peer of the IWF V.42 error-correcting entity can have outstanding (that is, unacknowledged). The value used for XID negotiations can be provisioned via *TdmaCs/* V42*.
Mib	TdmaIwf
Values	Decimal (1..127)
Default	No default

ATTRIBUTE TdmaBc V42 v42ActiveInCall

Access	Read: All Write: Illegal

Description	This attribute indicates whether V42 is really being used in this data call.
Mib	TdmaIwf
Values	notActiveInCall activeInCall
Default	notActiveInCall

ATTRIBUTE TdmaBc V42 v42BisActiveInCall

Access	Read: All Write: Illegal
Description	This attribute indicates whether V42bis is really being used in this data call.
Mib	TdmaIwf
Values	notActiveInCall activeInCall
Default	notActiveInCall

GROUP TdmaBc V42 Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes that measure the V.42 error detection and correction performance.
Mib	TdmaIwf

ATTRIBUTE TdmaBc V42 rxIBytes

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bytes that the V.42 actually received from the PSTN modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)

Units	octets
Default	0

ATTRIBUTE TdmaBc V42 txIBytes

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bytes that the V.42 transmitted to the PSTN modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Units	octets
Default	0

ATTRIBUTE TdmaBc V42 rxIFrames

Access	Read: All Write: Illegal
Description	This attribute counts the total number of Information (I) frames that the V.42 received from the PSTN modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 txIFrames

Access	Read: All Write: Illegal
Description	This attribute counts the total number of information frames that the V.42 transmitted to the PSTN modem in a data call. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 retransmittedFrames (retransFrm)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of frames retransmitted by the IWF V.42 entity in a data call. The V.42 retransmits the same frame when the associated T401 acknowledgment timer timeouts or when a Reject (REJ) supervisory frame has been received from the PSTN modem. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 t1AckTimeouts (t1Timeout)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times that the T401 timer has timed out within a data call. If this timer times-out frequently, the operator may need to adjust the provisioned parameter T401 acknowledgment timer to a larger time amount, since every time that V.42 sends out a frame it sets the T401 timer to wait for the peer's acknowledgment of the frame. When the timer times-out and no acknowledgment has been received, the V.42 sends the same frame to its peer. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 remoteBusyIndications (remoteBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the PSTN modem enters a busy state (the IWF has received a Receive Not Ready message) and asks the IWF V.42 not to send Information (I) frames to it until it is ready to receive information frames again (indicated by receipt of a Receive Ready message or a data message). The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 localBusyIndications (localBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the IWF V.42 enters in a busy condition and asks the peer to stop sending information frames until it has cleared up from the busy condition. The V.42 enters busy condition when its data buffer is about to be overflowed by the incoming Information (I) frames. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 badFramesRx (badFrmRx)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of bad frames the IWF V.42 has received from the PSTN remote modem within the data call. In this instance, “bad frames” refer to the V.42 protocol error

	frames other than the check sequence error frames. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42 crcErrorsRx (crcErrRx)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of frames received from the remote PSTN modem that contain incorrect frame check sequence. A high value signifies the condition of the physical medium is poor. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

COMPONENT TdmaBc V42Bis

Groups	"GROUP TdmaBc V42Bis Operational (Oper)" "GROUP TdmaBc V42Bis Statistics (Stats)"
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> V42bis* This component represents the group of measurements for the ITU-T V.42bis data compression protocol established for an IWF call (on the mobile station to the IWF link or the IWF to PSTN fax modem link) on this particular *TdmaIwfBearerChannel*.

Note that this component is present only if the current or most recent call involved this protocol.

Mib TdmaIwf

Common Verbs
Help
List
Display

GROUP TdmaBc V42Bis Operational (Oper)

Properties Operational

Description This group contains operational attributes that measure the performance of *IwfV42bis*.

Mib TdmaIwf

ATTRIBUTE TdmaBc V42Bis protocolModeEncoder (modeEncoder)

Access Read: All
Write: Illegal

Description This attribute indicates the current mode of the *IwfV42bis* encoder. This mode can be either:
transparent: A mode of operation in which compression has been selected but data is being transmitted in uncompressed form. Transparent mode command sequences may be inserted into the data stream.
compressed: A mode of operation in which data is transmitted in codewords.
The encoder switches between the two modes depending on whether the data coming from the Date Terminal Equipment (DTE) is suitable for compression. The data compression function periodically determines the compressibility of the data based on a comparison of the number of bits required to represent a segment of the data stream before and after compression.

Mib TdmaIwf

Values transparent
compressed

Default No default

ATTRIBUTE TdmaBc V42Bis protocolModeDecoder (modeDecoder)

Access	Read: All Write: Illegal
Description	This attribute indicates the current mode of the V.42bis decoder. This mode can be either: ***transparent***: A mode of operation in which compression has been selected but data is being transmitted in uncompressed form. Transparent mode command sequences may be inserted into the data stream. ***compressed***: A mode of operation in which data is transmitted in codewords. The encoder (at the mobile or PSTN) switches between the two modes depending on whether the data coming from the Date Terminal Equipment (DTE) is suitable for compression. The data compression function periodically determines the compressibility of the data based on a comparison of the number of bits required to represent a segment of the data stream before and after compression.
Mib	TdmaIwf
Values	transparent compressed
Default	No default

ATTRIBUTE TdmaBc V42Bis p0CompressionDirection (p0)

Access	Read: All Write: Illegal
Description	This attribute indicates the direction in which V.42bis is active, negotiated at link setup by the data link protocol through Exchange Identification (XID) negotiation of parameter P0 (compression direction). The value used for XID negotiations can be provisioned via *TdmaCs/* V42bis*. This attribute has one of the following values: ***noCompression***: No data compression. ***compInitrResp***: The data sent by the IWF to the other entity is compressed. ***compRespInitr***: The data received by the IWF from the other

	entity is compressed. ***compBoth***: compression in both directions.
Mib	TdmaIwf
Values	noCompression compInitrResp compRespInitr compBoth
Default	No default

ATTRIBUTE TdmaBc V42Bis p1MaximumCodewords (p1)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of codewords in the dictionary negotiated at link setup by the data link protocol by way of the Exchange Identification (XID) negotiation of parameter P1 (number of codewords). The value used for XID negotiations can be provisioned via *TdmaCs/* V42bis*.
Mib	TdmaIwf
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE TdmaBc V42Bis p2MaximumStringSize (p2)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of characters allowed in a string represented by a codeword negotiated at link setup by the data link protocol by way of the Exchange Identification (XID) negotiation of parameter P2 (maximum string size). The value used for XID negotiations can be provisioned via *TdmaCs/* V42bis.*
Mib	TdmaIwf
Values	Decimal (6..250)
Default	No default

ATTRIBUTE TdmaBc V42Bis lastDecodeError (lastDecodeErr)

Access	Read: All Write: Illegal
Description	This attribute indicates last error found by the decoder. This attribute has one of the following values: ***none***: No errors found. ***badStepup***: Receipt of STEPUP (step up codeword size) codeword when it would cause C2 (current code word size) to exceed N1 (maximum code word size). ***codewordEqC1***: Receipt of a codeword, at any time, equal to C1 (next empty dictionary entry). ***emptyCodeword***: Receipt of a codeword representing an empty dictionary entry. ***reservedCommand***: Receipt of a reserved command code. ***generalError***: Receipt of any other error. The action taken by V.42bis on detecting an error is provisioned via *TdmaCs/* V42bis.*
Mib	TdmaIwf
Values	none badStepup codewordEqC1 emptyCodeword rsvdCommand generalError
Default	none

ATTRIBUTE TdmaBc V42Bis compRatioEncoder

Access	Read: All Write: Illegal
Description	This attribute indicates the number of uncompressed bytes divided by the number of compressed bytes. A value greater than one means that the data is being compressed. This is the compression ratio achieved by the V.42bis encoder running on the Passport. This attribute is relevant for both protocol modes transparent and compressed as the encoder switches between the two modes.

Mib	TdmaIwf
Values	Decimal (0.00..300.00)
Default	No default

ATTRIBUTE TdmaBc V42Bis compRatioDecoder

Access	Read: All Write: Illegal
Description	This attribute indicates the number of uncompressed bytes divided by the number of compressed bytes. A value greater than one means that the data is being compressed. This is the compression ratio achieved by the V.42bis encoder at the mobile or PSTN. This attribute is relevant for both protocol modes transparent and compressed as the encoder switches between the two modes.
Mib	TdmaIwf
Values	Decimal (0.00..300.00)
Default	No default

GROUP TdmaBc V42Bis Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes that measure the performance of *IwfV42bis*.
Mib	TdmaIwf

ATTRIBUTE TdmaBc V42Bis modeChangesEncode (modeChgEncode)

Access	Read: All Write: Illegal
Description	This attribute counts the number of mode changes (from transparent to compressed or from compressed to transparent) by the encoder. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42Bis modeChangesDecode (modeChgDecode)

Access	Read: All Write: Illegal
Description	This attribute counts the number of mode changes (from transparent to compressed or from compressed to transparent) by the decoder. The mode changes are determined by the encoder at the mobile or the PSTN. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42Bis resetsEncode

Access	Read: All Write: Illegal
Description	This attribute counts the number of resets sent by the encoder. A reset is a command code sent by the encoder to force dictionary reinitialization. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42Bis resetsDecode

Access	Read: All Write: Illegal
Description	This attribute counts the number of resets received by the decoder. A reset is a command code sent by the encoder to force dictionary reinitialization. The resets of the decoder are

	determined by the encoder at the mobile or PSTN. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42Bis reinitializations (reInit)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times V.42bis is reinitialized because of a destructive break (a destructive break is a break that causes data to be discarded) occurring on the error-corrected connection initiated by either the mobile or PSTN. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc V42Bis errorsInDecode (errDecode)

Access	Read: All Write: Illegal
Description	This attribute counts the number of errors found by the decoder. The errors could be any of the following: 1.Receipt of STEPUP (step up codeword size) codeword when it would cause C2 (current code word size) to exceed N1 (maximum code word size). 2. Receipt of a codeword, at any time, equal to C1 (next empty dictionary entry). 3. Receipt of a codeword representing an empty dictionary entry. 4. Receipt of a reserved command code. 5. Receipt of any other error. The counter wraps when it exceeds the maximum value. The action taken by V.42bis on detecting any of these errors is provisioned via *TdmaCs/* V42bis.*

Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

COMPONENT TdmaBc UpperRelay (Ur)

Groups	"GROUP TdmaBc Ur Operational (Oper)" "GROUP TdmaBc Ur Statistics (Stats)"
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> UpperRelay* This component represents the group of measurements for the Upper Relay function established for each half of a DMS-MTX IWF asynchronous data or fax call (internally between the two *TdmaIwfBearerChannel*s involved in a call) from this particular *TdmaIwfBearerChannel* perspective.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaBc Ur Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure the performance of the *UpperRelay.*
Mib	TdmaIwf

ATTRIBUTE TdmaBc Ur rxBufferSize

Access	Read: All Write: Illegal
Description	This attribute indicates the size of the receive flow control buffer. This attribute may be viewed via *TdmaBc/*,*,*,* UpperRelay*.
Mib	TdmaIwf

Values	Decimal (0..65535)
Default	No default

ATTRIBUTE TdmaBc Ur txFlowControlState (txFlowControl)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the transmit flow control is active or not. This attribute has one of the following values: ***active***: The transmit flow control is active. ***inactive***: The transmit flow control is inactive. This attribute may be viewed via *TdmaBc/*,*,*,* UpperRelay*.
Mib	TdmaIwf
Values	active inactive
Default	No default

ATTRIBUTE TdmaBc Ur rxFlowControlState (rxFlowControl)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the receive flow control is active or not. This attribute has one of the following values: ***active***: The receive flow control is active. ***inactive***: The receive flow control is inactive. This attribute may be viewed via *TdmaBc/*,*,*,* UpperRelay*.
Mib	TdmaIwf
Values	active inactive
Default	No default

GROUP TdmaBc Ur Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure the performance of the *UpperRelay*.

Mib	TdmaIwf

ATTRIBUTE TdmaBc Ur txFrames

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames that are sent in the transmit direction. The counter wraps when it exceeds the maximum value. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Ur rxFrames

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames that are sent in the receive direction. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Ur unacknowledgedFrames (unackFrm)

Access	Read: All Write: Illegal
Description	This attribute indicates the current number of frames sent that have not been acknowledged for this instance of the UpperRelay. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaBc Ur cumUnacknowledgedFrames (cUnackFrm)

Access	Read: All Write: Illegal
Description	This attribute is the total number of unacknowledged frames for this instance of the UpperRelay. It is not reset when a new call starts.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

Nortel Networks Multiservice Switch 7400/15000/20000

Component TdmaBc

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component TdmaCs

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component TdmaCs

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COMPONENT TdmaIwfCallServer (TdmaCs)

Instance	Decimal (1..10)
Groups	"GROUP TdmaCs ServiceProvisioned (ServProv)" "GROUP TdmaCs MiscProvisioned (MiscProv)" "GROUP TdmaCs CustomerIdentifierData (CidData)" "GROUP TdmaCs OsiState (State)" "GROUP TdmaCs Statistics (Stats)"
Scope	Application
Description	*TdmaCs/<csIndex>* The *TdmaIwfCallServer* component represents an instance of a call manager for Mobile Telephone eXchange communications (MTX) InterWorking Function (IWF) calls on this node. The *TdmaIwfCallServer* provides a mechanism to segregate call resources (*TdmaIwfBearerChannels)* and maintenance activities for the *TdmaIwfBearerChannel*(s) associated with that *TdmaIwfCallServer.* The *csIndex* bears no particular significance and is arbitrary.

	This component is specific to the ***tdmaIwfCallServer*** feature of the ***tdmaIwf*** application.
Mib	TdmaIwf
Subcomponents	"COMPONENT TdmaCs Modem" "COMPONENT TdmaCs Fax" "COMPONENT TdmaCs DataCircuitTerminatingEquipment (Dce)" "COMPONENT TdmaCs DataServiceControl (Dsc)" "COMPONENT TdmaCs RadioLinkProtocol1 (Rlp1)" "COMPONENT TdmaCs V42" "COMPONENT TdmaCs V42Bis"
Opt. Subcomp.	"COMPONENT TdmaCs LogicalProcessor (Lp)" "COMPONENT TdmaCs FastConnect (Fc)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP TdmaCs ServiceProvisioned (ServProv)

Properties	Provisioned
Description	This group contains all the necessary timers for call setup and call clearing scenarios on the IWF.
Mib	TdmaIwf

ATTRIBUTE TdmaCs tIwf1

Access	Read: All Write: Configuration
Description	This is an internal timer to the call server of the IWF and is used during call setup for ensuring the MIT protocol stack and the NIT modem for a new call have been allocated and initialized.
Mib	TdmaIwf

Values	Decimal (0..3600)
Units	seconds
Default	4

ATTRIBUTE TdmaCs tIwf2

Access	Read: All Write: Configuration
Description	This is an internal timer to the call server of the IWF and is used during call clearing for ensuring the MIT protocol stack and NIT modem for a call have been deallocated correctly.
Mib	TdmaIwf
Values	Decimal (0..3600)
Units	seconds
Default	4

ATTRIBUTE TdmaCs t303

Access	Read: All Write: Configuration
Description	This timer is a call setup timer and is used for ensuring a CallProceeding message is received for a Setup message that has been sent by the IWF to the MTX.
Mib	TdmaIwf
Values	Decimal (0..3600)
Units	seconds
Default	4

ATTRIBUTE TdmaCs t305

Access	Read: All Write: Configuration

Description	This timer is a call clearing timer and is used for ensuring a Release message is received for a Disconnect message the IWF has sent to the MTX.
Mib	TdmaIwf
Values	Decimal (0..3600)
Units	seconds
Default	30

ATTRIBUTE TdmaCs t308

Access	Read: All Write: Configuration
Description	This timer is a call clearing timer and is used for ensuring a ReleaseComplete message is received for the Release message the IWF has sent to the MTX.
Mib	TdmaIwf
Values	Decimal (0..3600)
Units	seconds
Default	4

ATTRIBUTE TdmaCs t313

Access	Read: All Write: Configuration
Description	This is a call setup timer and is used for ensuring a ConnectAck message is received in response for the Connect message the IWF has sent to the MTX.
Mib	TdmaIwf
Values	Decimal (0..3600)
Units	seconds
Default	4

ATTRIBUTE TdmaCs t999

Access	Read: All Write: Configuration
Description	This timer is used during a mobile termination call setup and is used for ensuring the Setup message is received from the MTX.
Mib	TdmaIwf
Values	Decimal (0..3600)
Units	seconds
Default	300

ATTRIBUTE TdmaCs supportedTechnology

Access	Read: All Write: Configuration
Description	This attribute specifies the wireless technology that is supported for data calls on this IWF.
Mib	TdmaIwf
Values	tdmaOnly cdmaOnly tdmaAndCdma
Default	tdmaOnly

ATTRIBUTE TdmaCs supportedService

Access	Read: All Write: Configuration
Description	This attribute specifies the type(s) of data calls this IWF supports.
Mib	TdmaIwf
Values	asyncDataOnly g3FaxOnly analogFaxOnly packetOnly asyncDataAndG3Fax

	asyncDataAndAnalogFax asyncDataAndPacket asyncDataG3FaxAndPacket asyncDataAFaxAndPacket
Default	asyncDataOnly

GROUP TdmaCs MiscProvisioned (MiscProv)

Properties	Provisioned
Description	This group contains general provisioning data for the *TdmaIwfCallServer* that does not fit within other provisioning groups.
Mib	TdmaIwf

ATTRIBUTE TdmaCs commentText

Access	Read: All Write: All
Description	Use of this attribute is at the discretion of the system administrator. Typically, this attribute is used to specify the name of the DMS-MTX configured for this *TdmaIwfCallServer* plus any other commentary information.
Mib	TdmaIwf
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE TdmaCs mtxIpAddress (ipAddr)

Access	Read: All Write: Configuration
Description	This attribute specifies the Internet Protocol (IP) Address of the Mobile Telephone Exchange (MTX) that is permitted to set up MTX InterWorking Function (IWF) data calls using this *TdmaIwfCallServer*. This address must be specified in order for this *TdmaIwfCallServer* to provide service. If call setups are attempted from an MSC which does not have this address, those calls are rejected. The *callsRequested* statistic

	of this *TdmaIwfCallServer* is incremented and appropriate call failure logs are generated at the MSC.
Mib	TdmaIwf
Values	IP address
Default	0.0.0.0

ATTRIBUTE TdmaCs virtualRouterName (vr)

Access	Read: All Write: Configuration
Criticality	Component
Description	This attribute specifies the virtual router that this *TdmaIwfCallServer* uses for transmitting and receiving signaling messages to and from the DMS-MTX.
Mib	TdmaIwf
Values	The name of the component
Default	No default

ATTRIBUTE TdmaCs voiceLaw (encoding)

Access	Read: All Write: Configuration
Description	This attribute specifies the voice law to be established for the IWF to PSTN modem link for calls established by this *TdmaIwfCallServer*. This attribute has one of the following values: ***aLaw***: A protocol for encoding voice-band audio, Pulse Code Modulation (PCM). ***muLaw***: A protocol for encoding voice-band audio, PCM. Note that this value must match the voice law used at the DMS-MTX connected to this *TdmaIwfCallServer*.
Mib	TdmaIwf
Values	aLaw muLaw

Default	No default

GROUP TdmaCs CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	TdmaIwf

ATTRIBUTE TdmaCs customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	TdmaIwf
Values	Decimal (0; 1..8191)
Default	0

GROUP TdmaCs OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	TdmaIwf

ATTRIBUTE TdmaCs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	TdmaIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE TdmaCs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	TdmaIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE TdmaCs usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	TdmaIwf
Values	idle active (activ) busy
Default	idle

GROUP TdmaCs Statistics (Stats)

Properties	Operational

Description	This group contains operational attributes that measure the performance used for the calls set up by this particular *TdmaIwfCallServer.*
Mib	TdmaIwf

ATTRIBUTE TdmaCs currentCalls (currCall)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of active calls currently serviced by this particular *TdmaIwfCallServer.*
Mib	TdmaIwf
Values	Decimal (0..2047)
Default	0

ATTRIBUTE TdmaCs callsRequested (callsReq)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF call setup requests received at this particular *TdmaIwfCallServer* from the DMS-MTX. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs callsSetup (callsSet)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls successfully setup by this particular *TdmaIwfCallServer.* A call is considered setup when the IWF-Setup-Request message is received, indicating a request for a data communications service, and the IWF has successfully allocated the necessary resources to fulfill the request. The counter wraps when it exceeds the maximum value.

Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs callsReleasedNormal (callsRlsdNor)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls that have completed successfully on this particular *TdmaIwfCallServer*. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs callsReleasedAbnormal (callsRlsdAbnor)

Access	Read: All Write: Illegal
Description	This attribute counts the number of IWF calls that have been released due to error conditions at this particular *TdmaIwfCallServer* or one if its *TdmaIwfBearerChannel*(s). The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs erroredLFrames (errLFrm)

Access	Read: All Write: Illegal
Description	This attribute counts the number of CM/IWF Control Interface (CCI) messages received from the DMS-MTX that have an incorrect format. The counter wraps when it exceeds the maximum value.

Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

COMPONENT TdmaCs Modem

Scope	Application
Description	*TdmaCs/<csIndex> Modem/<modem-type>* This component represents an instance of a particular modem type that enables support of the various modem protocols on the DMS-MTX IWF.
Mib	TdmaIwf
Common Verbs	Help List Display

COMPONENT TdmaCs Fax

Scope	Application
Description	*TdmaCs/<csIndex> Fax* This component represents an instance of fax attributes. These specify various default settings for aspects of the fax protocol, which may be used for a DMS-MTX IWF call.
Mib	TdmaIwf
Common Verbs	Help List Display

COMPONENT TdmaCs DataCircuitTerminatingEquipment (Dce)

Scope	Application
Description	TdmaCs/<csIndex> Dce This component represents an instance of the Data Circuit-Terminating Equipment (DCE). The DCE represents a layer of the protocol stack for the network-side connection to the Public

	Switched Telephone Network. It is responsible for call control, AT-command handling, user-data transport, online-command signaling, break signaling, circuit/signal lead transport, and compression negotiation. The DCE is based on the BMI (BSC, MSC, IWF) portion of the IS-135 standard.
Mib	TdmaIwf
Common Verbs	Help List Display

COMPONENT TdmaCs DataServiceControl (Dsc)

Groups	"GROUP TdmaCs Dsc Provisioned (Prov)"
Scope	Application
Description	TdmaCs/<csIndex> Dsc This component represents an instance of the Data Service Control (DSC). The DSC represents a layer of the protocol stack for the mobile-side connection to the IWF. It is responsible for call control, AT-command handling, user-data transport, online-command signaling, break signaling, circuit/signal lead transport, and compression negotiation. The DSC is based on the BMI (BSC, MSC, IWF) portion of the IS-135 standard.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaCs Dsc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for Data Service Control Asynchronous Data Service portion of the wireless protocol stack used for the calls set up by this particular *TdmaIwfCallServer.*
Mib	TdmaIwf

ATTRIBUTE TdmaCs Dsc k0LI0WindowSize (k0)

Access	Read: All Write: Service
Description	This attribute specifies the maximum size of the DSC logical link 0 window.
Mib	TdmaIwf
Values	Decimal (1..64)
Default	64

ATTRIBUTE TdmaCs Dsc k1LI1WindowSize (k1)

Access	Read: All Write: Service
Description	This attribute specifies the maximum size of the DSC logical link 1 window.
Mib	TdmaIwf
Values	Decimal (1..64)
Default	64

COMPONENT TdmaCs RadioLinkProtocol1 (Rlp1)

Instance	halfRate (half) fullRate (full) doubleRate (double) tripleRate (triple)
Groups	"GROUP TdmaCs Rlp1 Provisioned (Prov)"
Scope	Application
Description	*TdmaCs/<csIndex> Rlp1/<radio-channel-type>* This component represents an instance of Radio Link Protocol 1 (RLP1), indexed by radio channel type. Valid radio channel types are: ***halfRate***, Half rate channel. ***fullRate***, Full rate channel.

doubleRate, Double rate channel.
tripleRate, Triple rate channel.

Many RLP1 attributes are dependent on the frame rate and frame size, that is dictated by the radio channel type. When a *TdmaIwfCallServer* is added, a *RadioLinkProtocol1* instance is added automatically for each possible instance value. The attributes are set to default values, dependent on the radio channel type of the component instance.

Mib: TdmaIwf

Common Verbs:
- Help
- List
- Display
- Add

GROUP TdmaCs Rlp1 Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisionable attributes for the Radio Link Protocol 1 (RLP1) parameters used for the calls set up by this particular *TdmaIwfCallServer*. Changes to these attributes do not affect existing calls.

Mib: TdmaIwf

ATTRIBUTE TdmaCs Rlp1 t1ResponseTimer (t1)

Access: Read: All
Write: Service

Description: This attribute specifies the time the receiving Radio Link Protocol (RLP1) entity shall wait for a response from the peer TIA-136-310 (formerly IS-130) application.
During the Exchange Information (XID) negotiation, both RLP1 entities (mobile station and IWF) can agree to use a specific value for this timer (T1). The IWF attempts to negotiate to the value specified by this attribute.
Changes to this attribute do not affect existing calls.

Mib: TdmaIwf

Values	Decimal (5..20)
Units	seconds
Default	5

ATTRIBUTE TdmaCs Rlp1 t2LinkActivityTimer (t2)

Access	Read: All Write: Service
Description	This attribute specifies the maximum time the receiving Radio Link Protocol (RLP1) entity shall wait for link activity. During the Exchange Information (XID) negotiation, both RLP1 entities (mobile station and IWF) can agree to use a specific value for this timer (T2). The IWF attempts to negotiate to the value specified by this attribute. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (10..120)
Units	seconds
Default	10

ATTRIBUTE TdmaCs Rlp1 t3PeerAckTimer (t3)

Access	Read: All Write: Service
Description	This attribute specifies the maximum time the receiving Radio Link Protocol (RLP1) entity shall wait for the peer to ACK or NAK data. During the Exchange Information (XID) negotiation, both RLP1 entities (mobile station and IWF) can agree to use a specific value for this timer (T3). The IWF attempts to negotiate to the value specified by this attribute. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (5..20)
Units	seconds

Default	5

COMPONENT TdmaCs V42

Groups	"GROUP TdmaCs V42 Provisioned (Prov)"
Scope	Application
Description	*TdmaCs/<csIndex> V42* This component represents an instance of ITU-T V.42 error correcting data link protocol. Its attributes specify various default settings for aspects of the V.42 protocol, that may be used for an IWF call for the IWF to PSTN modem link.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaCs V42 Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the V.42 protocol used for the calls set up by this particular *IwfCallServer*. Changes to these attributes do not affect existing calls.
Mib	TdmaIwf

ATTRIBUTE TdmaCs V42 t400DetectTimer (t400)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF waits for an Originator Detection Pattern (ODP) or Answerer Detection Pattern (ADP). ODP/ADP is a series of special bit patterns used during the call setup procedures. If the IWF is the originator of the call, it starts sending ODP patterns and waits for an ADP for the duration of T400 from the answerer at call setup time. If the IWF is the answerer of the call, it waits for an ODP for T400 seconds from the originator and if it receives during that

	time it sends an ADP pattern to the originator at the call setup time. Since both sides operate with different values of T400 timer, a higher value increases the chance of a successful call setup. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (0.75..2.54)
Units	seconds
Default	0.75

ATTRIBUTE TdmaCs V42 t401AckTimer (t401)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF waits for an acknowledgment before retransmitting a frame. Since information about the T401 timer is not carried in the Exchange Identification (XID) negotiations at call setup time, both sides operate with different timer values. The value for T401 depends on many factors, such as propagation delay or frame processing time. A frame is retransmitted up to N400 times if the timer T401 expires before an acknowledgment for a frame is actually received. The performance of the data link layer can be impacted by the value of this timer as retransmissions of frames occur on expiry of timer T401. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (0.50..9.00)
Units	seconds
Default	4.00

ATTRIBUTE TdmaCs V42 t402AckDelayTimer (t402)

Access	Read: All Write: Service

Description	This attribute specifies the maximum amount of time that the IWF may wait following the receipt of any frame requiring a reply before it initiates transmission of an appropriate reply in order to ensure that the reply frame is received by the remote error-correcting entity prior to expiration of the T401 timer of the remote error-correcting entity. Since information about the T402 timer is not carried in the Exchange Identification (XID) negotiations at call setup, both sides operate with different timer values. If this timer expires, then the reply that would have been returned prior to its expiration is not sent. The performance of the data link layer can be impacted by the value of this timer as retransmissions of frames occur on expiry of timer T401. For better performance, a value of *t402AckDelayTimer* (T402) equal to half the value of *t401AckTimer* (T401) is recommended. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (0.25..4.50)
Units	seconds
Default	2.00

ATTRIBUTE TdmaCs V42 t403IdleProbeTimer (t403)

Access	Read: All Write: Service
Description	This attribute specifies the maximum amount of time that the IWF allows to elapse without frames being exchanged. The link is permitted to remain idle with no frames being exchanged on the data link. Upon expiry of this timer, the IWF polls its peer for status. Since information about the T403 timer is not carried in the Exchange Identification (XID) negotiations at call setup time, both sides operate with different timer values. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (30..90)
Units	seconds

Default	60

ATTRIBUTE TdmaCs V42 txN401FrameSize (txN401)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of octets that can be carried in the information field of an Information (I) frame, Exchange Identification (XID) frame, and a Unnumbered Information (UI) frame from the IWF to the remote entity. The default value is 128 octets, and no XID negotiations required for *txN401FrameSize*. If the value for *txN401FrameSize* value is set to other than 128 octets, then XID frames are exchanged to negotiate a value. The value provided for *txN401FrameSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 128 is specified, then the IWF negotiates or attempts to negotiate a value between the 128 (as a minimum) and the given value (as a maximum). If a value less than 128 is specified, then the IWF attempts to negotiate a value between the given value (as a minimum) and 128 (as a maximum). Any value can be specified as long as it is within the provisionable limits. However, a value equal to or close to 128 is recommended. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (1..255)
Units	octets
Default	128

ATTRIBUTE TdmaCs V42 rxN401FrameSize (rxN401)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of octets that can be carried in the information field of an Information (I) frame, Exchange Identification (XID) frame, and a Unnumbered Information (UI) frame from the remote entity to the IWF. The default value is 128 octets, and no XID negotiations are required

for *rxN401FrameSize*. If the value set for *rxN401FrameSize* is other than 128, XID frames are exchanged to negotiate a value. The value provided for *rxN401FrameSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 128 is specified, then the IWF attempts to negotiate for a value between 128 (as a minimum) and the given value (as a maximum). If a value less than 128 value is specified, then the IWF attempts to negotiate for a value between the given value (as a minimum) and 128 (as a maximum). Any value can be specified as long as it is within the provisionable limits. However, a value equal to or close to the default is recommended.
Changes to this attribute do not affect existing calls.

Mib	TdmaIwf
Values	Decimal (1..255)
Units	octets
Default	128

ATTRIBUTE TdmaCs V42 txKWindowSize (txK)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of outstanding unacknowledged sequenced Information (I) frames from the IWF to the remote entity. The default value is 15 frames, and if this value is used then no Exchange Identification (XID) negotiations are required for *txKWindowSize*. If the value set for *txKWindowSize* is other than 15, then XID frames are exchanged to negotiate a value. The value provided for *txKWindowSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 15 is specified, then the IWF attempts to negotiate a value between 15 (as a minimum) and the given value (as a maximum). If a value less than 15 is specified, then the IWF attempts to negotiate for a value between the given value (as a minimum) and 15 (as a maximum). Any value can be specified as long at it is within the provisionable limits. However, a value

equal to or close to the default is recommended.
Changes to this attribute do not affect existing calls.

Mib: TdmaIwf

Values: Decimal (1..255)

Default: 15

ATTRIBUTE TdmaCs V42 rxKWindowSize (rxK)

Access: Read: All
Write: Service

Description: This attribute specifies the maximum number of outstanding unacknowledged sequenced Information (I) frames from the remote entity to the IWF. The default value is 15 frames, and if this value is used then no Exchange Identification (XID) negotiations are required for *rxKWindowSize*. If the value set for rxKWindowSize is other than 15, then XID frames are exchanged to negotiate a value. The value provided for *rxKWindowSize* sets up the bounds during XID negotiations. The IWF performs XID negotiations with this value as a minimum or maximum value. If a value greater than 15 is specified, then the IWF attempts to negotiate a value between 15 (as a minimum) and the given value (as a maximum). If a value less than 15 is specified, then the IWF attempts to negotiate for a value between the given value (as a minimum) and 15 (as a maximum). Any value can be specified as long as it is within the provisionable limits. However, a value equal to or close to the default is recommended.
Changes to this attribute do not affect existing calls.

Mib: TdmaIwf

Values: Decimal (1..255)

Default: 15

ATTRIBUTE TdmaCs V42 n400RetransLimit (n400)

Access: Read: All
Write: Service

Description: This attribute specifies the maximum number of times the IWF retransmits a frame upon expiry of *t401AckTimer* before

	appropriate recovery action is taken. Information about N400 (Retransmission Limit) is not carried in the Exchange Identification (XID) negotiation at call setup time so both sides operate with different N400 values. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (0..255)
Default	1

ATTRIBUTE TdmaCs V42 fcsLength

Access	Read: All Write: Service
Description	This attribute specifies whether a 16 bit or a 32 bit Frame Check Sequence (FCS) will be used for the link between the IWF and the far end DCE. This attribute has one of the following values: ***fcs16***: Use only a 16 bit FCS. ***fcs32Or16***: 32 bit FCS is preferred; Use a 16 bit FCS if needed. ***fcs32Only***: Use only a 32 it FCS; If unavailable, drop the connection.
Mib	TdmaIwf
Values	fcs16 fcs32Or16 fcs32
Default	fcs32Or16

COMPONENT TdmaCs V42Bis

Groups	"GROUP TdmaCs V42Bis Provisioned (Prov)"
Scope	Application
Description	*TdmaCs/<csIndex> V42bis* This component represents an instance of ITU-T V.42bis data compression protocol. Its attributes specify various default settings for aspects of the V.42bis protocol, which may be used in

an IWF call on the mobile station to IWF link or the IWF to PSTN modem link or both.

Mib TdmaIwf

Common Verbs
Help
List
Display

GROUP TdmaCs V42Bis Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attributes for the V.42bis data compression protocol parameters used for the calls set up by this particular CallServer. Changes to these attributes do not affect existing calls.

Mib TdmaIwf

ATTRIBUTE TdmaCs V42Bis p0CompressionDirection (p0)

Access Read: All
Write: Service

Description This attribute specifies the V.42bis data compression direction to be supported. The value for compression direction is negotiated at link setup by the data link protocol by way of the Exchange Identification (XID) negotiation of parameter P0 (compression direction).
During XID negotiation of parameter P0, both sides (IWF and mobile or IWF and PSTN) agree on the compression direction.
This attribute has one of the following values:
noCompression: No compression is present.
compInitrResp: The data sent by the IWF to the other entity is compressed.
compRespInitr: The data received by the IWF from the other entity is compressed.
compBoth: The data sent and received by the IWF is compressed.
Changes to this attribute do not affect existing calls.

Mib TdmaIwf

Values	noCompression compInitrResp compRespInitr compBoth
Default	compBoth

ATTRIBUTE TdmaCs V42Bis p1MaximumCodewords (p1)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of V.42bis codewords the IWF supports. A codeword is a binary number that represents a string of characters in compressed form. V.42bis keeps a dictionary of codewords for each compression direction. Changes to this attribute impact the compression ratio for the encoder (component *TdmaBc V42Bis* attribute *compRatioEncoder*). Changes also impact the amount of memory used (more memory is used when increasing the attribute). The gain in performance obtained from the selection of a larger dictionary may be offset by the larger codeword size needed, and for certain types of data, better performance may be obtained by using a smaller dictionary. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	Decimal (512..4096)
Default	512

ATTRIBUTE TdmaCs V42Bis p2MaximumStringSize (p2)

Access	Read: All Write: Service
Description	This attribute specifies the maximum number of characters allowed in a string represented by a codeword that the IWF supports. Each codeword in a V.42bis dictionary represents a string of characters. Changes to this attribute impact the compression ratio for the encoder. Changes to this attribute do not affect existing calls.

Mib	TdmaIwf
Values	Decimal (6..250)
Default	6

ATTRIBUTE TdmaCs V42Bis actionOnError (actOnErr)

Access	Read: All Write: Service
Description	This attribute specifies whether or not V.42bis takes down the call or resets the link when any of the following errors occur: 1.Receipt of STEPUP (step up codeword size) codeword when it would cause C2 (current code word size) to exceed N1 (maximum code word size). 2. Receipt of a codeword, at any time, equal to C1 (next empty dictionary entry). 3. Receipt of a codeword representing an empty dictionary entry. 4. Receipt of a reserved command code. 5. Receipt of any other error. If the value is ***resetLink***, the error corrected connection and V.42bis dictionaries are reset. Some data is lost but the call continues. If the value is ***takeDownCall***, the call is taken down. Changes to this attribute do not affect existing calls.
Mib	TdmaIwf
Values	resetLink takeDownCall
Default	resetLink

COMPONENT TdmaCs LogicalProcessor (Lp)

Instance	Decimal (0..15)
Groups	"GROUP TdmaCs Lp Operational (Oper)"
Scope	Application
Description	*TdmaCs/<csIndex> Lp/n* The *TdmaIwfLogicalProcessor* component represents an instance of a *TdmaIwfLogicalProcessor* that may be linked to this *TdmaIwfCallServer.* A *TdmaIwfBearerChannel* is indirectly

	linked to this *TdmaIwfLogicalProcessor* by way of the *TdmaIwfFramer* component. This component must be added to the *TdmaIwfCallServer* (and the change activated) prior to adding the *TdmaIwfBearerChannel*(s). This component can only be provisioned for one *TdmaIwfCallServer.*
Mib	TdmaIwf
Common Verbs	Help List Display Add DELete

GROUP TdmaCs Lp Operational (Oper)

Properties	Operational
Description	This group contains operational attributes pertaining to information about *TdmaIwfBearerChannels* and *TdmaIwfLogicalProcessor* associated with a *TdmaIwfCallServer* from a high-level view.
Mib	TdmaIwf

ATTRIBUTE TdmaCs Lp configuredBearerChannels (configBc)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of *TdmaIwfBearerChannel* components provisioned for the *TdmaIwfLogicalProcessor* represented by this component.
Mib	TdmaIwf
Values	Decimal (0..124)
Default	No default

ATTRIBUTE TdmaCs Lp activeCalls (actCalls)

Access	Read: All Write: Illegal

Description	This attribute indicates the number of calls currently active on this *LogicalProcessor*.
Mib	TdmaIwf
Values	Decimal (0..124)
Default	No default

ATTRIBUTE TdmaCs Lp modemsSupported (modemSup)

Access	Read: All Write: Illegal
Description	This attribute indicates if modems are supported with this *TdmaIwfLogicalProcessor*. This attribute has one of the following values: ***yes***: Modems are supported with this *TdmaIwfLogicalProcessor.* ***no***: Modems are not supported with this *TdmaIwfLogicalProcessor.*
Mib	TdmaIwf
Values	yes no
Default	No default

ATTRIBUTE TdmaCs Lp fastConnectSupported (fcSup)

Access	Read: All Write: Illegal
Description	This attribute indicates if the FastConnect functionality is supported with this *TdmaIwfLogicalProcessor*. This attribute has one of the following values: ***yes***: FastConnect is supported with this *TdmaIwfLogicalProcessor.* ***no***: FastConnect is not supported with this *TdmaIwfLogicalProcessor.*
Mib	TdmaIwf
Values	yes no

Default	No default

COMPONENT TdmaCs FastConnect (Fc)

Groups	"GROUP TdmaCs Fc FcStatistics (FcStats)" "GROUP TdmaCs Fc FcProvisioning (FcProv)"
Scope	Application
Description	*TdmaCs/<csIndex> FastConnect* This component represents the TDMA IWF FastConnect functionality for this particular *TdmaIwfCallServer*.
Mib	TdmaIwf
Common Verbs	Help List Display Add DELete

GROUP TdmaCs Fc FcStatistics (FcStats)

Properties	Operational
Description	This group contains operational attributes that measure data about FastConnect calls set up by this particular *TdmaIwfCallServer.*
Mib	TdmaIwf

ATTRIBUTE TdmaCs Fc currentCalls (currCall)

Access	Read: All Write: Illegal
Description	This attribute indicates the active FastConnect calls currently serviced by this particular *TdmaIwfCallServer.*
Mib	TdmaIwf
Values	Decimal (0..2047)
Default	0

ATTRIBUTE TdmaCs Fc callsRequested (callsReq)

Access	Read: All Write: Illegal
Description	This attribute counts the IWF FastConnect call setup requests received at this particular *TdmaIwfCallServer* from the DMS-MTX. The counter wraps to zero when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs Fc callsSetUp (callsSet)

Access	Read: All Write: Illegal
Description	This attribute counts the IWF FastConnect calls successfully set up by this particular *TdmaIwfCallServer.* A call is considered set up when the IWF-Setup-Request message is received, indicating a request for a data communications service, and the IWF has successfully allocated the necessary resources to fulfill the request. The counter wraps to zero when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs Fc callsReleasedNormal (callsRlsdNor)

Access	Read: All Write: Illegal
Description	This attribute counts the IWF FastConnect calls that have completed successfully on this particular *TdmaIwfCallServer.* The counter wraps to zero when it exceeds the maximum value.
Mib	TdmaIwf

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE TdmaCs Fc callsReleasedAbnormal (callsRlsdAbnor)

Access	Read: All Write: Illegal
Description	This attribute counts the IWF FastConnect calls that have been released due to error conditions at this particular *TdmaIwfCallServer* or one if its *TdmaIwfBearerChannel*s. The MTX logs can indicate reasons for abnormal call releases. The counter wraps to zero when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	No default

GROUP TdmaCs Fc FcProvisioning (FcProv)

Properties	Provisioned
Description	This group contains provisionable attributes for the TDMA IWF FastConnect feature.
Mib	TdmaIwf

ATTRIBUTE TdmaCs Fc fastConnectAccessCode (fcAc)

Access	Read: All Write: All
Description	This attribute specifies the digits that must be dialed at the mobile for this call to be identified as a FastConnect call. The dialed digits are used to identify a FastConnect call if the mobile does not support the Direct Async Data Service (DADS) service code. Up to ten access codes can be provisioned.
Mib	TdmaIwf
List of	BCD (1..15)
List Size	10

Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component TdmaCs

Release 6.1

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7400/15000/20000

Component TdmaFcBc

NN10600-060

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COMPONENT TdmaIwfFcBearerChannel (TdmaFcBc)

Instance	csIndex [Decimal (1..10)] bcIndex [Decimal (1..14030)]
Groups	"GROUP TdmaFcBc Provision (Prov)" "GROUP TdmaFcBc Operational (Oper)" "GROUP TdmaFcBc CustomerIdentifierData (CidData)" "GROUP TdmaFcBc OsiState (State)"
Scope	Application
Description	*TdmaIwfFcBearerChannel/<csIndex>,<bcIndex>* This component represents an individual bearer channel resource for the network (LAN) side of a FastConnect call. If the call type requested is a FastConnect call, the *TdmaIwfCallServer* links one *TdmaIwfBearerChannel* and one *TdmaIwfFcBearerChannel* in a single DMS-MTX InterWorking Function (IWF) call. The instance value *csIndex* is the logical identifier for the DMS-MTX and is used for associating the call server with this *TdmaIwfFcBearerChannel* instance. The instance value *bcIndex* is the logical identifier for the *TdmaIwfFcBearerChannel*. It and the csIndex together define a unique *TdmaIwfFcBearerChannel*.

	This component is specific to the ***tdmaIwfFastConnect*** feature of the ***tdmaIwf*** application.
Mib	TdmaIwf
Dyn. Subcomp.	"COMPONENT TdmaFcBc UpperRelay (Ur)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP TdmaFcBc Provision (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *TdmaIwfFcBearerChannel* component.
Mib	TdmaIwf

ATTRIBUTE TdmaFcBc linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the link to the Logical Processor that this *TdmaIwfFcBearerChannel* is to use.
Mib	TdmaIwf
Values	Link (Hardware, linkToApplications)
Default	No default

GROUP TdmaFcBc Operational (Oper)

Properties	Operational
Description	This group contains operational attributes concerning the operation of this particular *TdmaIwfBearerChannel* for the current or most recent call.

Mib	TdmaIwf

ATTRIBUTE TdmaFcBc state

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the MSC/IWF Interface Protocol (MIP) Message Router (MMR) for an IWF element. This attribute has one of the following values: ***idle***: Startup state of IWF element. ***setup***: This call half is being set up. ***active***: This call half has been connected by both the MTX and IWF and is active. ***releas***e: This call half is being released.
Mib	TdmaIwf
Values	idle setup active release
Default	No default

ATTRIBUTE TdmaFcBc callType

Access	Read: All Write: Illegal
Description	This attribute indicates the current call type. This attribute has one of the following values: ***analogSpeech***: Analog speech calls. ***digitalSpeech***: Digital speech calls. ***analogPrefSpeech***: Analog preferred speech calls. ***digitalPrefSpeech***: Digital preferred speech calls. ***asyncData***: Asynchronous data service calls. ***g3Fax***: Group 3 fax calls. ***rejected***: Rejected calls. ***stuIII***: STU III calls. ***notUsedYet***: Bearer Channel has not been used in a call yet. ***directAsyncData***: FastConnect or Direct Async Data Service (DADS) calls.

Mib	TdmaIwf
Values	analogSpeech digitalSpeech analogPrefSpeech digitalPrefSpeech asyncData g3Fax rejected stuIII notUsedYet directAsyncData
Default	No default

ATTRIBUTE TdmaFcBc lastResponseCode (respCode)

Access	Read: All Write: Illegal
Description	This attribute indicates the MSC/IWF Interface Protocol (MIP) Message Router (MMR) response code returned for the last call which was active on this particular *TdmaIwfBearerChannel*. This attribute has one of the following values: ***noCause***: No cause available. ***unassignedNumber***: Unallocated or unassigned number. ***noRouteToDest***: No route to destination. ***normalClearing***: The call was terminated normally. ***userBusy***: User busy. ***noResponse***: No carrier. ***userNoAnswer***: No answer from user. ***invalidNumberFormat***: Translation or routing problem. ***unspecNormal***: Normal, unspecified. ***temporaryFailure***: Temporary failure. ***channelUnavailable***: Channel unavailable. ***resourceUnavailable***: Resources unavailable to handle call. ***qosUnavailabled***: Specified rate of call unavailable. ***serviceUnavailable***: Service not implemented. ***unimplementedOption***: Option not implemented. ***invalidCallRefValue***: Invalid call reference value. ***invalidChannel***: Identified channel does not exist. ***unspecInvalidMessage***: Invalid message, unspecified.

missingMandatoryIe: Missing mandatory information element.
invalidMessageType: Message type not implemented.
incompatibleMessage: Message not compatible with call state.
timerRecovery: Recovery on timer expiration.
protocolError: Protocol error, unspecified.

Mib TdmaIwf

Values
noCause
unassignedNumber
noRouteToDest
normalClearing
userBusy
noResponse
userNoAnswer
invalidNumberFormat
unspecNormal
temporaryFailure
channelUnavailable
resourceUnavailable
qosUnavailable
serviceUnavailable
unimplementedOption
invalidCallRefValue
invalidChannel
unspecInvalidMessage
missingMandatoryIe
invalidMessageType
incompatibleMessage
timerRecovery
unspecProtocolError

Default No default

ATTRIBUTE TdmaFcBc mateBearerChannel (mateBc)

Access
Read: All
Write: Illegal

Description
This attribute contains the name of the mate *TdmaIwfBearerChannel* that this *TdmaIwfBearerChannel* is

	involved with in the currently active call. In the case of a FastConnect call, this mate is a *TdmaIwfFcBearerChannel*.
Mib	TdmaIwf
Values	The name of the component
Default	No default

GROUP TdmaFcBc CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	TdmaIwf

ATTRIBUTE TdmaFcBc customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	TdmaIwf
Values	Decimal (0; 1..8191)

Default	0

GROUP TdmaFcBc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	TdmaIwf

ATTRIBUTE TdmaFcBc adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	TdmaIwf
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE TdmaFcBc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	TdmaIwf
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE TdmaFcBc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	TdmaIwf
Values	idle active (activ) busy

Default	idle

COMPONENT TdmaFcBc UpperRelay (Ur)

Groups	"GROUP TdmaFcBc Ur Operational (Oper)" "GROUP TdmaFcBc Ur Statistics (Stats)"
Scope	Application
Description	*TdmaBc/<csIndex>,<bcIndex> UpperRelay* This component represents the group of measurements for the Upper Relay function established for each half of a DMS-MTX IWF asynchronous data or fax call (internally between the two *TdmaIwfBearerChannel*s involved in a call) from this particular *TdmaIwfBearerChannel* perspective.
Mib	TdmaIwf
Common Verbs	Help List Display

GROUP TdmaFcBc Ur Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that measure the performance of the *UpperRelay.*
Mib	TdmaIwf

ATTRIBUTE TdmaFcBc Ur rxBufferSize

Access	Read: All Write: Illegal
Description	This attribute indicates the size of the receive flow control buffer. This attribute may be viewed via *TdmaBc/*,*,*,* UpperRelay*.
Mib	TdmaIwf
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE TdmaFcBc Ur txFlowControlState (txFlowControl)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the transmit flow control is active or not. This attribute has one of the following values: ***active***: The transmit flow control is active. ***inactive***: The transmit flow control is inactive. This attribute may be viewed via *TdmaBc/*,*,*,* UpperRelay*.
Mib	TdmaIwf
Values	active inactive
Default	No default

ATTRIBUTE TdmaFcBc Ur rxFlowControlState (rxFlowControl)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the receive flow control is active or not. This attribute has one of the following values: ***active***: The receive flow control is active. ***inactive***: The receive flow control is inactive. This attribute may be viewed via *TdmaBc/*,*,*,* UpperRelay*.
Mib	TdmaIwf
Values	active inactive
Default	No default

GROUP TdmaFcBc Ur Statistics (Stats)

Properties	Operational
Description	This group contains operational attributes that measure the performance of the *UpperRelay*.
Mib	TdmaIwf

ATTRIBUTE TdmaFcBc Ur txFrames

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames that are sent in the transmit direction. The counter wraps when it exceeds the maximum value. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaFcBc Ur rxFrames

Access	Read: All Write: Illegal
Description	This attribute counts the number of frames that are sent in the receive direction. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaFcBc Ur unacknowledgedFrames (unackFrm)

Access	Read: All Write: Illegal
Description	This attribute indicates the current number of frames sent that have not been acknowledged for this instance of the UpperRelay. The counter wraps when it exceeds the maximum value.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE TdmaFcBc Ur cumUnacknowledgedFrames (cUnackFrm)

Access	Read: All Write: Illegal
Description	This attribute is the total number of unacknowledged frames for this instance of the UpperRelay. It is not reset when a new call starts.
Mib	TdmaIwf
Values	Decimal (0..4294967295)
Default	0

Nortel Networks Multiservice Switch 7400/15000/20000

Component TdmaFcBc

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Time

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Time

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COMPONENT Time (Time)

Groups	"GROUP Time Operational (Oper)" "GROUP Time Provisioned (Prov)"
Scope	Device
Description	*Time* The *Time* component provides access to time and date information on this module. It has operational and provisionable attributes and optional provisionable *Server* subcomponents.
Mib	Time
Opt. Subcomp.	"COMPONENT Time Server"
Common Verbs	Help List Display

GROUP Time Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Time* component.
Mib	Time

ATTRIBUTE Time syncStatus

Access	Read only

Description	This attribute indicates the XNTP (Network Time Protocol) synchronization status of this module. If the value is ***synchronized*** or ***synchronizing***, the *syncSource* attribute indicates the IP address of the main network time server. The values have the following meanings: ***synchronized*** -- The module is synchronized with the network time server. ***unsynchronized*** -- There is no network time server selected as XNTP server for the module to synchronize its time with. ***synchronizing*** -- The module is trying to synchronize with the network time server. ***unknown*** -- The synchronization status of the module is unknown.
Mib	Time
Values	synchronized unsynchronized synchronizing unspecified
Default	No default

ATTRIBUTE Time moduleTime

Access	Read and write
Description	This attribute indicates the current date and time on this module. The *moduleTime* is obtained by adding an offset to the reference time, which is the Universal Time Coordinated (UTC). When the *moduleTime* is set, it keeps the value even if the card boots. It is the time used for time stamps, such as in alarms and accounting data. The operator resets the current date and time by setting this attribute when *syncStatus* is ***unsynchronized***. Setting this attribute is not allowed if *syncStatus* is ***synchronized*** or ***synchronizing***.
Mib	Time
Values	Time (DHMS)
Default	No default

ATTRIBUTE Time mainServer

Access	Read only
Description	This attribute indicates the IP address of the main network time server that this module synchronizes with. If *syncStatus* is ***unsynchronized,*** then *mainServer* is 0.0.0.0.
Mib	Time
Values	IP address
Default	No default

ATTRIBUTE Time xntpVersion

Access	Read only
Description	This attribute indicates the current protocol version of XNTP running on this module.
Mib	Time
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Time offset

Access	Read and write
Description	This attribute specifies the number of minutes to be added to the reference time, which is Universal Coordinated Time (UTC), to obtain the *moduleTime*. It keeps its value even if the card reboots. However, if the node is powered-off for an extended period of time, it may reset to the default value.
Mib	Time
Values	Signed (-720..900)
Units	minutes
Default	0

ATTRIBUTE Time leapSecondsApplied

Access	Read only
Description	This attribute indicates the current number of leap seconds being applied in the system.
Mib	Time
Values	Signed (-1000..1000)
Default	No default

ATTRIBUTE Time syncSources

Access	Read only
Description	This attribute indicates the IP addresses of the network time servers that this module synchronizes with. XNTP uses the clock values of the network time servers to set its *moduleTime*.
Mib	Time
List of	IP address
Default	No default

GROUP Time Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the Time component.
Mib	Time

ATTRIBUTE Time timeDifferenceLimit (tdl)

Access	Read and write
Description	This attribute specifies the allowed difference between the times reported by provisioned time servers. The *timeDifferenceLimit* value is provisioned based on the sensitivity of time dependent applications and the network topology in use. An application more sensitive to time requires consistently close times reported by the time servers. A more elaborate network topology may cause the time servers to report a wider range of time differences

due to network delays than a simple network. An alarm is issued when the times reported by two time servers differ by more than the specified amount.

The value ***nolimit*** disables the check.

Mib	Time
Values	Decimal (0.001..1000.000) nolimit
Units	msec
Default	nolimit

ATTRIBUTE Time leapSecondDate (lsd)

Access	Read and write
Description	This attribute is required to be provisioned only if the *CpdsNode* component is present. This attribute specifies the UTC date on which the number of leap seconds has or will be changed from *preLeapSeconds* to *postLeapSeconds*; that is, the date on which a leap second is either inserted or deleted. This would normally be on June 30 or December 31. Bulletin C from the International Earth Rotation Service (www.iers.org) announces leap seconds. A leap second is added or removed at the end of a UTC day. That is, if a leap second is inserted, it takes two seconds from 23:59:59 to 0:00:00 instead of one. If a leap second is deleted, time will jump from 23:59:58 to 0:00:00 in one second instead of two. In Passport, a leap second is applied in the system only when it is detected, which occurs some time after the *leapSecondDate* and can vary depending on the network topology. If a leap second is not detected within 23 hours of the *leapSecondDate*, it will be automatically applied in the system.
Mib	Time

Values	Time (D)
Default	No default

ATTRIBUTE Time preLeapSeconds (preLs)

Access	Read and write
Description	This attribute is required to be provisioned only if the *CpdsNode* component is present. This attribute specifies the number of leap seconds applied in the system on or before the UTC date specified by *leapSecondDate*. *preLeapSeconds* must differ from *postLeapSeconds* by one.
Mib	Time
Values	Decimal (0..999)
Default	31

ATTRIBUTE Time postLeapSeconds (postLs)

Access	Read and write
Description	This attribute is required to be provisioned only if the *CpdsNode* component is present. This attribute specifies the number of leap seconds applied in the system after the UTC date specified by *leapSecondDate*. *postLeapSeconds* must differ from *preLeapSeconds* by one.
Mib	Time
Values	Decimal (0..999)
Default	32

COMPONENT Time Server

Instance	Decimal (1..10)

Groups	"GROUP Time Server Provisioned (Prov)" "GROUP Time Server OsiState (State)" "GROUP Time Server Operational (Oper)"
Scope	Device
Description	*Time Server/n* The *Server* component represents a single network time server that this module can use for network time synchronization.
Mib	Time
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Time Server Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Server* component.
Mib	Time

ATTRIBUTE Time Server ipAddress (ipAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the IP address of a network time server that the module will attempt to synchronize with. The value of *ipAddress* must be unique across all *Server* components.
Mib	Time
Values	IP address
Default	No default

ATTRIBUTE Time Server ipStack

Access	Read and write
Criticality	Component
Description	This attribute specifies the IP stack that XNTP uses to communicate with the network time server. If ***ipiFrIpiVc*** is selected, then an *IpiFr* or *IpiVc* component must be provisioned on this module. If ***vrIp*** is selected, then *IP* must be provisioned under the management *VR* on this module.
Mib	Time
Values	ipiFrIpiVc vrIp
Default	ipiFrIpiVc

ATTRIBUTE Time Server stratumLimit

Access	Read and write
Description	This attribute specifies the limit for the stratum reported by the remote time server. Stratum is an integer used by the Network Time Protocol to indicate the topological distance between a client and a time server. A smaller stratum value indicates a better topological distance to a time server. When the stratum reported by the remote time server exceeds this value, alarm 70150015 is raised. A clear alarm is issued when the reported stratum is no longer greater than this value.
Mib	Time
Values	Decimal (1..15)
Default	15

GROUP Time Server OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component

which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Time

ATTRIBUTE Time Server adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Time

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Time Server operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

	The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Time
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Time Server usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Time
Values	idle active (activ) busy
Default	idle

GROUP Time Server Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Server* component.
Mib	Time

ATTRIBUTE Time Server xntpVersion

Access	Read only
Description	This attribute indicates the version of XNTP currently in use by the network time server.
Mib	Time
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Time Server stratum

Access	Read only
Description	This attribute indicates the stratum level of the clock on the network time server.
Mib	Time
Values	Decimal (0..16)
Default	No default

ATTRIBUTE Time Server poll

Access	Read only
Description	This attribute indicates the time interval for the Passport module to poll the network time server for time synchronization. This value is the log to the base 2 of the poll interval in seconds. In other words, the poll interval in seconds is equal to 2**_poll_.
Mib	Time
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Time Server pktSent

Access	Read only
Description	This attribute counts the packets sent to the network time server.
Mib	Time

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Time Server pktRecv

Access	Read only
Description	This attribute counts the packets received from the network time server, including the invalid packets.
Mib	Time
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Time Server pktValid

Access	Read only
Description	This attribute counts the valid packets received from the network time server.
Mib	Time
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Time Server timeOffset

Access	Read only
Description	This attribute indicates the time by which this server's view of time is ahead of the Passport's view of reference time. Adding this value to the Passport's view of reference time gives the server's view of time. If Passport's and the server's view of time differ by more than 1000 seconds, then ***large*** will be displayed.
Mib	Time
Values	Signed (-1000000000..1000000000) large

Units	microsec
Default	No default

ATTRIBUTE Time Server delay

Access	Read only
Description	This attribute indicates the roundtrip delay to the time server over the network path between them. If the delay exceeds 100 seconds, then ***large*** will be displayed.
Mib	Time
Values	Signed (-100000000..100000000) large
Units	microsec
Default	No default

ATTRIBUTE Time Server status

Access	Read only
Description	This attribute indicates the status of the network time server. ***main*** -- This network time server is working properly, and is the system servers (synchronization sources) of the module. ***primary*** -- This network time server is working properly, and is the primary servers (one of the synchronization sources) of the module ***secondary*** -- This network time server is working properly, but its offset and dispersion is not stable or too high so that it can not be selected as one of the primary time synchronization sources. But if the primary synchronization sources are not available, it can take over the responsibility and become the time synchronization source of the module. ***unused*** -- This network time server is not used as a server (synchronization source) of the module. ***noResponse*** -- This network time server is not responding to the module's time synchronization request. This could be caused by network error or protocol error, or network time server configuration error. ***stratumTooHigh*** -- This network time server has a bad stratum

	(higher than 15), or its stratum is higher than the module's stratum. ***leapUnsync*** -- This network time server's leap value indicates that this network time server is not synchronized. ***clockUnsync*** -- This network time server's clock values indicates that this network time server is not synchronized. ***rootTooNoisy*** -- This network time server's root dispersion is too high, so that its time stamp is not used. ***peerTooNoisy*** -- The modules dispersion relative to this network time server is too high, so this network time server's time stamp is not used. ***faultStick*** -- This offset of the module relative to this network time server is out of the range or too high, so that it can not be selected as one of the primary time synchronization source.
Mib	Time
Set of	main primary secondary unused noResponse stratumTooHigh leapUnsync clockUnsync rootTooNoisy peerTooNoisy faultStick
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Time

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Trk

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Nortel Networks Multiservice Switch 7400/15000/20000

Component Trk

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COMPONENT Trunk (Trk)

Instance	Decimal (0..65535)
Groups	"GROUP Trk IfEntryProv (IfEntry)" "GROUP Trk Provisioned (Prov)" "GROUP Trk Overrides" "GROUP Trk OsiState (State)" "GROUP Trk OperationalStatus (OperStatus)" "GROUP Trk Operational (Oper)" "GROUP Trk Transport" "GROUP Trk Statistics (Stats)" "GROUP Trk SpeedReporting"

"COLLECTED STATS Trunk"

Scope	Network
Description	*Trunk/n* The *Trunk* component provides a connection between two Nortel Networks Multiservice Switches. It controls a protocol stack associated with a logical port on a function processor that provides an interconnection to another node with a *Trunk* component. It requires the existence of the *Routing* component. Note that ***dpnRouting*** also needs to be included in the *featureList* of CP's *LogicalProcessorType* component. Either an *AtmAccess*, *MplsAccess*, or *Unacknowledged*

	subcomponent must be added to provide the underlying link protocol and associated hardware that the *Trunk* will use.
Mib	Trunks
Opt. Subcomp.	"COMPONENT Trk UnAcked (UnAcked)" "COMPONENT Trk AtmAccess (Atm)" "COMPONENT Trk PathAdmin (Pa)" "COMPONENT Trk Address (Addr)"
Dyn. Subcomp.	"COMPONENT Trk LogicalChannel (LCh)" "COMPONENT Trk PorsStatistics (PorsStats)" "COMPONENT Trk ForwardingStatistics (FwdStats)" "COMPONENT Trk DprsStatistics (DprsStats)"
Common Verbs	Help List Display Add DELete Unlock

VERB LOCK Trk

Impact	Service
Description	*Lock [-force][-forever] <component name>* This verb causes the specified component to enter the OSI ***shuttingDown*** administrative state. While shutting down, the component continues to provide service to existing clients but rejects any new requests for service. In some cases, locking a component causes all its subcomponents to shut down also. When the component is no longer providing service, it enters the OSI ***locked*** administrative state. **Options:** *-force* If this option is present, service to current clients is terminated and the ***locked*** state is entered immediately (that is, without first going through the ***shuttingDown*** state). Without this option, *Lock* behaves as described above. *-forever* If this option is present, then after service to current clients is terminated and the ***locked*** state is entered, an unlock command is required to get the service into the ***unlocked*** state. Without this option, the service automatically returns to the ***unlocked*** state after five minutes.

GROUP Trk IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Trunks

ATTRIBUTE Trk ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.

Mib	Trunks
Values	up down testing
Default	up

ATTRIBUTE Trk ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Trunks
Values	Decimal (1..65535)
Default	No default

GROUP Trk Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes provides the parameters used by the layer 3 *Trunk* to *Trunk* staging protocol.
Mib	Trunks

ATTRIBUTE Trk expectedRemoteNodeName (expectedRemote)

Access	Read and write
Description	This attribute specifies the expected node name of the module to which this *Trunk* is connected. Once entered, the node name must correspond to the *Mod nodeName* attribute of the remote node. The *Trunk* end points exchange their node name through the *Trunk* staging protocol. The staged value is validated and the *remoteValidationAction* will be executed for those values not matching the value supplied for this attribute. If this attribute is an empty string, then the comparison is always successful.

Mib	Trunks
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Trk remoteValidationAction (validation)

Access	Read and write
Description	This attribute specifies the action to be taken if there is a mismatch between the *expectedRemoteNodeName* attribute and the value received from the remote end. The *remoteValidationAction* determines the action when a value is supplied to the *expectedRemoteNodeName* attribute. If this attribute is provisioned to ***continue*** then upon an unsuccessful validation staging continues, otherwise, if ***disable*** is set then the *Trunk* does not continue to stage but, attempts to stage again after a one minute time out. All unsuccessful validation when the *expectedRemoteNodeName* has been set result in the generation of an alarm.
Mib	Trunks
Values	continue disable
Default	continue

ATTRIBUTE Trk maximumExpectedRoundTripDelay (maxRtd)

Access	Read and write
Description	This is the maximum round trip delay value used by the Trunk staging protocol, in conjunction with *measuredSpeedToIf*, to determine if it has taken too long to successfully stage with a remote Trunk. The value specified must be larger than the *measuredRoundTripDelay* or the Trunk may not successfully stage.
Mib	Trunks
Values	Decimal (1..1500)
Units	msec

Default	1500

ATTRIBUTE Trk idleTimeOut

Access	Read and write
Description	This attribute specifies the Trunk protocol idle time out duration in units of seconds. If the local Trunk does not receive any packets from the link for the period specified by this attribute, the Trunk enters Are You There (AYT) mode for up to two seconds. If the Trunk does not receive any packets from the remote during the AYT mode it will restage; otherwise, it exits AYT mode and continues to provide service.
Mib	Trunks
Values	Decimal (2..30)
Units	seconds
Default	4

GROUP Trk Overrides

Properties	Provisioned
Description	Theses attribute comprise the set of provisionable override parameters supported by both the *Trunk* and *DpnGateway* components. The attributes are used when reporting operational attributes (used for metric calculations) to the routing system.
Mib	Trunks

ATTRIBUTE Trk overrideTransmitSpeed (ots)

Access	Read and write
Description	This is the overridden value of link speed (bit/s) that, if staged successfully with the remote, is reported to the routing system for metric calculations. A zero indicates that an override value has not been provided and that only the measured value will be reported to the routing system. If this value is changed on a *Trunk* or *DpnGateway* that is enabled, the LOCK and UNLOCK commands must be issued to the component to restage the override with the remote.

Mib	Trunks
Values	Decimal (0; 1000..4294967295)
Units	bit/s
Default	0

ATTRIBUTE Trk overrideRoundTripDelay (ortd)

Access	Read and write
Description	This is the overridden value of link delay (ms) that, if staged successfully with the remote, is reported to the routing system for metric calculations. A zero indicates that an override value has not been provided and that only the measured value will be reported to the routing system. If this value is changed on a *Trunk* or *DpnGateway* that is enabled, the LOCK and UNLOCK commands must be issued to the component to restage the override with the remote.
Mib	Trunks
Values	Decimal (0.0..1500.0)
Units	msec
Default	0.0

GROUP Trk OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Trunks

ATTRIBUTE Trk adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Trunks
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Trk operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

	The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Trunks
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Trk usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Trunks
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Trk availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: Trunks

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Trk proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does

initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Trunks
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Trk controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: Trunks

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Trk alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are

outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: Trunks

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Trk standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the

	role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	Trunks
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Trk unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Trunks
Values	false true
Default	false

GROUP Trk OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Trunks

ATTRIBUTE Trk snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Trunks
Values	up down testing
Default	up

GROUP Trk Operational (Oper)

Properties	Operational
Description	This is the group of operational attributes supported by the *Trunk*.
Mib	Trunks

ATTRIBUTE Trk remoteComponentName (remote)

Access	Read only
Description	This is the component name of the remote end which it has supplied through the *Trunk* staging protocol.
Mib	Trunks
Values	String (1..27, ASCII)
Default	No default

GROUP Trk Transport

Properties	Operational
Description	This group of attributes contains the set of operational parameters measured and maintained by both the *Trunk* and *DpnGateway* components.

Mib	Trunks

ATTRIBUTE Trk measuredSpeedToIf (spd)

Access	Read only
Description	This attribute indicates the current “transmittable” bandwidth of the underlying facility. For a *Trunk* with a *Unack* subcomponent, and a *DpnGateway* with a *Utp* subcomponent, if a serial port is used, the value is the measured transmit speed of the port; if a channelized port (E1/DS1) is used, the value is the measured transmit speed of the *Channel*. For a *Trunk* with an *AtmAccess* subcomponent, the value is calculated by converting the VCC transmit cell rate to an equivalent bit rate. The VCC transmit cell rate is determined based on the *vccReportingBw* attribute of the *Trunk AtmAccess* component. If *vccReportingBw* has a value of ***pcr*** and attribute *bwElastic* of *AtmAccess* has a value of ***no***, the peak cell rate (PCR) of the VCC, defined in *txTrafficDescParm* of *AtmIf Vcc Vcd*, is used. If *vccReportingBw* has a value of ***pcr*** and attribute *bwElastic* of *AtmAccess* has a value of ***yes***, the minimum of the PCR, defined in *txTrafficDescParm* of *AtmIf Vcc Vcd*, and the current cell rate (CCR) of the VCC is used. If *vccReportingBw* has a value of ***acr***, the best measurement of the actual cell rate (ACR) of the VCC is used, which is the minimum of the PCR, the CCR and the actual shaping rate (ASR). For a *Trunk* with an *MplsAccess* subcomponent, the value is the transmit bandwidth reserved on the MPLS transport *Lsp*. For a *DpnGateway* with a *FrAccess* subcomponent, the value indicates the *committedInformationRate* of *FrAccess FrMuxSetup*. A value of zero is displayed when the underlying facility is disabled or the current “transmittable” bandwidth is unknown.
Mib	Trunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	0

ATTRIBUTE Trk maxTxUnit (mtu)

Access	Read only
Description	This is the maximum transmission unit (byte size) that is supported by the *Trunk* or *DpnGateway* component. This size includes the data and routing headers. A value of zero indicates the MTU has not yet been determined.
Mib	Trunks
Values	Decimal (0..65535)
Units	bytes
Default	0

ATTRIBUTE Trk measuredRoundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the measured Round Trip Delay (msec) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. The value includes emission, propagation, and queuing delays. A 512 byte data packet is used to perform the measurement. A value of zero is displayed when the link is disabled or the measured Round Trip Delay is unknown.
Mib	Trunks
Values	Decimal (0.0..1500.0)
Units	msec
Default	0.0

GROUP Trk Statistics (Stats)

Properties	Operational
Description	These attributes comprise the statistics collected by the *Trunk* component.
Mib	Trunks

ATTRIBUTE Trk areYouThereModeEntries (ayt)

Access	Read only
Description	This attribute counts the number of times that the component has entered Are You There mode. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk pktFromIf (pkt)

Access	Read only
Description	This attribute counts the number of packets received from the remote module. It does not include the packets received from the interrupting queue. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk trunkPktFromIf (trk)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets (including those from the interrupting queue) received from the remote module. These packets are forwarded to the *Trunk* component. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk trunkPktToIf (trkti)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets (including those through the interrupting queue) transmitted to the remote module. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk discardUnforward (disc)

Access	Read only
Description	This attribute counts the number of packets received from the remote module that have been discarded. It does not include the packets received from the interrupting queue that have been discarded. This counter wraps around to zero when the maximum value is exceeded. Two main reasons that cause this counter to increase are: (1) the remote protocol is not compatible with the local protocol stack or, (2) the packet cannot be forwarded due to a recent loss of connectivity or due to congestion.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk discardTrunkPktFromIf (discTrk)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets (including those on the interrupting queue) received from the remote module that have been discarded. This counter wraps around to zero when the maximum value is exceeded. The three main reasons that cause this counter to increase are:

	(1) the two Trunks are not synchronized, (2) the remote trunk protocol is not the same version as the local protocol, and (3) the remote trunk has restaged.
Mib	Trunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk intPktFromIf (intPkt)

Access	Read only
Description	This attribute counts the number of packets received on the interrupting queue from the remote module. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk discardIntUnforward (discInt)

Access	Read only
Description	This attribute counts the number of packets received on the interrupting queue from the remote module that have been discarded. This counter wraps around to zero when the maximum value is exceeded. Two main reasons that cause this counter to increment are: (1) the remote protocol is not compatible to the local protocol stack and, (2) the packet cannot be forwarded due to either a recent loss of connectivity or due to congestion.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk stagingAttempts (statt)

Access	Read only
Description	This attribute counts the number of times that the staging protocol has attempted to stage with the remote module. This counter wraps around to zero when the maximum value is exceeded. The main reason that causes this counter to increment is that the local hardware is up but, the local protocol cannot stage with the remote protocol due to a faulty connection. If the value is zero, then the local hardware has never enabled successfully.
Mib	Trunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk discardTrunkPktToIf (discTrkti)

Access	Read only
Description	This attribute counts the number of internal trunk protocol packets (including those through the interrupting queue) that have been discarded before being transmitted to the remote module. This counter wraps around to zero when the maximum value is exceeded. The main reason that causes this counter to increment is that the trunk can not get sufficient resources to create an internal trunk protocol packet.
Mib	Trunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk utilization (util)

Access	Read only
Description	This attribute indicates the average trunk utilization. For a *Trunk/n* with an *Unack* subcomponent, the value is the link receive utilization. It is calculated every minute by comparing the

number of octets received from the remote module against the value of the *Trunk/n measuredSpeedToIf*. Since the trunk application solely owns the physical link, the maximum link utilization is 100%.

For a *Trunk/n* with an *AtmAccess* subcomponent, the value is the VCC(s) transmit utilization. It is calculated every 30 seconds by comparing the number of cells transmitted by *AtmIf Vcc(s)* against the value of the *Trunk/n measuredSpeedToIf*. The VCCs include the trunk VCC indicated by *atmConnection* of *Trunk/n AtmAccess* and the PORS SPO (Short Path Oriented) multiplexing VCC if applicable. The PORS SPO multiplexing VCC only applies to a *Trunk/n* with subcomponents *Pa AtmAccess*, where the *mode* of *AtmAccess* is ***multiplexing***, and the *AtmAccess* is linked to a second VCC indicated by *atmConnection* of *Pa AtmAccess*. Since the trunk application shares a physical link with other applications, the VCCs utilization can exceed 100%, and the value 200% is chosen as the maximum calculated utilization.

For a *Trunk/n* with an *MplsAccess* subcomponent, the value is the receive utilization. It is calculated every 30 seconds by comparing the number of octets received from the remote module against the value of the *Trunk/n measuredSpeedToIf*. Since the trunk application shares a physical link with other applications, utilization can exceed 100%, and the value 200% is chosen as the maximum calculated utilization.

Mib	Trunks
Values	Decimal (0..200)
Units	%
Default	No default

ATTRIBUTE Trk pktFromIfByPrio (pktBp)

Access	Read only
Description	This attribute counts the number of packets received by the *Trunk*. It is a vector indexed by the emission priorities (*ep0*, *ep1*, and *ep2*) of the packets. The highest emission priority is *ep0*.

	These counters wrap around to zero when the maximum value is exceeded.
Mib	Trunks
Vector of	Long Integer
Index	ep0 ep1 ep2
Default	No default

ATTRIBUTE Trk discPktFromIfByPrio (discBp)

Access	Read only
Description	This attribute counts the number of packets received from the remote module that have been discarded. It is a vector indexed by the emission priorities (*ep0*, *ep1* and *ep2*) of the packets. The highest emission priority is *ep0*. These counters wrap around to zero when the maximum value is exceeded. Two main reasons that cause this counter to increment are: (1) the remote protocol is not compatible to the local protocol stack and, (2) the packet cannot be forwarded due to either a recent loss of connectivity or due to congestion.
Mib	Trunks
Vector of	Long Integer
Index	ep0 ep1 ep2
Default	No default

ATTRIBUTE Trk octetFromIfByPrio (octBp)

Access	Read only
Description	This attribute counts the octets coming from the remote module which are received by the Trunk. It is a vector indexed by the emission priorities (*ep0*, *ep1* and *ep2*) of the packets. The highest

	emission priority is *ep0*. These counters wrap around to zero when the maximum value is exceeded.
Mib	Trunks
Vector of	Long Integer
Index	ep0 ep1 ep2
Default	No default

GROUP Trk SpeedReporting

Properties	Provisioned
Description	This group of provisionable attributes provides the ability to disable or enable the generation of speed change alarms by the *Trunk* component. It also provides the ability to disable or enable the Dynamic Speed Reporting mechanism.
Mib	Trunks

ATTRIBUTE Trk speedReportingHoldOff (spdHO)

Access	Read and write
Description	This attribute specifies the hold off time for reporting speed increases. When the *measuredSpeedToIf* reaches a level specified by the *speedReportingThresholds* attribute, the value specifies the duration (in units of seconds) for which the *measuredSpeedToIf* must maintain that level before it will be reported.
Mib	Trunks
Values	Decimal (1..1200)
Units	seconds
Default	30

ATTRIBUTE Trk lowSpeedAlarmThreshold (lowAla)

Access	Read and write

Description	This attribute specifies the lower end of the range of normal speeds for this Trunk. If the *measuredSpeedToIf* drops below this value the *Trunk* component generates a SET alarm. When the *measuredSpeedToIf* reaches or exceeds the value of this attribute, the *Trunk* component will generate a CLEAR alarm.
Mib	Trunks
Values	Decimal (0; 1..4294967295)
Units	bit/s
Default	0

ATTRIBUTE Trk highSpeedAlarmThreshold (hiAla)

Access	Read and write
Description	This attribute specifies the upper end of the range of normal speeds for this Trunk. If the *measuredSpeedToIf* exceeds this value the *Trunk* component generates a SET alarm. When the *measuredSpeedToIf* returns to or falls below the value of this attribute, the *Trunk* component will generate a CLEAR alarm.
Mib	Trunks
Values	Decimal (1..4294967295)
Units	bit/s
Default	4294967295

ATTRIBUTE Trk speedReportingThresholds (spdTh)

Access	Read and write
Description	This attribute controls the behavior of the Dynamic Speed Reporting mechanism. If its value is empty then the mechanism is disabled and neither increases nor decreases are reported. Otherwise, the attribute may contain up to seven threshold levels which are used to control the reporting of speed increases. Speed decreases are always reported immediately. If the *measuredSpeedToIf* increases such that it reaches one of the threshold levels which is greater than the last reported speed, the Trunk starts the *speedReportingHoldOff* timer. If the speed

	remains above this threshold until the timer expires, the *Trunk* component then reports the *measuredSpeedToIf*; otherwise the increase is not reported.
Mib	Trunks
List of	Decimal (0..4294967295)
Units	bit/s
List Size	7
Default	No default

COLLECTED STATS Trunk

Description	The statistics record generated by the Trunk component.

ATTRIBUTE Trk remoteComponentName (remote)

Description	This attribute is the component name of the remote end which it has supplied through the *Trunk* staging protocol.
Values	String (1..26, ASCII)

ATTRIBUTE Trk measuredSpeedToIfMax

Description	This is the maximum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for the whole interval or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedToIfMin

Description	This is the minimum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for any part of the interval or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedToIfCurrent

Description	This is the current measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled or the measured speed is unknown.

Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredRoundTripDelayMax

Description	This is the maximum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* staging protocols. A value of zero is provided when the link is disabled for the whole interval or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayMin

Description	This is the minimum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* staging protocols. A value of zero is provided when the link is disabled for any part of the interval or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayCurrent

Description	This is the measured Round Trip Delay (ms) discovered with the remote through the *Trunk* staging protocols. A value of zero is provided when the link is disabled or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk porsNormPktFromIf (normPkt)

Description	This attribute counts the number of normal priority packets received on the PORS *Trunk* normal priority queue in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk porsNormDiscUnforwardFromIf (normDisc)

Description	This attribute counts the number of normal priority packets discarded from the PORS *Trunk* normal priority queue in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk porsNormOctetFromIf (normOctet)

Description	This attribute counts the number of normal priority bytes received on the PORS *Trunk* normal priority queue in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk porsIntPktFromIf (intPkt)

Description	This attribute counts the number of interrupting priority packets received on the PORS *Trunk* interrupting priority queue in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk porsIntDiscUnforwardFromIf (intDisc)

Description	This attribute counts the number of interrupting priority packets discarded from the PORS *Trunk* interrupting priority queue in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk porsIntOctetFromIf (intOctets)

Description	This attribute counts the number of interrupting priority bytes received on the PORS *Trunk* interrupting priority queue in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk remoteComponentName (remote)

Description	This attribute is the component name of the remote end which it has supplied through the *Trunk* or *DpnGateway* staging protocol.
Values	String (1..26, ASCII)

ATTRIBUTE Trk measuredSpeedToIfMax

Description	This is the maximum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for the whole interval or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedToIfMin

Description	This is the minimum measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled for any part of the interval or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredSpeedToIfCurrent

Description	This is the current measured transmit speed (bit/s) of the link. A value of zero is provided when the link is disabled or the measured speed is unknown.
Values	Decimal (0..4294967295)

ATTRIBUTE Trk measuredRoundTripDelayMax

Description	This is the maximum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for the whole interval or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayMin

Description	This is the minimum measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled for any part of the interval or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk measuredRoundTripDelayCurrent

Description	This is the measured Round Trip Delay (ms) discovered with the remote through the *Trunk* and *DpnGateway* staging protocols. A value of zero is provided when the link is disabled or the delay is unknown.
Values	Decimal (0..1500)

ATTRIBUTE Trk fwdPktFromIf (fwdPkt)

Description	This attribute counts the number of forwarding packets received on the *Trunk* or *DpnGateway* in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk fwdDiscUnforwardFromIf (fwdDisc)

Description	This attribute counts the number of forwarding packets discarded by the *Trunk* or *DpnGateway* in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk fwdOctetFromIf (fwdOctet)

Description	This attribute counts the number of forwarding bytes received on the *Trunk* or *DpnGateway* in the last statistics collection interval.
Values	Long Integer

ATTRIBUTE Trk dprsPktFromIfByPrio (dprsPktBp)

Description	This attribute counts the number of DPRS packets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.	
Array of	Long Integer	
Row	ep ep1 ep2]	[ep0
Column	dp dp1 dp2 dp3]	[dp0

ATTRIBUTE Trk dprsDiscPktFromIfByPrio (dprsDiscBp)

Description	This attribute counts the number of DPRS packets received and discarded by the Trunk in the last statistics collection interval. It

is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of Long Integer

Row ep [ep0
ep1
ep2]

Column dp [dp0
dp1
dp2
dp3]

ATTRIBUTE Trk dprsOctetFromIfByPrio (dprsOctBp)

Description This attribute counts the number of DPRS octets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of Long Integer

Row ep [ep0
ep1
ep2]

Column dp [dp0
dp1
dp2
dp3]

ATTRIBUTE Trk porsPktFromIfByPrio (porsPktBp)

Description This attribute counts the number of PORS packets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard

priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of Long Integer

Row ep [ep0
ep1
ep2]

Column dp [dp0
dp1
dp2
dp3]

ATTRIBUTE Trk porsDiscPktFromIfByPrio (porsDiscBp)

Description This attribute counts the number of PORS packets received and discarded by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of Long Integer

Row ep [ep0
ep1
ep2]

Column dp [dp0
dp1
dp2
dp3]

ATTRIBUTE Trk porsOctetFromIfByPrio (porsOctBp)

Description This attribute counts the number of PORS octets received by the Trunk in the last statistics collection interval. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard

priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*.

Array of	Long Integer	
Row	ep ep1 ep2]	[ep0
Column	dp dp1 dp2 dp3]	[dp0

COMPONENT Trk UnAcked (UnAcked)

Groups	"GROUP Trk UnAcked Provisioned (Prov)" "GROUP Trk UnAcked OsiState (State)"
Scope	Network
Description	*Trunk/n Unacknowledged* The *Unacknowledged* component provides a Layer 2 protocol that adds the minimum of overhead to data on the link. A *Framer* subcomponent is automatically added providing the underlying HDLC framing and associated hardware that the *Unacknowledged* component will use.
Mib	UnackTrunks
Subcomponents	"COMPONENT Trk UnAcked Framer"
Common Verbs	Help List Display Add DELete

GROUP Trk UnAcked Provisioned (Prov)

Properties	Provisioned

Description	This group of provisionable attributes contains the parameters used by *Unacknowledged*, *Utp,* and *FrAccess* for monitoring link quality.
Mib	UnackTrunks

ATTRIBUTE Trk UnAcked maximumErroredInterval

Access	Read and write
Description	This attribute specifies the interval time over which the error threshold (as specified by *receiveErrorSensitivity)* must be continuously exceeded before the *Unacknowledged*, *Utp,* or *FrAccess* component can be degraded. Once the error interval count exceeds the provisioned value, the *Unacknowledged*, *Utp,* or *FrAccess* component issues an alarm indicating that link quality has degraded, and it disables its parent component. The exception to this is a value of zero, the default, which indicates that the mechanism is completely disabled.
Mib	UnackTrunks
Values	Decimal (0; 1..15)
Units	minutes
Default	0

ATTRIBUTE Trk UnAcked receiveErrorSensitivity

Access	Read and write
Description	This attribute is the allowable error rate beyond which the *Unacknowledged*, *Utp,* or *FrAccess* component can be degraded if it persists for a duration longer than the *maximumErrorInterval*. The threshold is expressed as a percentage of number of errored frames in the last interval per number of frames received in the last interval. The exception to this is a value of zero, which indicates that the mechanism is completely disabled. The configurable values are: 0 = the mechanism is completely disabled 1 = 1/(2**1) 2 = 1/(2**2) 3 = 1/(2**3)

	: 10 = 1/(2**10)
Mib	UnackTrunks
Values	Decimal (0; 1..10)
Default	3

GROUP Trk UnAcked OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	UnackTrunks

ATTRIBUTE Trk UnAcked adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: UnackTrunks

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Trk UnAcked operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: UnackTrunks

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Trk UnAcked usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: UnackTrunks

Values:
idle
active (activ)
busy

Default: idle

ATTRIBUTE Trk UnAcked availabilityStatus (osiAvail)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot

operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	UnackTrunks
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Trk UnAcked proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: UnackTrunks

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Trk UnAcked controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: UnackTrunks

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Trk UnAcked alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: UnackTrunks

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Trk UnAcked standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib: UnackTrunks

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Trk UnAcked unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	UnackTrunks
Values	false true
Default	false

COMPONENT Trk UnAcked Framer

Groups	"GROUP Trk UnAcked Framer Provisioned (Prov)" "GROUP Trk UnAcked Framer LinkOptions (Link)" "GROUP Trk UnAcked Framer OsiState (State)" "GROUP Trk UnAcked Framer Statistics (Stats)" "GROUP Trk UnAcked Framer LinkUtilization (Util)" "GROUP Trk UnAcked Framer LinkUtilThreshold (UtilThreshold)"

"COLLECTED STATS Trunk UnAcked Framer"

Scope	Device
Description	*Trunk/n Unack Framer* The *Framer* component controls link layer framing for

application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib: UnackTrunks

Common Verbs:
- Help
- List
- Display

GROUP Trk UnAcked Framer Provisioned (Prov)

Properties: Provisioned

Description:

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib: UnackTrunks

ATTRIBUTE Trk UnAcked Framer interfaceName

Access: Read and write

Criticality: Process

Description:

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib: UnackTrunks

Values: Link (Hardware, applicationFramerName)

Default: No default

GROUP Trk UnAcked Framer LinkOptions (Link)

Properties: Provisioned

Description

This group contains attributes defining the framing of data on the link interface.

Mib: UnackTrunks

ATTRIBUTE Trk UnAcked Framer framingType

Access: Read and write

Criticality: Process

Description

This attribute specifies the type of framing protocol that will be used for frames transmitted to the link interface and received from the link interface. If the value of this attribute is set to the default *interrupting*, then a Proprietary hdlc protocol is used which allows for voice cells to interrupt transmission of data frames, transmit the voice cell, and then continue transmitting the data frame. If the value of this attribute is set to *hdlc*, then the standard hdlc protocol is used for the sequential transmission of individual frames.

Mib: UnackTrunks

Values: hdlc
interrupting

Default: interrupting

ATTRIBUTE Trk UnAcked Framer dataInversion

Access Read and write

Description

This attribute determines whether data bits are to be inverted (1 to 0 and 0 to 1) before transmission of frames to the interface. If the value of this attribute is On, the incoming data bits will also be inverted when frames are received from the link before being processed.

This option is typically used in ***hdlc*** framing mode when inversion is used to guarantee 1's density.

Note that aborts (in ***hdlc*** and ***interrupting*** modes) are corrupted when data is inverted.

Mib UnackTrunks

Values off
on

Default off

ATTRIBUTE Trk UnAcked Framer frameCrcType

Access Read and write

Description

This attribute defines the type of CRC used.

The CRC value calculated is appended to the end of the frames transmitted to the link. The CRC value is removed from the end of frames received from the link and checked for correctness. NoCrc means that CRC is not used.

Mib UnackTrunks

Values crc16
crc32
noCrc

Default crc16

ATTRIBUTE Trk UnAcked Framer flagsBetweenFrames

Access Read and write

Description	This attribute defines the number of flags that are inserted between frames sent to the link interface.
Mib	UnackTrunks
Values	Decimal (1..16)
Default	1

GROUP Trk UnAcked Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	UnackTrunks

ATTRIBUTE Trk UnAcked Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	UnackTrunks
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Trk UnAcked Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	UnackTrunks
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Trk UnAcked Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib UnackTrunks

Values idle
active (activ)
busy

Default idle

GROUP Trk UnAcked Framer Statistics (Stats)

Properties Operational

Description

This group contains the operational statistics data for an unacknowledged Framer component.

Mib UnackTrunks

ATTRIBUTE Trk UnAcked Framer aborts

Access Read only

Description

This attribute is the total number of aborts received.

Mib UnackTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Trk UnAcked Framer crcErrors

Access Read only

Description

This attribute is the total number of frames with CRC errors.

Mib UnackTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Trk UnAcked Framer lrcErrors

Access	Read only
Description	This attribute is the total number of frames with LRC errors.
Mib	UnackTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Trk UnAcked Framer nonOctetErrors

Access	Read only
Description	This attribute is the total number of frames that were non octet aligned.
Mib	UnackTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Trk UnAcked Framer overruns

Access	Read only
Description	This attribute is the total number of frames received from the link for which overruns occurred.
Mib	UnackTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Trk UnAcked Framer underruns

Access	Read only

Description

This attribute is the total number of frames transmitted to the link for which underruns occurred.

Mib UnackTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Trk UnAcked Framer largeFrmErrors

Access Read only

Description

This attribute is the total number of frames received which were too large. The frame exceeded the *maximumFrameLengthLimit* provisioned attribute or it contained more than the 255 block hardware limit.

Mib UnackTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Trk UnAcked Framer frmModeErrors

Access Read only

Description

This attribute is the total number of frames detected with framing mode errors. A *framingModeError* is flagged when frames are inconsistent with the specified *framingType*, that is when interrupting frames are used while running in hdlc mode.

Mib UnackTrunks

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Trk UnAcked Framer outOfSequenceFrm

Access Read only

Description	This attribute is the total number of out of sequence frames in interrupting mode that have been received from the link.
Mib	UnackTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Trk UnAcked Framer repeatedFrm

Access	Read only
Description	This attribute is the total number of repeated frames (frames with the same sequence number) in interrupting mode that have been received from the link.
Mib	UnackTrunks
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Trk UnAcked Framer frmFromIf

Access	Read only
Description	The number of frames received from the link interface by Framer.
Mib	UnackTrunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk UnAcked Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	UnackTrunks
Values	Long Integer

Default	No default

GROUP Trk UnAcked Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	UnackTrunks

ATTRIBUTE Trk UnAcked Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	UnackTrunks
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Trk UnAcked Framer highPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the interrupting data traffic sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with a Transfer Priority (TP) of 11 and/or Emission Priority of 1. The utilization is the average for the last minute.
Mib	UnackTrunks
Values	Decimal (0..100)

Units	%
Default	0

ATTRIBUTE Trk UnAcked Framer normPrioLinkUtilFromIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities (TP) of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	UnackTrunks
Values	Decimal (0..100)
Units	%
Default	0

ATTRIBUTE Trk UnAcked Framer highPrioLinkUtilFromIf

Access	Read only
Description	This attribute is the utilization of the interrupting data traffic received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with a Transfer Priority (TP) of 11 and/or Emission Priority of 1. The utilization is the average for the last minute.
Mib	UnackTrunks
Values	Decimal (0..100)
Units	%
Default	0

GROUP Trk UnAcked Framer LinkUtilThreshold (UtilThreshold)

Properties	Provisioned

Description

This group contains all of the provisioning data required to set the link utilization alarm thresholds. All thresholds are percentages which can take on any value in the range of 0% through 100%. The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the minor alarm threshold is less than the other thresholds and that the major alarm threshold is less than the critical alarm threshold.

Mib UnackTrunks

ATTRIBUTE Trk UnAcked Framer minorLinkUtilAlarmThreshold (minor)

Access Read and write

Description

This attribute provides the threshold value which defines when a minor alarm would be issued, denoting a sustained total average link utilization. The total average link utilization is calculated based on the number of received bytes. The Set alarm is issued after 3 minutes of utilization greater than the given threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the given threshold.
The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the minor alarm threshold is less than the other thresholds.

Mib UnackTrunks

Values Decimal (0..100)

Units %

Default 75

ATTRIBUTE Trk UnAcked Framer majorLinkUtilAlarmThreshold (major)

Access Read and write

Description

This attribute provides the threshold value which defines when a major alarm would be issued, denoting a sustained total average link utilization. The total average link utilization is calculated based on the number of received bytes. The Set alarm is issued

after 3 minutes of utilization greater than the given threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the given threshold.
The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the major alarm threshold is greater than the minor threshold and less than the critical threshold.

Mib: UnackTrunks

Values: Decimal (0..100)

Units: %

Default: 85

ATTRIBUTE Trk UnAcked Framer criticalLinkUtilAlarmThreshold (critical)

Access: Read and write

Description

This attribute provides the threshold value which defines when a critical alarm would be issued, denoting a sustained total average link utilization. The total average link utilization is calculated based on the number of received bytes. The Set alarm is issued after 3 minutes of utilization greater than the given threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the given threshold.
The value 100% is used to disable an individual threshold. For values other than 100%, a semantic check ensures that the critical alarm threshold is greater than the other thresholds.

Mib: UnackTrunks

Values: Decimal (0..100)

Units: %

Default: 95

ATTRIBUTE Trk UnAcked Framer linkUtilAlarmStatus (status)

Access: Read and write

Description

This attribute provides control of the generation of link utilization alarms. If the value is ***disabled***, none of the alarms are generated (this is equivalent to setting all of the thresholds to 100%). If the value is ***enabled***, the individual thresholds are handled.

Mib UnackTrunks

Values enabled (ena)
disabled (dis)

Default disabled

COLLECTED STATS Trunk UnAcked Framer

Description The statistics record generated by the Trunk UnAcked Framer component.

ATTRIBUTE Trk UnAcked Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE Trk UnAcked Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE Trk UnAcked Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Trk UnAcked Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Trk UnAcked Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT Trk AtmAccess (Atm)

Groups "GROUP Trk Atm Provisioned (Prov)"
"GROUP Trk Atm Interface"
"GROUP Trk Atm OsiState (State)"
"GROUP Trk Atm UtilThreshold (Util)"
"GROUP Trk Atm Statistics (Stats)"

"COLLECTED STATS Trunk AtmAccess"

Scope Network

Description *Trunk/n AtmAccess*
The *AtmAc*cess component provides a Layer 2 protocol that adds no overhead to data on the ATM link that it accesses.

Mib AtmTrunks

Common Verbs
Help
List
Display
Add
DELete

GROUP Trk Atm Provisioned (Prov)

Properties Provisioned

Description This group of provisionable attributes contains the parameters used by *AtmAccess* for monitoring link quality.

Mib AtmTrunks

ATTRIBUTE Trk Atm receiveErrorSensitivity

Access	Read and write
Description	This attribute specifies the allowable error rate beyond which the *AtmAccess* component can be degraded if the error rate persists for a duration longer than the *maximumErrorInterval*. The threshold is expressed as a percentage. It is the ratio of the number of errored cells in the last interval over the number of cells received in the last interval. For AAL5, the number of errored cells is converted from *rxFrameDiscard* of *AtmIf Vcc* using the assumption that three ATM cells are used to carry a 128 byte AAL5 frame. The number of received cells is specified by *rxCell* of *AtmIf Vcc*. The configurable values are: 0 = the mechanism is completely disabled 1 = 1/(2**1) 2 = 1/(2**2) 3 = 1/(2**3) : 10 = 1/(2**10)
Mib	AtmTrunks
Values	Decimal (0; 1..10)
Default	3

ATTRIBUTE Trk Atm maximumErroredInterval

Access	Read and write
Description	This attribute specifies the interval time over which the error threshold (as specified by *receiveErrorSensitivity)* must be continuously exceeded before the *AtmAccess* component can be degraded. Once the error interval count exceeds the provisioned value, the *AtmAccess* component issues an alarm indicating that link quality has degraded, and it disables its parent component. The exception to this is a value of zero, the default, which indicates that the mechanism is completely disabled.
Mib	AtmTrunks

Values	Decimal (0.0; 0.5; 1.0; 1.5; 2.0; 2.5; 3.0; 3.5; 4.0; 4.5; 5.0; 6.0; 7.0; 8.0; 9.0; 10.0; 11.0; 12.0; 13.0; 14.0; 15.0)
Units	minutes
Default	0.0

GROUP Trk Atm Interface

Properties	Provisioned
Description	This group of attributes provides the parameters used by the *AtmAccess* component for specifying access to an ATM interface.
Mib	AtmTrunks

ATTRIBUTE Trk Atm atmConnection (ac)

Access	Read and write
Criticality	Component
Description	This attribute specifies the component name of the ATM Layer 2 AAL5 interface that the *AtmAccess* component will use.
Mib	AtmTrunks
Values	Link (Hardware, applicationName)
Default	No default

ATTRIBUTE Trk Atm bwElastic (bwE)

Access	Read and write
Criticality	Component
Description	This attribute specifies how changes in the bandwidth of the *atmConnection* are handled by the ATM software. If its value is ***no,*** the *atmConnection* will be released by the ATM software if it is incapable of providing the bandwidth specified by the peak cell rate (PCR) defined in *txTrafficDescParm* of *AtmIf Vcc Vcd*. If the value is ***yes,*** the *atmConnection* is not released in this situation, but its bandwidth may be reduced. Also, if this value is ***yes***, the Dynamic Speed Reporting mechanism must be enabled, by

provisioning at least one value in the *speedReportingThresholds* attribute of the parent *Trunk* component.

Mib: AtmTrunks

Values: no
yes

Default: no

ATTRIBUTE Trk Atm vccReportingBw (vccRepBw)

Access: Read and write

Criticality: Component

Description: This attribute specifies how the bandwidth of the VCC is reported to the parent *Trunk* component. If its value is ***pcr*** and attribute *bwElastic* of *AtmAccess* has a value of ***no***, the peak cell rate (PCR) of the VCC, defined in *txTrafficDescParm* of *AtmIf Vcc Vcd,* is reported. If its value is ***pcr*** and attribute *bwElastic* of *AtmAccess* has a value of ***yes***, the minimum of the PCR, defined in *txTrafficDescParm* of *AtmIf Vcc Vcd*, and the current cell rate (CCR) of the VCC is reported. If its value is ***acr,*** the best measurement of the actual cell rate (ACR) of the VCC is reported, which is the minimum of the PCR, the CCR and the actual shaping rate (ASR). The value of the reported bandwidth of the VCC is indicated by the *measuredSpeedToIf* attribute of the parent *Trunk* component.

Mib: AtmTrunks

Values: pcr
acr

Default: pcr

GROUP Trk Atm OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every

component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib AtmTrunks

ATTRIBUTE Trk Atm adminState (osiAdmin)

Access Read only

Description This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib AtmTrunks

Values locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default unlocked

ATTRIBUTE Trk Atm operationalState (osiOper)

Access Read only

Description This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: AtmTrunks

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Trk Atm usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: AtmTrunks

Values: idle
active (activ)
busy

Default idle

ATTRIBUTE Trk Atm availabilityStatus (osiAvail)

Access Read only

Description If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: AtmTrunks

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Trk Atm proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the

attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	AtmTrunks
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Trk Atm controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the

user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	AtmTrunks
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Trk Atm alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: AtmTrunks

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Trk Atm standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other

three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	AtmTrunks
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Trk Atm unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	AtmTrunks
Values	false true
Default	false

GROUP Trk Atm UtilThreshold (Util)

Properties	Provisioned
Description	This group contains all of the provisioning data required to set the ATM VCC utilization alarm thresholds. The ATM VCC utilization is indicated by the *lastCalculatedVccUtilization* attribute. All thresholds are percentages which can take on any value in the range of 0% through 200%. The value 200% is used to disable an individual threshold. For values other than 200%, the minor alarm threshold must be less than the other thresholds and the major alarm threshold must be less than the critical alarm threshold.
Mib	AtmTrunks

ATTRIBUTE Trk Atm minorVccUtilAlarmThreshold (minor)

Access	Read and write
Description	This attribute specifies the threshold value at which a minor alarm will be issued based on a sustained average ATM VCC utilization as indicated by the *lastCalculatedVccUtilization* attribute. The Set alarm is issued after 3 minutes of utilization greater than the threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the threshold. The value 200% is used to disable this threshold. For values other than 200%, the minor alarm threshold must be less than the other thresholds.
Mib	AtmTrunks
Values	Decimal (0..200)
Units	%
Default	75

ATTRIBUTE Trk Atm majorVccUtilAlarmThreshold (major)

Access	Read and write

Description

This attribute specifies the threshold value at which a major alarm will be issued based on a sustained average ATM VCC utilization as indicated by the *lastCalculatedVccUtilization* attribute. The Set alarm is issued after 3 minutes of utilization greater than the threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the threshold.
The value 200% is used to disable this threshold. For values other than 200%, the major alarm threshold must be greater than the minor threshold and less than the critical threshold.

Mib: AtmTrunks

Values: Decimal (0..200)

Units: %

Default: 85

ATTRIBUTE Trk Atm criticalVccUtilAlarmThreshold (critical)

Access: Read and write

Description

This attribute specifies the threshold value at which a critical alarm will be issued based on a sustained average ATM VCC utilization as indicated by the *lastCalculatedVccUtilization* attribute. The Set alarm is issued after 3 minutes of utilization greater than the threshold. The corresponding Clear alarm is issued after a subsequent 3 minutes of utilization less than or equal to the threshold.
The value 200% is used to disable this threshold. For values other than 200%, the critical alarm threshold must be greater than the other thresholds.

Mib: AtmTrunks

Values: Decimal (0..200)

Units: %

Default: 95

ATTRIBUTE Trk Atm vccUtilAlarmStatus (status)

Access	Read and write
Description	This attribute provides control of the generation of ATM VCC utilization alarms. If the value is *disabled*, none of the alarms is generated (this is equivalent to setting all of the thresholds to 200%). If the value is *enabled*, the individual thresholds are handled.
Mib	AtmTrunks
Values	enabled (ena) disabled (dis)
Default	disabled

GROUP Trk Atm Statistics (Stats)

Properties	Operational
Description	This group of attributes contains statistics collected by the *AtmAccess* component.
Mib	AtmTrunks

ATTRIBUTE Trk Atm lastCalculatedVccUtilization (util)

Access	Read only
Description	This attribute indicates the last calculated receive utilization of the ATM VCC. It is calculated every 30 seconds based on comparing the number of cells received by the *AtmIf Vcc* with the estimated available bandwidth on the *AtmIf Vcc*.
Mib	AtmTrunks
Values	Decimal (0..200)
Units	%
Default	0

ATTRIBUTE Trk Atm lastCalculatedTxVccUtilization (txutil)

Access	Read only
Description	This attribute indicates the last calculated transmit utilization of the ATM VCC. It is calculated every 30 seconds based on comparing the number of cells transmitted by the *AtmIf Vcc* with the estimated available bandwidth on the *AtmIf Vcc*.
Mib	AtmTrunks
Values	Decimal (0..200)
Units	%
Default	0

COLLECTED STATS Trunk AtmAccess

Description	The statistics record generated by the Trunk AtmAccess component.

ATTRIBUTE Trk Atm interfaceName (interface)

Description	This attribute indicates the component name of the local ATM Layer 2 AAL5 interface that the *AtmAccess* component uses.
Values	String (1..45, ASCII)

ATTRIBUTE Trk Atm txCell

Description	This attribute counts the number of cells that have been transmitted to the interface on the *Vcc* in the last collection interval.
Values	Long Integer
Units	cells

ATTRIBUTE Trk Atm txCellClp

Description	This attribute counts the number of cells that have been transmitted to the interface on the *Vcc* with the CLP=1 in the last collection interval.

Values	Long Integer
Units	cells

ATTRIBUTE Trk Atm txDiscard

Description	This attribute counts the number of cells or frames received from the bus on the *Vcc* that have been discarded (due to congestion or when the *Vcc* interface is disabled) in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk Atm txDiscardClp

Description	This attribute counts the number of cells or frames received from the bus on the *Vcc* with the CLP=1 that have been discarded (due to congestion or when the *Vcc* interface is disabled) in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk Atm rxCell

Description	This attribute counts the number of cells that have been received from the interface on the *Vcc* in the last collection interval.
Values	Long Integer
Units	cells

ATTRIBUTE Trk Atm rxCellClp

Description	This attribute counts the number of cells that have been received from the interface on the *Vcc* with the CLP=1 in the last collection interval.
Values	Long Integer
Units	cells

ATTRIBUTE Trk Atm rxDiscard

Description	This attribute counts the number of cells or frames received from the interface on the *Vcc* that have been discarded (due to congestion, non-conformance with UPC or AAL reassembly problems) in the last collection interval.

Values	Long Integer

ATTRIBUTE Trk Atm rxDiscardClp

Description	This attribute counts the number of cells or frames received from the interface on the *Vcc* with the CLP=1 that have been discarded (due to congestion, non-conformance with UPC or AAL reassembly problems) in the last collection interval.
Values	Long Integer

ATTRIBUTE Trk Atm txCellRateMax

Description	This attribute indicates the maximum transmit cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txCellRateMin

Description	This attribute indicates the minimum transmit cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txCellRateAvg

Description	This attribute indicates the average transmit cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txClpCellRateMax

Description	This attribute indicates the maximum transmit cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txClpCellRateMin

Description	This attribute indicates the minimum transmit cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm txClpCellRateAvg

Description	This attribute indicates the average transmit cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxCellRateMax

Description	This attribute indicates the maximum receive cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxCellRateMin

Description	This attribute indicates the minimum receive cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxCellRateAvg

Description	This attribute indicates the average receive cell throughput rate of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxClpCellRateMax

Description	This attribute indicates the maximum receive cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxClpCellRateMin

Description	This attribute indicates the minimum receive cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxClpCellRateAvg

Description	This attribute indicates the average receive cell throughput rate with the CLP=1 of the *Vcc* in the last collection interval.
Values	Decimal (0..4294967295)
Units	cell/s

ATTRIBUTE Trk Atm rxTotalVccUtil

Description	This attribute indicates the average total receive *Vcc* utilization computed based on comparing the total number of cells received on the *Vcc* with the estimated available bandwidth in the last collection interval.
Values	Decimal (0..200)
Units	%

ATTRIBUTE Trk Atm txTotalVccUtil

Description	This attribute indicates the average total transmitted *Vcc* utilization computed based on comparing the total number of cells transmitted on the *Vcc* with the estimated available bandwidth in the last collection interval.
Values	Decimal (0..200)

Units	%

COMPONENT Trk PathAdmin (Pa)

Groups	"GROUP Trk Pa Prov" "GROUP Trk Pa Oper" "GROUP Trk Pa Adaptation"
Scope	Application
Description	*Trunk/n PathAdmin* This component manages all path related activities on behalf of the trunk. This component is provisioned with a maximum count of *LogicalChannels* that it is allowed to create and a maximum percent of the trunk's outgoing bandwidth that it is permitted to allocate to these *LogicalChannels.*
Mib	PorsTrunks
Opt. Subcomp.	"COMPONENT Trk Pa AtmAccess (Atm)"
Common Verbs	Help List Display Add DELete

GROUP Trk Pa Prov

Properties	Provisioned
Description	This group contains all provisionable attributes relevant to path oriented traffic on a trunk. These attributes provide the maximum number of Logical Channels that are permitted under a *Trunk/n* and the maximum total bandwidth they are allowed to occupy as a percentage of the outgoing trunk bandwidth.
Mib	PorsTrunks

ATTRIBUTE Trk Pa maxLc (maxLc)

Access	Read: All Write: All
Criticality	Process
Description	This attribute indicates the number of Logical Channels (*LCh/n*) supported on this trunk. This attribute is used to allocate memory on the trunk FP for the PORS forwarding tables.Unless running in mapped mode on ATM hardware, the *PathAdmin* will add 100 channels to *maxL*c to reduce the chances of allocation clashes. However, you should never see more than *maxLc* channels in use for any extended period of time. On ATM hardware in mapped mode the *PathAdmin* will only add 10 channels to *maxLc* to permit more efficient use of the available VCC space. The *PathAdmin* may not be able to honor a request for *maxLc* channels. This will happen when the neighbor *PathAdmin* asks for less channels than this *PathAdmin*. To resolve the conflict the *PathAdmin* will always pick the minimum of the two *maxLc* values. This minimum value is called the *negotiatedMaxLc* and can be viewed as an operational parameter of the *PathAdmin*. Note that in mapped mode on ATM hardware, the value of this attribute provides an upper bound to the number of VCCs that this *Trunk/n PathAdmin* can occupy. It is not a guarantee that *maxLc* VCCs will be available to this *PathAdmin* because the VCC space is a shared resource on the card or port.
Mib	PorsTrunks
Values	Decimal (0..65435)
Default	512

ATTRIBUTE Trk Pa maxReservedBwOut (mrbwout)

Access	Read: All Write: All
Description	This attribute controls the percentage of trunk bandwidth which may be reserved by outgoing path oriented traffic on the trunk. The sum of *requiredBandwidth* attributes for all paths on this

	trunk must not exceed this attribute. Setting this attribute to zero (0) prevents paths from being established on this trunk. The limit of reserved bandwidth for incoming path oriented traffic is set using the same attribute on the trunk component on the other end of the trunk.This attribute may be changed without the trunk being restaged. If the value is decreased, calls may be bumped as necessary to free up bandwidth. Increasing the value has no impact on existing calls and new calls are able to use the new bandwidth. If this attribute is set to greater than 100%, connectionless traffic is given a minimum of 1Kbit per second for administrative traffic. A value greater than 100% overbooks the trunk bandwidth. By overbooking bandwidth, more calls are able to be established using the unused bandwidth reserved by idle *PLCs*.
Mib	PorsTrunks
Values	Decimal (0..200)
Units	%
Default	50

ATTRIBUTE Trk Pa trunkSecurity (tsec)

Access	Read: All Write: All
Criticality	Process
Description	This attribute indicates the security level of the trunk. Zero(0) represents the most secure trunk and seven(7) represents the least secure. The path's minimum security requirement is indicated by the *Plc requiredSecurity* attribute, with values identical in range and meaning to this attribute. PORS ensures that the route selected does not contain a trunk whose *PathAdmin trunkSecurity* attribute is numerically greater than the path's *requiredSecurity.*
Mib	PorsTrunks
Values	Decimal (0..7)
Default	0

ATTRIBUTE Trk Pa supportedTrafficTypes (sttyp)

Access	Read: All Write: All
Criticality	Process
Description	This attribute indicates the type of traffic that can be transmitted on the trunk. There are eight(8) possible traffic types, and the trunk can transmit all of them if desired. The ***voice, data*** and ***video*** traffic types are defined, and five(5) other traffic types can be defined by the network administration. This attribute is used in the route selection process to limit the route to trunks that support the traffic type carried by the path. The *requiredTrafficType* attribute of the *PLC* indicates the type of traffic carried on the path.
Mib	PorsTrunks
Set of	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	(voice, data, video, trafficType1, trafficType2)

ATTRIBUTE Trk Pa trunkType (ttyp)

Access	Read: All Write: All
Criticality	Process
Description	This attribute lists the type of the trunk. There can be up to eight(8) types of trunks. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six(6) remaining types that can be defined by the network administration. The set of allowed trunk types for a path is indicated in the *permittedTrunkType* attribute of the *PLC*. When selecting a route, PORS only chooses trunks

whose P*athAdmin trunkType* are in the *permittedTrunkTypes* set of the path.

Mib PorsTrunks

Values terrestrial
satellite
trunkType1 (tt1)
trunkType2 (tt2)
trunkType3 (tt3)
trunkType4 (tt4)
trunkType5 (tt5)
trunkType6 (tt6)

Default terrestrial

ATTRIBUTE Trk Pa customerParameter (cpar)

Access Read: All
Write: All

Criticality Process

Description This attribute indicates the customer defined parameter for the trunk. Its value, a number from zero(0) to seven(7), is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary *PLC* attribute, *requiredCustomerParameter*, also has a value from zero(0) to seven(7). The Route Selector does not consider trunks whose *PathAdmin customerParameter* is greater than the *requiredCustomerParameter* of the path.

Mib PorsTrunks

Values Decimal (0..7)

Default 0

ATTRIBUTE Trk Pa trunkCost (tcost)

Access Read: All
Write: All

Description This attribute is the cost metric for the trunk. This value is assigned by the network administration to represent the network

	cost of using this trunk. It can be related to distance, speed, dollars, or any other factor that could be taken into consideration. If the trunkAttributeToMinimize is set to *trunkCost*, PORS finds a route with the smallest sum of the PathAdmin *trunkCost* attribute over all trunks. The trunk cost can be increased or decreased without disrupting the service to the link. If it is increased and the PORS optimization feature is enabled calls will move off this link to lower cost links when possible. If the cost is decreased new calls will be attracted to this link.
Mib	PorsTrunks
Values	Decimal (1..255)
Default	128

ATTRIBUTE Trk Pa overrideTrunkDelay (ovrtd)

Access	Read: All Write: All
Description	This attribute specifies the override value of parent trunk's half round trip delay (propagation delay), which is used by the *PathAdmin* to negotiate the value of *negotiatedTrunkDelay.* A value of zero indicates that an override value has not been provided, and that the measured propagation delay value is used for negotiation.
Mib	PorsTrunks
Values	Decimal (0..1500)
Units	msec
Default	0

GROUP Trk Pa Oper

Properties	Operational
Description	This group contains all operational attributes relevant to path oriented and connectionless bandwidth utilization and path activity on a trunk.
Mib	PorsTrunks

ATTRIBUTE Trk Pa state

Access	Read: All Write: Illegal
Description	This attribute gives the operational state of the *PathAdmin* component. The *PathAdmin* may be ***up, down, goingDown, staging*** or ***downWaitingRestage***.
Mib	PorsTrunks
Values	String (1..80, ASCII)
Default	No default

ATTRIBUTE Trk Pa usedLc (ulc)

Access	Read: All Write: Illegal
Description	This attribute gives the total number of Logical Channels currently busy on the trunk. When this number reaches *maxLc*, no more paths are allowed to instantiate through this trunk. Note that it is possible for *usedLc* to be less than *maxLc* but for there to be no currently free *LogicalChannels*. This is because a *LogicalChannel* can be in one of several intermediate states between ***free*** and ***busy***.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk Pa negotiatedMaxLc (nmlc)

Access	Read: All Write: Illegal
Description	This attribute gives the actual value of *maxLc* that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmin*'s *maxLc* provisionable attributes the smaller of the two is chosen on both sides. This attribute reflects the minimum of these two *maxLc*'s.
Mib	PorsTrunks

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk Pa maxReservableBwOut (mrbwo)

Access	Read: All Write: Illegal
Description	This attribute gives the total bandwidth that this *PathAdmin* is allowed to reserve. This number is computed by multiplying the parent trunk's *measuredSpeedToIf* attribute by the *maxReservedBwOut* provisionable attribute of this *PathAdmin*.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Trk Pa overReservedBwOut (orbwo)

Access	Read: All Write: Illegal
Description	When bumping is required to free up enough bandwidth for a new path there exists a short period of time when both the new path and the soon to be bumped path are occupying the same bandwidth. This means that the total amount of reserved bandwidth will exceed *maxReservableBwOut*. When this happens the *unreservedBwOut* attribute will be 0 and the *overReservedBwOut* attribute will be non-zero to indicate by how much we are currently overcommitted. This value should quickly drop back to zero as the bumping starts to clear the lower *holdingPriority* calls.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Trk Pa unreservedBwOut (urbwo)

Access	Read: All Write: Illegal
Description	This attribute gives the total of amount of bandwidth that is still available for reservation by new connections. When this number reaches 0 the *PathAdmin* will no longer admit new connections to the trunk. This number represents available bandwidth in the outward going direction. To determine the inward available bandwidth you must query the *PathAdmin* at the other end of this *Trunk*.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Trk Pa clashCount (clcnt)

Access	Read: All Write: Illegal
Description	This attribute gives the total number of path setup requests that resulted in an *LCh/n* or *Vcc/x.y* clash. A large value for this number is an indicator of poor performance by the *PathAdmin* in its allocation of *LCh/n* or *Vcc/x.y* components. In general the channels will be allocated in opposite orders at each end of the *Trunk* but this may not always be the case. Note that as the *PathAdmin* runs out of *LCh/n* or *Vcc/x.y* components the number of clashes will increase.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk Pa negotiatedSupportedTrafficTypes (nsttyp)

Access	Read: All Write: Illegal

Description	This attribute gives the actual value of *supportedTrafficTypes* that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmin*'s *supportedTrafficTypes* provisionable attributes the union of the two is chosen on both sides. This attribute reflects the union of these two *supportedTrafficTypes* 's. It is this union that is advertised to all other nodes in the network and which is used for routing decisions.
Mib	PorsTrunks
Set of	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Trk Pa negotiatedTrunkSecurity (ntsec)

Access	Read: All Write: Illegal
Description	This attribute gives the actual value of the *trunkSecurity* that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmin*'s *trunkSecurity* provisionable attributes the larger of the two is chosen on both sides. This attribute reflects the maximum of these two *trunkSecurity*'s.
Mib	PorsTrunks
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Trk Pa negotiatedCustomerParameter (ncpar)

Access	Read: All Write: Illegal

Description	This attribute gives the actual value of customerParameter that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmin*'s customerParameter provisionable attributes the larger of the two is chosen on both sides. This attribute reflects the maximum of these two customerParameter's.
Mib	PorsTrunks
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Trk Pa negotiatedTrunkCost (ntcost)

Access	Read: All Write: Illegal
Description	This attribute gives the actual value of *trunkCost* that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmin*'s *trunkCost* provisionable attributes the larger of the two is chosen on both sides. This attribute reflects the maximum of these two trunkCost's.
Mib	PorsTrunks
Values	Decimal (1..255)
Default	No default

ATTRIBUTE Trk Pa negotiatedAtmMode (namode)

Access	Read: All Write: Illegal
Description	This attribute gives the actual value of *PathAdmin Atm mode* that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. This is only applicable to ATM cards since the mode on non ATM hardware is not specified. The ***multiplexing*** mode implies that all voice traffic will be multiplexed onto the *Atm atmConnection Vcc* and all data will be multiplexed onto the *Trunk Atm atmConnection Vcc*. The ***mapping*** mode implies that each unique logical channel will be allocated its own *Vcc*. The mode ***notApplicable*** implies either this is not ATM hardware or

	that no *Atm* subcomponent exists under this or the peer *PathAdmin*.
Mib	PorsTrunks
Values	multiplexing (mux) mapping (map) notApplicable (na)
Default	No default

ATTRIBUTE Trk Pa negotiatedTrunkDelay (ntdel)

Access	Read: All Write: Illegal
Description	This attribute gives the actual value of parent trunk's half round trip delay (propagation delay) that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmins* the larger of the two propagation delays is chosen on both sides. This attribute reflects the maximum of these two propagation delays.
Mib	PorsTrunks
Values	Decimal (0..1500)
Units	msec
Default	No default

ATTRIBUTE Trk Pa negotiatedTrunkType (nttyp)

Access	Read: All Write: Illegal
Description	This attribute gives the actual value of *trunkType* that the *PathAdmin* has decided on after negotiation with the far end *PathAdmin*. If there is disagreement between the two *PathAdmin*'s *trunkType* provisionable attributes the provisioned values are used on both sides. That is, both sides maintain their provisioned value..
Mib	PorsTrunks

Values	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Trk Pa adaptationLevel (adpl)

Access	Read: All Write: Illegal
Description	This attribute indicates the current PORS adaptation level of the parent trunk. The adaptation mechanism is controlled by *Adaptation* group, which is used to alleviate the high utilization condition on the parent trunk. 0 - adaptation is not active. 1 - new calls are prevented from being established over the parent trunk. 2 - some connections starting from the lowest *holdingPriority* attempt to reroute their paths using alternate trunks. 3 - some connections starting from the lowest *holdingPriority* are bumped away from the parent trunk.
Mib	PorsTrunks
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Trk Pa reservedBwOutByHp (rbw)

Access	Read: All Write: Illegal
Description	This attribute gives the total bandwidth reserved by paths for each of five (5) holding priorities. For example the bandwidth used by *holdingPriority* 0 paths is shown in the left most value.
Mib	PorsTrunks

Values	Decimal (0..4294967295)
Units	bit/s
Replication	Decimal (0..4)
Default	No default

ATTRIBUTE Trk Pa attemptCountByHp (pacnt)

Access	Read: All Write: Illegal
Description	This attribute gives the total number of path instantiation attempts this trunk has processed since its creation. This number includes successful and unsuccessful attempts. This attribute provides five (5) values of this count, one for each path *holdingPriority.*
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Replication	Decimal (0..4)
Default	No default

ATTRIBUTE Trk Pa failCountByHp (pfcnt)

Access	Read: All Write: Illegal
Description	This attribute gives the total number of path instantiation failures that have happened since the creation of this trunk. This attribute provides five (5) values of this count, one for each path *holdingPriority.*
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Replication	Decimal (0..4)
Default	No default

ATTRIBUTE Trk Pa clearCountByHp (pccnt)

Access	Read: All Write: Illegal
Description	This attribute gives the total number of path clear requests this trunk has processed since its creation. This attribute provides five (5) values of this count, one for each path *holdingPriority.*
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Replication	Decimal (0..4)
Default	No default

ATTRIBUTE Trk Pa bumpCountByHp (pbcnt)

Access	Read: All Write: Illegal
Description	This attribute gives the total number of path bumping requests this trunk has processed since its creation. This attribute provides 5 values of this count, one for each path *holdingPriority.*
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Replication	Decimal (0..4)
Default	No default

GROUP Trk Pa Adaptation

Properties	Provisioned
Description	This group of provisionable attributes controls the PORS adaptive routing mechanism. Adaptation is triggered by high trunk utilization, and is used to alleviate the high utilization condition on the parent *Trunk/n* component. For a *Trunk/n* with *an Unack* subcomponent, the link receive utilization (indicated by *utilization* of *Trunk/n)* is used for triggering adaptation.

For a *Trunk/n* with an *AtmAccess* subcomponent, the aggregation of the transmit VCCs utilization (indicated by *utilization* of *Trunk/n)*, VP utilization, and PORT utilization (normal port or IMA port if *Ima* is used) is used for triggering adaptation.

Mib PorsTrunks

ATTRIBUTE Trk Pa maxAdaptationLevel (maxadpl)

Access Read: All
Write: All

Description This attribute specifies the maximum adaptation level that the parent trunk can reach. It determines the highest degree of adaptation that can be triggered by high trunk utilization.

When the first degree of adaptation is triggered, new calls are prevented from being established over the parent trunk, and the *adaptationLevel* changes to level one (1).

When the second degree of adaptation is triggered, some connections starting from the lowest *holdingPriority* attempt to reroute their paths using alternate trunks, and the *adaptationLevel* changes to level two (2).

When the third degree of adaptation is triggered, some connections starting from the lowest *holdingPriority* are bumped away from the parent trunk, and the *adaptationLevel* changes to level three (3).

The configurable values are:
0 - The adapation mechanism is disabled.
1 - Only the first degree of adaptation can be triggered.
2 - Up to two degrees of adaptation can be triggered.
3 - Up to three degrees of adaptation can be triggered.

Regardless of its value, the operator command *CLEAR -hotSwap or CLEAR* (without an option) can always be issued on a particular *LCh/n* to cause the entire path to be rerouted if possible or bumped.

Mib	PorsTrunks
Values	Decimal (0..3)
Default	0

ATTRIBUTE Trk Pa adaptationBandwidth (adpbw)

Access	Read: All Write: All
Description	This attribute specifies the amount of bandwidth to be potentially freed up by rerouting connections if possible or freed up by bumping connections on the trunk when the second or third degree of adaptation is triggered. The *adaptationBandwidth* value is used to determine the number of connections to be rerouted or bumped starting from the lowest *holdingPriority*, such that the total of the chosen connections reserved outgoing bandwidth *requiredTxBandwidth* reaches this *adaptationBandwidth* value. If its value is greater than the *maxReservableBwOut* of *Trunk/n Pa*, the *maxReservableBwOut* amount of bandwidth is used for rerouting or bumping.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	64000

ATTRIBUTE Trk Pa adaptationThreshold (adpth)

Access	Read: All Write: All
Description	This attribute specifies three utilization thresholds used to trigger the three degrees of adaptation. It is a vector indexed by (*level1*, *level2*, and *level3*). While the PORS *adaptationLevel* is zero (0), - if the trunk utilization has exceeded the *level1* value for the

period of time specified by the *set* value of *adaptationHoldOffTime*, the first degree of adaptation is triggered. Meanwhile, the *Trunk/n Pa* component generates a SET alarm indicating that the PORS adaptation mechanism is active. The PORS *adaptationLevel* increases to level one (1).

While the PORS *adaptationLevel* is one (1),
- if the trunk utilization has exceeded the *level2* value for the period of time specified by the *set* value of *adaptationHoldOffTime*, the second degree of adaptation is triggered. The PORS *adaptationLevel* increases to level two (2).
- Otherwise, if the trunk utilization has exceeded the *level1* value for an additional period of time specified by the *set* value of *adaptationHoldOffTime*, the PORS *adaptationLevel* remains unchanged.
- Otherwise, if the trunk utilization has subsequently fallen back to a level at or below the *level1* value for the period of time specified by the *clear* value of *adaptationHoldOffTime*, new calls are allowed to be established over the parent trunk. Meanwhile, the *Trunk/n Pa* component generates a CLEAR alarm indicating that the PORS adaptation mechanism is no longer active. The PORS *adaptationLevel* decreases to level zero (0).

While the PORS *adaptationLevel* is two (2),
- if the trunk utilization has exceeded the *level3* value for the period of time specified by the *set* value of *adaptationHoldOffTime*, the third degree of adaptation is triggered. The PORS *adaptationLevel* increases to level three (3).
- Otherwise, if the trunk utilization has exceeded the *level2* value for an additional period of time specified by the *set* value of *adaptationHoldOffTime*, the second degree of adaptation is triggered again, and the PORS *adaptationLevel* remains unchanged.
- Otherwise, if the trunk utilization has subsequently fallen back to a level at or below the *level2* value for the period of time specified by the *clear* value of *adaptationHoldOffTime*, the PORS *adaptationLevel* decreases to level one (1).

While the PORS *adaptationLevel* is three (3),
- if the trunk utilization has exceeded the *level3* value for an additional period of time specified by the *set* value of

adaptationHoldOffTime, the third degree of adaptation is triggered again, and the PORS *adaptationLevel* remains unchanged.
- Otherwise, if the trunk utilization has subsequently fallen back to a level at or below the *level3* value for the period of time specified by the *clear* value of *adaptationHoldOffTime*, the PORS *adaptationLevel* decreases to level two (2).

For a *Trunk/n* with an *Unack* subcomponent, the link receive utilization (indicated by *utilization* of *Trunk/n*) is monitored against the thresholds. Since the trunk application solely owns the physical link, the maximum link receive utilization is 100%. The restrictions on the setting of the three thresholds are:
- when *maxAdaptationLevel* is 1, the value of *(level1)* must be in the range of 0% to 100%.
- when *maxAdaptationLevel* is 2, the values of *(level1* and *level2)* must be the range of 0% to 100%, and the value of *level1* must be less than or equal to the value of *level2*.
- when *maxAdaptationLevel* is 3, the values of (*level1*, *level2*, and *level3*) must be in the range of 0% to 100%, and the value of *level1* must be less than or equal to the value of level2, which must be less than or equal to the value of level3.

For a *Trunk/n* with an *AtmAccess* subcomponent, the aggregation of transmit VCCs utilization (indicated by *utilization* of *Trunk/n*), VP utilization, and PORT utilization (normal port or IMA port if *Ima* is used) is monitored against the thresholds. Since the trunk application shares a physical link with other applications, both the VCCs and VP utilizations can exceed 100%, and the value 200% is chosen as the maximum calculated utilization for VCCs and VP, so all thresholds can take on any value in the range of 0% to 200%. The restrictions on the setting of the three thresholds are:
- when *maxAdaptationLevel* is 2, the value of *level1* must be less than or equal to the value of *level2*.
- when *maxAdaptationLevel* is 3, the value of *level1* must be less than or equal to the value of level2, which must be less than or equal to the value of level3.

Mib	PorsTrunks
Vector of	Decimal (0..200)
Units	%
Index	level1 level2 level3
Default	(level1: 75, level2: 85, level3: 95)

ATTRIBUTE Trk Pa adaptationHoldOffTime (adpho)

Access	Read: All Write: All
Description	This attribute specifies two interval times. It is a vector indexed by (*set clear*). The *set* value specifies the period of time for which the trunk utilization must be above the utilization threshold specified by *adaptationThreshold* before the corresponding degree of adaptation is triggered. The *clear* value specifies the period of time for which the trunk utilization must be at or below the utilization threshold specified by *adaptationThreshold* before the PORS *adaptationLevel* is decreased by one (1).
Mib	PorsTrunks
Vector of	Decimal (5..60)
Units	minutes
Index	set clear
Default	([2] 30)

COMPONENT Trk Pa AtmAccess (Atm)

Groups	"GROUP Trk Pa Atm Prov"
Scope	Network
Description	*Trunk/n PathAdmin AtmAccess* This subcomponent is optionally added to the *PathAdmin* component on ATM hardware.

Without this subcomponent the *PathAdmin* will transport all Path Oriented traffic as AAL5 encapsulated cells on the *Trunk AtmAccess localConnection* VCC.
With this subcomponent added under the *PathAdmin* the *PathAdmin* will operate in one of two modes. These modes are referred to as mapping and multiplexing and the selection of the mode is done by setting the *PathAdmin AtmAccess mode* attribute to either ***mapping*** or ***multiplexing***.
When the mode is set to ***mapping***, the *PathAdmin* will create new VCCs for each new *LCh* that it sets up. In mapped mode the CPU usage is normally 0 for a connection and so the ATM FP can support a great many more mapped mode connections than it can multiplexed mode connections. Connections whose *maximumTransmissionUnit* is exactly 45 will use the SPO adaption layer to efficiently fit a single voice frame into a single cell with minimum overhead. All other connections will use the AAL5 adaption layer protocol.
When the mode is set to ***multiplexing***, the *PathAdmin* will look at the attribute *atmConnection* which points to a second provisioned ATM VCC. The *PathAdmin* will then multiplex voice frames onto this second VCC using a proprietary Short Path Oriented adaption layer which encapsulates one voice frame into one voice cell with low overhead. The *PathAdmin* will multiplex all non voice traffic over the *Trunk/n AtmAccess atmConnection* VCC using the AAL5 protocol.

Mib: PorsAtmTrunks

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Trk Pa Atm Prov

Properties: Provisioned

Description: This group of attributes provides the parameters used by the *AtmAccess* component for specifying access to an ATM interface.

Mib: PorsAtmTrunks

ATTRIBUTE Trk Pa Atm atmConnection (ac)

Access	Read and write
Criticality	Process
Description	This attribute specifies the component name of the ATM Virtual Circuit that the *AtmAccess* component will use. The format of the component name is *AtmIf/n Vcc/x.y Nep*
Mib	PorsAtmTrunks
Values	Link (Service, applicationName)
Default	No default

ATTRIBUTE Trk Pa Atm mode (mode)

Access	Read and write
Criticality	Process
Description	This attribute specifies the operating mode of the PathAdmin. When set to ***multiplexing*** the *PathAdmin* to multiplex voice calls to the given atmConnection using single cell per voice packet transport. All other calls will be multiplexed using AAL5 over the Trunk's VCC. When set to ***mapping*** the *PathAdmin* will allocate a VCC per *LCh/n*. In ***mapping*** mode the *atmConnection* should not be set. The VCC chosen for a given connection can be seen in the *LCh localConnection* attribute.
Mib	PorsAtmTrunks
Values	multiplexing (mux) mapping (map)
Default	multiplexing

COMPONENT Trk LogicalChannel (LCh)

Instance	Decimal (1..65535)
Groups	"GROUP Trk LCh Oper"
Scope	Application

Description	*Trunk/n LogicalChannel/n* This component is automatically created when a new path sets up over the *Trunk* and is deleted when that path terminates. An application component name followed by a series of *LogicalChannel* component names followed by an application component name serve to uniquely identify a path. Issuing a *clear* to this component will cause the entire path to collapse and all resources to be freed. Normally the end point components will attempt to reroute after a clear and may even reroute over this same trunk.
Mib	PorsTrunks
Common Verbs	Help List Display

VERB CLEAR Trk LCh

Impact	Service
Description	*Clear [-hotSwap] <component name>* Clearing an *LCh* (with no options specified) causes the entire path to be abruptly terminated and its resources freed. The end point applications see a disruption in service while their *LC*s attempt to find new routes. It is possible that the new route may go right back over the trunk from which it was cleared. Clearing is normally used in conjunction with a trunk lock. The trunk is locked and its *LCh/n* manually cleared. This is more controlled than to *lock force* a trunk. **Options:** *-hotSwap* If this option is present, the entire path is not terminated abruptly. Instead, the end point application sends traffic using the existing path while its *LC* attempts to find an alternate route. If an alternate route is found and a path is established, the data traffic is swapped from the current path to the alternate path, the current path is terminated, and the alternate path becomes the current path. Otherwise, if an alternate route is not found, the existing path continues to be used. When '*clear -hotSwap*' is issued against an *LCh/n* which is on a ***manual*** or ***forced*** path, the path gets re-setup.

GROUP Trk LCh Oper

Properties	Operational
Description	This group contains all operational attributes pertaining to the *Logical Channel* component owned by this trunk.
Mib	PorsTrunks

ATTRIBUTE Trk LCh nextHop (nhop)

Access	Read: All Write: Illegal
Description	The *nextHop* is the name of the component across the bus which is forwarding packets to us. Inversely the *nextHop* of our *nextHop*

component is us. More precisely, *LCh/n* components point to each other across the bus via their *nextHop* attributes. In the case where the next hop is an application the *nextHop* attribute will indicate the component name of this application.

Mib	PorsTrunks
Values	The name of the component
Default	No default

ATTRIBUTE Trk LCh setupPriority (sp)

Access	Read: All Write: Illegal
Description	This attribute gives the priority at which a path is established. Zero (0) is the highest priority and four (4) is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (or numerically less) than the existing path's *holdingPriority.*
Mib	PorsTrunks
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Trk LCh holdingPriority (hp)

Access	Read: All Write: Illegal
Description	This attribute gives the priority that a path holds once it is established. Zero (0) is the highest priority and four (4) is the lowest. A path's *holdingPriority* determines its likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (or numerically less) than the existing path's *holdingPriority.*

Mib	PorsTrunks
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Trk LCh emissionPriority (ep)

Access	Read: All Write: Illegal
Description	This attribute indicates the urgency with which packets on the *LCh*'s path are emitted by this trunk. The *emissionPriority* translates into the trunk's emission queue. Zero (0) indicates the highest *emissionPriority*, while three (3) indicates the lowest. Packets with a higher *emissionPriority* (or numerically less) are put on an emission queue which is serviced before a queue which accepts packets of a lower *emissionPriority* and hence experience smaller delays traversing congested trunks.
Mib	PorsTrunks
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Trk LCh discardPriority (dp)

Access	Read: All Write: Illegal
Description	This attribute indicates the importance of the packets on the path. Zero (0) is used for paths carrying the most important traffic, and two (3) is used for paths carrying the least important traffic. In times of congestion, the *discardPriority* is used by packet forwarding on the trunk to determine which packets are discarded first to reduce the load. Packets with a higher *discardPriority* (or numerically less) are discarded after packets with a lower *discardPriority* (or numerically higher).
Mib	PorsTrunks
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Trk LCh requiredTxBandwidth (tbw)

Access	Read: All Write: Illegal
Description	This attribute gives the bandwidth (in bits per second units) reserved by this *LCh/n* for emitting packets on the trunk.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Trk LCh requiredRxBandwidth (rbw)

Access	Read: All Write: Illegal
Description	This attribute gives the bandwidth (in bits per second units) reserved by this *LCh/n* for receiving packets on the trunk.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Trk LCh mode

Access	Read: All Write: Illegal
Description	This attribute gives the operational mode of the *LogicalChannel* component. It indicates what kind of transport is being performed on the packets in the channel. There are 7 possible values of this attribute as follows: ***unknown*** **-** not currently in busy state, type of forwarding not determined yet. ***hdlcFrmMux*** **-** frames are being multiplexed (multiple *LCh/n* on

same port or channel) using HDLC encapsulation.

aal5FrmMux - frames are being multiplexed (multiple *LCh/n* on same ATM VCC) using the AAL5 segmentation and recombination protocol.

spoFrmMux - frames are being multiplexed (multiple *LCh/n* on same ATM VCC) using the Short Path Oriented segmentation and recombination protocol. This is a proprietary protocol which encapsulates voice frames into a single ATM cell unlike AAL5 which would require two cells to transport the 45 byte voice frames.

aal5FrmMap - frames are being mapped (a single *LCh/n* per ATM VCC) using the AAL5 segmentation and recombination protocol. AAL5 mapped frames are forwarded by hardware in both directions and require no CPU intervention.

spoFrmMap - frames are being mapped (a single *LCh/n* per ATM VCC) using the Short Path Oriented segmentation and recombination protocol. SPO mapped frames are forwarded by hardware in both directions and require no CPU intervention in all but one special case. In particular CPU is required only if frames are being forwarded to an *LCh/n* whose *mode* is ***spoFrmMux***.

cellMap - ATM cells are being relayed directly over the bus with no segmentation and recombination protocol. The segmentation and recombination is only done at transition points between frame based cards and ATM cell based cards so this hop represents a pure tandem cell hop, ATM card to ATM card. No CPU is required to process these cells.

Mib PorsTrunks

Values unknown (unknwn)
hdlcFrmMux (hdlcMx)
aal5FrmMux (al5Mux)
spoFrmMux (spoMux)
spoFrmMap (spoMap)

	aal5FrmMap (al5Map) cellMap (celMap)
Default	No default

ATTRIBUTE Trk LCh maximumTransmissionUnit (mtu)

Access	Read: All Write: Illegal
Description	This attribute gives the size of the largest frame this service will send. A value of 0 means that the *Mtu* is unknown. A value of 45 or less (but non zero) means that ATM single cell transport will be used wherever possible. Otherwise ATM AAL5 adaption layer transport will be required to handle all frames.
Mib	PorsTrunks
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Trk LCh localConnection (lcon)

Access	Read: All Write: Illegal
Description	The *localConnection* attribute specifies the name of the connection on the local interface. On ATM hardware this is in the form *AtmIf/n Vcc/x.y*. On non ATM hardware this attribute is empty.
Mib	PorsTrunks
Values	The name of the component
Default	No default

COMPONENT Trk PorsStatistics (PorsStats)

Groups	"GROUP Trk PorsStats Operational (Oper)"
Scope	Application
Description	*Trunk/n PorsStatistics* This is a dynamic subcomponent of a *Trunk* which appears when

a *PathAdmin* component is provisioned under the *Trunk* supporting interrupting priority queue. It contains statistics associated with PORS traffic for a *Trunk* component.

Mib: Trunks

Common Verbs: Help, List, Display

GROUP Trk PorsStats Operational (Oper)

Properties: Operational

Description: This operational group provides the PORS Trunks interrupting and normal traffic statistics for operator console display.

Mib: Trunks

ATTRIBUTE Trk PorsStats porsNormPktFromIf (normPkt)

Access: Read only

Description: This attribute counts the number of normal priority packets received on the PORS Trunk normal priority queue. This counter wraps around to zero when the maximum value is exceeded.

Mib: Trunks

Values: Long Integer

Default: No default

ATTRIBUTE Trk PorsStats porsNormDiscUnforwardFromIf (normDisc)

Access: Read only

Description: This attribute counts the number of normal priority packets discarded from the PORS Trunk normal priority queue. This counter wraps around to zero when the maximum value is exceeded.

Mib: Trunks

Values: Long Integer

Default	No default

ATTRIBUTE Trk PorsStats porsNormOctetFromIf (normOctet)

Access	Read only
Description	This attribute counts the number of normal priority bytes received on the PORS Trunk normal priority queue.This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk PorsStats porsIntPktFromIf (intPkt)

Access	Read only
Description	This attribute counts the number of interrupting priority packets received on the PORS Trunk interrupting priority queue. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk PorsStats porsIntDiscUnforwardFromIf (intDisc)

Access	Read only
Description	This attribute counts the number of interrupting priority packets discarded from the PORS Trunk interrupting priority queue. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk PorsStats porsIntOctetFromIf (intOctets)

Access	Read only
Description	This attribute counts the number of interrupting priority bytes received on the PORS Trunk interrupting priority queue. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk PorsStats pktFromIfByPrio (pktBp)

Access	Read only
Description	This attribute counts the number of PORS packets received by the *Trunk*. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*. These counters wrap around to zero when the maximum value is exceeded.
Mib	Trunks
Array of	Long Integer
Row	ep [ep0 ep1 ep2]
Column	dp [dp0 dp1 dp2 dp3]
Default	No default

ATTRIBUTE Trk PorsStats discPktFromIfByPrio (discBp)

Access	Read only

Description	This attribute counts the number of PORS packets received from the remote module that have been discarded. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*. These counters wrap around to zero when the maximum value is exceeded.
Mib	Trunks
Array of	Long Integer
Row	ep [ep0 ep1 ep2]
Column	dp [dp0 dp1 dp2 dp3]
Default	No default

ATTRIBUTE Trk PorsStats octetFromIfByPrio (octBp)

Access	Read only
Description	This attribute counts the number of PORS octets received by the *Trunk*. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*. These counters wrap around to zero when the maximum value is exceeded.

Mib	Trunks	
Array of	Long Integer	
Row	ep ep1 ep2]	[ep0
Column	dp dp1 dp2 dp3]	[dp0
Default	No default	

COMPONENT Trk ForwardingStatistics (FwdStats)

Groups	"GROUP Trk FwdStats Operational (Oper)"
Scope	Application
Description	*Trunk/n ForwardingStatistics* This is a dynamic subcomponent of a *Trunk* or *DpnGateway* which appears when packet forwarding traffic is used over the *Trunk* or *DpnGateway*. It contains statistics associated with packet forwarding traffic for *Trunks* and *DpnGateways*.
Mib	Trunks
Common Verbs	Help List Display

GROUP Trk FwdStats Operational (Oper)

Properties	Operational
Description	This operational group counts the *Trunk* or *DpnGateway* packet forwarding traffic statistics for operator console display.
Mib	Trunks

ATTRIBUTE Trk FwdStats fwdPktFromIf (fwdPkt)

Access	Read only

Description	This attribute counts the number of forwarding packets received by the *Trunk* or *DpnGateway*. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk FwdStats fwdDiscUnforwardFromIf (fwdDisc)

Access	Read only
Description	This attribute counts the number of forwarding packets discarded by the *Trunk* or *DpnGateway*. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

ATTRIBUTE Trk FwdStats fwdOctetFromIf (fwdOctet)

Access	Read only
Description	This attribute counts the number of forwarding bytes received by the *Trunk* or *DpnGateway*. This counter wraps around to zero when the maximum value is exceeded.
Mib	Trunks
Values	Long Integer
Default	No default

COMPONENT Trk DprsStatistics (DprsStats)

Groups	"GROUP Trk DprsStats Operational (Oper)"
Scope	Application
Description	*Trunk/n DprsStatistics* This is a dynamic subcomponent of a *Trunk* which appears when

DPRS traffic is used over the *Trunk*. It contains statistics associated with packet forwarding traffic for *Trunks*.

Mib: Trunks

Common Verbs: Help, List, Display

GROUP Trk DprsStats Operational (Oper)

Properties: Operational

Description: This operational group counts the *Trunk* or *DpnGateway* packet forwarding traffic statistics for operator console display.

Mib: Trunks

ATTRIBUTE Trk DprsStats pktFromIfByPrio (pktBp)

Access: Read only

Description: This attribute counts the number of DPRS packets received by the *Trunk*. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*. These counters wrap around to zero when the maximum value is exceeded.

Mib: Trunks

Array of: Long Integer

Row: ep [ep0, ep1, ep2]

Column: dp [dp0, dp1, dp2, dp3]

Default: No default

ATTRIBUTE Trk DprsStats discPktFromIfByPrio (discBp)

Access	Read only
Description	This attribute counts the number of DPRS packets received from the remote module that have been discarded by the *Trunk*. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*. These counters wrap around to zero when the maximum value is exceeded.
Mib	Trunks
Array of	Long Integer
Row	ep [ep0 ep1 ep2]
Column	dp [dp0 dp1 dp2 dp3]
Default	No default

ATTRIBUTE Trk DprsStats octetFromIfByPrio (octBp)

Access	Read only
Description	This attribute counts the number of DPRS octets received by the *Trunk*. It is an array indexed by the emission priorities (*ep0*, *ep1* and *ep2*) and discard priorities (*dp0*, *dp1*, *dp2* and *dp3*) of the packets. The highest emission priority is *ep0* and the least discardable priority is *dp0*. These counters wrap around to zero when the maximum value is exceeded.

Mib	Trunks	
Array of	Long Integer	
Row	ep ep1 ep2]	[ep0
Column	dp dp1 dp2 dp3]	[dp0
Default	No default	

COMPONENT Trk Address (Addr)

Instance	String (1..40, ASCII)
Groups	"GROUP Trk Addr Prov"
Scope	Application
Description	*Trunk/n Address* This subcomponent is optionally added to the *Trunk* component to specify an NSAP address of a single destination that can be reached through that trunk, or to specify an NSAP address prefix which describes a set of destinations that can be reached through that trunk.
Mib	Trunks
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Trk Addr Prov

Properties	Provisioned

Description	This group of attributes specifies the provisionable characteristics of the *TrkReachableAddress* component.
Mib	Trunks

ATTRIBUTE Trk Addr cost (cost)

Access	Read and write
Description	This attribute specifies a cost of using the trunk to reach a destination or destinations described by *TrkReachableAddress* component. The value is assigned by the network administrator to represent the network cost of using this trunk. It can be related to distance, speed, dollars, or any other factor that could be taken into consideration.
Mib	Trunks
Values	Decimal (0..65435)
Default	200

Nortel Networks Multiservice Switch 7400/15000/20000

Component Trk

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Trm

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Nortel Networks Multiservice Switch 7400/15000/20000

Component Trm

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COMPONENT TransportResource (Trm)

Scope	Network
Description	*TransportResource* This component resides on all Nortel Networks Multiservice Switches and is responsible for managing link resources. It acts as an intermediary between a link and all the routing systems that use the link.
Mib	BaseRouting
Dyn. Subcomp.	"COMPONENT Trm Link (Lk)" "COMPONENT Trm LinkGroup (Lg)"
Common Verbs	Help List Display

COMPONENT Trm Link (Lk)

Instance	Decimal (1..1023)
Groups	"GROUP Trm Lk Operational (Oper)" "GROUP Trm Lk ForwardingStatistics (FwdStats)"
Scope	Network
Description	*Trm Link/<n>* This component is a dynamic subcomponent of

TransportResource. It has operational attributes only which are stored and maintained by this component for listing links.

Mib: BaseRouting

Common Verbs:
Help
List
Display

GROUP Trm Lk Operational (Oper)

Properties: Operational

Description: *Trm Lk/<n> Operational*
This group of attributes is used to list links. These links are all registered with Transport Resource Manager. They have a status which reflects the current view of the link.

Mib: BaseRouting

ATTRIBUTE Trm Lk status

Access: Read only

Description: This attribute indicates if the inactive link is disabled, joining, waiting to join, or in standby mode.

inactive - The link is known to TRM but is not active. This can mean that it is disabled, or has not yet started to join.
joining - The link has requested to join the routing systems.
online- The link is active and has joined one or more routing systems.

Mib: BaseRouting

Values:
inactive
joining
online

Default: No default

ATTRIBUTE Trm Lk throughput

Access	Read only
Description	This attribute indicates the throughput of the link. This value represents a nominal bandwidth available for connection-less traffic, after the maximum reserved for path-oriented traffic has been subtracted from trunk bandwidth. If a trunk speed override is specified, it is used instead. The “throughput” value can be exceeded by connection-less traffic whenever path-oriented traffic is not using it’s reserved bandwidth.
Mib	BaseRouting
Values	Decimal (1..640000000)
Units	kbit/s
Default	No default

ATTRIBUTE Trm Lk maxTxUnit

Access	Read only
Description	This attribute indicates the maximum data unit in bytes of this link. It represents the maximum frame length (including user data and routing headers) that can be sent on the link.
Mib	BaseRouting
Values	Decimal (1..65535)
Units	bytes
Default	No default

ATTRIBUTE Trm Lk linkComponentName

Access	Read only
Description	This attribute indicates the link’s component name. A link is either a trunk or a gateway to another module. The component name may be used to obtain additional information from the link system.
Mib	BaseRouting

Values	The name of the component
Default	No default

ATTRIBUTE Trm Lk delay

Access	Read only
Description	This attribute indicates the round trip delay of the link in milliseconds. This value represents a nominal delay for connection-less traffic. Connection-less traffic is biased away from trunks carrying path-oriented traffic by increasing this value. The value of this attribute is a function of the percentage of reserved path-oriented bandwidth and takes a maximum value of 1500ms for 100% path-oriented trunks. If a delay override is specified, it will be used instead.
Mib	BaseRouting
Values	Decimal (1.0..1500.0)
Units	msec
Default	No default

GROUP Trm Lk ForwardingStatistics (FwdStats)

Properties	Operational
Description	This group of attributes is used to display egress statistics collected by packet forwarding on this link. The statistics can be used to monitor congestion conditions and packet discards on a link.
Mib	BaseRouting

ATTRIBUTE Trm Lk fciSet

Access	Read only
Description	This attribute counts the packets whose FCI bits are set by packet forwarding due to congestion on this link, and when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This counter wraps around to zero when the maximum value is reached.

Mib	BaseRouting
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Trm Lk overflowAttempts

Access	Read only
Description	This attribute counts the number of times DPRS packet forwarding attempts to overflow packets to another link in a link group due to congestion on this link. It is used only when the *forwardingPolicy* attribute in the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This counter wraps around to zero when the maximum value is reached.
Mib	BaseRouting
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Trm Lk pathOverflowAttempts

Access	Read only
Description	This attribute counts the number of times DPRS packet forwarding attempts to overflow packets to another link group due to congestion on the link group of this link. It is used only when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This counter wraps around to zero when the maximum value is reached.
Mib	BaseRouting
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Trm Lk discardCongested

Access	Read only

Description	This attribute counts the packets that have been discarded by packet forwarding due to congestion on this link and when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This attribute is a vector with three entries. Each entry corresponds to a discard priority of the packet. The first entry represents the discard count of packets with discard priority 1, the second entry discard priority 2, and the third entry discard priority 3. Each entry (counter) wraps around to zero when the maximum value is reached.
Mib	BaseRouting
Vector of	Decimal (0..2147483647)
Index	discardPriority_1 (dp1) discardPriority_2 (dp2) discardPriority_3 (dp3)
Default	No default

COMPONENT Trm LinkGroup (Lg)

Instance	String (1..12, ASCII)
Scope	Network
Description	*Trm LinkGroup /<neighborNodeName>* This component is a dynamic subcomponent of *TransportResource*. It has operational attributes only which are stored and maintained by this component for the purpose of displaying link groups. A link group contains 1 to 4 links, all of which are active. The neighbor node name is the node name provisioned in the *Module* component on the remote node if the link group connects to a Nortel Networks Multiservice Switch. Otherwise it is the remote module node name provisioned in the components of gateways in this link group. Links in a link group can have differing throughputs and round

trip delays. If the difference within the set of throughputs, or within the set of delays is significant, some links may not be used. The rule that is applied is that links within 50% of the throughput of the highest throughput link are used for the throughput RCOS. similarly links within 50% of the delay of the lowest delay link are used for the throughput RCOS. As links are added or removed from the link group, the set of links which are used is re-evaluated.

Mib	BaseRouting
Dyn. Subcomp.	"COMPONENT Trm Lg Link (Lk)" "COMPONENT Trm Lg LogicalNetworkNumber (LNN)"
Common Verbs	Help List Display

COMPONENT Trm Lg Link (Lk)

Instance	Decimal (1..1023)
Groups	"GROUP Trm Lg Lk Operational (Oper)" "GROUP Trm Lg Lk ForwardingStatistics (FwdStats)"
Scope	Network
Description	*Trm Lg/<neighborNodeName> Link /<linkInstance>* This component is a dynamic subcomponent of *LinkGroup*. It has operational attributes only which are stored and maintained by this component for displaying links in a link group. There are 1 to 4 active links in a link group. A link group object is not created until there is at least one active link in the group. Inactive links are not shown in a link group.
Mib	BaseRouting
Common Verbs	Help List Display

GROUP Trm Lg Lk Operational (Oper)

Properties	Operational
Description	*Trm Lk/<n> Operational* This group of attributes is used to list links. These links are all registered with Transport Resource Manager. They have a status which reflects the current view of the link.
Mib	BaseRouting

ATTRIBUTE Trm Lg Lk status

Access	Read only
Description	This attribute indicates if the inactive link is disabled, joining, waiting to join, or in standby mode. ***inactive*** - The link is known to TRM but is not active. This can mean that it is disabled, or has not yet started to join. ***joining*** - The link has requested to join the routing systems. ***online***- The link is active and has joined one or more routing systems.
Mib	BaseRouting
Values	inactive joining online
Default	No default

ATTRIBUTE Trm Lg Lk throughput

Access	Read only
Description	This attribute indicates the throughput of the link. This value represents a nominal bandwidth available for connection-less traffic, after the maximum reserved for path-oriented traffic has been subtracted from trunk bandwidth. If a trunk speed override is specified, it is used instead. The “throughput” value can be exceeded by connection-less traffic whenever path-oriented traffic is not using it’s reserved bandwidth.

Mib	BaseRouting
Values	Decimal (1..640000000)
Units	kbit/s
Default	No default

ATTRIBUTE Trm Lg Lk maxTxUnit

Access	Read only
Description	This attribute indicates the maximum data unit in bytes of this link. It represents the maximum frame length (including user data and routing headers) that can be sent on the link.
Mib	BaseRouting
Values	Decimal (1..65535)
Units	bytes
Default	No default

ATTRIBUTE Trm Lg Lk linkComponentName

Access	Read only
Description	This attribute indicates the link's component name. A link is either a trunk or a gateway to another module. The component name may be used to obtain additional information from the link system.
Mib	BaseRouting
Values	The name of the component
Default	No default

ATTRIBUTE Trm Lg Lk delay

Access	Read only
Description	This attribute indicates the round trip delay of the link in milliseconds. This value represents a nominal delay for connection-less traffic. Connection-less traffic is biased away from trunks carrying path-oriented traffic by increasing this

	value. The value of this attribute is a function of the percentage of reserved path-oriented bandwidth and takes a maximum value of 1500ms for 100% path-oriented trunks. If a delay override is specified, it will be used instead.
Mib	BaseRouting
Values	Decimal (1.0..1500.0)
Units	msec
Default	No default

GROUP Trm Lg Lk ForwardingStatistics (FwdStats)

Properties	Operational
Description	This group of attributes is used to display egress statistics collected by packet forwarding on this link. The statistics can be used to monitor congestion conditions and packet discards on a link.
Mib	BaseRouting

ATTRIBUTE Trm Lg Lk fciSet

Access	Read only
Description	This attribute counts the packets whose FCI bits are set by packet forwarding due to congestion on this link, and when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This counter wraps around to zero when the maximum value is reached.
Mib	BaseRouting
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Trm Lg Lk overflowAttempts

Access	Read only

Description	This attribute counts the number of times DPRS packet forwarding attempts to overflow packets to another link in a link group due to congestion on this link. It is used only when the *forwardingPolicy* attribute in the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This counter wraps around to zero when the maximum value is reached.
Mib	BaseRouting
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Trm Lg Lk pathOverflowAttempts

Access	Read only
Description	This attribute counts the number of times DPRS packet forwarding attempts to overflow packets to another link group due to congestion on the link group of this link. It is used only when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This counter wraps around to zero when the maximum value is reached.
Mib	BaseRouting
Values	Decimal (0..2147483647)
Default	No default

ATTRIBUTE Trm Lg Lk discardCongested

Access	Read only
Description	This attribute counts the packets that have been discarded by packet forwarding due to congestion on this link and when the *forwardingPolicy* attribute of the *Routing DpnAddressPlan* component is set to a value of either ***loadshare*** or ***loadspread***. This attribute is a vector with three entries. Each entry corresponds to a discard priority of the packet. The first entry represents the discard count of packets with discard priority 1, the

	second entry discard priority 2, and the third entry discard priority 3. Each entry (counter) wraps around to zero when the maximum value is reached.
Mib	BaseRouting
Vector of	Decimal (0..2147483647)
Index	discardPriority_1 (dp1) discardPriority_2 (dp2) discardPriority_3 (dp3)
Default	No default

COMPONENT Trm Lg LogicalNetworkNumber (LNN)

Instance	Decimal (0..2047)
Groups	"GROUP Trm Lg LNN Operational (Oper)"
Scope	Network
Description	*Trm Lg/<neighborNodeName> LNN /<logical network number>* This component is a dynamic subcomponent of *LinkGroup*. It has operational attributes only which are stored and maintained by this component for displaying address plans supported over this link group. A logical network number (which is used as an instance to this component) uniquely identifies an address plan and its traffic in a network.
Mib	BaseRouting
Common Verbs	Help List Display

GROUP Trm Lg LNN Operational (Oper)

Properties	Operational
Description	*Trm Lg/<neighborNodeName> LNN/<logical network number> Operational* This group of attributes is the information associated with an address plan.

Mib	BaseRouting

ATTRIBUTE Trm Lg LNN linkType

Access	Read only
Description	This attribute indicates how the LNN is transported over the link group. It can be one of three types: *trunk* - the LNN is supported by Topology over a link between two Nortel Networks Multiservice Switches. *internal gateway* - the LNN is supported by an address plan (but not Topology) over a link between two Nortel Networeks Multiservice Switches. *external gateway* - the LNN is supported by an address plan (but not Topology) over a link between a Nortel Networks Multiservice Switch and a node that is not a Nortel Networks Multiservice Switch.
Mib	BaseRouting
Values	trunk internalGateway externalGateway
Default	No default

ATTRIBUTE Trm Lg LNN addressPlanComponentName (addrPlanCompName)

Access	Read only
Description	This attribute indicates the component name of the address plan which owns the logical network number of this component.
Mib	BaseRouting
Values	The name of the component
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Trm

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Usc

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Chapter 1
COMPONENT UsgsnSubscriberControl (Usc)

Instance	Decimal (1..15)
Groups	"GROUP Usc Provisioned (Prov)" "GROUP Usc OsiState (State)" "GROUP Usc Statistics (Stats)" "GROUP Usc WlcCustomCounters (WlcCustomCntr)" "GROUP Usc OvldScOper" "GROUP Usc OvldOper"

"COLLECTED STATS UsgsnSubscriberControl"

Scope	Application
Description	*UmtsSubscriberControl/n* This component represents the subscriber control entities such as the GPRS Mobility Management (GMM), the Session Management SM), the control part of the GPRS Tunneling

	Protocol (GTP-C), and the interfaces to the Home Location Register (HLR) (*HlrCache*, *MapClient*).
Mib	UsgsnSubscriberControl
Subcomponents	"COMPONENT Usc GtpC" "COMPONENT Usc HlrCache (HlrC)" "COMPONENT Usc SessionManagement (Sm)" "COMPONENT Usc GprsMobilityManagement (Gmm)" "COMPONENT Usc MapClient (Mc)" "COMPONENT Usc ServiceSwitchingFunction (Ssf)"
Opt. Subcomp.	"COMPONENT Usc LocationServices (Lcs)"
Dyn. Subcomp.	"COMPONENT Usc RemoteApplicationConnection (RaConn)" "COMPONENT Usc Ranap" "COMPONENT Usc DifferentiatedService (Ds)" "COMPONENT Usc GprsSupportNode (Gsn)"
Common Verbs	Help List Display Add DELete

GROUP Usc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Usc* component.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor that the *UmtsSubscriberControl (Usc)* and its subcomponents are provisioned on. Changing the value of this attribute causes the card to be reset

	and all the subscribers using this *Usc* component will be disconnected.
Mib	UsgsnSubscriberControl
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Usc sgsnNumber (sgsnNum)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the designated E.164 number for this USGSN. This is used to associate the USGSN in the Home Location Register (HLR) with the MSC-VLR, to identify the USGSN in the SS7 network, and to identify the routing capabilities. Changing the value of this attribute causes the card to be reset and all the subscribers using this *Usc* component will be disconnected.
Mib	UsgsnSubscriberControl
Values	String (8..17, NativeAddress)
Default	No default

ATTRIBUTE Usc maxAttachedSubscribers (maxSubs)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum attached subscribers for this instance of UMTS Subscriber Control (*Usc*). The current attached subscribers can be obtained from the attribute *currentlyAttached* defined in the *GprsMobilityManagement (Gmm)* component.

	Changing the value of this attribute causes the card to be reset and all the subscribers using this *Usc* component will be disconnected. This attribute together with currentlyAttached are used to determine when subscriber count overload occurs (Refer to *Usc* subCountOvldAttachesDiscarded).
Mib	UsgsnSubscriberControl
Values	Decimal (1..1000000)
Default	500

ATTRIBUTE Usc maxActiveSessions (maxActSess)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum simultaneous active sessions supported in this UMTS Subscriber Control (*Usc*). Changing the value of this attribute causes the card to be reset and all the subscribers using this *Usc* component will be disconnected
Mib	UsgsnSubscriberControl
Values	Decimal (1..600000)
Default	1500

ATTRIBUTE Usc linkToDnsAgent (lToDns)

Access	Read: All Write: All
Description	This attribute specifies a link to the *DnsAgent* to be used by the *UmtsSubscriberControl* entities.
Mib	UsgsnSubscriberControl
Values	Link (Service, linkToDnsClient)

Default	No default

ATTRIBUTE Usc linkToLisp

Access	Read: All Write: All
Description	This attribute specifies a link to the *LawfulIntercept* to be used by the *UmtsSubscriberControl* entities.
Mib	UsgsnSubscriberControl
Values	Link (Service, linkToLiClient)
Default	No default

ATTRIBUTE Usc localPointCode (localPc)

Access	Read: All Write: All
Description	This attribute specifies the point code of the node that the MAP layer manages. The point code must be provisioned in one of the following formats: ***basic***: The point code is provisioned as a decimal number in the range 1..16383 if the value of the attribute *sccpVariant* in *Usc/n MapClient* is set to ***itu.*** The point code is provisioned as a decimal number in the range ***1..16777215*** if the value of the attribute *sccpVariant* in *Usc/n MapClient* is set to ***ansi*** or ***ituChinese.*** ***segmented***: The point code is provisioned as three integers, separated by dots. If the value of the attribute *sccpVariant* in *Usc/n MapClient* is set to ***itu,*** the first integer must be in the range ***0..7***, the second integer must be in the range ***0..255***, and the third integer must be in the range ***0..7***. A value of ***0.0.0*** is not valid. If the value of the attribute *sccpVariant* in *Usc/n MapClient* is set

to ***ansi*** or ***ituChinese,*** all the three integers must be in the range ***0..255***.

A value of ***0.0.0*** or ***0*** is not valid.

Mib	UsgsnSubscriberControl
Values	Integer Sequence
Default	No default

ATTRIBUTE Usc resolveIrauDnsMncAmbiguity (resDnsMncAmb)

Access	Read: All Write: All
Description	This attribute specifies an option for networks to resolve ambiguity in the formulation of the logical name for the Domain Name System (DNS) query for Inter Routing Area Update (IRAU). Ambiguity can result when networks that support two- and three-digit Mobile Network Codes (MNCs) can create identical logical names for the DNS query during IRAU. For example, suppose a network supported a two-digit MNC = 98, and a three-digit MNC = 809, then the resulting DNS logical name is "RACXXXX.LACXXXX.MNC0098.MCCXXXX.GPRS" for both. This ambiguity can be solved by setting the value of the *resolveIrauDnsMncAmbiguity* attribute to ***enabled***. The formulation of the DNS logical name is changed to include a discriminator high order digit of the encoded MNCXXXX. The discriminator digit would be '2' for two-digit MNC and '3' for three-digit MNC. In the above example, for a two-digit MNC = 98, the DNS logical name would be "RACXXXX.LACXXXX.MNC2098.MCCXXXX.GPRS". For a three-digit MNC = 809, the DNS logical name would be "RACXXXX.LACXXXX.MNC3098.MCCXXXX.GPRS".

Setting this attribute to ***enabled*** will affect the formulation of all logical names for IRAU DNS queries. Corresponding changes will have to be made to DNS servers. If no potential ambiguity of the two-digit or three-digit MNC exists in networks, then it is recommended to leave the value of the attribute set to ***disabled***.

Mib: UsgsnSubscriberControl

Values: disabled
enabled

Default: disabled

GROUP Usc OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: UsgsnSubscriberControl

ATTRIBUTE Usc adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: UsgsnSubscriberControl

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Usc operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: UsgsnSubscriberControl

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Usc usageState (osiUsage)

Access: Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	UsgsnSubscriberControl
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Usc availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal

fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib	UsgsnSubscriberControl
Set of	inTest failed dependency (depend) powerOff (pwrOff) offLine offDuty degraded (degrad) notInstalled (notIn) logFull migrating
Default	No default

ATTRIBUTE Usc proceduralStatus (osiProc)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***. The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***. The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib: UsgsnSubscriberControl

Set of:
initializationRequired (initRq)
notInitialized (notInit)
initializing (init)
reporting (report)
terminating (term)

Default: No default

ATTRIBUTE Usc controlStatus (osiCntrl)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: UsgsnSubscriberControl

Set of: subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Usc alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

	The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.
Mib	UsgsnSubscriberControl
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Usc standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable. The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up. The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity. The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	UsgsnSubscriberControl

Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Usc unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	UsgsnSubscriberControl
Values	false true
Default	false

GROUP Usc Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes for the Mobile Subscriber Purge functionality on the (UMTS) Serving GPRS Support Node (USGSN or SGSN).
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc explicitDetachPurge (expDetPurge)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Subscriber (MS) Purge requests initiated due to an explicit mobile detach. Mobile Subscriber Purge requests are initiated upon explicit detach when the

	purgeOnExplicitDetach attribute in (U) SGSN MobileSubscriberPurge is enabled. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc operatorInitiatedPurge (opInitPurge)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Subscriber (MS) Purge requests initiated by the operator. An operator initiated the Mobile Subscriber Purge request by issuing the *clear* command on an (U) SGSN *Imsi* component. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc contextReusePurge (crPurge)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Subscriber (MS) Purge requests initiated due to context reuse. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc periodicAuditPurge (auditPurge)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Subscriber (MS) Purge requests initiated due to periodic audit. During a periodic audit, Mobile Subscribers whose age is greater than the value specified by the auditPurgeMinimumInactiveAge attribute in (U) SGSN MobileSubscriberPurge are considered candidates for purge. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc msPurgeAckFailures (ackFail)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Subscriber (MS) Purge Acknowledgement Failures received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc msPurgeSendFailures (sendFail)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Subscriber (MS) Purge requests that were either not sent from the (UMTS) Serving GPRS Support Node (USGSN or SGSN) or no response was received from the Home Location Register (HLR) due to network related

	faults such as SS7 IP Gateway (SIG) failure. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc OvldScOper

Properties	Operational
Description	This group contains the operational attributes for overload controls for the *Gsc* and *Usc* components.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc cpuOvldAttachesDiscarded (cpuOvldAttDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of GPRS Mobility Management (GMM) attach request messages that are discarded due to a CPU overload condition on the GSC and USC applications. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc cpuOvldActivationsDiscarded (cpuOvldActDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Session Management (SM) session activate request messages that are discarded due to CPU overload on the GSC and USC applications. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc subCountOvldAttachesDiscarded (subOvldAttDisc)

Access	Read: All Write: Illegal
Description	This attribute counts the number of GPRS Mobility Management (GMM) attach request messages that are discarded due to subscriber count overload, which occurs when the value of the *currentlyAttached* attribute is equal to the value of the *maxAttachedSubscribers* attribute. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc OvldOper

Properties	Operational
Description	This group contains the operational attributes for overload controls.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc cpuOvldMovingAvg (cpuOvldAvg)

Access	Read: All Write: Illegal
Description	This attribute indicates the CPU moving average calculated from within the defined moving window, the size of which is determined by the value of *cpuOvldWindowSize attribute*.
Mib	UsgsnSubscriberControl
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Usc cpuOvldWindowSize (cpuOvldWinSz)

Access	Read: All Write: Illegal
Description	This attribute indicates the CPU moving average window size. The window size is the duration over which the CPU usage measurements are taken before the average CPU usage is calculated. CPU measurements are separated by a fixed interval.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Units	seconds
Default	60

COLLECTED STATS UsgsnSubscriberControl

Description	The statistics record generated by the UsgsnSubscriberControl component.

ATTRIBUTE Usc cpuOvldAttachesDiscarded (cpuOvldAttDisc)

Description	This attribute counts the number of GPRS Mobility Management (GMM) attach request messages that are discarded due to a CPU overload condition on the GSC and USC applications.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc cpuOvldActivationsDiscarded (cpuOvldActDisc)

Description This attribute counts the number of Session Management (SM) session activate request messages that are discarded due to CPU overload on the GSC and USC applications.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc subCountOvldAttachesDiscarded (subOvldAttDisc)

Description This attribute counts the number of GPRS Mobility Management (GMM) attach request messages that are discarded due to subscriber count overload, which occurs when the value of the *currentlyAttached* attribute is equal to the value of the *maxAttachedSubscribers* attribute.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc cpuOvldMovingAvg (cpuOvldAvg)

Description This attribute indicates the CPU moving average calculated from within the defined moving window, the size of which is determined by the value of *cpuOvldWindowSize* attribute.

The value of the attribute is set at the end of the collection interval.

Values Decimal (0..100)

Units %

ATTRIBUTE Usc explicitDetachPurge

Description This attribute counts the Mobile Subscriber (MS) Purge requests initiated due to an explicit mobile detach. Mobile Subscriber Purge request are initiated upon explicit detach when the

purgeOnExplicitDetach attribute in (U) SGSN MobileSubscriberPurge is enabled.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc operatorInitiatedPurge

Description This attribute counts the number of Mobile Subscriber (MS) Purge requests initiated by the operator.

An operator initiates the Mobile Subscriber Purge request by issuing the *clear* command on an (U) SGSN *Imsi* component.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc contextReusePurge

Description This attribute counts the number of Mobile Subscriber (MS) Purge requests initiated due to memory reuse.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc periodicAuditPurge

Description This attribute counts the number of Mobile Subscriber (MS) Purge requests initiated due to periodic. During a periodic audit, detached Mobile Subscribers whose age is greater than the value specified by the auditPurgeMinimumInactiveAge attribute in (U) SGSN MobileSubscriberPurge are considered candidates for purge.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc msPurgeAckFailures

Description This attribute counts the Mobile Subscriber (MS) Purge Acknowledgement Failures received by the (UMTS) Serving

GPRS Support Node (USGSN or SGSN) from the Home Location Register (HLR).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc msPurgeSendFailures

Description: This attribute counts the Mobile Subscriber (MS) Purge requests that were either not sent from the (UMTS) Serving GPRS Support Node (USGSN or SGSN) or no response was received from the Home Location Register (HLR) due to network related faults such as SS7 IP Gateway (SIG) failure and so on.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

COMPONENT Usc GtpC

Groups:
"GROUP Usc GtpC Provisioned (Prov)"
"GROUP Usc GtpC Operational (Oper)"
"GROUP Usc GtpC WlcCustomCounters (WlcCustomCntr)"
"GROUP Usc GtpC OsiState (State)"

"COLLECTED STATS UsgsnSubscriberControl GtpC"

Scope: Application

Description: *Usc/n GtpC*

This component represents the control plane (signalling traffic) of the GPRS Tunnelling Protocol (GTP) layer used over the Gn and Gp interfaces.

Mib: UsgsnSubscriberControl

Dyn. Subcomp.: "COMPONENT Usc GtpC GtpPath (Path)"

Common Verbs:
Help
List
Display

VERB Zero Usc GtpC

Impact	Service
Description	*Zero Usc/n GtpC* This command resets all the peak attributes in the *Usc/n GtpC* component.

GROUP Usc GtpC Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the control plane (signalling traffic) of the GPRS Tunnelling Protocol layer (GTP-C) used over the Gn and Gp interfaces.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc GtpC maxGtpPaths (maxPaths)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of paths that can be setup between this UMTS Serving GPRS Support Node (USGSN) and the GPRS Support Nodes (GSNs). Each path contains one or more tunnels which may be used by, for example, PDP Contexts. The peak number of paths can be obtained from the attribute *peakGtpPaths*. The current number of paths can be obtained from the attribute *currentGtpPaths*. Changing the value of this attribute causes the card to be reset and all outstanding transactions will be affected.
Mib	UsgsnSubscriberControl
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Usc GtpC maxTransactions (maxTr)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of outstanding GPRS Tunneling Protocol (GTP) messages that can be simultaneously waiting for responses or acknowledgments from the peer GPRS Support Nodes (GSNs). The peak number of transactions can be obtained from the attribute *peakTransactions*. The current number of transactions can be obtained from the attribute *currentTransactions.* Changing the value of this attribute causes the card to be reset and all outstanding transactions will be affected.
Mib	UsgsnSubscriberControl
Values	Decimal (10..65535)
Default	100

ATTRIBUTE Usc GtpC linkToPort (lToPort)

Access	Read: All Write: All
Description	This attribute specifies the IP Address and the UDP port numbers that the GPRS Tunneling Protocol (GTP) version 0 and version 1 respectively use to communicate with the Gateway GPRS Support Node (GGSN). The IP Address and UDP Port are specified by setting this attribute to link to the correct *Gips IpAddress Port Udp* component. The standards recommend the value of the first member of this list (used by GTP Version 0) to be set to ***Gips IpAddress/ <ipaddress> Port Udp/3386*** The standards recommend the value of the second member of this

	list (used by GTP Version 1) to be set to ***Gips IpAddress/ <ipaddress> Port Udp/2123*** Changing the value of this attribute causes all the outstanding transactions to be affected.
Mib	UsgsnSubscriberControl
List of	Link (Service, linkToApplication)
Default	No default

GROUP Usc GtpC Operational (Oper)

Properties	Operational
Description	This group contains operational attributes of the control plane (signalling traffic) of the GPRS Tunnelling Protocol (GTP) layer used over the Gn and Gp interfaces.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc GtpC peakGtpPaths (peakGtpP)

Access	Read: All Write: Illegal
Description	This attribute indicates the peak number of managed paths that have been setup between this UMTS Serving GPRS Support Node (USGSN) and the GPRS Support Nodes (GSNs). The maximum value is provisioned in the attribute *maxGtpPaths* and the current value is indicated by the *currentGtpPaths* attribute. The value of this attribute indicates the peak value attained by the *currentGtpPaths* attribute. The *Zero* verb resets the value of this attribute to the current number of GTP paths.
Mib	UsgsnSubscriberControl
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Usc GtpC pathFailures (pathFail)

Access	Read: All Write: Illegal
Description	This attribute counts the path failures detected by GPRS Tunelling Protocol (GTP), based on maximum value of the attribute *n3Request* for different GTP messages provisioned under *Usgsn Usc*. The attribute *n3Request* defines the number of times the UMTS serving GPRS support node (USGSN) will attempt to send a GTP signalling message to the GPRS support node (GSN). A path to the GSN would be declared as failed when the number of request messages on the USGSN waiting for a response from the GSN exceeds the *n3Request* value with no incoming request or response messages received from the GSN. All sessions tied (on) to that GSN would be deactivated. The counter wraps to zero when its maximum value is exceeded.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc GtpC peakTransactions

Access	Read: All Write: Illegal
Description	This attribute indicates the peak number of transactions between this UMTS Serving GPRS Support Node (USGSN) and the GPRS Support Nodes (GSNs). The maximum value is provisioned in the *maxTransactions* attribute and the current value is indicated by the *currentTransactions* attribute. The value of this attribute indicates the peak value attained by the *currentTransactions* attribute. The *Zero* verb resets the value of this attribute to the current number of Transactions.

Mib	UsgsnSubscriberControl
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Usc GtpC currentGtpPaths (currGtpP)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of managed paths currently maintained that have been setup between this UMTS Serving GPRS Support Node (USGSN) and the GPRS Support Nodes (GSNs). The maximum value is provisioned in the *maxGtpPaths* attribute and the peak value attained by this attribute is indicated by the *peakGtpPaths* attribute.
Mib	UsgsnSubscriberControl
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Usc GtpC currentTransactions (currTr)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of outstanding transactions between this UMTS Serving GPRS Support Node (USGSN) and the GPRS Support Nodes (GSNs). It is the sum of the outstanding requests in each path. The maximum value is provisioned in the *maxTransactions* attribute and the peak value attained by this attribute is indicated by the *peakTransactions* attribute.
Mib	UsgsnSubscriberControl
Values	Decimal (0..65535)
Default	No default

GROUP Usc GtpC WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc GtpC customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc GtpC customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc GtpC customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc GtpC OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc GtpC adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	UsgsnSubscriberControl
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Usc GtpC operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	UsgsnSubscriberControl
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Usc GtpC usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: UsgsnSubscriberControl

Values:
idle
active (activ)
busy

Default: idle

COLLECTED STATS UsgsnSubscriberControl GtpC

Description: The statistics record generated by the UsgsnSubscriberControl GtpC component.

ATTRIBUTE Usc GtpC echoRqstsTx

Description: This attribute indicates the number of Echo Request Messages sent over the collection interval.

The count is taken at the end of the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc GtpC gnEchoRespTx

Description: This attribute indicates the number of Echo Response Messages sent on the Gn Interface over the collection interval.

The count is taken at the end of the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc GtpC pathFailures

Description: This attribute counts the path failures detected by GPRS Tunelling Protocol (GTP), based on maximum value of the attribute *n3Request* provisioned for different GTP messages under *Usgsn Usc* over the collected interval.

The attribute *n3Request* defines the number of times the UMTS serving GPRS support node (USGSN) will attempt to send a GTP signalling message to the GPRS support node (GSN). A path to the GSN would be declared as failed when the number of request

messages on the USGSN waiting for a response from the GSN exceeds the *n3Request* value with no incoming request or response messages received from the GSN. All sessions tied (on) to that GSN would be deactivated.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc GtpC idenRqstMsgsTx

Description: This value indicates the number of times the USGSN sent a IDENTIFICATION REQUEST message to the Mobile Station (MS) over the collection interval.

The count is taken at the end of the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc GtpC sgsnCntxtRqstMsgsTx

Description: This attribute indicates the number of times the USGSN sent a SGSN CONTEXT REQUEST Message to the Mobile Station over the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc GtpC sgsnCntxtAckRqstMsgsTx

Description: This value indicates the number of times the USGSN sent a SGSN CONTEXT ACKNOWLEDGE REQUEST Message to the Mobile Station.

The count is taken at the end of the collection interval.

Values: Decimal (0..4294967295)

COMPONENT Usc GtpC GtpPath (Path)

Instance: IP address

Groups: "GROUP Usc GtpC Path OsiState (State)"
"GROUP Usc GtpC Path WlcCustomCounters (WlcCustomCntr)"

Scope: Application

Description: *Usc/n GtpC GtpPath/<ipaddress>*
Gsc/n GtpMgmt GtpPath/<ipaddress>

This component represents paths managed by the signaling part of the GPRS Tunneling Protocol (GTP) protocol layer. Paths are set up between this (UMTS) Serving GPRS Support Node ((U) SGSN) and the GPRS Support Nodes (GSNs).

Mib: UsgsnSubscriberControl

Common Verbs:
- Help
- List
- Display

GROUP Usc GtpC Path OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: UsgsnSubscriberControl

ATTRIBUTE Usc GtpC Path adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: UsgsnSubscriberControl

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Usc GtpC Path operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: UsgsnSubscriberControl

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Usc GtpC Path usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	UsgsnSubscriberControl
Values	idle active (activ) busy
Default	idle

GROUP Usc GtpC Path WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc GtpC Path customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc GtpC Path customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc GtpC Path customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Usc HlrCache (HlrC)

Groups	"GROUP Usc HlrC Provisioned (Prov)" "GROUP Usc HlrC Statistics (Stats)" "GROUP Usc HlrC WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS UsgsnSubscriberControl HlrCache"

Scope	Application
Description	*Usc/n HlrCache* This component represents the Home Location Register (HLR) Cache functionality. It stores subscription data retrieved from the HLR.
Mib	UsgsnSubscriberControl
Subcomponents	"COMPONENT Usc HlrC RefreshAudit"
Common Verbs	Help List Display

GROUP Usc HlrC Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *HlrCache* in this UMTS Serving GPRS Support Node (USGSN).
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc HlrC maxRecords (maxRecs)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of records that can be stored in the Home Location Register (HLR) Cache. The maximum number of records in HLR Cache can be greater than the *maxSubscribers* (defined in the parent *Usc* component) because in addition to active records, the HLR Cache also stores inactive records, which are reused when the inactive subscribers become active. The current number of active and inactive records that are stored by the HLR Cache are indicated by the attributes *recordsActive* and *recordsInactive* respectively. Changing the value of this attribute causes the card to be reset and all outstanding transactions will be affected.
Mib	UsgsnSubscriberControl
Values	Decimal (1..150000)
Default	5000

ATTRIBUTE Usc HlrC maxPdpContexts (maxPdpC)

Access	Read: All Write: All
Criticality	Process

Description	This attribute specifies the maximum number of Packet Data Protocol (PDP) context subscription data records that can be stored in the *HlrCache*. The current number of PDP Contexts that are stored in the Home Location Register (HLR) Cache is indicated by the attribute *currHlrCachePdpContexts*. Changing the value of this attribute causes the card to be reset and all outstanding transactions will be affected.
Mib	UsgsnSubscriberControl
Values	Decimal (1..750000)
Default	1500

GROUP Usc HlrC Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes of the *HlrCache*.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc HlrC currHlrCachePdpContexts (currPdpC)

Access	Read: All Write: All
Description	This attribute specifies the current number of Packet Data Protocol (PDP) context subscription data records that are stored in the Home Location Register (HLR) Cache. The maximum number of PDP contexts that can be stored in the HLR Cache is provisioned in the attribute *maxPdpContexts*.
Mib	UsgsnSubscriberControl
Values	Decimal (0..3000000)
Default	No default

ATTRIBUTE Usc HlrC cacheHits

Access	Read: All Write: Illegal
Description	This attribute counts the times the Home Location Register (HLR) Cache had the subscriber information locally and did not need to retrieve information from the HLR. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc HlrC cacheMisses (cacheMiss)

Access	Read: All Write: Illegal
Description	This attribute counts the times the Home Location Register (HLR) Cache does not have the subscriber information locally and must retrieve information from the HLR. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc HlrC recordsInactive (recInact)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Home Location Register (HLR) Cache Records that are currently inactive, that is, the number of records for which subscribers are detached from the UMTS Serving GPRS Support Node (USGSN).
Mib	UsgsnSubscriberControl

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc HlrC recordsActive (recAct)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Home Location Register (HLR) Cache Records that are currently active, that is, the number of records that are active and the UPDATE GPRS LOCATION RESPONSE has been received from the HLR.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc HlrC recordsWaitingForHlrConf (hlrConf)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Home Location Register (HLR) Cache Records that are active and waiting for HLR Confirmation, that is, number of records which are yet to receive UPDATE GPRS LOCATION RESPONSE from the HLR.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc HlrC WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc HlrC customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc HlrC customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc HlrC customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)

Default No default

COLLECTED STATS UsgsnSubscriberControl HlrCache

Description The statistics record generated by the UsgsnSubscriberControl HlrCache component.

ATTRIBUTE Usc HlrC currHlrCachePdpContexts

Description This attribute indicates the number of Packet Data Protocol (PDP) context subscription data records that are stored in the Home Location Register (HLR) Cache.

The maximum number of PDP contexts that can be stored in the HLR Cache is provisioned in the attribute *maxPdpContexts*, at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc HlrC cacheHits

Description This attribute counts the times the Home Location Register (HLR) Cache had the subscriber information locally and did not need to retrieve information from the HLR.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc HlrC cacheMisses

Description This attribute counts the times the Home Location Register (HLR) Cache does not have the subscriber information locally and must retrieve information from the HLR.

It counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc HlrC recordsInactive

Description This attribute indicates the number of Home Location Register (HLR) Cache Records that are currently inactive, that is, the number of records for which subscribers are detached from the UMTS Serving GPRS Support Node (USGSN).

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc HlrC recordsActive

Description This attribute indicates the number of Home Location Register (HLR) Cache Records that are currently active, that is, the number of records that are active and the UPDATE GPRS LOCATION RESPONSE has been received from HLR.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc HlrC recordsToBeReset

Description This attribute indicates the Home Location Register (HLR) Cache Records currently waiting to be reset. When a RESET message is received from a HLR, all Location Confirmation flags of the HLR Cache Records, corresponding to the HLR is set to false. The GPRS Mobility Management (GMM) is notified to request UPDATE GPRS LOCATION for the HLR Cache Records corresponding to the reset HLR.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc HlrC recordsWaitingForHlrConf

Description This attribute indicates the number of Home Location Register (HLR) Cache Records that are currently active and waiting for HLR Confirmation, that is, the number of records which are yet to receive UPDATE GPRS LOCATION RESPONSE from the HLR.

The count is taken at the end of the collection interval.

Values Decimal (0..4294967295)

COMPONENT Usc HlrC RefreshAudit

Groups	"GROUP Usc HlrC RefreshAudit WlcRefreshAuditProv (AuditProv)" "GROUP Usc HlrC RefreshAudit WlcRefreshAuditOper (AuditOper)"
Scope	Application
Description	*Gsc/n Hlrc RefreshAudit* *Usc/n Hlrc RefreshAudit* This component represents the subscriber refresh audit functionality of the *HlrCache (HlrC)* component. The purpose of the audit is to request new subscriber profile data from the Home Location Register (HLR). The audit initiates the Update GPRS Location Dialogue to the HLR for all attached subscribers.
Mib	UsgsnSubscriberControl
Common Verbs	Help List Display

VERB START Usc HlrC RefreshAudit

Impact	Service
Description	*start Gsc/n Hlrc RefreshAudit* *start Usc/n Hlrc RefreshAudit* This command starts the refresh audit to request subscriber information from the Home Location Register for all the attached subscribers.

VERB STOP Usc HlrC RefreshAudit

Impact	Service
Description	*stop Gsc/n Hlrc RefreshAudit* *stop Usc/n Hlrc RefreshAudit* This command stops the refresh audit in progress. If the audit is currently running, it is immediately stopped. If the audit has not started or has already finished running, this command does nothing.

GROUP Usc HlrC RefreshAudit WlcRefreshAuditProv (AuditProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *RefreshAudit* component.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc HlrC RefreshAudit autoStart

Access	Read: All Write: All
Description	This attribute specifies whether the refresh audit function is ***enabled*** or ***disabled.*** When enabled, the *HlrCache* component will automatically initiate a process to refresh subscriber profiles whenever certain optional supplementary services, such as Location Services and Short Message Services, are provisioned. When disabled, the *HlrCache* component will not start the audit automatically.
Mib	UsgsnSubscriberControl
Values	enabled disabled
Default	enabled

GROUP Usc HlrC RefreshAudit WlcRefreshAuditOper (AuditOper)

Properties	Operational

Description	This group contains the operational attributes for the *RefreshAudit* component.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc HlrC RefreshAudit auditPercentComplete (percentComplete)

Access	Read: All Write: Illegal
Description	This attribute indicates the current completion percentage of the refresh audit. A value of ***0%*** means the refresh audit is not currently running but may need to run due to recent activation of a feature that normally triggers the audit. The refresh audit is not running because the value of the *autoStart* attribute is ***disabled*** or the audit was manually interrupted by the *stop* command. A value of ***1-99%*** means the refresh audit is currently running. A value of ***100%*** means the refresh audit has been completed.
Mib	UsgsnSubscriberControl
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Usc SessionManagement (Sm)

Groups	"GROUP Usc Sm PdpOper" "GROUP Usc Sm WlcCustomCounters (WlcCustomCntr)" "GROUP Usc Sm PdpModOper" "GROUP Usc Sm UmtsPdpModOper" "GROUP Usc Sm WlcSnrActOper (SnrActOper)"

"COLLECTED STATS UsgsnSubscriberControl SessionManagement"

Scope	Application
Description	*Usc/n SessionManagement* This component represents the Session Management (SM)

	protocol layer of the UMTS Serving GPRS Support Node (USGSN).
Mib	UsgsnSubscriberControl
Dyn. Subcomp.	"COMPONENT Usc Sm Failures"
Common Verbs	Help List Display

GROUP Usc Sm PdpOper

Properties	Operational
Description	This group contains operational attributes of the Session Management (SM) protocol layer associated with the Packet Data Protocol (PDP).
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Sm currentPdpContexts (currPdpC)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of currently active Packet Data Protocol (PDP) contexts.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm mobileInitActivations (mia)

Access	Read: All Write: Illegal
Description	This attribute counts the successful Packet Data Protocol (PDP) context activations initiated by the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.

Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm mobileInitDeacts (mid)

Access	Read: All Write: Illegal
Description	This attribute counts the successful Packet Data Protocol (PDP) context deactivations initiated by the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm ggsnInitDeacts (nwkD)

Access	Read: All Write: Illegal
Description	This attribute counts the Packet Data Protocol (PDP) context deactivations initiated by the Gateway GPRS Support Node (GGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm usgsnInitDeacts (usgsnD)

Access	Read: All Write: Illegal
Description	This attribute counts the Packet Data Protocol (PDP) context deactivations initiated locally from the UMTS Serving GPRS

	Support Node (USGSN) (for example, an implicit session deactivation as a result of a Gateway GPRS support Node (GGSN) restart or path failure). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm hlrInitDeacts (hlrD)

Access	Read: All Write: Illegal
Description	This attribute counts the Packet Data Protocol (PDP) context deactivations initiated by the Home Location Register (HLR), for example, Delete Subscriber Data (DSD) withdrawing subscription for an active session. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm usgsnInitModifies (usgsnM)

Access	Read: All Write: Illegal
Description	This attribute counts the Packet Data Protocol (PDP) context Modifications initiated from the UMTS Serving GPRS Support Node (USGSN), for example, as a result of QoS renegotiations with the Mobile Station (MS). This counter is pegged only during a Routing Area Update (RAU) scenario. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm currentRoamers

Access	Read: All Write: Illegal
Description	This value indicates the number of mobiles that have entered the PLMN that is not their home PLMN, and are served by the UMTS Serving GPRS Support Node (USGSN). The counter wraps when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm attemptedActivationsPdpContexts (attActPdpC)

Access	Read: All Write: Illegal
Description	This attribute counts the Packet Data Protocol (PDP) contexts that the Mobile Station or the SGSN Session Management Entity has attempted to activate. This counter includes the successful activations counted by the *mobileInitActivations* attribute. This attribute counts both attempted PDP context activations using static addresses and PDP context activations using dynamic PDP addresses. This attribute does not count Inter Routing Area Update (IRAU) activations. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm activationFailuresPdpContexts (actFailPdpC)

Access	Read: All Write: Illegal
Description	This attribute counts the Packet Data Protocol (PDP) contexts initiated by the Mobile Station (MS) or the SGSN Session Management Entity that were rejected by the Serving GPRS Support Node (SGSN). This attribute counts both the failures for PDP context activations using static addresses and failures for PDP context activations using dynamic PDP addresses. This attribute does not count Inter Routing Area Update (IRAU) activation failures. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm actFailSgsnInsufficientResources (actFailSgsnInsufRes)

Access	Read: All Write: Illegal
Description	This attribute counts the activations initiated by the Mobile Station (MS) or the SGSN Session Management Entity, and rejected by the Serving GPRS Support Node (SGSN) due to the cause code NO RESOURCES AVAILABLE. This counter is incremented due to the SGSN having insufficient resources for the session. The value of this attribute is included in the count of *activationFailuresPdpContexts*. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm actFailMissingOrUnknownApn (actFailMissOrUnkn)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) or an SGSN Session Management Entity initiated activation due to the requested service being rejected by the external packet data network. The service is rejected because the required Access Point Name (APN) was not included or the APN was not resolved. The value of this attribute is included in the count of *activationFailuresPdpContexts*. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm actFailUnknownPdpAddrOrPdpType (actFailUnknPdpAddType)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times a CREATE PDP CONTEXT RESPONSE message was received from the Gateway GPRS Support Node (GGSN) with the cause code “Unknown PDP address or PDP type”. This could be due to the requested service being rejected by the external packet data network because the Packet Data Protocol (PDP) address or the PDP type was not recognized. This event is also counted by the *activationFailuresPdpContexts* attribute. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm actFailUserAuthentications (actFailUserAuth)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times a CREATE PDP CONTEXT REQUEST message was received from the Gateway GPRS Support Node (GGSN) with the cause code USER AUTHENTICATION FAILED. This could be due to the requested service being rejected by the external packet data network due to a failed user authentication. The value of this attribute is included in the count of *activationFailuresPdpContexts*. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm actFailRejectedByGgsn (actFailRejGgsn)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) or an SGSN Session Management Entity initiated activation due to the requested service being rejected by the Gateway GPRS Support Node (GGSN) with a cause code that does not map to a cause code in the ACTIVATE PDP CONTEXT REJECT message. The value of this attribute is included in the count of *activationFailuresPdpContexts*. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm actFailGgsnInsufficientRessources (actFailGgsnInsufRes)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated activations rejected by the Serving GPRS Support Node (SGSN) due to the cause code NO RESOURCES AVAILABLE. This counter is incremented due to the Gateway GPRS Support Node (GGSN) returning a cause code of NO RESOURCES AVAILABLE in the CREATE PDP CONTEXT RESPONSE message. The value of this attribute is included in the count of *activationFailuresPdpContexts*. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm attemptedActivationsDynPdpC (attActDynPdpC)

Access	Read: All Write: Illegal
Description	This attribute counts the Packet Data Protocol (PDP) contexts that the Mobile Station or the SGSN Session Management Entity has attempted to activate and that requires the use of a dynamic PDP address. This attribute does not count Inter Routing Area Update (IRAU) activations. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm activationFailuresDynPdpC (actFailDynPdpC)

Access	Read: All Write: Illegal

Description	This attribute counts the number of times the Serving GPRS Support Node (SGSN) rejected a PDP context activation initiated by a Mobile Station (MS) or an SGSN Session Management Entity and that requires the use of a dynamic PDP address. This attribute does not count Inter Routing Area Update (IRAU) activation failures. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm sgsnAttemptedModifictionsPdpC (sgsnAttModPdpC)

Access	Read: All Write: Illegal
Description	This attribute counts the Packet Data Protocol (PDP) contexts that the Service GPRS Support Node (SGSN) has attempted to modify. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm attemptedNetworkDeactivationsPdpC (attNwkDeactivationsPdpC)

Access	Read: All Write: Illegal
Description	This attribute counts the Packet Data Protocol (PDP) context deactivations initiated by the Gateway GPRS Support Node (GGSN), the UMTS Gateway GPRS Support Node (USGSN) or the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.

Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc Sm WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Sm customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc Sm PdpModOper

Properties	Operational
Description	This group contains operational attributes of the Session Management (SM) protocol layer associated with the Packet Data Protocol (PDP) context modification.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Sm sgsnInitModifyAttempts (sgsnInitMod)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN), for example, as a result of QoS renegotiations with the Mobile Station (MS). This counter is pegged only during SGSN Initiated PDP Context Modification. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm sgsnInitFailAtMs (sgsnInitMsFail)

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm sgsnInitFailAtGgsn (sgsnInitGgsnFail)

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the Gateway GPRS Support Node (GGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm sgsnInitFailAtSgsn (sgsnInitSgsnFail)

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the SGSN. The counter wraps to zero when it exceeds the maximum value.

Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm msInitModifyAttempts (msInitMod)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm msInitFailAtGgsn (msInitGgsnFail)

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the Gateway GPRS Support Node (GGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm msInitFailAtSgsn (msInitSgsnFail)

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS)

	that failed at the Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc Sm UmtsPdpModOper

Properties	Operational
Description	This group contains operational attributes of the UMTS Session Management (SM) protocol layer associated with the Packet Data Protocol (PDP) context modification.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Sm sgsnInitFailAtRnc (sgsnInitRncFail)

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the UMTS Serving GPRS Support Node (USGSN) that failed at the Radio Network Controller (RNC). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm msInitFailAtMs (msInitMsFail)

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the MS.

	The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm msInitFailAtRnc (msInitRncFail)

Access	Read: All Write: Illegal
Description	This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the Radio Network Controller (RNC). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc Sm WlcSnrActOper (SnrActOper)

Properties	Operational
Description	This group contains operational attributes of this component.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Sm snrCurrentlyActivated (snrCuAct)

Access	Read: All Write: Illegal
Description	This attribute counts the roaming Mobile Stations (MSs) that are currently GPRS-activated and have been given homer Quality of Service by Seamless National Roaming.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Usc Sm snrActivatesSuccessful (snrAct)

Access	Read: All Write: Illegal
Description	This attribute counts the roaming Mobile Stations (MSs) that have been GPRS-activated and had been given homer Quality of Service by Seamless National Roaming. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS UsgsnSubscriberControl SessionManagement

Description	The statistics record generated by the UsgsnSubscriberControl SessionManagement component.

ATTRIBUTE Usc Sm currentPdpContexts

Description	This attribute indicates the number of currently active Packet Data Protocol (PDP) contexts. The count is taken at the end of the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Sm mobileInitActivations

Description	This attribute indicates the number of successful Mobile-Initiated Packet Data Protocol (PDP) context activations. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Sm mobileInitDeacts

Description	This attribute counts the successful Packet Data Protocol (PDP) context deactivations initiated by the Mobile Station (MS). The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Sm ggsnInitDeacts

Description	This attribute indicates the number of Packet Data Protocol (PDP) context deactivations initiated by the Gateway GPRS Support Node (GGSN). The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Sm usgsnInitDeacts

Description	This attribute indicates the number of Packet Data Protocol (PDP) context deactivations initiated locally from the UMTS Serving GPRS Support Node (USGSN) (for example, an implicit session deactivation as a result of a Gateway GPRS Support Node (GGSN) restart or path failure). The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Sm hlrInitDeacts

Description	This attribute indicates the number of Packet Data Protocol (PDP) context deactivations initiated by the Home Location Register (HLR), for example, Delete Subscriber Data (DSD) withdrawing subscription for an active session. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Sm usgsnInitModifies

Description: This attribute indicates the number of Packet Data Protocol (PDP) context Modifications initiated from the UMTS Serving GPRS Support Node (USGSN), for example, as a result of QoS renegotiations with the Mobile Station (MS). This counter is pegged only during a Routing Area Update (RAU) scenario.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm currentRoamers

Description: This value indicates the number of mobiles that have entered the PLMN, which is not their home PLMN, and are served by the USGSN.

The count is taken at the end of the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm tRabAssgtTimeouts

Description: This value indicates the number of times the tRabAssgtTimer expires. If the value of this attribute increases consistently, the value of the tRabAssgtTimer can be increased.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm usgsnInitModifyExhaust (usgsnME)

Description: This value indicates the number of times the *usgsnInitModifies* attribute is exhausted during Inter-SGSN Routing Area Update. This counter is incremented in the new SGSN.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm attemptedActivationsPdpContexts (attActPdpC)

Description: This attribute indicates the Packet Data Protocol (PDP) contexts that the Mobile Station or the SGSN Session Management Entity has attempted to activate during the collection interval. This

counters includes the successful activations counted by the *mobileInitActivations* attribute. This attribute counts both attempted PDP context activations using static addresses and PDP context activations using dynamic PDP addresses.This attribute does not count Inter Routing Area Update (IRAU) activations.

This counter includes static as well as dynamic PDP addresses.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm activationFailuresPdpContexts (actFailPdpC)

Description This attribute indicates the Packet Data Protocol (PDP) contexts, initiated by the Mobile Station (MS) or the SGSN Session Management Entity, that were rejected by the Serving GPRS Support Node (SGSN). This attribute counts both the failures for PDP context activations using static addresses and failures for PDP context activations using dynamic PDP addresses. This attribute does not count Inter Routing Area Update (IRAU) activation failures.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm actFailSgsnInsufficientResources (actFailSgsnInsufRes)

Description This attribute indicates, for the collection interval, the activations initiated by the Mobile Station (MS) or the SGSN Session Management Entity, and rejected by the Serving GPRS Support Node (SGSN) due to the cause code NO RESOURCES AVAILABLE. This counter is incremented due to the SGSN having insufficient resources for the session. The value of this attribute is included in the count of *activationFailuresPdpContexts*.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm actFailMissingOrUnknownApn (actFailMissOrUnkn)

Description This attribute indicates, for the collection interval, the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) or an SGSN Session Management Entity initiated activation due to the requested service being rejected by the

external packet data network. The service is rejected because the required Access Point Name (APN) was not included or the APN was not resolved. The value of this attribute is included in the count of *activationFailuresPdpContexts*.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm actFailUnknownPdpAddrOrPdpType (actFailUnknPdpAddType)

Description This attribute indicates, for the collection interval, the number of times a CREATE PDP CONTEXT RESPONSE message was received from the Gateway GPRS Support Node (GGSN) with the cause code “Unknown PDP address or PDP type”. This could be due to the requested service being rejected by the external packet data network because the Packet Data Protocol (PDP) address or the PDP type was not recognized. This event is also counted by the *activationFailuresPdpContexts* attribute.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm actFailUserAuthentications (actFailUserAuth)

Description This attribute indicates, for the collection interval, the number of times a CREATE PDP CONTEXT REQUEST message was received from the Gateway GPRS Support Node (GGSN) with the cause code USER AUTHENTICATION FAILED. This could be due to the requested service being rejected by the external packet data network due to a failed user authentication. The value of this attribute is included in the count of *activationFailuresPdpContexts*.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm actFailRejectedByGgsn (actFailRejGgsn)

Description This attribute indicates, for the collection interval, the number of times the Serving GPRS Support Node (SGSN) rejected a Mobile Station (MS) or an SGSN Session Management Entity initiated activation, due to the requested service being rejected by the Gateway GPRS Support Node (GGSN) with a cause code that does not map to a cause code in the ACTIVATE PDP CONTEXT REJECT message. The value of this attribute is included in the count of *activationFailuresPdpContexts*.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm actFailGgsnInsufficientResources (ggsnInsufRes)

Description This attribute indicates, for the collection interval, the activations initiated by the Mobile Station (MS) or the SGSN Session Management Entity, and rejected by the Serving GPRS Support Node (SGSN) due to the cause code NO RESOURCES AVAILABLE. This counter is incremented due to the Gateway GPRS Support Node (GGSN) returning a cause code of NO RESOURCES AVAILABLE in the CREATE PDP CONTEXT RESPONSE message. The value of this attribute is included in the count of *activationFailuresPdpContexts*.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm attemptedActivationsDynPdpC (attActDynPdpC)

Description This attribute indicates, for the collection interval, the Packet Data Protocol (PDP) contexts that the Mobile Station or the SGSN Session Management Entity has attempted to activate and that requires the use of a dynamic PDP address. This attribute does not count Inter Routing Area Update (IRAU) activations.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm activationFailuresDynPdpC (actFailDynPdpC)

Description This attribute indicates, for the collection interval, the number of times the Serving GPRS Support Node (SGSN) rejected a PDP context activation initiated by a Mobile Station (MS) or an SGSN Session Management Entity and that requires the use of a dynamic PDP address. This attribute does not count Inter Routing Area Update (IRAU) activation failures.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm maxSubsWithActivationsPdpC (maxSubsActPdpC)

Description This attribute displays the highest recorded value for the number of subscribers with an active Packet Data Protocol (PDP) context. The value is obtained by comparing on an update of the actual number of subscribers with activated PDP contexts in the SGSN, with the currently maximal value in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm sgsnAttemptedModificationsPdpC (sgsnAttModPdpC)

Description This attribute indicates the Packet Data Protocol (PDP) contexts that the Service GPRS Support Node (SGSN) has attempted to modify during the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm attemptedNetworkDeactivationsPdpC (attNwkDeactPdpC)

Description This attribute indicates, for the collection interval, the Packet Data Protocol (PDP) context deactivations initiated by the Gateway GPRS Support Node (GGSN), the UMTS Gateway GPRS Support Node (USGSN) or the Home Location Register (HLR).

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm sgsnInitModifyAttempts

Description This attribute counts the number of Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN), for example, as a result of QoS renegotiations with the Mobile Station (MS). This counter is pegged only during SGSN Initiated PDP Context Modification.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm sgsnInitFailAtMs

Description This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the Mobile Station (MS).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm sgsnInitFailAtGgsn

Description: This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the Gateway GPRS Support Node (GGSN).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm sgsnInitFailAtSgsn

Description: This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Serving GPRS Support Node (SGSN) that failed at the SGSN.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm msInitModifyAttempts

Description: This attribute counts the number of Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm msInitFailAtGgsn

Description: This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the Gateway GPRS Support Node (GGSN).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Sm msInitFailAtSgsn

Description: This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the SGSN.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm sgsnInitFailAtRnc

Description This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the UMTS Serving GPRS Support Node (USGSN) that failed at the Radio Network Controller (RNC).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm msInitFailAtMs

Description This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the MS.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm msInitFailAtRnc

Description This attribute counts the unsuccessful Packet Data Protocol (PDP) context modifications initiated by the Mobile Station (MS) that failed at the Radio Network Controller (RNC).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm snrPeakActivated (snrPeakAct)

Description This attribute indicates the peak number of roaming Mobile Stations (MSs) that have become GPRS-activated and have been given homer Quality of Service by Seamless National Roaming.

The value reported is the peak value in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm snrActivatesSuccessful (snrAct)

Description	This attribute counts the roaming Mobile Stations (MSs) that have been GPRS-activated and had been given homer Quality of Service by Seamless National Roaming. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Usc Sm Failures

Instance	systemFailure imsiUnknown mandatoryIeIncorrect mandatoryIeMissing optionalIeIncorrect invalidMsgFormat versionUnsupported pTmsiSignatureMismatch resourcesUnavailable authenticationFailure allDynamicPdpAddressesOccupied semanticErrorInTftOperation syntacticErrorInTftOperation semanticErrorsInPacketFilters syntacticErrorsInPacketFilters
Groups	"GROUP Usc Sm Failures WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS UsgsnSubscriberControl SessionManagement Failures"

Scope	Application
Description	*Usc/n Sm Failures/<cause>* This component represents the Session Management (SM)

	Failures of the UMTS Serving GPRS Support Node (USGSN). The instance value represents the cause of failure.
Mib	UsgsnSubscriberControl
Common Verbs	Help List Display

GROUP Usc Sm Failures WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Sm Failures customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm Failures customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Sm Failures customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS UsgsnSubscriberControl SessionManagement Failures

Description	The statistics record generated by the UsgsnSubscriberControl SessionManagement Failures component.

ATTRIBUTE Usc Sm Failures idenRespMsgsRx

Description	This attribute indicates the number of IDENTIFICATION RESPONSE message failures received with the cause indicated by the instance of the component, over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Sm Failures sgsnCntxtRespMsgsRx

Description	This attribute indicates the number of SGSN CONTEXT RESPONSE message failures received with the cause indicated by the instance of the component, over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Sm Failures sgsnCntxtAckRespMsgsRx

Description	This attribute indicates the number of SGSN CONTEXT ACKNOWLEDGE RESPONSE message failures received with

the cause indicated by the instance of the component, over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm Failures createPdpCntxtRespMsgsRx

Description This attribute indicates the number of CREATE PDP CONTEXT RESPONSE message failures received with the cause indicated by the instance of the component, over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm Failures updatePdpCntxtRespMsgsTx

Description This attribute indicates the number of UPDATE PDP CONTEXT RESPONSE message failures received with the cause indicated by the instance of the component, over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Sm Failures deletePdpCntxtRespMsgsRx

Description This attribute indicates the number of DELETE PDP CONTEXT RESPONSE message failures received with the cause indicated by the instance of the component, over the collection interval.

Values Decimal (0..4294967295)

COMPONENT Usc GprsMobilityManagement (Gmm)

Groups "GROUP Usc Gmm GmmProv"
"GROUP Usc Gmm GmmStats"
"GROUP Usc Gmm GmmStatusRxStats (StStats)"
"GROUP Usc Gmm GmmMsgCountsStats (MsgCounts)"
"GROUP Usc Gmm WlcCustomCounters (WlcCustomCntr)"
"GROUP Usc Gmm SnrAttOper (SnrOper)"

"COLLECTED STATS UsgsnSubscriberControl GprsMobilityManagement"

Scope Application

Description *Usc/n GprsMobiltyManagement*

This component represents the GPRS Mobility Management

(GMM) protocol layer of the UMTS Serving GPRS Support Node (USGSN).

Mib: UsgsnSubscriberControl

Common Verbs: Help, List, Display

GROUP Usc Gmm GmmProv

Properties: Provisioned

Description: This group contains the provisionable attributes for the Usc/n Gmm component.

Mib: UsgsnSubscriberControl

ATTRIBUTE Usc Gmm simultaneousTransientContexts (simulTransContexts)

Access: Read: All
Write: All

Description: This attribute specifies the percentage of subscribers expected to be in transient mobile states (for example, attaching, detaching, authenticating) at any one given time. It is expressed as a percentage of the *maxAttachedSubscribers* attribute within the *Usc/n* component.

This attribute is used to reserve a pool of memory set aside for the transient contexts.

This value of this attribute may be increased from the default value in increments of 10, after consulting a Nortel Networks support personnel.

The value of this attribute may need to be increased if the values of the attributes *attachRejectMsgs*, *rauRejectMsgs*, and *authAndCiphRejectMsgs* are increasing.

Mib: UsgsnSubscriberControl

Values	Decimal (0; 10; 20; 30; 40; 50; 60; 70; 80; 90; 100)
Units	%
Default	10

GROUP Usc Gmm GmmStats

Properties	Operational
Description	This group contains attributes which maintain various statistics for the GMM layer of the UMTS Serving GPRS Support Node (USGSN).
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Gmm pmmIdleStateSubscribers (pmmIdleStSubs)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of mobile subscribers that are GPRS-attached and in the PMM-IDLE state.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm pmmConnectedStateSubscribers (pmmConnStSubs)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of mobile subscribers that are GPRS-attached and in the PMM-CONNECTED state.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm currentlyAttached (currAttached)

Access	Read: All Write: Illegal
Description	This attribute indicates the Mobile Stations (MS) that are currently GPRS-attached and in the PMM-IDLE or PMM-CONNECTED state. The maximum subscribers that can be GPRS-attached is provisioned in the *maxAttachedSubscribers* attribute of the parent *UmtsSubscriberControl (Usc)* component. This attribute together with maxAttachedSubscribers are used to determine when subscriber count overload occurs (Refer to *Usc* subCountOvldAttachesDiscarded).
Mib	UsgsnSubscriberControl
Values	Decimal (0..1000000)
Default	No default

ATTRIBUTE Usc Gmm authenticationRequests (authReq)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the authentication procedure is initiated by the SGSN. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm attachesSuccessful (attachSuccess)

Access	Read: All Write: Illegal

Description	This attribute counts the GPRS-attaches to this UMTS Serving GPRS Support Node (USGSN) that were successful. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm attachesRejected (attRej)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS-attaches to this UMTS Serving GPRS Support Node (USGSN) that were rejected. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm attachesWithKnownPtmsi (attachWKPtmsi)

Access	Read: All Write: Illegal
Description	This attribute counts the ATTACH REQUEST messages received with a Packet-Temporary Mobile Subscriber Identity (P-TMSI) previously assigned by this UMTS Serving GPRS Support Node (USGSN). This includes all successful and unsuccessful attempts. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm attachesWithUnknownPtmsi (attachWUPtmsi)

Access	Read: All Write: Illegal
Description	This attribute counts the ATTACH REQUEST messages received with a Packet-Temporary Mobile Subscriber Identity (P-TMSI) not assigned by this UMTS Serving GPRS Support Node (USGSN). This includes all successful and unsuccessful attempts. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm attachesWithImsi (attachWImsi)

Access	Read: All Write: Illegal
Description	This attribute counts the ATTACH REQUEST messages received with an International Mobile Subscriber Identity (IMSI) as an identifier. This includes all successful and unsuccessful attempts. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm serviceRequestsForData (servReqData)

Access	Read: All Write: Illegal

Description	This attribute counts the successful SERVICE REQUEST messages sent by mobile stations (MS) requesting a resource reservation for active PDP contexts. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm serviceRequestsForSignalling (servReqSig)

Access	Read: All Write: Illegal
Description	This attributes counts the successful SERVICE REQUEST messages sent by mobile stations (MS) requesting a signalling connection in order to send uplink signalling messages (such as ATTACH REQUEST, PDP CONTEXT REQUEST, and so on). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm serviceRequestsForPagingResponse (servReqPR)

Access	Read: All Write: Illegal
Description	This attribute counts the successful SERVICE REQUEST messages sent by mobile stations (MS) indicating a paging response. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm detachesSuccessful (detachSuccess)

Access	Read: All Write: Illegal
Description	This attribute counts the successful DETACHes that are either mobile or network initiated. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm msDetachRejected (msDR)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated GPRS-DETACH REQUEST messages which have been rejected by this UMTS Serving GPRS Support Node (USGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm normalIntraUsgsnRaUpdate (normIntraURU)

Access	Read: All Write: Illegal
Description	This attribute counts the normal intra-UMTS Serving GPRS Support Node (USGSN) ROUTING AREA UPDATE REQUEST messages received from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm periodicIntraUsgsnRAUpdate (periodIURAU)

Access	Read: All Write: Illegal
Description	This attribute counts the periodic intra-UMTS Serving GPRS Support Node (USGSN) ROUTING AREA UPDATE REQUEST messages from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm normalInterUsgsnRaUpdate (normInterURU)

Access	Read: All Write: Illegal
Description	This attribute counts the inter-UMTS Serving GPRS Support Node (USGSN) ROUTING AREA UPDATE REQUEST messages from the Mobile Station (MS). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm initialPsPageRequests (initPPR)

Access	Read: All Write: Illegal
Description	This attribute counts the initial PS (Packet-Switched) PAGE REQUEST messages sent to the Mobile Station (MS).

	The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm reattemptPsPageRequests (reattempPPR)

Access	Read: All Write: Illegal
Description	This attribute counts the re-attempt PS (Packet-Switched) PAGE REQUEST messages sent to the Mobile Station (MS) after the initial page request. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm intraSgsnRaUpdateRejects (rauReject)

Access	Read: All Write: Illegal
Description	This attribute counts the ROUTING AREA UPDATE REJECT messages sent during an Intra-SGSN Routing Area Update to the Mobile Station (MS). This counters includes the failures due to one of the following conditions: IMSI Unknown In HLR Service Not Allowed PLMN Not Allowed Roaming Not Allowed Network Failure Unspecified Protocol Error Invalid Mandatory Information Conditional Information Element Error

The counter wraps to zero when it exceeds the maximum value.

Mib: UsgsnSubscriberControl

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Usc Gmm interSgsnRaUpdateRejects (irauReject)

Access: Read: All
Write: Illegal

Description: This attribute counts the ROUTING AREA UPDATE REJECT messages sent from this SGSN, while acting in the role of new SGSN, to the Mobile Station (MS). This counter includes the failures due to one of the following conditions:

IMSI Unknown In HLR
Service Not Allowed
PLMN Not Allowed
Roaming Not Allowed
Network Failure
Unspecified Protocol Error
Invalid Mandatory Information
Conditional Information Element Error

The counter wraps to zero when it exceeds the maximum value.

Mib: UsgsnSubscriberControl

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Usc Gmm psPagingProcFailures (psPagProcFail)

Access: Read: All
Write: Illegal

Description: This attribute counts the PS (Packet-Switched) paging procedures initiated by the UMTS Serving GPRS Support Node (USGSN) over the Iu interface that are rejected.

	The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm securityModeRequests (secuModeReq)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the Security Mode procedure is initiated by the UMTS Serving GPRS Support Node (USGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc Gmm GmmStatusRxStats (StStats)

Properties	Operational
Description	This group contains the attributes which count the status messages received by the UMTS Serving GPRS Support Node (USGSN).
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Gmm retriesUponEntry (nEntry)

Access	Read: All Write: Illegal
Description	This attribute counts the times the UMTS Serving GPRS Support Node (USGSN) received a status message from a Mobile Station (MS) to indicate a retry upon entry into a new cell. The counter wraps when it exceeds the maximum value.

Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm incorrectMsgs (incorrMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the times the UMTS Serving GPRS Support Node (USGSN) received a status message from a Mobile Station (MS) indicating that a semantically incorrect message was received by the MS. The counter wraps when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm invalidMandatoryInfos (invMandInfos)

Access	Read: All Write: Illegal
Description	This attribute counts the number of mobile originated messages containing invalid mandatory information that are received by the UMTS Serving GPRS Support Node (USGSN). The counter wraps when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm unimplementedMsgs (uniMsgs)

Access	Read: All Write: Illegal

Description	This attribute counts the times the UMTS Serving GPRS Support Node (USGSN) received a status message from a Mobile Station (MS) indicating an unimplemented or unrecognized message was received by the MS. The counter wraps when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm incompatibleMsgsType (incMsgsT)

Access	Read: All Write: Illegal
Description	This attribute counts the times the UMTS Serving GPRS Support Node (USGSN) received a status message from a Mobile Station (MS) indicating a message type received by the MS was not compatible with the protocol state of the MS. The counter wraps when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm unimplementedInfos (uniInfos)

Access	Read: All Write: Illegal
Description	This attribute counts the times the UMTS Serving GPRS Support Node (USGSN) received a status message from a Mobile Station (MS) indicating an unimplemented or unrecognized information element inside a message was received by the MS. The counter wraps when it exceeds the maximum value.
Mib	UsgsnSubscriberControl

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm conditionalIeErrors (condIeErrs)

Access	Read: All Write: Illegal
Description	This attribute counts the times the UMTS Serving GPRS Support Node (USGSN) received a status message from a Mobile Station (MS) indicating that a message containing a conditional information element error was received by the MS. The counter wraps when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm incompatibleMsgs (incMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the times the UMTS Serving GPRS Support Node (USGSN) received a status message from a Mobile Station (MS) indicating a message received by the MS was not compatible with the protocol state of the MS. The counter wraps when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm unspecifiedProtocolErrors (unPerrs)

Access	Read: All Write: Illegal

Description	This attribute counts the times the UMTS Serving GPRS Support Node (USGSN) received a status message from the Mobile Station (MS) indicating that the MS received a message containing an unspecified protocol error. The counter wraps when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm miscStatusRx (mStRx)

Access	Read: All Write: Illegal
Description	This attribute counts the times the UMTS Serving GPRS Support Node (USGSN) received a miscellaneous status message from a Mobile Station (MS). The counter wraps when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc Gmm GmmMsgCountsStats (MsgCounts)

Properties	Operational
Description	This group contains attributes that maintain counts of messages received or sent by the GMM layer of the UMTS Serving GPRS Support Node (USGSN).
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Gmm attachRequestMsgs (attachReq)

Access	Read: All Write: Illegal

Description	This attribute counts the Mobile Station (MS) initiated ATTACH REQUEST messages received by this UMTS Serving GPRS Support Node (USGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm attachAcceptMsgs (attachAcc)

Access	Read: All Write: Illegal
Description	This attribute counts the ATTACH ACCEPT messages sent by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm attachCompleteMsgs (attachCompl)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated ATTACH COMPLETE messages received by this UMTS Serving GPRS Support Node (USGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm attachRejectMsgs (attachRej)

Access	Read: All Write: Illegal
Description	This attribute counts the ATTACH REJECT messages sent by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm msDetachRequestMsgs (msDetachReq)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated DETACH REQUEST messages received by this UMTS Serving GPRS Support Node (USGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm msDetachAcceptMsgs (detachAcc)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated DETACH ACCEPT messages received by this UMTS Serving GPRS Support Node (USGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm nwkDetachRequestMsgs (nwkDetachReq)

Access	Read: All Write: Illegal
Description	This attribute counts the DETACH REQUEST messages sent by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm nwkDetachAcceptMsgs (nwkDetach)

Access	Read: All Write: Illegal
Description	This attribute counts the DETACH ACCEPT messages sent by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm rauRequestMsgs (rauReq)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated ROUTING AREA UPDATE REQUEST messages received by this UMTS Serving GPRS Support Node (USGSN).

	The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm rauAcceptMsgs (rauAcc)

Access	Read: All Write: Illegal
Description	This attribute counts the ROUTING AREA UPDATE ACCEPT messages sent by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm rauCompleteMsgs (rauCompl)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated ROUTING AREA UPDATE COMPLETE messages received by this UMTS Serving GPRS Support Node (USGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm rauRejectMsgs (rauRej)

Access	Read: All Write: Illegal
Description	This attribute counts the ROUTING AREA UPDATE REJECT messages sent successfully by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm ptmsiReallocCommandMsgs (ptmsiReallocCommand)

Access	Read: All Write: Illegal
Description	This attribute counts the P-TMSI REALLOCATION COMMAND messages sent by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm ptmsiReallocCompleteMsgs (ptmsiReallocCompl)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated P-TMSI REALLOCATION COMPLETE messages received by this UMTS Serving GPRS Support Node (USGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm authAndCiphRequestMsgs (authAndCiphReq)

Access	Read: All Write: Illegal
Description	This attribute counts the AUTHENTICATION AND CIPHERING REQUEST messages sent by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm authAndCiphResponseMsgs (authAndCiphResp)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated AUTHENTICATION AND CIPHERING RESPONSE messages received by this UMTS Serving GPRS Support Node (USGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm authAndCiphFailureMsgs (authAndCipFail)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated AUTHENTICATION AND CIPHERING FAILURE messages received by this Serving GPRS Support Node (USGSN).

	The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm authAndCiphRejectMsgs (authAndCiphRej)

Access	Read: All Write: Illegal
Description	This attribute counts the AUTHENTICATION AND CIPHERING REJECT messages sent by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm identityRequestMsgs (idReq)

Access	Read: All Write: Illegal
Description	This attribute counts the IDENTITY REQUEST messages sent by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm identityResponseMsgs (idResp)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated IDENTITY RESPONSE messages received by this UMTS Serving GPRS Support Node (USGSN). The counter wraps to zero when it exceeds the maximum value
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm msGmmStatusMsgs (msGmmSt)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated GMM STATUS messages received by this UMTS Serving GPRS Support Node (USGSN). The counter wraps to zero when it exceeds the maximum value
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm nwkGmmStatusMsgs (nwkGmmSt)

Access	Read: All Write: Illegal
Description	This attribute counts the GMM STATUS messages sent by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. This counter excludes the GMM Status messages sent by the Signalling Gateway (SG) due to invalid mobile identity, invalid message type, or missing mandatory Information Elements found in the incoming GMM messages.

	The counter wraps to zero when it exceeds the maximum value
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm gmmInformationMsgs (gmmInfo)

Access	Read: All Write: Illegal
Description	This attribute counts the GMM INFORMATION messages sent by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. The counter wraps to zero when it exceeds the maximum value
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm serviceRequestMsgs (serviceReq)

Access	Read: All Write: Illegal
Description	This attribute counts the Mobile Station (MS) initiated SERVICE REQUEST messages received by this UMTS Serving GPRS Support Node (USGSN). The counter wraps to zero when it exceeds the maximum value
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm serviceAcceptMsgs (serviceAcc)

Access	Read: All Write: Illegal
Description	This attribute counts the SERVICE ACCEPT messages sent by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. The counter wraps to zero when it exceeds the maximum value
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm serviceRejectMsgs (serviceRej)

Access	Read: All Write: Illegal
Description	This attribute counts the SERVICE REJECT messages sent by this UMTS Serving GPRS Support Node (USGSN) to mobile subscribers. The counter wraps to zero when it exceeds the maximum value
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc Gmm WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Gmm customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)

Default	No default

GROUP Usc Gmm SnrAttOper (SnrOper)

Properties	Operational
Description	This group contains operational attributes of this component.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Gmm snrCurrentlyAttached (snrCuAtt)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of roaming Mobile Stations (MSs) that are currently GPRS-attached and have been given homer Quality of Service by Seamless National Roaming (SNR). If the SNR service is updated after the MS is attached, then the value of this attribute is not updated until the next Routing Area Update, periodic or Intra Serving GPRS Support Node (SGSN).
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm snrAttachesSuccessful (snrAtt)

Access	Read: All Write: Illegal
Description	This attribute counts the roaming Mobile Stations (MSs) that have been GPRS-attached and had been given homer Quality of Service by Seamless National Roaming. If the SNR service is updated after the MS is attached, then the value of this attribute is not updated until the next Routing Area Update, periodic or Intra Serving GPRS Support Node (SGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm snrGprsNotAllowedRejects (snrGprsNotAllRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS Services Not Allowed” (cause code 7). The reject is also counted in the *attachesRejected* attribute (defined in the *Gsc/n Gmm* component). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm snrCombNotAllowedRejects (snrCombNotAllRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS and Non-GPRS Services Not Allowed” (cause code 8). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm snrNotAllowedInPlmnRejects (snrPlmnRej)

Access	Read: All Write: Illegal

Description	This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “PLMN Not Allowed” (cause code 11). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm snrNotAllowedInLaRejects (snrLaRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “Location Area Not Allowed” (cause code 12). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm snrNoRoamingInLaRejects (snrRoamLaRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “Roaming Not Allowed In This Location Area” (cause code 13). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm snrGprsNotAllowedInPlmnRejects (snrGprsPlmnRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS Not Allowed in this PLMN” (cause code 14). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm snrTryAnotherCellRejects (snrCellRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Release 99 Mobile Stations (MSs) due to the cause “No Suitable Cells In Location Area” (cause code 15). The reject for Release 97 MSs are counted in the *snrRemappedCauseRejects* attribute (defined in the *Gsc/n Gmm* component). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm snrOtherCauseRejects (snrOtherRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) because of causes other

	than the following reject causes: Cause code 7: GPRS Services Not Allowed Cause code 8: GPRS Services and Non-GPRS Services Not Allowed Cause code 11: PLMN Not Allowed Cause code 12: Location Area Not Allowed Cause code 13: Roaming Not Allowed In This Location Area Cause code 14: GPRS Not Allowed In This PLMN Cause code 15: No Suitable Cells In Location Area The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gmm snrRemappedCauseRejects (remapRej)

Access	Read: All Write: Illegal
Description	This attribute counts the rejects sent by Seamless National Roaming to the Release 97 Mobile Stations (MSs) due to the cause “No Suitable Cells In Location Area” (cause code 15). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS UsgsnSubscriberControl GprsMobilityManagement

Description	The statistics record generated by the UsgsnSubscriberControl GprsMobilityManagement component.

ATTRIBUTE Usc Gmm pmmIdleStateSubscribers

Description	This attribute indicates the number of mobile subscribers that are GPRS-attached and in the PMM-IDLE state at the end of the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Gmm pmmConnectedStateSubscribers

Description	This attribute indicates the number of mobile subscribers that are GPRS-attached and in the PMM-CONNECTED state at the end of the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Gmm currentlyAttached

Description	This attribute indicates the Mobile Stations (MS) that are currently GPRS-attached and in the PMM-IDLE or PMM-CONNECTED state. The maximum subscribers that can be GPRS-attached is provisioned in the maxAttachedSubscribers attribute of the parent UmtsSubscriberControl (*Usc*) component. The count is taken at the end of the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Gmm attachesSuccessful

Description	This attribute indicates the number of GPRS-attaches to this UMTS Serving GPRS Support Node (USGSN) that were successful over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Gmm attachesWithKnownPtmsi

Description	This attribute indicates the number of ATTACH REQUEST messages received with a Packet-Temporary Mobile Subscriber Identity (P-TMSI) previously assigned by this UMTS Serving GPRS Support Node (USGSN). This includes all successful and unsuccessful attempts.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm attachesWithUnknownPtmsi

Description This attribute indicates the number of ATTACH REQUEST messages received with a Packet-Temporary Mobile Subscriber Identity (P-TMSI) not assigned by this UMTS Serving GPRS Support Node (USGSN) over the collection interval.

This includes all successful and unsuccessful attempts.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm attachesWithImsi

Description This attribute indicates the number of ATTACH REQUEST messages received with an International Mobile Subscriber Identity (IMSI) as an identifier, over the collection interval. This includes all successful and unsuccessful attempts.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm authenticationRequests

Description This attribute indicates the number of times the authentication procedure was initiated by the UMTS Serving GPRS Support Node (USGSN).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm serviceRequestsForSignalling

Description This attributes counts the successful SERVICE REQUEST messages sent by mobile stations (MS) requesting a signalling connection in order to send uplink signalling messages (such as ATTACH REQUEST, PDP CONTEXT REQUEST, and so on.), over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm serviceRequestsForData

Description	This attribute counts the successful SERVICE REQUEST messages sent by mobile stations (MS) requesting a resource reservation for active PDP contexts, over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Gmm serviceRequestsForPagingResponse

Description	This attribute counts the successful SERVICE REQUEST messages sent by mobile stations (MS) indicating a paging response, over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Gmm detachesSuccessful

Description	This attribute counts the successful DETACHes that are either mobile or network initiated. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Gmm msDetachRejected

Description	This attribute counts the Mobile Station (MS) initiated GPRS-DETACH REQUEST messages which have been rejected by this UMTS Serving GPRS Support Node (USGSN). The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Gmm normalIntraUsgsnRaUpdate

Description	This attribute counts the normal intra-Serving GPRS Support Node ROUTING AREA UPDATE REQUEST messages received from the Mobile Station (MS). The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Gmm periodicIntraUsgsnRaUpdate

Description: This attribute counts the periodic intra-Serving GPRS Support Node ROUTING AREA UPDATE REQUEST messages from the Mobile Station (MS).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm normalInterUsgsnRaUpdate

Description: This attribute counts the inter-UMTS Serving GPRS Support Node ROUTING AREA UPDATE REQUEST messages from the Mobile Station (MS).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm initialPsPageRequests

Description: This attribute counts the initial PS (Packet-Switched) PAGE REQUEST messages sent to the Mobile Station (MS).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm reattemptPsPageRequests

Description: This attribute counts the re-attempt PS (Packet-Switched) PAGE REQUEST messages sent to the Mobile Station (MS) after the initial page request.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Gmm interSgsnRaUpdateAccepts (irauAccept)

Description: This attribute counts the ROUTING AREA UPDATE ACCEPT messages sent from this SGSN, while acting in the role of new SGSN, to the Mobile Station (MS) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm interSgsnRaUpdateRejects (irauReject)

Description This attribute indicates the ROUTING AREA UPDATE REJECT messages sent from this SGSN, while acting in the role of new SGSN, to the Mobile Station (MS). This attribute includes one of the following conditions:

IMSI Unknown In HLR
Service Not Allowed
PLMN Not Allowed
Roaming Not Allowed
Network Failure
Unspecified Protocol Error
Invalid Mandatory Information
Conditional Information Element Error

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm intraSgsnRaUpdateRejects (rauReject)

Description This attribute counts the ROUTING AREA UPDATE REJECT message sent during an Intra-SGSN Routing Area Update to the Mobile Station (MS). This attribute includes one of the following conditions:

IMSI Unknown In HLR
Service Not Allowed
PLMN Not Allowed
Roaming Not Allowed
Network Failure
Unspecified Protocol Error
Invalid Mandatory Information
Conditional Information Element Error

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm periodicRaUpdateRejects (periodicRauReject)

Description	This attribute counts the ROUTING AREA UPDATE REJECT message sent during Periodic Routing Area Updates to the Mobile Station (MS) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Gmm psPagingProcFailures (psPagProcFail)

Description	This attribute indicates the PS (Packet-Switched) paging procedures initiated by the UMTS Serving GPRS Support Node (USGSN) over the Iu interface that are rejected by the Mobile Station (MS). This counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Gmm securityModeRequests

Description	This attribute counts the number of times the Security Mode procedure was initiated by the UMTS Serving GPRS Support Node (USGSN). The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrPeakAttached (snrPeakAtt)

Description	This attribute indicates the peak number of roaming Mobile Stations (MSs) that have become GPRS-attached and have been given homer Quality of Service by Seamless National Roaming. If the SNR service is updated after the MS is attached, then the value of this attribute is not updated until the next periodic Routing Area Update. The value reported is the peak value in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrAttachesSuccessful (snrAtt)

Description

This attribute counts the roaming Mobile Stations (MSs) that have been GPRS-attached and had been given homer Quality of Service by Seamless National Roaming.

If the SNR service is updated after the MS is attached, then the value of this attribute is not updated until the next periodic Routing Area Update.

This counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrGprsNotAllowedRejects (snrGprsNotAllRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS Services Not Allowed” (cause code 7).

The reject is also counted in the *attachesRejected* attribute (defined in the *Gsc/n Gmm* component).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrCombNotAllowedRejects (snrCombNotAllRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS And Non-GPRS Services Not Allowed” (cause code 8).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrNotAllowedInPlmnRejects (snrPlmnRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “PLMN Not Allowed” (cause code 11).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrNotAllowedInLaRejects (snrLaRej)

Description This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “Location Area Not Allowed” (cause code 12).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrNoRoamingInLaRejects (snrRoamLaRej)

Description This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “Roaming Not Allowed In This Location Area” (cause code 13).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrGprsNotAllowedInPlmnRejects (snrGprsPlmnRej)

Description This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) due to the cause “GPRS Not Allowed in this PLMN” (cause code 14).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrTryAnotherCellRejects (snrCellRej)

Description This attribute counts the rejects sent by Seamless National Roaming to the Release 99 Mobile Stations (MSs) due to the cause “No Suitable Cells In Location Area” (cause code 15).

The reject for Release 97 MSs are counted in the *snrRemappedCauseRejects* attribute (defined in the *Gsc/n Gmm* component).

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrOtherCauseRejects (snrOtherRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Mobile Stations (MSs) because of causes other than the following reject causes:

Cause code 7: GPRS Services Not Allowed
Cause code 8: GPRS Services and Non-GPRS Services Not Allowed
Cause code 11: PLMN Not Allowed
Cause code 12: Location Area Not Allowed
Cause code 13: Roaming Not Allowed In This Location Area
Cause code 14: GPRS Not Allowed In This PLMN
Cause code 15: No Suitable Cells In Location Area

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Usc Gmm snrRemappedCauseRejects (remapRej)

Description

This attribute counts the rejects sent by Seamless National Roaming to the Release 97 Mobile Stations (MSs) due to the cause “No Suitable Cells In Location Area” (cause code 15).

The counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

COMPONENT Usc RemoteApplicationConnection (RaConn)

Instance

appType [String (1..8, ASCII)]
shelfId [Decimal (0..15)]
n [Decimal (1..15)]

Groups

"GROUP Usc RaConn OsiState (State)"
"GROUP Usc RaConn WlcCustomCounters (WlcCustomCntr)"

Scope

Application

Description

... RemoteApplicationConnection/<appType, shelfId, n>

This component represents the Remote Application Connection information of an application that talks to applications on other

shelves. For each application that it can communicate with, one of these connection components is created and is instantiated with the name of the remote application, the Id of the shelf on which the application runs, and the instance number of the application. ShelfId ***0*** represents the Master shelf.

Mib: UsgsnSubscriberControl

Dyn. Subcomp.: "COMPONENT Usc RaConn AtmConnection (AtmCon)"

Common Verbs:
- Help
- List
- Display

GROUP Usc RaConn OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: UsgsnSubscriberControl

ATTRIBUTE Usc RaConn adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

	The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	UsgsnSubscriberControl
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Usc RaConn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	UsgsnSubscriberControl
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Usc RaConn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: UsgsnSubscriberControl

Values: idle
active (activ)
busy

Default: idle

GROUP Usc RaConn WlcCustomCounters (WlcCustomCntr)

Properties: Operational

Description: This group contains the spare counters that can be dynamically patched.

Mib: UsgsnSubscriberControl

ATTRIBUTE Usc RaConn customCounter1 (customCntr1)

Access: Read: All
Write: Illegal

Description: This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib: UsgsnSubscriberControl

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Usc RaConn customCounter2 (customCntr2)

Access: Read: All
Write: Illegal

Description: This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc RaConn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Usc RaConn AtmConnection (AtmCon)

Groups	"GROUP Usc RaConn AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	UsgsnSubscriberControl
Common Verbs	Help List Display

GROUP Usc RaConn AtmCon Operational (Oper)

Properties	Operational

Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc RaConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	UsgsnSubscriberControl
Values	The name of the component
Default	No default

COMPONENT Usc MapClient (Mc)

Groups	"GROUP Usc Mc Provisioned (Prov)" "GROUP Usc Mc Statistics (Stats)" "GROUP Usc Mc MapClientSccpUserInfo (McSccpUI)" "GROUP Usc Mc OsiState (State)" "GROUP Usc Mc WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS UsgsnSubscriberControl MapClient"

Scope	Application
Description	*Usc/n MapClient* This component represents the *MapClient* functionality of the *UmtsSubscriberControl (Usc)*. The *MapClient* component provides the Mobile Application Part (MAP) over SS7 to interact with the Home Location Register (HLR) via the SS7-IP Gateway.
Mib	UsgsnSubscriberControl
Common Verbs	Help List Display

GROUP Usc Mc Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes to specify the Port Number and the SS7-IP Gateway information that this *MapClient* uses.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Mc mscE164Address (mscEAddr)

Access	Read: All Write: All
Description	This attribute supplies the E.164 number associated with the local MSC SCCP subsystem on the SGSN. This E.164 number will be used in the global title address field of the Calling Party Address (CgPA) when the USC MAP Client attribute *mapCgpaRoutingIndicator* is set to ***globalTitle***. If this attribute is changed after the MAP Client has registered with the MAP Stack, the MAP Client will need to deregister with the MAP Stack and then re-register. Any outstanding MAP transactions will be lost as a result of the re-registration. If this attribute is empty, the value of the USC's or GSC's E.164 address specified in the *sgsnNumber* attribute is used for the MAP Client's E.164 address.
Mib	UsgsnSubscriberControl
Values	String (0..17, NativeAddress)
Default	No default

ATTRIBUTE Usc Mc linkToMapStack (mapLink)

Access	Read: All Write: All
Description	This attribute specifies the *MapStack* used by this *MapClient*.
Mib	UsgsnSubscriberControl

Values	Link (Service, linkToMapStackUsers)
Default	No default

GROUP Usc Mc Statistics (Stats)

Properties	Operational
Description	This group contains statistical attributes of the *MapClient* application.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Mc currentTransactions (curTr)

Access	Read: All Write: Illegal
Description	This attribute indicates how many MAP transactions are currently being handled by the MAP Client. *currentTransactions* is expressed as a percentage utilization of the number of MAP transactions the MAP Client is capable of handling concurrently. A SET alarm is generated by the MAP Client when the percentage utilization reaches a high threshold. A CLEAR alarm is generated by the MAP Client when the percentage utilization reaches a low threshold and an outstanding SET alarm exists.
Mib	UsgsnSubscriberControl
Values	Decimal (0..100)
Units	%
Default	No default

ATTRIBUTE Usc Mc uglMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-UPDATE GPRS LOCATION messages sent to the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc uglResponseMsgs (uglResp)

Access	Read: All Write: Illegal
Description	This attribute indicates the successful MAP-UPDATE GPRS LOCATION RESPONSE messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc isdMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc isdResponseMsgs (isdResp)

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-INSERT SUBSCRIBER DATA RESPONSE messages sent to the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc dsdMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-DELETE SUBSCRIBER DATA messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc dsdResponseMsgs (dsdResp)

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-DELETE SUBSCRIBER DATA RESPONSE messages sent to the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc clMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-CANCEL LOCATION messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Usc Mc clResponseMsgs (clResp)

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-CANCEL LOCATION RESPONSE messages sent to the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc rstMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-RESET messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc saiMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-SEND AUTHENTICATION INFO messages sent to the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc saiResponseMsgs (saiResp)

Access	Read: All Write: Illegal
Description	This attribute indicates the MAP-SEND AUTHENTICATION INFO ACK messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc transLimitDiscards (trDisc)

Access	Read: All Write: Illegal
Description	This attribute indicates the transactions rejected by the MAP Client when the maximum number of concurrent MAP transactions supported by the MAP Client has been exceeded. The maximum number of MAP transactions is constrained by the MAP Client internal memory available to store the transactions. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc tmrExpiries (tmrEx)

Access	Read: All Write: Illegal
Description	This attribute indicates the times the *mcTimer* (defined in component *Sgsn GprsSubscriberControl* and *Usgsn UmtsSubscriberControl*) expires before receiving a response from the Home Location Register (HLR). This can be used to determine if the provisionable attribute *mcTimer* must be changed, or a problem exists between the Serving GPRS Support

	Node (SGSN) or Umts Serving General Support Node (USGSN) and the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc afrMsgs

Access	Read: All Write: Illegal
Description	This attribute indicates the AUTHENTICATION FAILURE REPORT message sent to HLR from MAP Client in the collection interval. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc afrResponseMsgs (afrResp)

Access	Read: All Write: Illegal
Description	This attribute indicates the AUTHENTICATION FAILURE REPORT RESPONSE messages sent to MAP Client from HLR in the collection interval. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc sccpServiceRequestTimeouts

Access	Read: All Write: Illegal

Description	This attribute indicates the MAP Stack Service request timeouts. This could occur if the MAP Stack was not responding to Service requests from the MAP Clients, or if there was an SS7-IP Gateway (SIG) or IP network problem. Retries of the Service request are infinite since the MAP Client can not send or receive MAP messages until it is successfully registered with the MAP Stack.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc decodeErrors

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP messages received from HLR and SMSC that are not decodable. The inability to decode the MAP message is caused by the MAP Client receiving a message with invalid data. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc dataMissingRespSent

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “data missing” error responses sent to the HLR or SMSC. This error may occur when optional data is missing from a MAP message received, when required data is missing from a MAP message received, or when an internal data structure is missing data. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc unexpectedDataValuesRespSent (unexpDataRespSent)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “unexpected data value” error responses sent to the HLR or SMSC. This error may occur when the parameter type is correct in the MAP message received but contains data which is not relevant for the type of MAP service being invoked. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc unidentifiedSubscribersRespSent (unidentSubRespSent)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “unidentified subscriber” error responses sent to the HLR or SMSC. This error may occur when the subscriber is not contained in the subscriber database resulting in the failure to establish a call. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc dataMissingRespRecv

Access	Read: All Write: Illegal
Description	This attribute indicates the number of data missing errors received from the HLR or SMSC. This error may occur when

	optional data is missing from a MAP message sent, when required data is missing from a MAP message sent, or when an internal data structure is missing data. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc unexpectedDataValuesRespRecv (unexpDataRespRecv)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “unexpected data value” error responses received from the HLR or SMSC. This error may occur when the parameter type is correct in the MAP message sent but contains data which is not relevant for the type of MAP service being invoked. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc systemFailuresRespRecv (sysFailRespRecv)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “system failure” error responses received from the HLR or SMSC. This error may occur when a task specified in a MAP message sent cannot be performed because of a problem with another entity. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc unknownSubscribersRespRecv (unkSubRespRecv)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “unknown subscriber” error responses received from the HLR or SMSC. This error may occur when a message sent is processed for a subscription that does not exist. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc roamingNotAllowedRespRecv (noRoamRespRecv)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of “roaming not allowed” error responses received from the HLR or SMSC. This error may occur when a location update attempt is made in an area not covered by the subscription. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc invalidMessages

Access	Read: All Write: Illegal
Description	This attribute indicates the number of invalid messages received by the MAP Client. This may occur if the MAP Client receives an unsolicited message, a message with an invalid header, or an invalid dialogue ID. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc isdMsgsUpdateLocation (isdMsgsUpdLoc)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) during a GPRS Update Location procedure. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc isdMsgsHlrSubUpdate (isdMsgsHlrSubUp)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) due to an HLR operator intervention. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc isdFailures (isdFail)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) that could not be processed due to one of the following errors:

	Data Missing Unexpected Data Value Unidentified Subscriber Decode errors The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc clMsgsHlrDetach (clMsgsHlrDetach)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) due to an HLR initiated Detach. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc clMsgsSgsnChange (clMsgsSgsnChg)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) due to a Service GPRS Support Node (SGSN) change. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc clFailures (clFail)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) that could not be processed due to one of the following errors: Data Missing Unexpected Data Value Decode errors The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc dsdFailures (dsdFail)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP-DELETE SUBSCRIBER DATA messages sent to the Home Location Register (HLR) that could not be processed due to one of the following errors: Data Missing Unexpected Data Value Unidentified Subscriber Decode errors The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc uAbortMsgSent

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP USER ABORT messages sent by the MAP Client to the HLR or SMSC. This message may be sent as a result of a resource limitation caused by congestion or as a result of the unavailability of resources. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc pAbortMsgRecv

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP PROVIDER ABORT messages received by the MAP Client from the HLR or SMSC. This message indicates to the MAP service-user to abort a MAP dialogue. This message may be received due to a MAP service-provider malfunction, supporting dialogue/transaction release, resource limitation, maintenance activity, version incompatibility, or an abnormal MAP dialogue. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc uAbortMsgRecv

Access	Read: All Write: Illegal
Description	This attribute indicates the number of MAP USER ABORT messages received by the MAP Client from the HLR or SMSC. This message indicates to the MAP service-provider to abort a

	MAP dialogue. This message may be received due to a resource limitation caused by congestion or by unavailability of resources. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc pmsMsgs

Access	Read: All Write: Illegal
Description	This attribute counts the number of Mobile Subscriber Purge messages sent to the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc pmsResponseMsgs (pmsRes)

Access	Read: All Write: Illegal
Description	This attribute counts the number of Mobile Subscriber Purge Response messages received from the Home Location Register (HLR). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc unexpectedErrorCodeRespRecv (unexpErrRespRecv)

Access	Read: All Write: Illegal
Description	This attribute counts the unexpected error responses received from the Home Location Register (HLR). An unexpected error response may be received when a Transaction Capabilities Application Part (TCAP) error code is received at the Service GPRS Support Node (SGSN) and that error code is inconsistent with the invoked Mobile Application Part (MAP) operation. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc pslRespMsgs

Access	Read: All Write: Illegal
Description	This attribute counts the MAP-PROVIDE SUBSCRIBER LOCATION response messages sent by the MAP Client to the Gateway Mobile Location Center (GMLC). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc unauthorizedReqNetworkRespSent (unauthReqNetRespSent)

Access	Read: All Write: Illegal
Description	This attribute counts the number of “Unauthorized Requested Network” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when a Location Request

	is denied due to the GMLC not being in the home country. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc unauthorizedLcsClientRespSent (unauthLcsCliRespSent)

Access	Read: All Write: Illegal
Description	This attribute counts the number of “Unauthorized LCS Client” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when a Location Request is denied due to privacy restrictions. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc positionMethodFailureRespSent (posMethFailRespSent)

Access	Read: All Write: Illegal
Description	This attribute counts the number of “Positioning Method Failure” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when the position of the mobile cannot be retrieved. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc absentSubscriberRespSent (absentSubRespSent)

Access	Read: All Write: Illegal
Description	This attribute counts the number of “Absent Subscriber” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when the subscriber is International Mobile Subscriber Identity (IMSI) detached, in a restricted area, or does not respond to paging. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc pslMsgs

Access	Read: All Write: Illegal
Description	This attribute counts the MAP-PROVIDE SUBSCRIBER LOCATION messages received by the MAP Client from the Gateway Mobile Location Center (GMLC). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc Mc MapClientSccpUserInfo (McSccpUI)

Properties	Provisioned
Description	This group contains provisionable attributes of the Sccp User Information of the *MapClient* application
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Mc mapCgpaRoutingIndicator (mapRtInd)

Access	Read: All Write: All
Description	This attribute specifies routing by global title or point code. If set to ***globalTitle*** the MAP Client sets the CgPA routing indicator to route on global title and supply global title information. If set to ***pointCode*** the MAP Client sets the CgPA routing indicator to route on SSN and supply point code and subsystem number in the CgPA.
Mib	UsgsnSubscriberControl
Values	globalTitle (gt) pointCode (pc)
Default	globalTitle

ATTRIBUTE Usc Mc mapSgsnSubsystemNumber (msssn)

Access	Read: All Write: All
Description	This attribute specifies the MAP SGSN SSN. This SSN is used by SCCP for subsystem routing.
Mib	UsgsnSubscriberControl
Values	Decimal (1..255)
Default	149

ATTRIBUTE Usc Mc sccpServiceRequestTimer

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Client waits for a response after sending a Service Request primitive to the MAP Protocol Stack. The count of timeouts is available in the *sccpServiceRequestTimeouts* attribute.

	Retries of the Service request are infinite since the MAP Client can not send or receive MAP messages until it is successfully registered with the MAP Stack.
Mib	UsgsnSubscriberControl
Values	Decimal (0..60)
Units	seconds
Default	10

ATTRIBUTE Usc Mc sccpVariant

Access	Read: All Write: All
Description	This attribute specifies the SCCP variant used by the MAP Client on this SS7 network for the SCCP Called Party Address that is based on the E.212 or E.214 Mobile Subscriber number.
Mib	UsgsnSubscriberControl
Values	itu ansi ituChinese
Default	itu

GROUP Usc Mc OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Mc adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	UsgsnSubscriberControl
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Usc Mc operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	UsgsnSubscriberControl

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Usc Mc usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	UsgsnSubscriberControl
Values	idle active (activ) busy
Default	idle

GROUP Usc Mc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Mc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Mc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS UsgsnSubscriberControl MapClient

Description	The statistics record generated by the UsgsnSubscriberControl MapClient component.

ATTRIBUTE Usc Mc uglMsgs

Description	This attribute indicates the MAP-UPDATE GPRS LOCATION messages sent to the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc uglResponseMsgs (uglResp)

Description	This attribute indicates the successful MAP-UPDATE GPRS LOCATION RESPONSE messages received from the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc isdMsgs

Description	This attribute indicates the MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc isdResponseMsgs (isdResp)

Description	This attribute indicates the MAP-INSERT SUBSCRIBER DATA RESPONSE messages sent to the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc dsdMsgs

Description	This attribute indicates the MAP-DELETE SUBSCRIBER DATA messages received from the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc dsdResponseMsgs (dsdResp)

Description	This attribute indicates the MAP-DELETE SUBSCRIBER DATA RESPONSE messages sent to the Home Location Register (HLR) in the collection interval.

Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc clMsgs

Description	This attribute indicates the MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc clResponseMsgs (clResp)

Description	This attribute indicates the MAP-CANCEL LOCATION RESPONSE messages sent to the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc rstMsgs

Description	This attribute indicates the MAP-RESET messages received from the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc saiMsgs

Description	This attribute indicates the MAP-SEND AUTHENTICATION INFO messages sent to the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc saiResponseMsgs (saiResp)

Description	This attribute indicates the MAP-SEND AUTHENTICATION INFO RESPONSE messages received from the Home Location Register (HLR) in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc transLimitDiscards (trDisc)

Description	This attribute indicates the number of transactions rejected by the MAP Client when the maximum number of concurrent MAP transactions supported by the MAP Client has been exceeded.

The maximum number of MAP transactions is constrained by the MAP Client internal memory available to store the transactions. This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc tmrExpiries (tmrEx)

Description This attribute indicates the times the *mcTimer* (defined in component *Sgsn GprsSubscriberControl* and *Usgsn UmtsSubscriberControl*) expires before receiving a response from the Home Location Register (HLR). This can be used to determine if the provisionable attribute *mcTimer* must be changed, or a problem exists between the Serving GPRS Support Node (SGSN) or the UMTS Serving General Support Node (USGSN) and the Home Location Register (HLR). This counter counts the value in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc afrMsgs

Description This attribute indicates the AUTHENTICATION FAILURE REPORT messages sent to the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc afrResponseMsgs (afrResp)

Description This attribute indicates the ATHENTICATION FAILURE REPORT RESPONSE messages received from the Home Location Register (HLR) in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc currentTransactions (curTr)

Description This attribute indicates how many MAP transactions are currently being handled by the MAP Client. *currentTransactions* is expressed as a percentage utilization of the number of MAP transactions the MAP Client is capable of handling concurrently.

A SET alarm is generated by the MAP Client when the percentage utilization reaches a high threshold. A CLEAR alarm

is generated by the MAP Client when the percentage utilization reaches a low threshold and an outstanding SET alarm exists.

The value reported is the value at the end of the collection interval.

Values Decimal (0..100)

ATTRIBUTE Usc Mc sccpServiceRequestTimeouts

Description This attribute indicates the MAP Stack Service request timeouts in the collection interval. This could occur if the MAP Stack was not responding to Service requests from the MAP Clients, or if there was an SS7-IP Gateway (SIG) or IP network problem.

Retries of the Service request are infinite since the MAP Client can not send or receive MAP messages until it is successfully registered with the MAP Stack.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc decodeErrors

Description This attribute indicates, over the collection interval, the number of MAP messages received from HLR and SMSC that are not decodable. The inability to decode the MAP message is caused by the MAP Client receiving a message with invalid data.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc dataMissingRespSent

Description This attribute indicates, over the collection interval, the number of “data missing error” responses sent to the HLR or SMSC. This error may occur when optional data is missing from a MAP message received, when required data is missing from a MAP message received, or when an internal data structure is missing data.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc unexpectedDataValuesRespSent (unexpDataRespSent)

Description This attribute indicates, over the collection interval, the number of “unexpected data value” error responses sent to the HLR or

SMSC. This error may occur when the parameter type is correct in a MAP message received but contains data which is not relevant for the type of MAP service being invoked.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc unidentifiedSubscribersRespSent (unidentSubRespSent)

Description This attribute indicates, over the collection interval, the number of “unidentified subscriber” error responses sent to the HLR or SMSC. This error may occur when the subscriber is not contained in the subscriber database resulting in the failure to establish a call.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc dataMissingRespRecv

Description This attribute indicates, over the collection interval, the number of “data missing” error responses received from the HLR or SMSC. This error may occur when optional data is missing from a MAP message sent, when required data is missing from a MAP message sent, or when an internal data structure is missing data.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc unexpectedDataValuesRespRecv (unexpDataRespRecv)

Description This attribute indicates, over the collection interval, the number of “unexpected data value” error responses received from the HLR or SMSC. This error may occur when the parameter type is correct in a MAP message sent but contains data which is not relevant for the type of MAP service being invoked.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc systemFailuresRespRecv (sysFailRespRecv)

Description This attribute indicates, over the collection interval, the number of “system failure” error responses received from the HLR or SMSC. This error may occur when a task specified by a MAP message sent cannot be performed because of a problem with another entity.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc unknownSubscribersRespRecv (unkSubRespRecv)

Description	This attribute indicates, over the collection interval, the number of “unknown subscriber” error responses received from the HLR or SMSC. This error may occur when a message sent is processed for a subscription that does not exist.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc roamingNotAllowedRespRecv (noRoamRespRecv)

Description	This attribute indicates, over the collection interval, the number of “roaming not allowed” error responses received from the HLR or SMSC. This error may occur when a location update attempt is made in an area not covered by the subscription.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc invalidMessages

Description	This attribute indicates, over the collection interval, the number of invalid messages received by the MAP Client. This may occur if the MAP Client receives an unsolicited message, a message with an invalid header, or an invalid dialogue ID.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc isdMsgsUpdateLocation (isdMsgsUpdLoc)

Description	This attribute indicates, over the collection interval, the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) during a GPRS Update Location procedure.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc isdMsgsHlrSubUpdate (isdMsgsHlrSubUp)

Description	This attribute indicates, over the collection interval, the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) due to an updated mobile subscription.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Mc isdFailures (isdFail)

Description

This attribute indicates the number of MAP-INSERT SUBSCRIBER DATA messages received from the Home Location Register (HLR) that could not be processed due to one of the following errors:

Data Missing
Unexpected Data Value
Unidentified Subscriber
Decode errors

This counter counts the events in the collection interval.

Values

Decimal (0..4294967295)

ATTRIBUTE Usc Mc clMsgsHlrDetach (clMsgsHlrDetach)

Description

This attribute indicates, over the collection interval, the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) due to an HLR initiated Detach.

Values

Decimal (0..4294967295)

ATTRIBUTE Usc Mc clMsgsSgsnChange (clMsgsSgsnChg)

Description

This attribute indicates, over the collection interval, the number of MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) due to a Service GPRS Support Node (SGSN) change.

Values

Decimal (0..4294967295)

ATTRIBUTE Usc Mc clFailures (clFail)

Description

This attribute counts the MAP-CANCEL LOCATION messages received from the Home Location Register (HLR) that could not be processed due to one of the following errors:

Data Missing
Unexpected Data Value
Decode errors

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc dsdFailures (dsdFail)

Description This attribute indicates the number of MAP-DELETE SUBSCRIBER DATA messages sent to the Home Location Register (HLR) that could not be processed due to one of the following errors:

Data Missing
Unexpected Data Value
Unidentified Subscriber
Decode errors

This counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc uAbortMsgSent

Description This attribute indicates, over the collection interval, the number of MAP USER ABORT messages sent by the MAP Client to the HLR or SMSC. This message may be sent as a result of a resource limitation caused by congestion or as a result of the unavailability of resources.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc pAbortMsgRecv

Description This attribute indicates, over the collection interval, the number of MAP PROVIDER ABORT messages received by the MAP Client from the HLR or SMSC. This message indicates to the MAP service-user to abort a MAP dialogue. This message may be received due to a MAP service-provider malfunction, supporting dialogue/transaction release, resource limitation, maintenance activity, version incompatibility, or an abnormal MAP dialogue.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Mc uAbortMsgRecv

Description: This attribute indicates, over the collection interval, the number of MAP USER ABORT messages received by the MAP Client from the HLR or SMSC. This message indicates to the MAP service-provider to abort a MAP dialogue. This message may be received due to a resource limitation caused by congestion or by unavailability of resources.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc pmsMsgs

Description: This attribute indicates the number of Mobile Subscriber Purge messages sent to the Home Location Register (HLR).

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc pmsResponseMsgs (pmsRes)

Description: This attribute indicated the number of Mobile Subscriber Purge Response messages received from the Home Location Register (HLR).

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc unexpectedErrorCodeRespRecv (unexpErrRespRecv)

Description: This attribute counts the unexpected error responses received from the Home Location Register (HLR). An unexpected error response may be received when a Transaction Capabilities Application Part (TCAP) error code is received at the Service GPRS Support Node (SGSN) and that error code is inconsistent with the invoked Mobile Application Part (MAP) operation.

This counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc pslRespMsgs

Description: This attribute counts the MAP-PROVIDE SUBSCRIBER LOCATION response messages sent by the MAP Client to the Gateway Mobile Location Center (GMLC).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc unauthorizedReqNetworkRespSent (unauthReqNetRespSent)

Description: This attribute counts the number of “Unauthorized Requested Network” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when a Location Request is denied due to the GMLC not being in the home country.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc unauthorizedLcsClientRespSent (unauthLcsCliRespSent)

Description: This attribute counts the number of “Unauthorized LCS Client” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when a Location Request is denied due to privacy restrictions.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc positionMethodFailureRespSent (posMethFailRespSent)

Description: This attribute counts the number of “Positioning Method Failure” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when the position of the mobile cannot be retrieved.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc absentSubscriberRespSent (absentSubRespSent)

Description: This attribute counts the number of “Absent Subscriber” error responses sent to the Gateway Mobile Location Center (GMLC). This error may occur when the subscriber is International Mobile Subscriber Identity (IMSI) detached, in a restricted area, or does not respond to paging.

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Mc pslMsgs

Description: This attribute counts the MAP-PROVIDE SUBSCRIBER LOCATION messages received by the MAP Client from the Gateway Mobile Location Center (GMLC).

The counter counts the events in the collection interval.

Values: Decimal (0..4294967295)

COMPONENT Usc Ranap

Groups: "GROUP Usc Ranap Operational (Oper)"
"GROUP Usc Ranap WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS UsgsnSubscriberControl Ranap"

Scope: Application

Description: *Usc/n Ranap*

This component represents the RANAP protocol layer of the UMTS Serving GPRS Support Node (USGSN).

Mib: UsgsnSubscriberControl

Common Verbs:
- Help
- List
- Display

GROUP Usc Ranap Operational (Oper)

Properties	Operational
Description	This group contains operational attributes of the RANAP sub-component under the *Usc* component
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Ranap rabAssignmentMsgs (rabAssgn)

Access	Read: All Write: Illegal
Description	This attribute counts the RAB ASSIGNMENT messages that were sent to the RNC. The counter wraps to 0 when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap rabSetupRequestMsgs (rabSetupRqstMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the RAB SETUP REQUEST messages that were sent to the RNC.The counter wraps to zero when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap rabReleaseRequestMsgs (rabReleaseRqstMsgs)

Access	Read: All Write: Illegal

Description	This attribute counts the RAB RELEASE REQUEST messages that were sent to the RNC.The counter wraps to 0 when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap iuReleaseRequestRxMsgs (iuReleaseRqstRxMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the Iu RELEASE REQUEST messages that were received from the RNC. The counter wraps to 0 when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap iuReleaseCommandTxMsgs (iuRelCmdTxMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts the Iu RELEASE COMMAND messages that were sent to the RNC.The counter wraps to 0 when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap relocRequestMsgs (relocReq)

Access	Read: All Write: Illegal
Description	This attribute counts the Relocation Request messages that were sent to the RNC.

	The counter wraps to 0 when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap pagingMsgs (paging)

Access	Read: All Write: Illegal
Description	This attribute counts the Paging messages that were sent to the RNC. The counter wraps to 0 when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap resetMsgs (reset)

Access	Read: All Write: Illegal
Description	This attribute counts the Reset messages that were received from the RNC. The counter wraps to 0 when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap initialUeMsgs (inUe)

Access	Read: All Write: Illegal

Description	This attribute counts the Initial UE messages that were received from the RNC. The counter wraps to 0 when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap errorIndicationMsgsRx (errIndRx)

Access	Read: All Write: Illegal
Description	This attribute counts the Error Indication messages that were received from the RNC. The counter wraps to 0 when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap errorIndicationMsgsTx (errIndTx)

Access	Read: All Write: Illegal
Description	This attribute counts the Error Indication messages that were sent to the RNC.The counter wraps to 0 when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap locationReportingControlMsgs (lcsControl)

Access	Read: All Write: Illegal

Description	This attribute counts the Location Reporting Control messages that are sent to the Radio Network Controller. The counter wraps to 0 when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap locationReportMsgs (lcsReport)

Access	Read: All Write: Illegal
Description	This attribute counts the Location Report messages that are received from the Radio Network Controller. The counter wraps to 0 when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc Ranap WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Ranap customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ranap customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS UsgsnSubscriberControl Ranap

Description	The statistics record generated by the UsgsnSubscriberControl Ranap component.

ATTRIBUTE Usc Ranap rabAssignmentMsgs

Description	This attribute indicates the number of RAB ASSIGNMENT messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap rabSetupRequestMsgs

Description	This attribute indicates the number of RAB SETUP REQUEST messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap rabReleaseRequestMsgs

Description	This attribute indicates the number of RAB RELEASE REQUEST messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap iuReleaseRequestRxMsgs

Description	This attribute indicates the number of Iu RELEASE REQUEST messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap iuReleaseCommandTxMsgs

Description	This attribute indicates the number of Iu RELEASE COMMAND messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap relocRequestMsgs

Description	This attribute indicates the number of RELOCATION REQUEST messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap pagingMsgs

Description	This attribute indicates the number of PAGING messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap resetMsgs

Description	This attribute indicates the number of RESET messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap initialUeMsgs

Description	This attribute indicates the number of INITIAL UE messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap errorIndicationMsgsRx

Description	This attribute indicates the number of ERROR INDICATION messages that were received from the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap errorIndicationMsgsTx

Description	This attribute indicates the number of ERROR INDICATION messages that were sent to the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap locationReportingControlMsgs

Description	This attribute indicates the number of Location Reporting Control messages that are sent to the Radio Network Controller over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap locationReportMsgs

Description	This attribute indicates the number of Location Report messages that are received from the Radio Network Controller over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap rabAssgnRqstSetupFailureMsgs

Description	This attribute indicates the number of times a RAB assignment request of type setup was rejected by the RNC over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ranap rabAssgnRqstRelFailureMsgs

Description	This attribute indicates the number of times a RAB assignment message of type release was rejected by the RNC over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Usc DifferentiatedService (Ds)

Groups	"GROUP Usc Ds WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Gsc/n* DifferentiatedService *Usc/n* DifferentiatedServices This component represents the differentiated service (QOS) on the (UMTS or GPRS) Subscriber Control (USC or GSC) that governs the behavior of packets and contexts that pass through this node. This component is a logical container for statistical attributes based on the differentiated services levels.
Mib	UsgsnSubscriberControl
Dyn. Subcomp.	"COMPONENT Usc Ds AllocationRetention (Ar)"
Common Verbs	Help List Display

GROUP Usc Ds WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Ds customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ds customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ds customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Usc Ds AllocationRetention (Ar)

Instance	Decimal (1..3)
Groups	"GROUP Usc Ds Ar WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Usd Ds AllocRetention/<allocation retention priority>* *Gsd Ds AllocRetention/<allocation retention priority>* This component represents the allocation retention priority on the Subscriber Control Card. The instance value of the component represents the allocation retention priority.
Mib	UsgsnSubscriberControl
Dyn. Subcomp.	"COMPONENT Usc Ds Ar TrafficClass (Tc)"
Common Verbs	Help List Display

GROUP Usc Ds Ar WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Ds Ar customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ds Ar customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ds Ar customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Usc Ds Ar TrafficClass (Tc)

Instance	conversational (conv) streaming (strm) interactive (int) background (bkgr)
Groups	"GROUP Usc Ds Ar Tc Statistics (Stats)" "GROUP Usc Ds Ar Tc WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS UsgsnSubscriberControl DifferentiatedService AllocationRetention TrafficClass"

Scope	Application
Description	*Usc Ds Ar/<alloc retention priority> TrafficClass/<traffic class>* *Gsc Ds Ar/<alloc retention priority> TrafficClass/<traffic class>* This component represents the traffic class on the Subscriber Control Card.
Mib	UsgsnSubscriberControl
Common Verbs	Help List Display

GROUP Usc Ds Ar Tc Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of this component.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Ds Ar Tc createPdpReq

Access	Read: All Write: Illegal
Description	This attribute counts the number of CREATE PDP CONTEXT REQUEST messages sent by the (UMTS) Serving GPRS Support

	Node (USGSN or SGSN) for the allocation retention priority and traffic class represented by this component.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ds Ar Tc createPdpRes

Access	Read: All Write: Illegal
Description	This attribute counts the number of CREATE PDP CONTEXT RESPONSE messages received with the cause REQUEST ACCEPTED for the allocation retention priority and traffic class represented by this component.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ds Ar Tc sgsnInitPdpUpdateReq

Access	Read: All Write: Illegal
Description	This attribute counts the number of UPDATE PDP CONTEXT REQUEST messages sent by the (UMTS) Serving GPRS Support Node (USGSN or SGSN) for the allocation retention priority and traffic class represented by this component.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ds Ar Tc sgsnInitPdpUpdateRes

Access	Read: All Write: Illegal

Description	This attribute counts the number of UPDATE PDP CONTEXT RESPONSE messages sent by the (UMTS) Serving GPRS Support Node (USGSN or SGSN) for the allocation retention priority and traffic class represented by this component.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ds Ar Tc ggsnInitPdpUpdateReq

Access	Read: All Write: Illegal
Description	This attribute counts the number of UPDATE PDP CONTEXT REQUEST messages received from the Gateway Serving GPRS Support Node (GGSN) for the allocation retention priority and traffic class represented by this component.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ds Ar Tc wlcGgsnInitPdpUpdateRes

Access	Read: All Write: Illegal
Description	This attribute counts the number of UPDATE PDP CONTEXT RESPONSE messages sent with a cause REQUEST ACCEPTED by the (UMTS) Serving GPRS Support Node (USGSN or SGSN) for the allocation retention priority and traffic class represented by this component.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc Ds Ar Tc WlcCustomCounters (WlcCustomCntr)

Properties	Operational

Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Ds Ar Tc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ds Ar Tc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ds Ar Tc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default
Default	COLLECTED STATS UsgsnSubscriberControl DifferentiatedService AllocationRetention TrafficClass
Description	The statistics record generated by the UsgsnSubscriberControl DifferentiatedService AllocationRetention TrafficClass component.

ATTRIBUTE Usc Ds Ar Tc createPdpReq

Description	This attribute indicates the number of CREATE PDP CONTEXT REQUEST messages sent by the (UMTS) Serving GPRS Support Node (USGSN or SGSN) for the allocation retention priority and traffic class represented by this component over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ds Ar Tc createPdpRes

Description	This attribute indicates the number of CREATE PDP CONTEXT RESPONSE messages received with the cause REQUEST ACCEPTED for the allocation retention priority and traffic class represented by this component over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ds Ar Tc sgsnInitPdpUpdateReq

Description	This attribute indicates the number of UPDATE PDP CONTEXT REQUEST messages sent by the (UMTS) Serving GPRS Support Node (USGSN or SGSN) for the allocation retention priority and traffic class represented by this component over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Ds Ar Tc sgsnInitPdpUpdateRes

Description	This attribute indicates the number of UPDATE PDP CONTEXT RESPONSE messages sent by the (UMTS) Serving GPRS

Support Node (USGSN or SGSN) for the allocation retention priority and traffic class represented by this component over the collection interval..

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ds Ar Tc ggsnInitPdpUpdateReq

Description This attribute indicates the number of UPDATE PDP CONTEXT REQUEST messages received from the Gateway Serving GPRS Support Node (GGSN) for the allocation retention priority and traffic class represented by this component over the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ds Ar Tc wlcGgsnInitPdpUpdateRes

Description This attribute indicates the number of UPDATE PDP CONTEXT RESPONSE messages sent with a cause REQUEST ACCEPTED by the (UMTS) Serving GPRS Support Node (USGSN or SGSN) for the allocation retention priority and traffic class represented by this component over the collection interval.

Values Decimal (0..4294967295)

COMPONENT Usc GprsSupportNode (Gsn)

Groups "GROUP Usc Gsn WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS UsgsnSubscriberControl GprsSupportNode"

Scope Application

Description *Usc/n GprsSupportNode*

This component represents the GPRS Support Node (GSN) protocol layer of the UMTS Serving GPRS Support Node (USGSN)

Mib UsgsnSubscriberControl

Common Verbs
Help
List
Display

GROUP Usc Gsn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Gsn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gsn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Gsn customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description — This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib — UsgsnSubscriberControl

Values — Decimal (0..4294967295)

Default — No default

COLLECTED STATS UsgsnSubscriberControl GprsSupportNode

Description — The statistics record generated by the UsgsnSubscriberControl GprsSupportNode component.

ATTRIBUTE Usc Gsn incomingRequestsRejected (inReqReject)

Description — This attribute indicates the number of incoming request messages on the Gn interface that were rejected during the collection interval because the maximum number of outstanding incoming requests was exceeded.

Values — Decimal (0..4294967295)

COMPONENT Usc ServiceSwitchingFunction (Ssf)

Groups — "GROUP Usc Ssf Provisioned (SsfProv)"
"GROUP Usc Ssf OsiState (State)"
"GROUP Usc Ssf Operational (SsfOp)"
"GROUP Usc Ssf WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS UsgsnSubscriberControl ServiceSwitchingFunction"

Scope — Application

Description — *Gsc/n ServiceSwitchingFunction*
Usc/n ServiceSwitchingFunction

This component represents the Service Switching Function (SSF) functionality of the SGSN (2G) and USGSN (3G). The Service Switching Function is responsible for handling communication between the SGSN (2G and 3G) and one or more Service Control Points (SCP). An SCP is an external entity present in a wireless

network supporting CAMEL (Customized Application for Mobile Network Enhanced Logic). It provides prepaid services.

The SSF maintains the state of the CAMEL dialogues between the SGSN and the external SCPs with which it communicates.

Mib	UsgsnSubscriberControl
Common Verbs	Help List Display

GROUP Usc Ssf Provisioned (SsfProv)

Properties	Provisioned
Description	This group contains provisioning data for the *Ssf* component.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Ssf maxCamelDialogues (maxDialogues)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of CAMEL dialogs that can be active at any time. Changing the value of this attribute causes the card to be reset and all outstanding transactions will be affected. The current number of active CAMEL dialogs is indicated by the *currentCamelDialogues* attribute, and the total number of dialogues created since the creation of this component is counted by *totalCamelDialogues*.
Mib	UsgsnSubscriberControl
Values	Decimal (1..150000)
Default	35000

ATTRIBUTE Usc Ssf linkToTcapStack (tcapLink)

Access	Read: All Write: All
Description	This attribute specifies the TCAP (Transaction Capabilities Application Part) Stack used by this *Ssf*. The TCAP Stack provides services to the CAMEL Application Part (CAP) and facilitates network communication required by CAMEL.
Mib	UsgsnSubscriberControl
Values	Link (Service, linkToTcapStackUsers)
Default	No default

GROUP Usc Ssf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Ssf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: UsgsnSubscriberControl

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Usc Ssf operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: UsgsnSubscriberControl

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Usc Ssf usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

	The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	UsgsnSubscriberControl
Values	idle active (activ) busy
Default	idle

GROUP Usc Ssf Operational (SsfOp)

Properties	Operational
Description	This group contains the operational data of the *Ssf* component.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Ssf currentCamelDialogues (currDialogues)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of CAMEL dialogues that are currently active.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ssf pdpContextsRedirected (pdpRedir)

Access	Read: All Write: Illegal
Description	This attribute counts the number of PDP (Packet Data Protocol) Contexts redirected to a different APN (Access Point Name) by the SCP (Service Control Point). If the counter is increasing rapidly, the operator may want to

	examine the network configuration to determine why so many PDP contexts are being redirected. It is possible that the current network configuration is not optimal and that the SCP is redirecting PDP contexts to avoid undesirable or expensive network access paths. The counter wraps to zero when its maximum value is exceeded.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ssf attemptedCamelDialogues (attDialogues)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of CAMEL dialogue establishments attempted by this *Ssf* component. The counter wraps to zero when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ssf unsuccessfulCamelDialogues (unsuccDialogues)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of unsuccessful CAMEL dialogue establishment attempts caused by errors or reject messages received from an SCP. The counter wraps to zero when it exceeds it maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ssf totalTssfTimeouts (totTssfTimeouts)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of Tssf timeouts for this *Ssf* component. The timeout period is specified by the *ssfTimer* attribute of the *Sgsn Gsc* component. The counter wraps to zero when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ssf totalDefaultGprsHandlings (totDefHand)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of times the SSF (Service Switching Function) detected an error and had to refer to the Default Gprs Handing field of the related mobile's CAMEL Subscriber Information (CSI) to determine whether to continue or fail the PDP (Packet Data Protocol) Context. If this counter is rapidly increasing, the *totalProtocolErrors* and *totalNoCopFailures* attributes can be examined for information about why the Default Gprs Handling field is so often referenced. The counter wraps to zero when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ssf totalProtocolErrors (totProtoErr)

Access	Read: All Write: Illegal

Description	This attribute counts the total number of protocol errors detected in CAP (CAMEL Application Part) messages from the SCP (Service Control Point). If this counter is rapidly increasing, there may be a mismatch in the protocol version being used by the SCP and the version being used by the SGSN. The counter wraps to zero when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ssf totalNoCopFailures (totNoCopFail)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of PDP (Packet Data Protocol) Contexts that have failed because an IRAU (Inter Routing Area Updates) occurred when the Change Of Position (COP) trigger was not in the TDP (Trigger Detection Point) list of the subscriber for which the PDP Context was requested. If this value is rapidly increasing, it may indicate that roaming should be disabled for CAMEL users or that Camel Subscriber Information (CSI) is not properly specified in the HLR for some users. The counter wraps to zero when it exceeds its maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc Ssf WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.

Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Ssf customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ssf customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Ssf customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberControl

Values Decimal (0..4294967295)

Default No default

COLLECTED STATS UsgsnSubscriberControl ServiceSwitchingFunction

Description The statistics record generated by the UsgsnSubscriberControl ServiceSwitchingFunction component.

ATTRIBUTE Usc Ssf pdpContextsRedirected (pdpRedir)

Description This attribute indicates the number of PDP (Packet Data Protocol) Contexts that have been redirected to a different APN (Access Point Name) by an SCP (Service Control Point) during the collection interval.

If this attribute is continuously reporting a high value during each collection interval, the operator may want to examine the network configuration to determine why so many PDP contexts are being redirected. It is possible that the current network configuration is not optimal and that the SCP is redirecting PDP contexts to avoid undesirable or expensive network access paths.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ssf attemptedCamelDialogues (attDialogues)

Description This attribute indicates the total number of CAMEL dialogues that this *Ssf* component has attempted to establish during the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ssf unsuccessfulCamelDialogues (unsuccDialogues)

Description This attribute indicates the total number of unsuccessful CAMEL dialogues establishment attempts caused by errors or reject messages received from an SCP during the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ssf totalTssfTimeouts (totTssfTimeouts)

Description: This attribute indicates the total number of Tssf timeouts during the collection interval. The timeout period is specified by the *ssfTimer* attribute of the *Sgsn Gsc* component.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Ssf totalDefaultGprsHandlings (totDefHand)

Description: This attribute indicates the number of times during the collection interval the SSF (Service Switching Function) detected an error and had to refer to the Default Gprs Handing field of the related mobile's CAMEL Subscriber Information (CSI) to determine whether to continue or fail the PDP (Packet Data Protocol) Context.

If this attribute is continuously reporting a high value during each collection interval, the *totalProtocolErrors* and *totalNoCopFailures* attributes can be examined for information about why the Default Gprs Handling field is so often referenced.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Ssf totalProtocolErrors (totProtoErr)

Description: This attribute indicates the total number of protocol errors detected in CAP (CAMEL Application Part) messages from an SCP (Service Control Point) during the collection interval.

If this attribute is continuously reporting a high number of errors during each collection interval, there may be a mismatch in the protocol version being used by the SCP and the version being used by the SGSN.

Values: Decimal (0..4294967295)

ATTRIBUTE Usc Ssf totalNoCopFailures (totNoCopFail)

Description: This attribute indicates the total number of PDP (Packet Data Protocol) Contexts that have failed during the collection interval because an IRAU (Inter Routing Area Updates) occurred when the Change Of Position (COP) trigger was not in the TDP (Trigger Detection Point) list of the subscriber for which the PDP

Context was requested.

If this attribute is continuously reporting a high number of errors during each collection interval, it may indicate that roaming should be disabled for CAMEL users or that Camel Subscriber Information (CSI) is not properly specified in the HLR for some users.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Ssf currentCamelDialogues (currDialogues)

Description This attribute indicates the number of CAMEL dialogues active at the end of the collection interval.

Values Decimal (0..4294967295)

COMPONENT Usc LocationServices (Lcs)

Groups "GROUP Usc Lcs WlcLcsProv (Prov)"
"GROUP Usc Lcs UmtsLcsProv (UmtsProv)"
"GROUP Usc Lcs OsiState (State)"
"GROUP Usc Lcs WlcLcsOper (Oper)"
"GROUP Usc Lcs UmtsLcsOper (UmtsOper)"

"COLLECTED STATS UsgsnSubscriberControl LocationServices"

Scope Application

Description *Usc/n LocationServices*

This component represents the *LocationServices* functionality of the *UmtsSubscriberControl (Usc)* component. The LCS functions include LCS coordination, managing the location request, and authorization and operation of the LCS services. LCS furnishes its clients with information about the physical location of a mobile terminal. This positioning information is typically used for value-added services, charging, law enforcement, or emergency services.

The LCS function is not available for all LCS-enabled

subscribers until the audit represented by the *Usc/n Hlrc RefreshAudit* component has completed.

Mib: UsgsnSubscriberControl

Common Verbs:
Help
List
Display
Add
DELete

GROUP Usc Lcs WlcLcsProv (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the *LocationServices* component.

Mib: UsgsnSubscriberControl

ATTRIBUTE Usc Lcs maxLcsSubscribers (maxLcsSubs)

Access: Read: All
Write: All

Description: This attribute specifies the maximum number of subscribers that can have Location Services capabilities.

When this attribute is set to a lower value, the new value will not take effect until the card is reset.

This attribute value must be less than or equal to the value specified by the *maxAttachedSubscribers* attribute.

Mib: UsgsnSubscriberControl

Values: Decimal (1..1000000)

Default: No default

ATTRIBUTE Usc Lcs privacyProfileAlarmsThreshold (priProfileThreshold)

Access: Read: All
Write: All

Description	This attribute specifies the percentage threshold at which the warning PrivacyProfileUsage alarm is set. The memory for storing the privacy profile information is allocated based on the value of the *maxLcsSubscribers* attribute. A SET major PrivacyProfileUsage alarm is set when the memory usage for privacy profile information reaches 100%. This alarm is cleared when the usage drops by 5%. A SET warning PrivacyProfileUsage alarm is set when the memory usage for privacy profile information reaches the value of the *privacyProfileAlarmsThreshold* attribute. This alarm is cleared when the usage drops by 5% below the value of the *privacyProfileAlarmsThreshold* attribute.
Mib	UsgsnSubscriberControl
Values	Decimal (50..95)
Units	%
Default	90

ATTRIBUTE Usc Lcs maxCurrentTransactions (maxlcsTrans)

Access	Read: All Write: All
Description	This attribute specifies the number of maximum Location Services (LCS) subscribers that can concurrently use the LCS functionality on the SGSN/USGSN. When this attribute is set to a lower value, the new value will not take effect until the card is reset. This attribute value must be less than or equal to the value specified by *maxLcsSubscribers* attribute.
Mib	UsgsnSubscriberControl
Values	Decimal (1..1000000)
Default	No default

ATTRIBUTE Usc Lcs lcsContextAlarmsThreshold (lcsContextThreshold)

Access	Read: All Write: All
Description	This attribute specifies the percentage threshold at which the warning LcsContextUsage alarm is set. The memory for storing the location services context information is allocated based on the value of the *maxCurrentTransactions* attribute. A SET major LcsContextUsage alarm is set when the memory usage for location services context information reaches 100%. This alarm is cleared when the usage drops by 5%. A SET warning LcsContextUsage alarm is set when the memory usage for location services context information reaches the value of the *lcsContextAlarmsThreshold* attribute. This alarm is cleared when the usage drops by 5% below the value of the *lcsContextAlarmsThreshold* attribute.
Mib	UsgsnSubscriberControl
Values	Decimal (50..95)
Units	%
Default	90

ATTRIBUTE Usc Lcs maxLcsExternalClientBlocks (maxlcsExtClientBk)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of memory blocks used for storing lists of external clients in the Subscriber Location Privacy Profiles. Each block holds data for up to five external clients. A minimum of one block is needed per list (session related or session unrelated) per Location Services (LCS) subscriber. When this attribute is set to a lower value, the new value will not take effect until the card is reset.

	This attribute value must be less than or equal to 14 times the value specified by the *maxLcsSubscribers* attribute.
Mib	UsgsnSubscriberControl
Values	Decimal (1..14000000)
Default	No default

ATTRIBUTE Usc Lcs externalClientAlarmsThreshold (extClientThreshold)

Access	Read: All Write: All
Description	This attribute specifies the percentage threshold at which the warning ExternalClientUsage alarm is set. The memory for storing the external client index information is allocated based on the value of the *maxLcsExternalClientBlocks* attribute. A SET major ExternalClientUsage alarm is set when the memory usage for external client index information reaches 100%. This alarm is cleared when the usage drops by 5%. A SET warning ExternalClientUsage alarm is set when the memory usage for external client index information reaches the value of the *externalClientAlarmsThreshold* attribute. This alarm is cleared when the usage drops by 5% below the value of the *externalClientAlarmsThreshold* attribute.
Mib	UsgsnSubscriberControl
Values	Decimal (50..95)
Units	%
Default	90

GROUP Usc Lcs UmtsLcsProv (UmtsProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *LocationServices* component of the *UmtsSubscriberControl* component.

Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Lcs locationReportTimer (tLcsr)

Access	Read: All Write: All
Description	This attribute specifies the amount of time Location Services waits for the Radio Network Controller (RNC) to respond to a location request. The timer is started when the Location Reporting Control message is sent to the RNC. The expiries of this timer are counted by the attribute *lcsReportExpiries*. This attribute must be set to the same value for all the *Location Services* components on the same shelf.
Mib	UsgsnSubscriberControl
Values	Decimal (3..60)
Units	seconds
Default	11

ATTRIBUTE Usc Lcs locationNotifyTimer (tLcsn)

Access	Read: All Write: All
Description	This attribute specifies the amount of time Location Services waits for the Mobile Subscriber (MS) to respond to a Location Notification message. The timer is started when the Location Notification message is sent to the MS. The expiries of this timer are counted by the attribute *lcsNotifyExpiries*.

	This attribute must be set to the same value for all the *Location Services* components on the same shelf.
Mib	UsgsnSubscriberControl
Values	Decimal (10..20)
Units	seconds
Default	10

GROUP Usc Lcs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Lcs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	UsgsnSubscriberControl
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Usc Lcs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	UsgsnSubscriberControl
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Usc Lcs usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	UsgsnSubscriberControl
Values	idle active (activ) busy
Default	idle

GROUP Usc Lcs WlcLcsOper (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *LocationServices* component.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Lcs lcsCurrentEnabledSubscribers (enabledSubs)

Access	Read: All Write: Illegal
Description	This attribute indicates the current number of location services enabled subscribers.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsCurrentTransactions (currentTrans)

Access	Read: All Write: Illegal
Description	This attribute indicates the current number of location transactions that are being processed.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsCurrentExternalClientBlocks (currentExtClientBks)

Access	Read: All Write: Illegal
Description	This attribute indicates the current number of external client blocks that are being utilized for storing the external client index information.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsMtRequests (mtReq)

Access	Read: All Write: Illegal
Description	This attribute counts the total mobile terminated location requests. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsMtFailures (mtFail)

Access	Read: All Write: Illegal
Description	This attribute counts the total unsuccessful mobile terminated location requests. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsPagingRequests (pagingReq)

Access	Read: All Write: Illegal
Description	This attribute counts the total paging requests sent by the *LocationServices* component. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsPagingFailures (pagingFail)

Access	Read: All Write: Illegal
Description	This attribute counts the total unsuccessful paging requests sent by the *LocationServices* component. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsRequestTypeNotSupported (reqTypeNotSupp)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to a requested location that is not supported. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Usc Lcs lcsDataMissing (dataMiss)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to missing information. For example, Imsi or Msisdn is missing in the location request message. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsSubscriberNotAttached (subNotAttach)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to the subscriber not currently attached. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsUnauthorizedGmlc (unauthGmlc)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to location requests messages received from an unauthorized Gateway Mobile Location Center. The counter wraps to 0 when it exceeds the maximum value.

Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsUnauthorizedClient (unauthClient)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to location requests messages received from an unauthorized client. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsServiceBusy (servBusy)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to another location request already in progress for the same subscriber. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsNotificationNotPossible (notifyNotPossible)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to the reason that it is impossible to send a notification message to the

	mobile. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsGadShapeNotSupported (gadShapeNotSupp)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to the obtained location estimates using a Geographical Area Description (GAD) shape, that is not supported in the Location Request message. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsInterrupted (interrupted)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to information received from the Radio Network Controller (RNC) showing that the Location Services (LCS) entity has been interrupted. For example, LCS can be interrupted by an Inter-SGSN Routing Area Update (IRAU). The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsQosNotAttained (qosNotAttained)

Access	Read: All Write: Illegal
Description	This attribute counts the total failed location requests due to the quality of service information not matching the requested quality of service in the Provide Subscriber Location (PSL) message from the Gateway Mobile Location Center (GMLC). The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

GROUP Usc Lcs UmtsLcsOper (UmtsOper)

Properties	Operational
Description	This group contains the operational attributes for the *LocationServices* component of the *UmtsSubscriberControl* component.
Mib	UsgsnSubscriberControl

ATTRIBUTE Usc Lcs lcsNotificationRequests (notifyRequest)

Access	Read: All Write: Illegal
Description	This attribute counts the total notification requests to the mobile subscribers. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsNotificationFailures (notifyFail)

Access	Read: All Write: Illegal
Description	This attribute counts the total unsuccessful notification requests to the mobile subscribers. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsReportExpiries (reportExpiries)

Access	Read: All Write: Illegal
Description	This attribute counts the timer expiries associated with the *locationReportTimer* attribute. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usc Lcs lcsNotifyExpiries (notifyExpiries)

Access	Read: All Write: Illegal
Description	This attribute counts the timer expiries associated with the *locationNotifyTimer* attribute. The counter wraps to 0 when it exceeds the maximum value.
Mib	UsgsnSubscriberControl
Values	Decimal (0..4294967295)

Default No default

ATTRIBUTE Usc Lcs lcsClientDeniedByMs (deniedByMs)

Access Read: All
Write: Illegal

Description This attribute counts the location requests that are failed due to the subscriber denying the request.

The counter wraps to 0 when it exceeds the maximum value.

Mib UsgsnSubscriberControl

Values Decimal (0..4294967295)

Default No default

ATTRIBUTE Usc Lcs lcsRncPositioningFailure (rncPosFail)

Access Read: All
Write: Illegal

Description This attribute counts the total failed location requests due to the Radio Network Controller (RNC) failing to determine the location of the subscriber.

The counter wraps to 0 when it exceeds the maximum value.

Mib UsgsnSubscriberControl

Values Decimal (0..4294967295)

Default No default

COLLECTED STATS UsgsnSubscriberControl LocationServices

Description The statistics record generated by the UsgsnSubscriberControl LocationServices component.

ATTRIBUTE Usc Lcs lcsMaxCurrentEnabledSubscribers (maxEnabledSubs)

Description This attribute indicates the current number of location services enabled subscribers.

The value reported is the peak value for the duration of the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsMtRequests (mtReq)

Description This attribute counts the total mobile terminated location requests.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsMtFailures (mtFail)

Description This attribute counts the total unsuccessful mobile terminated location requests.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsPagingRequests (pagingReq)

Description This attribute counts the total paging requests sent by the *LocationServices* component.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsPagingFailures (pagingFail)

Description This attribute counts the total unsuccessful paging requests sent by the *LocationServices* component.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsRequestTypeNotSupported (reqTypeNotSupp)

Description This attribute counts the total failed location requests due to a requested location that is not supported.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsDataMissing (dataMiss)

Description This attribute counts the total failed location requests due to missing information. For example, Imsi or Msisdn is missing in the location request message.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsSubscriberNotAttached (subNotAttach)

Description This attribute counts the total failed location requests due to the subscriber not currently attached.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsUnauthorizedGmlc (unauthGmlc)

Description This attribute counts the total failed location requests due to location requests messages received from an unauthorized Gateway Mobile Location Center.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsUnauthorizedClient (unauthClient)

Description This attribute counts the total failed location requests due to location requests messages received from an unauthorized client.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsServiceBusy (servBusy)

Description	This attribute counts the total failed location requests due to another location request already in progress for the same subscriber. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsNotificationNotPossible (notifyNotPossible)

Description	This attribute counts the total failed location requests due to the reason that it is impossible to send a notification message to the mobile. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsGadShapeNotSupported (gadShapeNotSupp)

Description	This attribute counts the total failed location requests due to the obtained location estimates using a Geographical Area Description (GAD) shape that are not supported in the Location Request message. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsInterrupted (interrupted)

Description	This attribute counts the total failed location requests due to information received from the Radio Network Controller (RNC) showing that the Location Services (LCS) entity has been interrupted. For example, LCS can be interrupted by an Inter-SGSN Routing Area Update (IRAU). The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsQosNotAttained (qosNotAttained)

Description — This attribute counts the total failed location requests due to the quality of service information not matching the requested quality of service in the Provide Subscriber Location (PSL) message from the Gateway Mobile Location Center (GMLC).

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsNotificationRequests (notifyRequest)

Description — This attribute counts the total notification requests to the mobile subscribers.

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsNotificationFailures (notifyFail)

Description — This attribute counts the total unsuccessful notification requests to the mobile subscribers.

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsReportExpiries (reportExpiries)

Description — This attribute counts the timer expiries associated with the *locationReportTimer* attribute.

The counter counts the events in the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsNotifyExpiries (notifyExpiries)

Description — This attribute counts the timer expiries associated with the *locationNotifyTimer* attribute.

The counter counts the events in the collection interval.

Values	Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsClientDeniedByMs (deniedByMs)

Description	This attribute counts the location requests that fail due to the subscriber denying the request. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usc Lcs lcsRncPositioningFailure (rncPosFail)

Description	This attribute counts the total failed location requests due to the Radio Network Controller (RNC) failing to determine the location of the subscriber. The counter counts the events in the collection interval.
Values	Decimal (0..4294967295)

Nortel Networks Multiservice Switch 7400/15000/20000

Component Usc

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Usd

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Usd

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Chapter 1 COMPONENT UsgsnSubscriberDatapath (Usd)

Instance	Decimal (1..15)
Groups	"GROUP Usd Provisioned (Prov)" "GROUP Usd OsiState (State)" "GROUP Usd Stats" "GROUP Usd WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS UsgsnSubscriberDatapath"

Scope	Application
Description	*UsgsnSubscriberDatapath/n* This component represents the data path layers of the UMTS Subscriber GPRS Support Node (USGSN).

	Only one instance of this component can be provisioned on an LP.
Mib	UsgsnSubscriberDatapath
Subcomponents	"COMPONENT Usd GtpUserPlane (GtpU)"
Dyn. Subcomp.	"COMPONENT Usd RemoteApplicationConnection (RaConn)" "COMPONENT Usd TieredSubscription (Ts)" "COMPONENT Usd InternationalMobileSubscriberId (Imsi)" "COMPONENT Usd DifferentiatedService (Ds)"
Common Verbs	Help List Display Add DELete

GROUP Usd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of this component.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor that the *UmtsSubscriberDataPath (Usd)* component and its subcomponents are provisioned on. Changing the value of this attribute will cause the card to be reset and all outstanding transactions will be affected.
Mib	UsgsnSubscriberDatapath
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Usd maxActiveSessions (maxSc)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the maximum number of active session contexts allowed for this instance of *UmtsSubscriberDataPath (Usd)* component. Changing the value of this attribute will cause the card to be reset and all outstanding transactions will be affected. The current number of active sessions allowed is indicated by the attribute *currentActiveSessions.*
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..300000)
Default	15000

GROUP Usd OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	UsgsnSubscriberDatapath
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Usd operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	UsgsnSubscriberDatapath
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Usd usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	UsgsnSubscriberDatapath
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Usd availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present.

The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***.

The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***.

The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***.

The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***.

The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: UsgsnSubscriberDatapath

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Usd proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	UsgsnSubscriberDatapath
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Usd controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics. The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is

unlocked.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	UsgsnSubscriberDatapath
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Usd alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently being repaired. The *operationalState* is ***enabled*** or ***disabled***. The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***. The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: UsgsnSubscriberDatapath

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Usd standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

	The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.
Mib	UsgsnSubscriberDatapath
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Usd unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	UsgsnSubscriberDatapath
Values	false true
Default	false

GROUP Usd Stats

Properties	Operational
Description	This group contains the statistical attributes of the *Usd/n* component.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd currentActiveSessions (currActSess)

Access	Read: All Write: Illegal

Description	This attribute indicates the current number of active session contexts for this instance of *UmtsSubscriberDataPath (Usd).* The maximum number of active sessions allowed is provisioned in the attribute *maxActiveSessions.*
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..6000000)
Default	No default

ATTRIBUTE Usd pdusToUtran

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) sent to the UMTS Terrestrial Radio Access Network (UTRAN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd pdusFromUtran

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) received from the UMTS Terrestrial Radio Access Network (UTRAN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd pdusToNetwork (pdusToNwk)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS Tunneling Protocol (GTP-U) Protocol Data Units (PDUs) transmitted to the Gateway GPRS Support Node (GGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd pdusFromNetwork (pdusFromNwk)

Access	Read: All Write: Illegal
Description	This attribute counts the GPRS Tunneling Protocol (GTP-U) Protocol Data Units (PDUs) received from the Gateway GPRS Support Node (GGSN). This includes PDUs counted in the attribute *discardedPdus.* The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd discardedPdus (discPdus)

Access	Read: All Write: Illegal
Description	This attribute counts the discarded Protocol Data Units (PDUs) received from the GPRS Support Nodes (GSNs) or UMTS Terrestrial Radio Access Network (UTRAN). This includes packets dropped due to GPRS Tunneling Protocol (GTP-U)

	protocol errors, packets received with no currently linked session context, packets received without a path to send them or packets dropped due to the Tiered Subscription feature policing downlink data. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

GROUP Usd WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS UsgsnSubscriberDatapath

Description	The statistics record generated by the UsgsnSubscriberDatapath component.

ATTRIBUTE Usd currentActiveSessions (currActSess)

Description	This attribute indicates the current number of active session contexts allowed for this instance of *UmtsSubscriberDataPath (Usd)* over the collection interval.
Values	Decimal (0..6000000)

ATTRIBUTE Usd pdusToUtran

Description	This attribute indicates the number of Protocol Data Units (PDUs) sent to the UMTS Terrestrial Radio Access Network (UTRAN) over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usd pdusFromUtran

Description	This attribute indicates the number of Protocol Data Units (PDUs) received from the UMTS Terrestrial Radio Access Network (UTRAN) over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usd pdusToNetwork (pdusToNwk)

Description	This attribute indicates the number of GPRS Tunneling Protocol User Plane (GTP-U) Protocol Data Units (PDU) transmitted to the Gateway GPRS Support Node (GGSN) over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usd pdusFromNetwork (pdusFromNwk)

Description	This attribute indicates the number of GPRS Tunneling Protocol User Plane (GTP-U) Protocol Data Units (PDU) received from the Gateway GPRS Support Node (GGSN) over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usd discardedPdus (discPdus)

Description	This attribute indicates the number of discarded Protocol Data Units (PDUs) received from the GPRS Support Nodes (GSNs) or UMTS Terrestrial Radio Access Network (UTRAN). This includes packets dropped due to GPRS Tunneling Protocol (GTP-U) protocol errors, packets received with no currently linked session context, packets received without a path to send them or packets dropped due to the Tiered Subscription feature policing downlink data. The counter counts events in the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Usd RemoteApplicationConnection (RaConn)

Instance	appType [String (1..8, ASCII)] shelfId [Decimal (0..15)] n [Decimal (1..15)]
Groups	"GROUP Usd RaConn OsiState (State)" "GROUP Usd RaConn WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*... RemoteApplicationConnection/<appType, shelfId, n>* This component represents the Remote Application Connection information of an application that talks to applications on other shelves. For each application that it can communicate with, one of these connection components is created and is instantiated with the name of the remote application, the Id of the shelf on which the application runs, and the instance number of the application. ShelfId ***0*** represents the Master shelf.
Mib	UsgsnSubscriberDatapath
Dyn. Subcomp.	"COMPONENT Usd RaConn AtmConnection (AtmCon)"
Common Verbs	Help List Display

GROUP Usd RaConn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd RaConn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	UsgsnSubscriberDatapath
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Usd RaConn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: UsgsnSubscriberDatapath

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Usd RaConn usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: UsgsnSubscriberDatapath

Values: idle
active (activ)
busy

Default: idle

GROUP Usd RaConn WlcCustomCounters (WlcCustomCntr)

Properties: Operational

Description: This group contains the spare counters that can be dynamically patched.

Mib: UsgsnSubscriberDatapath

ATTRIBUTE Usd RaConn customCounter1 (customCntr1)

Access: Read: All
Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd RaConn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd RaConn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Usd RaConn AtmConnection (AtmCon)

Groups	"GROUP Usd RaConn AtmCon Operational (Oper)"

Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	UsgsnSubscriberDatapath
Common Verbs	Help List Display

GROUP Usd RaConn AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd RaConn AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	UsgsnSubscriberDatapath
Values	The name of the component
Default	No default

COMPONENT Usd TieredSubscription (Ts)

Groups	"GROUP Usd Ts Statistics (Stats)" "GROUP Usd Ts WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS UsgsnSubscriberDatapath TieredSubscription"

Scope	Application
Description	*Gsd/n TieredSubscription* *Usd/n TieredSubscription*

	This component represents the differentiated tiers of service on the (UMTS) Serving GPRS Support Node (SGSN or USGSN) per Packet Data Protocol (PDP) context basis for downlink traffic. The maximum average bandwidth associated with each tier is not guaranteed at all times but indicates the upper bound on the average data rate for the service.
Mib	UsgsnSubscriberDatapath
Common Verbs	Help List Display

GROUP Usd Ts Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of this component.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd Ts activePdpCServiced (actPdpCSer)

Access	Read: All Write: Illegal
Description	This attribute indicates the active PDP contexts for each tier. The value is incremented on a PDP context activation for a tier and decremented when a PDP context is deactivated for the tier.
Mib	UsgsnSubscriberDatapath
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)
Default	No default

GROUP Usd Ts WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.

Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd Ts customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Ts customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Ts customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath

Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS UsgsnSubscriberDatapath TieredSubscription

Description	The statistics record generated by the UsgsnSubscriberDatapath TieredSubscription component.

ATTRIBUTE Usd Ts pktsPerTierToMobile (pktsToM)

Description	This attribute counts the number of packets successfully sent by the SGSN or USGSN for each tier in the down link direction in the collection interval.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Usd Ts octetsPerTierToMobile (octToM)

Description	This attribute counts the number of octets successfully sent by the SGSN or USGSN for each tier in the down link direction in the collection interval.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Usd Ts pktsDropped (pktsDr)

Description	This attribute counts the packets dropped by the Tiered Subscription of the SGSN or USGSN for each tier in the collection interval. For example, if the peak throughput for a context is 56kbit/s and there is a burst of downlink data packets exceeding 56kbit/s, then the excess packets will be dropped, and the *pktsDropped* attribute is incremented every time a packet is dropped.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Usd Ts activePdpCServiced (actPdpCSer)

Description	This attribute indicates the current number of PDP contexts that are active for each tier. The value is incremented on a PDP context activation for a tier and decremented when a PDP context is deactivated for the tier. This value reported is the value at the end of the collection interval.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

ATTRIBUTE Usd Ts peakPdpCServiced (peakPdpCSer)

Description	This attribute indicates the maximum number of PDP contexts serviced for the tier during the collection interval. The value is incremented every time *currentPdpCServiced* for that tier exceeds the current value of *peakPdpCServiced* for that tier. It is reset to *currentPdpCServiced* after every data collection.
Vector of	Decimal (0..4294967295)
Index	Decimal (1..9)

COMPONENT Usd GtpUserPlane (GtpU)

Groups	"GROUP Usd GtpU Provisioned (Prov)" "GROUP Usd GtpU WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*UsgsnSubscriberDatapath/n GtpU* This component represents the data traffic part of the GPRS Tunneling Protocol (GTP-U).
Mib	UsgsnSubscriberDatapath
Common Verbs	Help List Display

GROUP Usd GtpU Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *GtpUserPlane* component.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd GtpU networkPortLink (netPort)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the IP Address and the UDP port numbers that the GPRS Tunneling Protocol User Plane (GTP-U) version 0 and version 1 respectively use to communicate with the Gateway GPRS Support Node (GGSN). The IP Address and UDP Port are specified by setting this attribute to link to the correct *Gips/n Ip/<ipaddress> Udp Port/<n>* component. The standards recommend the value of the first member of this list (used by GTP Version 0) to be set to *Gips/n Ip/<ipaddress> Udp Port/3386* The standards recommend the value of the second member of this list (used by GTP Version 1) to be set to *Gips/n Ip/<ipaddress> Udp Port/2152* Changing the value of this attribute will cause the card to be reset and all outstanding transactions will be affected. If the *utranPortLink* attribute is set, the IP address and port specified by this attribute are only used for GGSN traffic. Traffic to the UMTS Terrestrial Radio Access Network (UTRAN) is routed using the IP address and port specified by *utranPortLink*. If the *utranPortLink* attribute is empty, the IP address and port specified by this attribute are used to route all GTP-U traffic

	whether from the UMTS Terrestrial Radio Access Network (UTRAN) or the GGSN.
Mib	UsgsnSubscriberDatapath
List of	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Usd GtpU utranPortLink (utranPort)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the IP Address and the UDP port numbers that the GPRS Tunneling Protocol User Plane (GTP-U) version 0 and version 1 respectively use to communicate with the UMTS Terrestrial Radio Access Network (UTRAN). The IP Address and UDP Port are specified by setting this attribute to link to the correct *Gips/n Ip/<ipaddress> Port Udp/<n>* component. The standards recommend the value of the first member of this list (used by GTP Version 0) to be set to *Gips/n Ip/<ipaddress> Port Udp/3386* The standards recommend the value of the second member of this list (used by GTP Version 1) to be set to *Gips/n Ip/<ipaddress> Port Udp/2152* Changing the value of this attribute will cause the card to be reset and all outstanding transactions will be affected. If this attribute is empty, the IP address and port specified by the *networkPortLink* attribute will be used for communication with the UMTS Terrestrial Radio Access Network (UTRAN).
Mib	UsgsnSubscriberDatapath
List of	Link (Service, linkToApplication)

Default	No default

GROUP Usd GtpU WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd GtpU customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd GtpU customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd GtpU customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Usd InternationalMobileSubscriberId (Imsi)

Instance	BCD (5..15)
Groups	"GROUP Usd Imsi WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*UsgsnSubscriberDatapath/n Imsi* This component represents an instance of a International Mobile Subscriber Identity (IMSI). It contains information about the datapath on a per-IMSI basis. The control path information is represented by the *Usgsn Imsi/n* component. Each instance of this component is indexed by the IMSI of the mobile subscriber. A list of all current *Imsi* instances is not possible, but it is possible to display a certain instance of *Imsi*.
Mib	UsgsnSubscriberDatapath
Dyn. Subcomp.	"COMPONENT Usd Imsi SessionContext (Sc)"
Common Verbs	Help List Display

GROUP Usd Imsi WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd Imsi customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Imsi customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Imsi customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)

Default	No default

COMPONENT Usd Imsi SessionContext (Sc)

Instance	Decimal (1..15)
Groups	"GROUP Usd Imsi Sc Stats" "GROUP Usd Imsi Sc WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Usd/n Imsi/<imsi> SessionContext/<nsapi>* This component represents the datapath session context information of a subscriber being serviced by this *Usd.* An instance of this component is created for each activated Packet Data Protocol (PDP) context of a subscriber.
Mib	UsgsnSubscriberDatapath
Common Verbs	Help List Display

GROUP Usd Imsi Sc Stats

Properties	Operational
Description	This group contains the statistical attributes of this component.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd Imsi Sc uplinkOctetsToNetwork (upOctsToNwk)

Access	Read: All Write: Illegal
Description	This attribute counts the uplink octets sent from this *UmtsSubscriberDataPath (Usd)* to the Network (GGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberDatapath

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Imsi Sc downlinkOctetsToUtran (dlOctsToUtran)

Access	Read: All Write: Illegal
Description	This attribute counts the downlink octets sent from this *UmtsSubscriberDataPath (Usd)* to the UMTS Terrestrial Radio Access Network (UTRAN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Imsi Sc pdusToUtran

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) sent to the UMTS Terrestrial Radio Access Network (UTRAN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Imsi Sc pdusFromUtran

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDUs) received from the UMTS Terrestrial Radio Access Network (UTRAN). The counter wraps to zero when it exceeds the maximum value.

Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Imsi Sc pdusToNetwork (pdusToNwk)

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Units (PDU) sent to the Network (GGSN). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Imsi Sc pdusFromNetwork (pdusFromNwk)

Access	Read: All Write: Illegal
Description	This attribute counts the Protocol Data Unit (PDU) received from the Network (GSNs). The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Imsi Sc discardedPdus (discPdus)

Access	Read: All Write: Illegal
Description	This attribute counts the discarded Protocol Data Units (PDUs) received from the GPRS Support Nodes (GSNs) or UMTS Terrestrial Radio Access Network (UTRAN). This includes

	packets dropped due to GPRS Tunneling Protocol (GTP-U) protocol errors, packets received without a path to send them or packets dropped due to the Tiered Subscription feature policing downlink data. The counter wraps to zero when it exceeds the maximum value.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

GROUP Usd Imsi Sc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd Imsi Sc customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Imsi Sc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Imsi Sc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Usd DifferentiatedService (Ds)

Groups	"GROUP Usd Ds WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Gsd*/n DifferentiatedService *Usd/n* DifferentiatedService This component represents the differentiated service (OQS) on the (UMTS or GPRS) Subscriber Data (GSD or USD) that governs the behavior of packets and contexts that pass through

	this node. This component is a logical container for statistical attributes based on the differentiated services levels
Mib	UsgsnSubscriberDatapath
Dyn. Subcomp.	"COMPONENT Usd Ds AllocationRetention (Ar)"
Common Verbs	Help List Display

GROUP Usd Ds WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd Ds customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Ds customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Ds customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Usd Ds AllocationRetention (Ar)

Instance	Decimal (1..3)
Groups	"GROUP Usd Ds Ar WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Usd Ds AllocRetention/<alloc retention priority>* *Gsd Ds AllocRetention/<alloc retention priority>* This component represents the allocation retention priority of the subscriber data traffic. The instance value of this component indicates the allocation retention priority.
Mib	UsgsnSubscriberDatapath
Dyn. Subcomp.	"COMPONENT Usd Ds Ar TrafficClass (Tc)"
Common Verbs	Help List Display

GROUP Usd Ds Ar WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd Ds Ar customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Ds Ar customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Ds Ar customCounter3 (customCntr3)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Usd Ds Ar TrafficClass (Tc)

Instance	conversational (conv) streaming (strm) interactive (int) background (bkgr)
Groups	"GROUP Usd Ds Ar Tc Statistics (Stats)" "GROUP Usd Ds Ar Tc WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS UsgsnSubscriberDatapath DifferentiatedService AllocationRetention TrafficClass"

Scope	Application
Description	*Usd Ds Ar/<alloc retention priority> TrafficClass/<traffic class>* *Gsd Ds Ar/<alloc retention priority> TrafficClass/<traffic class>* This component represents the traffic class of the data traffic. The instance value of this component can be one of the following: Conversational, Background, Interactive, Streaming.
Mib	UsgsnSubscriberDatapath
Common Verbs	Help List Display

GROUP Usd Ds Ar Tc Statistics (Stats)

Properties	Operational

Description	This group contains the statistical attributes of this component.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd Ds Ar Tc dsUplink

Access	Read: All Write: Illegal
Description	This attribute counts the number of octets transferred uplink for the allocation retention priority and traffic class represented by this component over the collection interval.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Ds Ar Tc dsDownlink

Access	Read: All Write: Illegal
Description	This attribute countes the number of octets transferred downlink for the allocation retention priority and traffic class represented by this component.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

GROUP Usd Ds Ar Tc WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UsgsnSubscriberDatapath

ATTRIBUTE Usd Ds Ar Tc customCounter1 (customCntr1)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Ds Ar Tc customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usd Ds Ar Tc customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UsgsnSubscriberDatapath
Values	Decimal (0..4294967295)
Default	No default

Default	COLLECTED STATS UsgsnSubscriberDatapath DifferentiatedService AllocationRetention TrafficClass
Description	The statistics record generated by the UsgsnSubscriberDatapath DifferentiatedService AllocationRetention TrafficClass component.

ATTRIBUTE Usd Ds Ar Tc dsUplink

Description	This attribute indicates the number of octets transferred uplink for the allocation retention priority and traffic class represented by this component over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Usd Ds Ar Tc dsDownlink

Description	This attribute indicates the number of octets transferred downlink for the allocation retention priority and traffic class represented by this component.
Values	Decimal (0..4294967295)

Nortel Networks Multiservice Switch 7400/15000/20000

Component Usd

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Usgsn

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Component Usgsn

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COMPONENT UmtsServingGprsSupportNode (Usgsn)

Groups	"GROUP Usgsn Provisioned (Prov)" "GROUP Usgsn VolumeCounts (Vc)" "GROUP Usgsn Operational (Oper)" "GROUP Usgsn OsiState (State)"
Scope	Application
Description	*UmtsServingGprsSupportNode* This component represents the UMTS Serving GPRS Support Node (USGSN) functionality. It contains the common provisioning data for all the USGSN features on this shelf. If the USGSN spans multiple shelves, each shelf will have to be provisioned separately. It is strongly recommended that the provisioning for each shelf be

	done the same way so that the behavior of the network at any given time does not depend on which shelf is handling the traffic.
Mib	UmtsServingGprsSupportNode
Subcomponents	"COMPONENT Usgsn Shelf (Sh)" "COMPONENT Usgsn DnsAgent (DnsAg)"
Opt. Subcomp.	"COMPONENT Usgsn UmtsSubscriberControl (Usc)" "COMPONENT Usgsn TieredSubscription (Ts)" "COMPONENT Usgsn PlmnImsiEntry (PlmnImsi)" "COMPONENT Usgsn MobileCountryCode (Mcc)" "COMPONENT Usgsn DifferentiatedService (Ds)" "COMPONENT Usgsn EquivalentPlmn (EquivPlmn)" "COMPONENT Usgsn SubscriberClass (SubsClass)"
Dyn. Subcomp.	"COMPONENT Usgsn InternationalMobileSubscriberId (Imsi)"
Common Verbs	Help List Display Add DELete

GROUP Usgsn Provisioned (Prov)

Properties	Provisioned
Description	This group contains general provisioning data for *UmtsServingGprsSupportNode (Usgsn)* including Software Optionality Control (SOC).
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn networkOpId (nwOpId)

Access	Read: All Write: All
Description	This attribute specifies the Network Operator Identity, used to identify the operator. This attribute is used by the Lawful Interception functionality.
Mib	UmtsServingGprsSupportNode

Values	String (1..37, ASCII)
Default	No default

ATTRIBUTE Usgsn maxSubscribers (maxSubs)

Access	Read: All Write: All
Description	This attribute specifies the total number of ‘UMTS-Attached’ subscribers this Umts Serving GPRS Support Node (USGSN) can support simultaneously. It does this by limiting the total of all the individual *maxAttachedSubscribers* attribute in all the *UmtsSubscriberControl (Usc)* components. The sum of the ‘maxAttachedSubscribers’ values of all ‘Usc’ instances should be less than or equal to the value of this attribute. For example, if this USGSN has two FP *UmtsSubscriberControl* provisioned, the first *UmtsSubscriberControl* provisioned to support ***5000*** subscribers and the second to support ***2500*** subscribers, this attribute must be provisioned with a value of ***7500*** or greater. The value of this attribute cannot be greater than the number authorized by the access code. The access code (attribute *maxSubsAccessCode*) is unique for each USGSN. Please contact your local Nortel Networks Customer Service representative for more information. The current number of ‘UMTS-Attached’ subscribers can be obtained from the sum of the *currentlyAttached* attribute defined in the *Usc UscGprsMobilityManagement* component for all the *Usc* instances.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1000..5000000)
Default	1000

ATTRIBUTE Usgsn maxSubsAccessCode (mSubsCode)

Access	Read: All Write: All

Description	This attribute specifies the access code that allows the *maxSubscribers* attribute to be changed to a higher value. The access code must be obtained from an authorized Nortel Networks representative. Each UMTS Serving GPRS Support Node (USGSN) requires a unique access code for each and every increase to the *maxSubscribers* attribute.
Mib	UmtsServingGprsSupportNode
Values	BCD (0..18)
Default	No default

ATTRIBUTE Usgsn longMncMccs (longMnc)

Access	Read: All Write: All
Description	This attribute specifies which Mobile Country Codes (MCC) use a three digit Mobile Network Code (MNC). All MCCs not in this list are assumed to use a two digit MNC. This information is used to construct an APN-Operator Identity in the format mnc<MNC digits>.mcc<MCC digits>.gprs for APN translations during DNS queries. An operator would need to add entries to this list, if he has roamers from another PLMN with 3 digit MNCs for whom he needs to do APN translations.
Mib	UmtsServingGprsSupportNode
List of	BCD (3)
Default	No default

GROUP Usgsn VolumeCounts (Vc)

Properties	Provisioned
Description	This group contains provisionable attributes for the *UmtsServingGprsSupportNode (Usgsn)* component to provide traffic volume control.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn tariffTimeChangeTrigger (ttcTrig)

Access	Read: All Write: All
Description	This attribute specifies whether Tariff Time Change Trigger (TTCT) feature is ***enabled*** or ***disabled***. When enabled, SGSN Accounting Server closes existing Change of Charging Condition containers and opens new containers in SGSN Packet Data Protocol (PDP) Call Detail Records (S-CDRs) to indicate to the down stream billing device that a Tariff Time Change event has occurred. This enables the down stream billing system to use different billing rates for different time containers. TTCT relies on Time of Day Accounting (TODA) for provisioning the tariff periods. Both the SGSN Accounting Server and the Subscriber Data applications register with TODA for notification of tariff time changes. When the *tariffTimeChangeTrigger* attribute is enabled, the *collectionTimes* attribute (defined in the *Collector/Accounting* component) must not specify more than 6 periods with no period closer than 4 hours.
Mib	UmtsServingGprsSupportNode
Values	disabled enabled
Default	disabled

ATTRIBUTE Usgsn dataVolumeLimit (dvl)

Access	Read: All Write: All
Description	This attribute specifies when partial SGSN Packet Data Protocol (PDP) Call Detail Records (S-CDRs) are generated with a partial record reason of “data volume limit” based upon the number of combined uplink and downlink kilobytes that have been transferred by the active session. If this attribute is set to ***disabled***, then a default value of 2

	gigabytes for the volume limit is used to trigger the generation of partial S-CDRs.
Mib	UmtsServingGprsSupportNode
Values	Decimal (128..5120) disabled
Units	kbyte
Default	disabled

GROUP Usgsn Operational (Oper)

Properties	Operational
Description	This group contains operational attributes for this component.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn currentImsiMasks (imsiMasks)

Access	Read: All Write: Illegal
Description	This attribute counts the total number of *ImsiMask* components currently provisioned on the Serving GPRS Support Node (SGSN or USGSN).
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..500)
Default	No default

GROUP Usgsn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	UmtsServingGprsSupportNode
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Usgsn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	UmtsServingGprsSupportNode
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Usgsn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	UmtsServingGprsSupportNode
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Usgsn availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: UmtsServingGprsSupportNode

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Usgsn proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	UmtsServingGprsSupportNode
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Usgsn controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	UmtsServingGprsSupportNode
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Usgsn alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently

being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: UmtsServingGprsSupportNode

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Usgsn standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	UmtsServingGprsSupportNode
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Usgsn unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	UmtsServingGprsSupportNode
Values	false true
Default	false

COMPONENT Usgsn Shelf (Sh)

Groups	"GROUP Usgsn Sh Provisioned (Prov)"
Scope	Application
Description	*Usgsn Shelf* This component represents a shelf in a Multi Shelf USGSN configuration. The *Shelf* component is the control entity for a passport shelf and for a network of shelves. A shelf in a multishelf configuration is either a Master or a Slave shelf. Only one shelf can be provisioned as a master shelf. A master shelf is one that has at least one *ConnectionToSlave* component provisioned. A slave shelf is one that has the *ConnectionToMaster* component provisioned.
Mib	UmtsServingGprsSupportNode
Opt. Subcomp.	"COMPONENT Usgsn Sh ConnectionToMaster (ConM)" "COMPONENT Usgsn Sh ConnectionToSlave (ConS)"
Common Verbs	Help List Display

GROUP Usgsn Sh Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioning data of the *Shelf (Sh)* component.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Sh atmLocalEsi (atmEsi)

Access	Read: All Write: All

Description	This attribute specifies the End System Identifier (ESI) of the ATM NSAP address used by this shelf. The full ATM address is constructed by prepending the *nodeprefix* (taken from the *ModuleData* component) to the *atmLocalEsi*.
Mib	UmtsServingGprsSupportNode
Values	String (14, ASCII)
Default	No default

COMPONENT Usgsn Sh ConnectionToMaster (ConM)

Groups	"GROUP Usgsn Sh ConM Provisioned (ConM)" "GROUP Usgsn Sh ConM WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Sh ConnectionToMaster* *Usgsn Sh ConnectionToMaster* This component represents a Slave shelf in a Multi Shelf SGSN configuration. This component is provisioned with the ATM Address (NSAP) of the Master Nodal Manager.
Mib	UmtsServingGprsSupportNode
Dyn. Subcomp.	"COMPONENT Usgsn Sh ConM AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete

GROUP Usgsn Sh ConM Provisioned (ConM)

Properties	Provisioned
Description	This group contains the *Shelf (Sh)* provisioning data for the slave shelf.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Sh ConM masterAddress (mAddr)

Access	Read: All Write: All
Criticality	Module
Description	This attribute specifies the full ATM NSAP Address of the Master shelf. It is constructed by prepending the *nodeprefix* (taken from the *ModuleData* component) to the *atmLocalEsi* (taken from the *Sgsn Shelf* component) of the Master Shelf. Changing the value of this attribute causes a system reload on the shelf.
Mib	UmtsServingGprsSupportNode
Values	String (40, NativeAESANsapAddress)
Default	No default

GROUP Usgsn Sh ConM WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Sh ConM customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usgsn Sh ConM customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usgsn Sh ConM customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Usgsn Sh ConM AtmConnection (AtmCon)

Groups	"GROUP Usgsn Sh ConM AtmCon Operational (Oper)"
Scope	Device

Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	UmtsServingGprsSupportNode
Common Verbs	Help List Display

GROUP Usgsn Sh ConM AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Sh ConM AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	UmtsServingGprsSupportNode
Values	The name of the component
Default	No default

COMPONENT Usgsn Sh ConnectionToSlave (ConS)

Instance	Decimal (1..15)
Groups	"GROUP Usgsn Sh ConS Provisioned (ConS)" "GROUP Usgsn Sh ConS WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	*Sgsn Sh ConnectionToSlave/n* *Usgsn Sh ConnectionToSlave/n*

	This component represents a Master shelf in a Multi Shelf SGSN configuration. This component is provisioned with the ATM Address (NSAP) of all Slave Nodal Managers. The instance value of this component is used as the Shelf Id.
Mib	UmtsServingGprsSupportNode
Dyn. Subcomp.	"COMPONENT Usgsn Sh ConS AtmConnection (AtmCon)"
Common Verbs	Help List Display Add DELete

GROUP Usgsn Sh ConS Provisioned (ConS)

Properties	Provisioned
Description	This group contains the *Shelf (Sh)* provisioning data for the Master shelf.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Sh ConS slaveAddress (sAddr)

Access	Read: All Write: All
Description	This attribute specifies the ATM NSAP Address of the Nodal Manager (NM) of the Remote Slave shelf. It is constructed by prepending the *nodeprefix* (taken from the *ModuleData* component) to the *atmLocalEsi* (taken from the *Sgsn Shelf* component) of this Slave Shelf.
Mib	UmtsServingGprsSupportNode
Values	String (40, NativeAESANsapAddress)
Default	No default

GROUP Usgsn Sh ConS WlcCustomCounters (WlcCustomCntr)

Properties	Operational

Description	This group contains the spare counters that can be dynamically patched.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Sh ConS customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usgsn Sh ConS customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usgsn Sh ConS customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Usgsn Sh ConS AtmConnection (AtmCon)

Groups	"GROUP Usgsn Sh ConS AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	UmtsServingGprsSupportNode
Common Verbs	Help List Display

GROUP Usgsn Sh ConS AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Sh ConS AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	UmtsServingGprsSupportNode
Values	The name of the component
Default	No default

COMPONENT Usgsn DnsAgent (DnsAg)

Groups	"GROUP Usgsn DnsAg Provisioned (Prov)"
Scope	Application
Description	*Sgsn DnsAgent* This component represents the Domain Name System (DNS) Agent.
Mib	UmtsServingGprsSupportNode
Opt. Subcomp.	"COMPONENT Usgsn DnsAg StaticCacheEntry (Static)"
Common Verbs	Help List Display

GROUP Usgsn DnsAg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the *DnsAgent* provisioning data of the Serving GPRS Support Node (SGSN).
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn DnsAg retryTimer (tRetry)

Access	Read: All Write: All
Description	This attribute specifies how long the *DnsAgent* waits for a response from a Domain Name System (DNS) Server following the initial query. Intervals for subsequent retries if required, are computed using an algorithm based on this attribute. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (2..20)

Units	seconds
Default	5

ATTRIBUTE Usgsn DnsAg maxRetries (nRetry)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of retries for a Domain Name System (DNS) query. After *maxRetries* expiry, if there is no response from the DNS Server, the *DnsAgent* sends an error indication to the application.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..5)
Default	2

ATTRIBUTE Usgsn DnsAg refreshTime (tRefresh)

Access	Read: All Write: All
Description	This attribute specifies how often a Domain Name System (DNS) cache table entries are refreshed. After the timer expires for a given entry, the next client query for that entry's Logical Name causes the DNS Name Server to be queried again to update the Logical Name information.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..14400)
Units	minutes
Default	10080

ATTRIBUTE Usgsn DnsAg staleIpAddressReuse (staleIpReuse)

Access	Read: All Write: All
Description	This attribute specifies whether the last stale Internet Protocol (IP) address for a given Access Point Name (APN) is reused by

the *DnsAgent* component when all Domain Name System (DNS) query retries fail.

If a value of ***enabled*** is specified, the *DnsAgent* cache table is not emptied even if the *DnsAgent refreshTime* or *ttl* attribute values have expired for the cache entries. If all DNS query retries fail, the last dynamic entry in the *DnsAgent* cache table is reused. If a value of ***disabled*** is specified, the *DnsAgent* cache table behavior is unaffected.

Mib	UmtsServingGprsSupportNode
Values	disabled enabled
Default	disabled

COMPONENT Usgsn DnsAg StaticCacheEntry (Static)

Instance	virtualRouter (vr) [String (1..8, ASCII)] entryNum [Decimal (0..1000)]
Groups	"GROUP Usgsn DnsAg Static Provisioned (Prov)"
Scope	Application
Description	*Sgsn DnsAg StaticCacheEntry/<vr>,n*

This component represents a Logical Name-IP Address mapping entry for the Serving GPRS Support Node (SGSN) in GPRS. An instance of this component is provisioned if a static Domain Name System (DNS) mapping is required.

Mib	UmtsServingGprsSupportNode
Common Verbs	Help List Display Add DELete

GROUP Usgsn DnsAg Static Provisioned (Prov)

Properties	Provisioned
Description	This group contains a Logical Name-IP Address mapping entry for the Serving GPRS Support Node (SGSN) in GPRS.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn DnsAg Static logicalName (lName)

Access	Read: All Write: All
Description	This attribute specifies the Logical Name for this static entry.
Mib	UmtsServingGprsSupportNode
Values	String (1..253, ASCII)
Default	No default

ATTRIBUTE Usgsn DnsAg Static mappedIpAddr (ipAddr)

Access	Read: All Write: All
Description	This attribute specifies the IP addresses corresponding to a given Logical Name. One Logical Name can have up to ten IP addresses mapped to it. The order of the addresses is not important; successive queries of the Logical Name return the IP addresses in a round robin fashion. This attribute must not specify the address ‘0.0.0.0’ or any address ending in ‘255’.
Mib	UmtsServingGprsSupportNode
List of	IP address
List Size	10
Default	No default

COMPONENT Usgsn UmtsSubscriberControl (Usc)

Groups	"GROUP Usgsn Usc SessionManagement (Sm)" "GROUP Usgsn Usc GprsMobilityManagement (Gmm)" "GROUP Usgsn Usc GtpC" "GROUP Usgsn Usc HlrCache (HlrC)" "GROUP Usgsn Usc MapClientProv (Mc)" "GROUP Usgsn Usc Gsn" "GROUP Usgsn Usc SsfGlobalProv (Ssf)" "GROUP Usgsn Usc MobileSubscriberPurge (MsPurge)"
Scope	Application
Description	*Usgsn/n UmtsSubscriberControl* This component represents the control path layers of the UMTS Serving GPRS Support Node (USGSN).
Mib	UmtsServingGprsSupportNode
Common Verbs	Help List Display Add DELete

GROUP Usgsn Usc SessionManagement (Sm)

Properties	Provisioned
Description	This group contains the common provisionable attributes for the Session Management protocol layer of the UMTS Serving GPRS Support Node (USGSN) on this shelf.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Usc nwkPdpDeactTimer (t3395)

Access	Read: All Write: All
Description	This attribute specifies the timer value used in the UMTS Serving GPRS Support Node (USGSN) or in the Gateway GPRS Support Node (GGSN) initiated Packet Data Protocol (PDP) Context

	Deactivation procedures. This timer is started when a DEACTIVATE PDP CONTEXT REQUEST message is sent to the Mobile Station (MS) and is stopped when a DEACTIVATE PDP CONTEXT ACCEPT message is received from the MS. If this timer expires before the receipt of a DEACTIVATE PDP CONTEXT ACCEPT message, the USGSN or GGSN initiated PDP Context deactivation procedure is retried for a maximum of *nwkPdpDeactRetries.* The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..255)
Units	seconds
Default	8

ATTRIBUTE Usgsn Usc nwkPdpDeactRetries (n3395)

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the timer *nwkPdpDeactTimer(t3395)* expires during a UMTS Serving GPRS Support Node (USGSN) or Gateway GPRS Support Node (GGSN)-initiated PDP Context Deactivation procedure.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4)
Default	4

ATTRIBUTE Usgsn Usc defApnOperatorId (defApnOp)

Access	Read: All Write: All

Description	This attribute specifies the default Access Point Name (APN) Operator Identifier for this Public Land Mobile Network (PLMN). It is a fully qualified domain name according to the Domain Name System (DNS) naming conventions and consists of three labels (that is, <DNS-label>.<DNS-label>.gprs). It is expected that the operator uses this attribute to fill in a human-readable format of the APN Operator Identifier (that is, an APN Operator Identifier not in the mnc<*MNC* digits>.mcc<*MCC* digits>.gprs format). The selected APN Operator identifier for a particular session can be displayed as part of the *selectedApnOperatorId* attribute (defined in the component *Usgsn Imsi/n SessionContext)*.
Mib	UmtsServingGprsSupportNode
Values	String (1..37, ASCII)
Default	No default

ATTRIBUTE Usgsn Usc nwkPdpModifyTimer (t3386)

Access	Read: All Write: All
Description	This attribute specifies the timer value used in the UMTS Serving GPRS Support Node (USGSN) or in the Gateway GPRS Support Node (GGSN) initiated Packet Data Protocol (PDP) Context Modification procedures. This timer is started when a MODIFY PDP CONTEXT REQUEST message is sent to the Mobile Station (MS) and is stopped when a MODIFY PDP CONTEXT ACCEPT message is received from the MS. If this timer expires before the receipt of a MODIFY PDP CONTEXT ACCEPT message, the USGSN or GGSN initiated PDP Context modification procedure is retried for a maximum of *nwkPdpModifyRetries.* The timer must be provisioned to a value that is greater than the

	maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..255)
Units	seconds
Default	8

ATTRIBUTE Usgsn Usc nwkPdpModifyRetries (n3386)

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the timer *nwkPdpModifyTimer(t3386)* expires during a UMTS Serving GPRS Support Node (USGSN) or Gateway GPRS Support Node (GGSN)-initiated PDP Context Modification procedure.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4)
Default	4

ATTRIBUTE Usgsn Usc tRabAssgtTimer

Access	Read: All Write: All
Description	This attribute specifies the timer value used in the Radio Access Bearer (RAB) Assignment Request procedures. This timer is started when a RAB ASSIGNMENT REQUEST message is sent to the Radio Network Controller (RNC) and is stopped when a RAB ASSIGNMENT ACCEPT message is received from the RNC. If this timer expires before the receipt of a RAB ASSIGNMENT ACCEPT message, the USGSN or GGSN initiated RAB Assignment procedure is retried for a maximum of *tRabAssgtRetries.*

	The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..50)
Units	seconds
Default	4

ATTRIBUTE Usgsn Usc tRabAssgtRetries

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the timer *tRabAssgtTimer* expires during a Radio Access Bearer (RAB) Assignment Request procedure.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..5)
Default	1

ATTRIBUTE Usgsn Usc defApnNetworkId (defApnNwk)

Access	Read: All Write: All
Description	This attribute specifies the default Access Point Name (APN) Network Identifier for the Packet Data Protocol (PDP) types like X.25, IP and PPP. The operator fills in the default network identifiers for each of these types, in the following manner: x25 <string for X.25 address > ip <string for IP address> ppp <string for PPP address>. The address used to identify the GGSN depends on which of these types of network is being connected to. Each of the strings is a label (for example “corporation”) or a set

of labels separated by dots, which is a fully qualified domain name according to the Domain Name System (DNS) naming conventions (for example, "company.com"). Only alphanumeric characters and ‘-’ character are allowed in the label.

The *defApnNetworkId* must not start with the strings “.”, “-”, “*rnc*”, "*rac*", "*lac*" or "*sgsn*" and it must not end in ".gprs". It must also not take the value "*". In order to guarantee uniqueness of the APN Network Identifier across all GPRS PLMNs, an APN Network Identifier containing more than one label corresponds to an Internet domain name. This name must only be allocated by the Public Land Mobile Network (PLMN) to an organization that has officially reserved this name in the Internet domain. Other types of APN Network Identifiers are not guaranteed to be unique within the GPRS PLMN(s).

This *defApnNetworkId* is used if the Mobile Station (MS) does not send the APN Network Identifier as part of the ACTIVATE PDP CONTEXT REQUEST and if its subscription record received from the HLR has a wildcard (*) APN. If the *defApnNetworkId* is not entered in such a case, the ACTIVATE PDP CONTEXT REQUEST message is rejected.

The selected APN Network Identifier for a particular session can be displayed as part of the *apnNetworkIdentifier* attribute (defined in *Usgsn Imsi/<imsi> SessionContext).*

Mib	UmtsServingGprsSupportNode
Vector of	String (1..63, ASCII)
Index	x25 ip ppp
Default	No default

GROUP Usgsn Usc GprsMobilityManagement (Gmm)

Properties	Provisioned

Description	This group contains the common provisionable attributes for the GPRS Mobility Management protocol layer of the UMTS Serving GPRS Support Node (USGSN) on this shelf.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Usc resetTimer (t12)

Access	Read: All Write: All
Description	This attribute specifies the reset timer used for a *UmtsSubscriberControl (Usc)*. This timer is started when an FP on which a *Usc* component is provisioned comes up. During the reset timer period, the USC is considered to have recently experienced a restart, and the GPRS Mobility Management (GMM) ignores and discards messages from the mobile (except ATTACH Requests and ROUTING AREA UPDATE Requests). If the reset timer has expired, and the mobile subscriber has not performed a subsequent GPRS-Attach, any received messages are considered a protocol violation and responded to with the appropriate reject or a GMM STATUS message, until the mobile performs another GPRS-Attach.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..255)
Units	minutes
Default	No default

ATTRIBUTE Usgsn Usc mobileReachableTimer (tReachable)

Access	Read: All Write: All
Description	This attribute specifies the MOBILE REACHABLE Timer for the GPRS Mobility Management (GMM) state transition. The timer value must be at least four minutes longer than the

longest *periodicRaUpdateTimer (t3312)* (defined in component *Usgsn Mcc/n Mnc/n Lac/n RoutingAreaCode/n).*

The timer is started when the Mobile Station (MS) drops from PMM-CONNECTED state to PMM-IDLE state or when the MS is forced to PMM-IDLE state.

When the timer expires, the USGSN clears the Paging Proceed Flag (PPF) which causes the USGSN to stop paging the MS. The PPF is set when the next activity from the MS is detected. The MM and PDP contexts are kept in the USGSN.

The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).

Mib	UmtsServingGprsSupportNode
Values	Decimal (5..255)
Units	minutes
Default	58

ATTRIBUTE Usgsn Usc pagingTimer (t3313)

Access	Read: All Write: All
Description	This attribute specifies the timer used for the GPRS Paging procedure. Upon expiry of the *pagingTimer*, if the Paging procedure is not completed, the GPRS Paging procedure is restarted for a maximum of *pagingRetries* (n3313). The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..255)

Units	seconds
Default	8

ATTRIBUTE Usgsn Usc pagingRetries (n3313)

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the *pagingTimer (t3313)* expires.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4)
Default	1

ATTRIBUTE Usgsn Usc nwkInitiatedDetachTimer (t3322)

Access	Read: All Write: All
Description	This attribute specifies the timer used in the Network-Initiated Detach procedure. Upon expiry of *nwkInitiatedDetach*Timer, if the Detach procedure is not completed, the Network-Initiated Detach procedure is restarted for a maximum of *nwkInitDetachRetries (n3322)*. If the maximum number of retries is exceeded, the mobile goes to the PMM_DETACHED state. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..255)
Units	seconds
Default	No default

ATTRIBUTE Usgsn Usc nwkInitDetachRetries (n3322)

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the *nwkInitiatedDetachTimer (t3322)* expires.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8)
Default	4

ATTRIBUTE Usgsn Usc idRequestTimer (t3370)

Access	Read: All Write: All
Description	This attribute specifies the timer used in Identification procedure. Upon expiry of the i*dRequestTimer*, if the Identification procedure is not finished, the identification procedure is restarted for a maximum of *idRequestRetries* (n3370). The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..255)
Units	seconds
Default	6

ATTRIBUTE Usgsn Usc idRequestRetries (n3370)

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the *idRequestTimer (t3370)* expires.
Mib	UmtsServingGprsSupportNode

Values	Decimal (0..8)
Default	4

ATTRIBUTE Usgsn Usc ptmsiReallocTimer (t3350)

Access	Read: All Write: All
Description	This attribute specifies the timer used in the Packet-Temporary Mobile Subscriber Identity (P-TMSI) Reallocation procedure. The P-TMSI reallocation procedure can also be performed within the Attach or Routing Area Update procedures, as well. Upon expiry of the *ptmsiReallocTimer*, if the P-TMSI Reallocation procedure is not finished, P-TMSI Reallocation procedure is restarted for a maximum of *ptmsiReallocationRetries (n3350)*.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..255)
Units	seconds
Default	6

ATTRIBUTE Usgsn Usc ptmsiReallocationRetries (n3350)

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the *ptmsiReallocTimer (t3350)* expires.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8)
Default	4

ATTRIBUTE Usgsn Usc authCipheringTimer (t3360)

Access	Read: All Write: All
Description	This attribute specifies the timer used in Authentication and Ciphering procedure. Upon expiry of the *t3360* timer, if the

	Authentication and Ciphering procedure is not finished, this procedure is restarted for a maximum of *authCipheringRetries (n3360).* The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..255)
Units	seconds
Default	6

ATTRIBUTE Usgsn Usc authCipheringRetries (n3360)

Access	Read: All Write: All
Description	This attribute specifies the number of retry attempts after the *authCipheringTimer (t3360)* expires.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8)
Default	4

ATTRIBUTE Usgsn Usc authEvents

Access	Read: All Write: All
Description	This attribute specifies the number, N, which indicates that at every Nth event requiring authentication, the Authentication procedure is initiated with the mobile subscriber. For example, when this value is set to never, the Authentication procedure is never performed, when the value is set to 1, the Authentication procedure is performed every time an event that triggers authentication occurs. The provisioning of any other value N for this attribute indicates

that every Nth event that can be authenticated undergoes this Authentication procedure. This parameter is not per Mobile Station (MS); rather, it is used to count events over all the affected procedures per *UmtsSubscriberControl (Usc).*

Mib: UmtsServingGprsSupportNode

Values: Decimal (1..255)
never

Default: 20

ATTRIBUTE Usgsn Usc subsRegisterRecoveryUpdateTimer (tSubsReg)

Access: Read: All
Write: All

Description: This attribute specifies the maximum recovery delay time used by the UMTS Serving GPRS Support Node (USGSN) to re-create the association between the Home Location Register (HLR), in the case of the HLR Reset, and a Mobile Station (MS). The timer is started on a receipt of a valid MS message following the HLR Reset. When the timer expires the appropriate procedure is initiated by the GPRS Mobility Management (GMM).

The actual timer used is a randomized value less than this value in order to distribute the traffic to HLR after an HLR Reset when a MAP-UPDATE GPRS LOCATION (UGL) is performed.

If the value of this attribute is set to ***0***, the timer is not started.

Mib: UmtsServingGprsSupportNode

Values: Decimal (0..10)

Units: seconds

Default: 5

ATTRIBUTE Usgsn Usc t3TunnelTimer (t3Tunnel)

Access: Read: All
Write: All

Description	This attribute specifies the time that the old USGSN will continue to forward packets to the new USGSN during an Inter SGSN Routing Area Update (IRAU). The timer is started in the old SGSN when it receives a GTP SGSN CONTEXT REQUEST message and there is at least one active Packet Data Protocol (PDP) context. Upon timer expiry, the packets are no longer forwarded to the new USGSN.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..40)
Units	seconds
Default	20

ATTRIBUTE Usgsn Usc iuReleaseTimer (iuRt)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the network waits for an IuReleaseComplete message once the IuReleaseCommand message is sent.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..15)
Units	seconds
Default	5

ATTRIBUTE Usgsn Usc cipheringAlgorithms (ciphAlgo)

Access	Read: All Write: All
Description	This attribute specifies the Ciphering Algorithms supported on this UMTS Serving GPRS Support Node (USGSN) in descending order of preference. The mobile provides a list of the ciphering algorithms it supports to the USGSN. The USGSN compares the mobile provided

values with the values listed in this attribute. The first value provisioned in this attribute that is also in the mobile provided list is chosen as the ciphering algorithm for use in communicating with this mobile.

The possible values for the attribute are:
noCiphering: No Ciphering is used.
geav1: GPRS Encryption Algorithm Version 1.

Mib	UmtsServingGprsSupportNode
Vector of	noCiphering geav1
Index	Decimal (1..2)
Default	(noCiphering, noCiphering)

GROUP Usgsn Usc GtpC

Properties	Provisioned
Description	This group contains the common provisionable attributes for the signalling part of the GPRS Tunneling Protocol layer (GtpC) of the UMTS Serving GPRS Support Node (USGSN) on this shelf.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Usc echoRequest (echoReq)

Access	Read: All Write: All
Description	This attribute specifies if the ECHO REQUEST message is to be sent out for signaling path to the GPRS Support Node (GSN).
Mib	UmtsServingGprsSupportNode
Values	disabled enabled
Default	enabled

ATTRIBUTE Usgsn Usc echoTimeInterval (echoInt)

Access	Read: All Write: All
Description	This attribute specifies the time interval at which ECHO REQUESTS are sent on a signaling path in use from the UMTS Serving GPRS Support Node (USGSN) to the GPRS Support Node (GSN).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..300)
Units	minutes
Default	2

ATTRIBUTE Usgsn Usc pathHistoryExpireTimeInterval (pathHistExpInt)

Access	Read: All Write: All
Description	This attribute specifies time interval at which the path history is reset. When the value is set to ***disabled,*** it is never reset.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..300) disabled
Units	minutes
Default	10

ATTRIBUTE Usgsn Usc gtpV0Version (gtpVer)

Access	Read: All Write: All
Description	This attribute specifies the version of 3GPP specification 09.60 GPRS Tunnelling Protocol (GTP) across the Gn and Gp interfaces that the UMTS Serving GPRS Support Node (USGSN) is compliant with. This attribute is applicable only to GTP version 0, which is used

if the Release 99 compliant GTP version 1 cannot be negotiated with a neighboring Gprs Support Node (GSN). This attribute is important for network operators because USGSNs that support v7.6 cannot perform Inter USGSN Routing Area Updates (IRAUs) with USGSNs that support version v7.3 due to non-backwards compatible changes present in the GTP specification.

If the value of this attribute is set to ***ver7-3,*** this USGSN supports version 7.3 of 09.60 and can perform IRAUs with other USGSNs supporting this same version of the specification.

If the value of this attribute is set to ***ver7-6***, this USGSN supports version 7.6 of 09.60 and can perform IRAUs with other USGSNs supporting this same version of the specification.

Mib: UmtsServingGprsSupportNode

Values: ver7-3
ver7-6

Default: ver7-6

ATTRIBUTE Usgsn Usc n3CreateRequest (n3CrReq)

Access: Read: All
Write: All

Description: This attribute specifies the number of times that the UMTS Serving GPRS Support Node (USGSN), will attempt to send the CREATE PDP CONTEXT REQUEST message to a Gateway GPRS Support Node (GGSN). It is recommended that the total wait time (specified by the *n3CreateRequest* attribute and the *t3CreateResponse* attribute) is to be shorter than the Mobile Station (MS) wait time between retries of the Session Management (SM) ACTIVATE PDP CONTEXT REQUEST message.

Mib: UmtsServingGprsSupportNode

Values: Decimal (1..10)

Default: 5

ATTRIBUTE Usgsn Usc t3CreateResponse (t3CrResp)

Access	Read: All Write: All
Description	This attribute specifies the time that a UMTS Serving GPRS Support Node (USGSN) will wait for a response to the CREATE PDP CONTEXT REQUEST message. It is recommended that the total wait time (specified by the *n3CreateRequest* attribute and the *t3CreateResponse* attribute) is to be shorter than the Mobile Station (MS) wait time between retries of the Session Management (SM) ACTIVATE PDP CONTEXT REQUEST message. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU) from this USGSN to any Gateway GPRS Support Node (GGSN).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..30)
Units	seconds
Default	5

ATTRIBUTE Usgsn Usc n3DeleteRequest (n3DelReq)

Access	Read: All Write: All
Description	This attribute specifies the number of times that the UMTS Serving GPRS Support Node (USGSN), will attempt to send the DELETE PDP CONTEXT REQUEST message to the Gateway GPRS Support Node (GGSN). It is recommended that the total wait time (specified by the *n3DeleteRequest* attribute and the *t3DeleteResponse* attribute) is to be shorter than the Mobile Station (MS) wait time between retries of the Session Management (SM) DEACTIVATE PDP CONTEXT REQUEST messages.
Mib	UmtsServingGprsSupportNode

Values	Decimal (1..10)
Default	2

ATTRIBUTE Usgsn Usc t3DeleteResponse (t3DelResp)

Access	Read: All Write: All
Description	This attribute specifies the time that a UMTS Serving GPRS Support Node (USGSN) will wait for the Gateway GPRS Support Node (GGSN) to respond to a DELETE PDP CONTEXT REQUEST message. It is recommended that the total wait time (specified by the *n3DeleteRequest* attribute and the *t3DeleteResponse* attribute) is to be shorter than the Mobile Station (MS) wait time between retries of the Session Management (SM) DEACTIVATE PDP CONTEXT REQUEST messages. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..30)
Units	seconds
Default	5

ATTRIBUTE Usgsn Usc n3EchoRequest (n3EcReq)

Access	Read: All Write: All
Description	This attribute specifies the number of times that the UMTS Serving GPRS Support Node (USGSN), will attempt to send the ECHO REQUEST message to the Gateway GPRS Support Node (GGSN).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..10)

Default	5

ATTRIBUTE Usgsn Usc t3EchoResponse (t3EcResp)

Access	Read: All Write: All
Description	This attribute specifies the time that a UMTS Serving GPRS Support Node (USGSN) will wait for the Gateway GPRS Support Node (GGSN) to respond to an ECHO REQUEST message. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (5..600)
Units	seconds
Default	60

ATTRIBUTE Usgsn Usc n3SgsnContextRequestOrResponse (n3CntxtReqResp)

Access	Read: All Write: All
Description	This attribute specifies the number of times that the UMTS Serving GPRS Support Node (USGSN) will attempt to send the SGSN CONTEXT REQUEST message while the Mobile Station (MS) is undergoing an Inter-SGSN Routing Area Update (IRAU). This attribute also specifies the number of times that the USGSN will attempt to send the SGSN CONTEXT RESPONSE message in response to a received SGSN CONTEXT REQUEST.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..20)
Default	2

ATTRIBUTE Usgsn Usc t3SgsnContextResponseOrAck (t3CntxtRespAck)

Access	Read: All Write: All
Description	This attributes specifies the time that this UMTS Serving GPRS Support Node (USGSN) will wait for a response to the SGSN CONTEXT REQUEST message while the Mobile Station (MS) is undergoing an Inter-SGSN Routing Area Update (IRAU). This attribute also specifies the time that the USGSN will wait for a response to the SGSN CONTEXT RESPONSE message. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..20)
Units	seconds
Default	5

ATTRIBUTE Usgsn Usc n3UpdateRequest (n3UpdateReq)

Access	Read: All Write: All
Description	This attribute specifies the number of times that this UMTS Serving GPRS Support Node (USGSN), while acting as the new USGSN, will attempt to send an UPDATE PDP CONTEXT REQUEST message to the Gateway GPRS Support Node (GGSN) while the Mobile Station (MS) is undergoing an Inter-SGSN Routing Area Update (IRAU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..20)
Default	1

ATTRIBUTE Usgsn Usc t3UpdateResponse (t3UpdateResp)

Access	Read: All Write: All
Description	This attributes specifies the time that this UMTS Serving GPRS Support Node (USGSN), while acting as the new USGSN, will wait for the Gateway GPRS Support Node (GGSN) to respond to the UPDATE PDP CONTEXT REQUEST message while the Mobile Station (MS) is undergoing an Inter-SGSN Routing Area Update (IRAU). The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..20)
Units	seconds
Default	4

ATTRIBUTE Usgsn Usc n3IdRequest

Access	Read: All Write: All
Description	This attribute specifies the number of times that the UMTS Serving GPRS Support Node (USGSN) will attempt to send an ID REQUEST message.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..10)
Default	1

ATTRIBUTE Usgsn Usc t3IdResponse

Access	Read: All Write: All
Description	This attribute specifies the time a UMTS Serving GPRS Support Node will wait for a response to the ID REQUEST message.

Mib	UmtsServingGprsSupportNode
Values	Decimal (1..20)
Units	seconds
Default	3

GROUP Usgsn Usc HlrCache (HlrC)

Properties	Provisioned
Description	This group contains the common provisionable attributes for all the *UmtsSubscriberControl/n HlrCache* instances on this shelf.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Usc authTripletsReuse (authTrip)

Access	Read: All Write: All
Description	This attribute specifies the number of times an Authentication Triplet can be reused when authenticating a subscriber. The reuse of the Authentication Triplets is done only in abnormal situations, when new triplets cannot be received from the Home Location Register (HLR) due to connectivity breakdown between the UMTS Serving GPRS Support Node (USGSN) and the HLR.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..5000)
Default	5000

GROUP Usgsn Usc MapClientProv (Mc)

Properties	Provisioned
Description	This group contains the common provisionable attributes for the *MapClient* subcomponents of *UmtsSubscriberControl* on the FPs. The *MapClient* subcomponent provides Mobile Application Part (MAP) over SS7 to interact with the Home Location Register (HLR) via the SS7-IP Gateway.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Usc mcTimer (tMc)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the *MapClient* allows for a response from the Home Location Register (HLR). The timer is started when messages MAP-SEND AUTHENTICATION INFO, stand-alone MAP-INSERT SUBSCRIBER DATA, MAP-UPDATE GPRS LOCATION, MAP-PURGE MS, or READY-FOR-SMS are sent to the HLR. The timer must be provisioned to a value that is greater than the maximum expected round trip delay of a Protocol Data Unit (PDU) and greater than the longest timer provisioned in the *MapStack* component for messages sent to the HLR.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..32)
Units	seconds
Default	27

ATTRIBUTE Usgsn Usc uglRetries (nUgl)

Access	Read: All Write: All
Description	This attribute specifies the times the Serving GPRS Support Node (SGSN) can send the MAP-UPDATE GPRS LOCATION to the Home Location Register (HLR) upon no reception of the MAP-UPDATE GPRS LOCATION ACK.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4)
Default	1

ATTRIBUTE Usgsn Usc saiRetries (nSai)

Access	Read: All Write: All

Description	This attribute specifies the times the Serving GPRS Support Node (SGSN) can send the MAP-SEND AUTHENTICATION INFO to the Home Location Register (HLR) upon no reception of the MAP-SEND AUTHENTICATION INFO ACK.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4)
Default	1

ATTRIBUTE Usgsn Usc afrRetries (nAfr)

Access	Read: All Write: All
Description	This attribute specifies the times the Serving GPRS Support Node (SGSN) can send the MAP Authentication Failure Report to the Home Location Register (HLR) upon no reception of the MAP Authentication Failure Report Acknowledge.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4)
Default	1

ATTRIBUTE Usgsn Usc mcFallbackTimer (tFbMc)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the MAP Client allows to reset the MAP Client Fallback Table. The Fallback Table is used by the MAP Client to track the messaging version supported by each Home Location Register (HLR). If the *mcFallbackTimer* attribute changes or the timer expires, the Fallback Table is deleted and the messaging version is renegotiated with each HLR. The timer is also restarted with either the existing timeout value if the timer expired or the modified value if the value was modified. If the timer is set to ***disabled***, the timer is not started and the Fallback Table is not deleted. Message version renegotiation with

	the HLR does not take place until the timer is set to a value other than ***disabled***.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..365) disabled
Units	days
Default	30

ATTRIBUTE Usgsn Usc mscEmulationMode (mscEmMode)

Access	Read: All Write: All
Description	This attribute specifies whether the SGSN should emulate an MSC when messaging with the Short Message Service Center (SMSC). Currently the MAP specification requires that the MSC SSN be used in the Calling Party Address (CgPA) when the SGSN addresses an entity that does not support inter-working with the SGSN. When this attribute is set to ***on***, the SGSN emulates an MSC when messaging with the SMSC. The SMSC is either the Short Message Service Interworking MSC (SMS-IWMSC) or the Short Message Service Gateway MSC (SWS-GMSC). When this attribute is set to ***off***, the SGSN's SSN is used when messaging with the SMSC.
Mib	UmtsServingGprsSupportNode
Values	off on
Default	off

ATTRIBUTE Usgsn Usc mscSubsystemNumber (mscSubsysNum)

Access	Read: All Write: All

Description	This attribute specifies the MAP SGSN SubSystem Number (SSN). This SSN is only used if the *mscEmulationMode* attribute is set to ***on***. Otherwise this attribute is ignored. If this attribute is changed after the MAP Client has registered with the MAP Stack, any outstanding MAP transactions will be lost.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..255)
Default	8

GROUP Usgsn Usc Gsn

Properties	Provisioned
Description	This group contains the common provisionable attributes for all of the UmtsSubscirberContro/n Gsn instances on this shelf.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Usc maxIncomingRequests (maxInReq)

Access	Read: All Write: All
Description	This attribute specifies the maximum number of outstanding incoming Gn requests. Increasing the value causes more memory to be allocated for these requests.
Mib	UmtsServingGprsSupportNode
Values	Decimal (10..1000)
Default	100

GROUP Usgsn Usc SsfGlobalProv (Ssf)

Properties	Provisioned
Description	This group contains general provisioning data for all *Ssf* components on the shelf.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Usc tssfTimer (tssf)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the SSF will wait for an SCP response while in the Waiting for Instructions state. Each new CAP (CAMEL Application Part) message from an SCP stops the Tssf timer. The timer is started when the SSF enters the Waiting for Instructions state. If a response is not received in the amount of time specified by this attribute, the SSF will give up and use the Default GPRS Handling field of the related mobile's CAMEL Subscriber Info (CSI) to determine the appropriate action to take.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..20)
Units	seconds
Default	3

ATTRIBUTE Usgsn Usc ssfChargingGuardTimer (ssfCGuardTimer)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the SSF will wait for a reply from an SCP once an ApplyChargingReportGPRS CAP message has been sent and successfully received by the SCP. Valid responses from the SCP are the ApplyCharging, ReleaseGPRS or CancelGPRS messages. If a response if not received in the amount of time specified by this attribute, the SSF will give up and used the Default GPRS Handling field of the related mobile's CAMEL Subscriber Info (CSI) to determine the appropriate action to take. This attribute also specifies the amount of time the SSF will wait for a reply from an SCP indicating that one of the following SGSN initiated messages has been received: ApplyChargingReportGPRS, EventReportGPRS, EntityReleasedGPRS, and InitialDPGPRS.

	If an acknowledgement is not received from the SCP in the amount of time specified by this attribute for any of the messages listed above, the message is sent again to the SCP. The SSF will continue to retransmit the previous CAP message after each timeout until the number of consecutive timeouts reaches the value specified by the *ssfCGuardRetryAtt* attribute. If the maximum number of timeouts is reached, the SSF will give up and use the DefaultGprsHandling field of the related mobile's CAMEL Subscriber Info (CSI) to determine the appropriate action to take.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..20)
Units	seconds
Default	3

ATTRIBUTE Usgsn Usc ssfTcapStackRegistrationTimer (ssfTcapRegTmr)

Access	Read: All Write: All
Description	This attribute specifies the amount of time the SSF will wait for a registration response from the TCAP Stack after sending a registration request. If the timer expires, the SSF sends another registration request. The SSF continues to send registration requests whenever the timer expires until registration is successful.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..60)
Units	seconds
Default	10

ATTRIBUTE Usgsn Usc ssfChargingGuardRetryAttempts (ssfCGuardRetryAtt)

Access	Read: All Write: All

Description	This attribute specifies the maximum number of retry attempts after the *ssfChargingGuardTimer* expires.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..5)
Default	0

ATTRIBUTE Usgsn Usc ssfCgpaRoutingIndicator (ssfCgpaRtInd)

Access	Read: All Write: All
Description	This attribute specifies the SCCP routing indicator used for SGSN Calling Party Addresses (CgPA). Two methods are supported. ***globalTitle***- CAP subsystem sets the CgPA routing Indicator to route on Global Title and supplies Global Title information. ***pointCode*** - CAP subsystem sets the CgPA routing Indicator to route on Point Code and supplies the Subsystem Number and Point Code in the CgPA.
Mib	UmtsServingGprsSupportNode
Values	globalTitle (gt) pointCode (pc)
Default	globalTitle

ATTRIBUTE Usgsn Usc ssfCapSsn (ssfSsn)

Access	Read: All Write: All
Description	This attribute specifies the CAP (CAMEL Application Part) SGSN SubSystem Number (SSN). This SSN is used by SCCP for subsystem routing. The value of this attribute must match the value the corresponding subsystem number specified on the SS7 IP Gateway (SIG).
Mib	UmtsServingGprsSupportNode

Values	Decimal (1..255)
Default	146

ATTRIBUTE Usgsn Usc ssfRoamerService (ssfRoamServ)

Access	Read: All Write: All
Description	This attribute specifies if CAMEL roaming subscribers are supported. If *ssfRoamerService* is set to ***disabled*** and a CAMEL subscriber roams into an area served by this SGSN, active PDP (Packet Data Protocol) contexts are dropped and new contexts cannot be created. If *ssfRoamerService* is set to ***enabled*** and a CAMEL subscriber roams into an area served by this SGSN, existing PDP Contexts are maintained and new contexts are created when requested. ***enabled***- enable roamer service, allowing roaming subscribers. ***disabled-*** disable roamer service, refusing roaming subscribers.
Mib	UmtsServingGprsSupportNode
Values	enabled disabled
Default	enabled

ATTRIBUTE Usgsn Usc ssfSupportedCamelPhase (ssfSupportedPhase)

Access	Read: All Write: All
Description	This attribute specifies the highest phase of CAMEL supported by the SGSN or USGSN. If ***notSupported*** is specified, it indicates to all *Ssf* components that CAMEL is not supported by the network.
Mib	UmtsServingGprsSupportNode

Values	Decimal (3) notSupported
Default	notSupported

GROUP Usgsn Usc MobileSubscriberPurge (MsPurge)

Properties	Provisioned
Description	This group contains provisionable attributes for the Mobile Subscriber (MS) Purge functionality on the (UMTS) Serving GPRS Support Node (USGSN or SGSN).
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Usc msPurgeFunction (msPurgeFunc)

Access	Read: All Write: All
Description	This attribute specifies whether Mobile Subscriber Purge function is enabled or disabled. If this attribute is set to ***disabled,*** then no purge shall be sent out of the (UMTS) Serving GPRS Support Node (USGSN or SGSN).
Mib	UmtsServingGprsSupportNode
Values	disabled enabled
Default	disabled

ATTRIBUTE Usgsn Usc purgeOnExplicitDetach (purgeExplicit)

Access	Read: All Write: All
Description	This attribute specifies whether Mobile Subscribers are purged immediately upon an explicit detach. The *msPurgeFunction* attribute must be set to ***enabled*** for this attribute to have an effect.
Mib	UmtsServingGprsSupportNode

Values	disabled enabled
Default	disabled

ATTRIBUTE Usgsn Usc purgeMinimumInactiveMobileAge (purgeMinAge)

Access	Read: All Write: All
Description	This attribute specifies the minimum time that a detached Mobile Subscriber's Data is kept on the (UMTS) Serving GPRS Support Node (USGSN or SGSN). Once a Mobile Subscriber remains detached beyond the specified value, the Mobile Subscriber becomes a candidate for purge during an audit. The *msPurgeFunction* attribute must be set to ***enabled*** for this attribute to have an effect.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..744) disabled
Units	hours
Default	disabled

COMPONENT Usgsn TieredSubscription (Ts)

Groups	"GROUP Usgsn Ts Provisioned (Prov)"
Scope	Application
Description	*Sgsn TieredSubscription* *Usgsn TieredSubscription* This component represents the differentiated tiers of service on the (UMTS) Serving GPRS Support Node (SGSN or USGSN) on a per Packet Data Protocol (PDP) context basis for downlink traffic. The maximum average bandwidth associated with each tier is not guaranteed at all times but indicates the upper bound on

the average data rate for the service. If this component is not provisioned, the data rate for every context will be best effort.

Mib: UmtsServingGprsSupportNode

Common Verbs:
Help
List
Display
Add
DELete

GROUP Usgsn Ts Provisioned (Prov)

Properties: Provisioned

Description: This group contains the *Tiered Subscription (Ts)* provisioning data of the (UMTS) Serving GPRS Support Node (SGSN or USGSN).

Mib: UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Ts roamerTier

Access: Read: All
Write: All

Description: This attribute specifies the peak bit rate (tier) that can be assigned to a PDP context for mobiles that are not in their Home PLMN. Tier 0 through Tier 9 map to peak throughput classes 0 through 9. Peak throughput class 0 represents the subscribed peak throughput class for a PDP context. Peak throughput classes 1 through 9 represent peak bit rates of 8 kbit/s, 16 kbit/s, 32 kbit/s, 64 kbit/s, 128 kbit/s, 256 kbit/s, 512 kbit/s, 1024 kbit/s and 2048 kbit/s respectively. The Tiered Subscription service uses this information during a PDP context activation for a roamer to determine the maximum average throughput for the context.
If the *roamerTier* is provisioned as ***0***, then the peak throughput for the context is the lower of the peak throughput class of the mobile requested QoS and the mobile's subscribed QoS.
If the *roamerTier* is a value between ***1*** and ***9***, then the peak throughput class for the context is the peak throughput associated with that tier.

Mib	UmtsServingGprsSupportNode
Values	0 1 2 3 4 5 6 7 8 9
Default	0

ATTRIBUTE Usgsn Ts averagingWindow (avgWin)

Access	Read: All Write: All
Description	This attribute specifies the size of the averaging window used to compute the average bandwidth used by a PDP context. User traffic is policed per context using the peak throughput rate. In order to police the average peak data rate per context in the down link direction, Tiered Subscription (TS) monitors the amount of data passed over a specified period of time, which is defined by the *averagingWindow*. In other words, the user data rate is throttled in terms of how many bytes are passed over the averaging Window time frame. Tiered Subscription (TS) limits the data transfer to the data rate (bits/s) multiplied by the *averagingWindow* (s). The larger the *averagingWindow*, the more burst size is accommodated.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..10)
Units	seconds
Default	5

COMPONENT Usgsn PlmnImsiEntry (PlmnImsi)

Instance	Decimal (1..1000)
Groups	"GROUP Usgsn PlmnImsi PlmnImsi"
Scope	Application
Description	*Usgsn PlmnImsiEntry/n* This component represents an entry in a table of the International Mobile Subscriber Identity (IMSI) digits ranges. If a particular IMSI has a digit range that does not match any entry in the table, then it does not belong to this Public Land Mobile Network (PLMN).
Mib	UmtsServingGprsSupportNode
Common Verbs	Help List Display Add DELete

GROUP Usgsn PlmnImsi PlmnImsi

Properties	Provisioned
Description	This group contains the Mobile Country Code (MCC), Mobile Network Code (MNC) range for this Public Land Mobile Network (PLMN). All Mobile Stations (MS) whose MCC and MNC do not belong to the current PLMN are considered roamers. The *fromPrefix* and *toPrefix* attributes represent decimal number value ranges that fit the IMSI specification of 15 digits. All digits must be 0 through 9 inclusive. When the *fromPrefix* or the *toPrefix* value is less than 15 digits, the value in attribute *fromPrefix* is always extended with 0's, and the value in attribute *toPrefix* is always extended with 9's. A complete range (*fromPrefix* and *toPrefix* forming a range of IMSI digits) must not overlap any previously entered range.

Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn PlmnImsi fromPrefix (frPrefix)

Access	Read: All Write: All
Description	This attribute specifies the lower limit of the range of the International Mobile Subscriber Identity (IMSI) digits which are considered as home subscribers. The value in attribute *fromPrefix* is always extended with 0's.
Mib	UmtsServingGprsSupportNode
Values	BCD (1..15)
Default	No default

ATTRIBUTE Usgsn PlmnImsi toPrefix

Access	Read: All Write: All
Description	This attribute specifies the upper limit of the range of the International Mobile Subscriber Identity (IMSI) digits which are considered as home subscribers. The value in attribute *toPrefix* is always extended with 9's.
Mib	UmtsServingGprsSupportNode
Values	BCD (1..15)
Default	No default

COMPONENT Usgsn MobileCountryCode (Mcc)

Instance	BCD (3)
Scope	Application
Description	*Usgsn MobileCountryCode/<mcc>* This component represents a Mobile Country Code (MCC)

	supported by the UMTS Serving GPRS Support Node (USGSN). The instance value is the 3 digit MCC.
Mib	UmtsServingGprsSupportNode
Opt. Subcomp.	"COMPONENT Usgsn Mcc MobileNetworkCode (Mnc)"
Common Verbs	Help List Display Add DELete

COMPONENT Usgsn Mcc MobileNetworkCode (Mnc)

Instance	BCD (2..3)
Groups	"GROUP Usgsn Mcc Mnc Provisioned (Prov)"
Scope	Application
Description	*Usgsn Mcc/<mcc> MobileNetworkCode/<mcc>* This component represents a Mobile Network Code (MNC) supported by the UMTS Serving GPRS Support Node (USGSN). The instance value is the 2 or 3 digit MNC.
Mib	UmtsServingGprsSupportNode
Opt. Subcomp.	"COMPONENT Usgsn Mcc Mnc LocationAreaCode (Lac)" "COMPONENT Usgsn Mcc Mnc ImsiMask (ImsiMask)"
Common Verbs	Help List Display Add DELete

GROUP Usgsn Mcc Mnc Provisioned (Prov)

Properties	Provisioned

Description	This group contains the E.212 to E.214 Translation Table provisionable attributes.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Mcc Mnc countryCode (cc)

Access	Read: All Write: All
Description	This attribute specifies a specific country, countries in an integrated number plan, or a specific geographic area as defined by the ITU-T international public telecommunication numbering plan. The associated MCC (Mobile Country Code) gets translated to this CC (Country Code) during a E.212 to E.214 number translation used for global title addressing for the HLR.
Mib	UmtsServingGprsSupportNode
Values	BCD (1..3)
Default	No default

ATTRIBUTE Usgsn Mcc Mnc networkCode (nc)

Access	Read: All Write: All
Description	This attribute specifies the PLMN or HLR within the PLMN as defined by the ITU-T international public telecommunication numbering plan. The associated MNC (Mobile Network Code) gets translated to this NC (Network Code) during a E.212 to E.214 number translation used for global title addressing for the HLR.
Mib	UmtsServingGprsSupportNode
Values	BCD (1..9)
Default	No default

COMPONENT Usgsn Mcc Mnc LocationAreaCode (Lac)

Instance	String (2, Hex)
Scope	Application

Description	*Usgsn Mcc/<mcc> Mnc/<mcc> LocationAreaCode/<lac>* This component represents a Location Area Code (LAC) supported by the UMTS Serving GPRS Support Node (USGSN). The instance value is the 4 digit LAC. At least one *Rac* subcomponent must be provisioned for each *Lac*.
Mib	UmtsServingGprsSupportNode
Opt. Subcomp.	"COMPONENT Usgsn Mcc Mnc Lac RoutingAreaCode (Rac)" "COMPONENT Usgsn Mcc Mnc Lac ImsiMask (ImsiMask)"
Common Verbs	Help List Display Add DELete

COMPONENT Usgsn Mcc Mnc Lac RoutingAreaCode (Rac)

Instance	String (1, Hex)
Groups	"GROUP Usgsn Mcc Mnc Lac Rac Rac"
Scope	Application
Description	*Usgsn Mcc/<mcc> Mnc/<mnc> Lac/<lac> RoutingAreaCode/<rac>* This component represents a Routing Area Code (RAC)

supported by the UMTS Serving GPRS Support Node (USGSN). The instance value is the 2 digit RAC.

Mib: UmtsServingGprsSupportNode

Opt. Subcomp.: "COMPONENT Usgsn Mcc Mnc Lac Rac ImsiMask (ImsiMask)"

Common Verbs:
Help
List
Display
Add
DELete

GROUP Usgsn Mcc Mnc Lac Rac Rac

Properties: Provisioned

Description: This group contains the provisionable attributes associated with the routing areas supported by the UMTS Serving GPRS Support Node (USGSN).

Mib: UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Mcc Mnc Lac Rac periodicRaUpdateTimer (t3312)

Access: Read: All
Write: All

Description: This attribute specifies the Periodic Routing Area Update Timer (T3312) for be used by the Mobile Station (MS). The MS receives this timer from the network during GPRS Attach Accept and during Periodic Routing Area Update Accepts.

When this timer expires, the MS notifies the UMTS Serving GPRS Support Node (USGSN) of the current routing area of the MS. This timer value is per Routing Area. The value ***deactivate*** means that no periodic messages are sent.

The *mobileReachableTimer* provisioned in the *Usgsn UmtsSubscriberControl* component must be at least four minutes longer than the longest *periodicRaUpdateTimer*.

The timer must be provisioned to a value that is greater than the

	maximum expected round trip delay of a Protocol Data Unit (PDU).
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..31; 36; 42; 48; 54; 60; 66; 72; 78; 84; 90; 96; 102; 108; 114; 120; 126; 132; 138; 144; 150; 156; 162; 168; 174; 180; 186) deactivate
Units	minutes
Default	deactivate

ATTRIBUTE Usgsn Mcc Mnc Lac Rac ptmsiEvents

Access	Read: All Write: All
Description	This attribute specifies the number, N, which indicates that at every Nth event requiring Packet-Temporary Mobile Subscriber Identity (P-TMSI) reallocation, the P-TMSI Reallocation procedure is initiated with the mobile subscriber.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..255) never
Default	10

ATTRIBUTE Usgsn Mcc Mnc Lac Rac rncIds

Access	Read: All Write: All
Description	This attribute specifies the *rncId*s of the Radio Network Controller (RNC) that are provisioned on the *Sg/n Rncif* components associated with this Routing Area. The *rncid* is a field of the Global RNC-ID defined in 3G TS 25.413, that uniquely identifies an RNC. Since each Signalling Gateway talks to exactly one RNC, this attribute uniquely identifies the Signalling Gateways associated with this Routing Area.

Mib	UmtsServingGprsSupportNode
List of	Decimal (1..4095)
Default	No default

COMPONENT Usgsn Mcc Mnc Lac Rac ImsiMask (ImsiMask)

Instance	BCD (1..15, Wildcarded)
Groups	"GROUP Usgsn Mcc Mnc Lac Rac ImsiMask Provisioned (Prov)"
Scope	Application
Description	*Sgsn Mcc/<mcc> Mnc/<mnc>ImsiMask/<mask>* *Sgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> ImsiMask/<mask>* *Sgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> Rac/<rac> ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> Rac/<rac> ImsiMask/<mask>* This component represents the masks for the Serving GPRS Support Node (SGSN or USGSN). The mask instance value specifies a string of BCD digits including wildcarded ‘?’ digits. The Call Router Data (CRD) network address syntax check prohibits wildcards from appearing to the right of a mask, and also prevents default masks from containing more than one wildcard. A default mask contains one wildcard with no BCD digits.
Mib	UmtsServingGprsSupportNode
Common Verbs	Help List Display Add DELete

GROUP Usgsn Mcc Mnc Lac Rac ImsiMask Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for this component.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Mcc Mnc Lac Rac ImsiMask linkToSubscriberClass (lToSubC)

Access	Read: All Write: All
Description	This attribute specifies a link to the *SubscriberClass* component (defined in the *Sgsn* or *Usgsn* components).
Mib	UmtsServingGprsSupportNode
Values	Link (Service, linksToImsiMask)
Default	No default

COMPONENT Usgsn Mcc Mnc Lac ImsiMask (ImsiMask)

Instance	BCD (1..15, Wildcarded)
Groups	"GROUP Usgsn Mcc Mnc Lac ImsiMask Provisioned (Prov)"
Scope	Application
Description	*Sgsn Mcc/<mcc> Mnc/<mnc>ImsiMask/<mask>* *Sgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> ImsiMask/<mask>* *Sgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> Rac/<rac> ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> ImsiMask/<mask>* *Usgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> Rac/<rac> ImsiMask/<mask>* This component represents the masks for the Serving GPRS Support Node (SGSN or USGSN). The mask instance value specifies a string of BCD digits including wildcarded ‘?’ digits. The Call Router Data (CRD) network address syntax check prohibits wildcards from appearing to the right of a mask, and

also prevents default masks from containing more than one wildcard. A default mask contains one wildcard with no BCD digits.

Mib	UmtsServingGprsSupportNode
Common Verbs	Help List Display Add DELete

GROUP Usgsn Mcc Mnc Lac ImsiMask Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for this component.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Mcc Mnc Lac ImsiMask linkToSubscriberClass (lToSubC)

Access	Read: All Write: All
Description	This attribute specifies a link to the *SubscriberClass* component (defined in the *Sgsn* or *Usgsn* components).
Mib	UmtsServingGprsSupportNode
Values	Link (Service, linksToImsiMask)
Default	No default

COMPONENT Usgsn Mcc Mnc ImsiMask (ImsiMask)

Instance	BCD (1..15, Wildcarded)
Groups	"GROUP Usgsn Mcc Mnc ImsiMask Provisioned (Prov)"
Scope	Application
Description	*Sgsn Mcc/<mcc> Mnc/<mnc>ImsiMask/<mask>* *Sgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> ImsiMask/<mask>* *Sgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> Rac/<rac> ImsiMask/*

<mask>

Usgsn Mcc/<mcc> Mnc/<mnc>ImsiMask/<mask>
Usgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> ImsiMask/<mask>
Usgsn Mcc/<mcc> Mnc/<mnc>Lac/<lac> Rac/<rac> ImsiMask/<mask>

This component represents the masks for the Serving GPRS Support Node (SGSN or USGSN). The mask instance value specifies a string of BCD digits including wildcarded ‘?’ digits.

The Call Router Data (CRD) network address syntax check prohibits wildcards from appearing to the right of a mask, and also prevents default masks from containing more than one wildcard. A default mask contains one wildcard with no BCD digits.

Mib	UmtsServingGprsSupportNode
Common Verbs	Help List Display Add DELete

GROUP Usgsn Mcc Mnc ImsiMask Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for this component.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Mcc Mnc ImsiMask linkToSubscriberClass (lToSubC)

Access	Read: All Write: All
Description	This attribute specifies a link to the *SubscriberClass* component (defined in the *Sgsn* or *Usgsn* components).
Mib	UmtsServingGprsSupportNode

Values	Link (Service, linksToImsiMask)
Default	No default

COMPONENT Usgsn InternationalMobileSubscriberId (Imsi)

Instance	BCD (5..15)
Groups	"GROUP Usgsn Imsi Operational (Oper)"
Scope	Application
Description	*Usgsn InternationalMobileSubscriberId/<imsi>* This component represents an instance of the International Mobile Subscriber Identity (IMSI). The information includes subscription context, mobility management context, session contexts, and logical link context. The instance value is the IMSI of the mobile subscriber. A list of all the current Imsi instances is not possible, but it is possible to display a specific instance of *Imsi*.
Mib	UmtsServingGprsSupportNode
Dyn. Subcomp.	"COMPONENT Usgsn Imsi MobilityContext (Mc)" "COMPONENT Usgsn Imsi SessionContext (Sc)" "COMPONENT Usgsn Imsi SubscriptionRecord (Sr)"
Common Verbs	Help List Display

VERB Clear Usgsn Imsi

Impact	Service
Description	*Clear InternationMobileSubscriberId/<imsi>* This command clears the specified *Imsi* component. If the *msPurgeFuncion* provisionable attribute is ***enabled*** in USGSN USC MsPurge, it will cause a Mobile Subscriber Purge request to be sent to the Home Location Register.

GROUP Usgsn Imsi Operational (Oper)

Properties	Operational
Description	This group contains subscription information downloaded from the Home Location Register (HLR).
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Imsi internationalMobileSubscriberId (imsi)

Access	Read: All Write: Illegal
Description	This attribute indicates the International Mobile Subscriber Identity (IMSI) of the Mobile Station (MS).
Mib	UmtsServingGprsSupportNode
Values	BCD (5..15)
Default	No default

ATTRIBUTE Usgsn Imsi hlrNumber (hlrNo)

Access	Read: All Write: Illegal
Description	This attribute indicates the HLR Number of the Home Location Register (HLR) to which the *HlrCache* record is currently associated. It is used to retrieve the *HlrCache* records to be restored after receipt of the RESET message from the HLR.
Mib	UmtsServingGprsSupportNode

Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE Usgsn Imsi msIsdnNumber (msIsdn)

Access	Read: All Write: Illegal
Description	This attribute indicates the Integrated Service Digital Network (ISDN) number of the mobile subscriber. This is represented as an E.164 number in international format.
Mib	UmtsServingGprsSupportNode
Values	String (1..17, NativeAddress)
Default	No default

ATTRIBUTE Usgsn Imsi subscriptionConfirmedByHlr (subsCByHlr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the subscription information in the Serving GPRS Support Node (SGSN) is known to be in agreement with the Home Location Register (HLR) when the SGSN successfully performs an UPDATE GPRS LOCATION to the HLR.
Mib	UmtsServingGprsSupportNode
Values	no yes
Default	No default

ATTRIBUTE Usgsn Imsi locationInfoConfirmedInHlr (locCInHlr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Home Location Register (HLR) record of the Serving GPRS Support Node (SGSN) address for the Mobile Station (MS) has been confirmed by radio contact.

It is initially set to, ***no***, when the SGSN receives a ROUTING AREA UPDATE REQUEST, or an IMSI and a GPRS ATTACH-REQUEST, or if a RESET message is received from the HLR with which the MS is registered. The indicator is set to, ***yes***, when a successful UPDATE GPRS LOCATION is performed for the MS.

Mib: UmtsServingGprsSupportNode

Values: no
yes

Default: No default

COMPONENT Usgsn Imsi MobilityContext (Mc)

Groups: "GROUP Usgsn Imsi Mc MobilityContext (Mc)"

Scope: Application

Description: *Usgsn Imsi/<imsi> MobilityContext*

This component represents the GPRS Mobility Management (GMM) context created for each mobile subscriber that is GPRS-Attached.

Mib: UmtsServingGprsSupportNode

Common Verbs:
Help
List
Display

GROUP Usgsn Imsi Mc MobilityContext (Mc)

Properties: Operational

Description: This group displays the Mobility Context information of a subscriber.

Mib: UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Imsi Mc gmmState (gmmSt)

Access	Read: All Write: Illegal
Description	This attribute indicates the GPRS Mobility Management (GMM) state for a mobile. Upon initialization, this attribute value is in ***pmmIdle*** state. The states have the following meaning: ***pmmDetached*** - There is no communication between the Mobile Station (MS) and the UMTS Serving GPRS Support Node (USGSN). The MS and the USGSN contexts hold no valid location or routing area information for the mobile. ***pmmIdle*** - The MS location is known in the UMTS Serving GPRS Support Node (USGSN) with an accuracy of a routing area. Paging is required in order to reach the MS. ***pmmConnected*** - The PS signalling connection has been established between the MS and the UMTS Serving GPRS Support Node (USGSN). The MS can send or receive the Point To Point Protocol Data Units (PTP PDUs) in this state.
Mib	UmtsServingGprsSupportNode
Values	pmmDetached pmmIdle pmmConnected
Default	No default

ATTRIBUTE Usgsn Imsi Mc routingAreaIdentifier (rai)

Access	Read: All Write: Illegal
Description	This attribute indicates the current routing area of the Mobile Station (MS). The routing area is transmitted to the UMTS Serving GPRS Support Node (USGSN) during a Routing Area Update procedure or Attach procedure. The routing area identifier includes the Mobile Country Code (MCC) in BCD format in the first 3 digits, the Mobile Network

	Code (MNC) in BCD format in the next 3 digits, the Location Area Code (LAC) in the next 2 octets, and the Routing Area Code (RAC) in the last octet. For a 2 digit MNC, a padding of F is used in place of the first digit so that it always occupies 3 digits. For the MNC and the MCC, the order of digits is reversed in every byte. For example, the RAI consisting of : 208 (MCC), 12 (MNC), 34 (LAC), 15 (RAC) will be encoded as, 02F821003415.
Mib	UmtsServingGprsSupportNode
Values	String (6, Hex)
Default	No default

ATTRIBUTE Usgsn Imsi Mc ptmsi

Access	Read: All Write: Illegal
Description	This attribute indicates the P-TMSI used to identify the context of the Mobile Station (MS) within the UMTS Serving GPRS Support Node (USGSN). This is one of the main reference keys that is used to identify an MS in the USGSN.
Mib	UmtsServingGprsSupportNode
Values	String (4, Hex)
Default	No default

ATTRIBUTE Usgsn Imsi Mc serviceAreaCode (sac)

Access	Read: All Write: Illegal
Description	This attribute indicates the last known Service Area Code (SAC) when an INITIAL UE message was received from the Radio Network Controller (RNC), or when a Location Reporting procedure was executed.
Mib	UmtsServingGprsSupportNode

Values	String (2, Hex)
Default	No default

ATTRIBUTE Usgsn Imsi Mc msNetworkCapability (msNwkCap)

Access	Read: All Write: Illegal
Description	This attribute indicates the network portion of the Mobile Station (MS) classmark. The classmark contains specific information about a Mobile Station (MS).
Mib	UmtsServingGprsSupportNode
Values	String (6..20, Hex)
Default	No default

COMPONENT Usgsn Imsi SessionContext (Sc)

Instance	Decimal (5..15)
Groups	"GROUP Usgsn Imsi Sc SessionContextl (Sc)"
Scope	Application
Description	*Usgsn Imsi/<imsi> SessionContext/<nsapi>* This component represents the session context information for a subscriber. The session contexts are created for each activated Packet Data Protocol (PDP) context of a subscriber. The instance value identifies a session for a mobile subscriber.
Mib	UmtsServingGprsSupportNode
Dyn. Subcomp.	"COMPONENT Usgsn Imsi Sc RequestedQos (ReqQos)" "COMPONENT Usgsn Imsi Sc NegotiatedQos (NegQos)"
Common Verbs	Help List Display

GROUP Usgsn Imsi Sc SessionContextl (Sc)

Properties	Operational
Description	This group contains the operational attributes associated with this component
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Imsi Sc dataPathGgsnAddress (dGgsnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the Gateway GPRS Support Node (GGSN) for the data path that is currently used by the activated Packet Data Protocol (PDP) context.
Mib	UmtsServingGprsSupportNode
Values	IP address
Default	No default

ATTRIBUTE Usgsn Imsi Sc signalingGgsnAddress (sGgsnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the Gateway GPRS Support Node (GGSN) for the signaling path that is currently used by the activated Packet Data Protocol (PDP) context.
Mib	UmtsServingGprsSupportNode
Values	IP address
Default	No default

ATTRIBUTE Usgsn Imsi Sc dataPathRncAddress (dRncAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the IP address of the Radio Network Controller (RNC) for the data path that is currently used by the activated Packet Data Protocol (PDP) context.

Mib	UmtsServingGprsSupportNode
Values	IP address
Default	No default

ATTRIBUTE Usgsn Imsi Sc remoteTeid (remTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg that originates at the UMTS Serving GPRS Support Node (USGSN) and terminates at the Radio Network Controller (RNC).
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usgsn Imsi Sc localTeid (locTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg that originates at the Radio Network Controller (RNC) and terminates at the UMTS Serving GPRS Support Node (USGSN).
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usgsn Imsi Sc ggsnRemoteTeid (ggsnRemTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg that originates at the UMTS Serving GPRS Support Node (USGSN) and terminates at the GGSN.

Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usgsn Imsi Sc ggsnLocalTeid (ggsnLocTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg that originates at the GGSN and terminates at the UMTS Serving GPRS Support Node (USGSN).
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usgsn Imsi Sc signallingGgsnTeid (sGgsnTeid)

Access	Read: All Write: Illegal
Description	This attribute indicates the Tunnel End point Identifier that is associated with a tunnel leg end point of the control tunnel that runs between the UMTS Serving GPRS Support Node (USGSN) and the GGSN.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Usgsn Imsi Sc rabid

Access	Read: All Write: Illegal
Description	This attribute indicates the Radio Access Bearer ID, which uniquely identifies the radio access bearer being used in the Radio Network Controller (RNC).
Mib	UmtsServingGprsSupportNode

Values	Decimal (0..4294967295)
Default	No default

COMPONENT Usgsn Imsi Sc RequestedQos (ReqQos)

Groups	"GROUP Usgsn Imsi Sc ReqQos QosProfile (Qos)"
Scope	Application
Description	*Usgsn Imsi/<imsi> SessionContext/<nsapi> RequestedQos* This component represents the Quality of Service requested by a mobile subscriber for this session.
Mib	UmtsServingGprsSupportNode
Common Verbs	Help List Display

GROUP Usgsn Imsi Sc ReqQos QosProfile (Qos)

Properties	Operational
Description	This group contains the QOS profile. It contains either the requested Qos, the negotiated Qos, or the subscribed QOS based on which component contains this group.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Imsi Sc ReqQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Signalling Data Units (SDUs) order of delivery is guaranteed.
Mib	UmtsServingGprsSupportNode
Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Usgsn Imsi Sc ReqQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal
Description	This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network. The erroneous SDUs can be handled in one of the following ways: ***subDeliveryOfSdus***: The Signalling Data Units (SDUs) are delivered according to the Subscriber's profile. ***noDetect:*** The Signalling Data Units (SDUs) are delivered without considering error detection. ***errSdusDelivered:*** The erroneous Signalling Data Units (SDUs) are delivered together with an error indication. ***errSdusNotDelivered:*** The erroneous Signalling Data Units (SDUs) are discarded.
Mib	UmtsServingGprsSupportNode
Values	subDeliveryOfSdus noDetect errSdusDelivered errSdusNotDelivered
Default	No default

ATTRIBUTE Usgsn Imsi Sc ReqQos trafficClass (traffClass)

Access	Read: All Write: Illegal
Description	This attribute indicates the type of application for which the UMTS bearer service is optimized. By including the traffic class itself as an attribute, the UMTS Sgsn can make assumptions about the traffic source and optimize the transport for that traffic type. The different traffic classes are:

subscribed - This value specifies that the traffic class to be optimized is that indicated by the "subscribed traffic class" field of the user's HLR record.

conversational - This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing.

streaming - This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay.

interactive - This class includes applications where a man or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content.

background - This class includes applications where the end-user, typically a computer, sends and receives data files in the background, for eg., emails, SMS and database downloads. This is characterized by the destination not expecting the data within a certain time.

Mib	UmtsServingGprsSupportNode
Values	subscribed (sub) conversational (conv) streaming (strm) interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Usgsn Imsi Sc ReqQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal

Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDUs). It is used for admission control and policing.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Usgsn Imsi Sc ReqQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to UMTS in the uplink direction within a period of time, divided by the duration of the period.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Usgsn Imsi Sc ReqQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered by UMTS in the downlink direction within a period of time, divided by the duration of the period.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Usgsn Imsi Sc ReqQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal
Description	This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered Signalling Data Units (SDUs). This attribute can take up values ranging from 1 through 9, representing: 1 -> 5*10 -2 2 -> 1*10 -2 3 -> 5*10 -3 4 -> 4*10 -3 5 -> 1*10 -3 6 -> 1*10 -4 7 -> 1*10 -5 8 -> 1*10 -6 9 -> 6*10 -8
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..9)
Default	No default

ATTRIBUTE Usgsn Imsi Sc ReqQos sduErrorRatio (sduErrRatio)

Access	Read: All Write: Illegal
Description	This attribute indicates the fraction of SDUs lost or detected as erroneous. It is defined only for conforming traffic. This attribute can take up values between the numbers 1 - 7 representing the following: 1 -> 1*10 -2 2 -> 7*10 -3 3 -> 1*10 -3 4 -> 1*10 -4 5 -> 1*10 -5

6 -> 1*10 -6
7 -> 1*10 -1

Mib UmtsServingGprsSupportNode

Values Decimal (1..7)

Default No default

ATTRIBUTE Usgsn Imsi Sc ReqQos trafficHandlingPriority (traffHndlPr)

Access Read: All
Write: Illegal

Description This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the values ***interactive.***

Mib UmtsServingGprsSupportNode

Values Decimal (0..3)

Default No default

ATTRIBUTE Usgsn Imsi Sc ReqQos transferDelay (transfDelay)

Access Read: All
Write: Illegal

Description This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.

Mib UmtsServingGprsSupportNode

Values Decimal (10..4100)

Default No default

ATTRIBUTE Usgsn Imsi Sc ReqQos guaranteedUplinkBitRate (guarUpBr)

Access Read: All
Write: Illegal

Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8640)
Default	No default

ATTRIBUTE Usgsn Imsi Sc ReqQos guaranteedDownlinkBitRate (guarDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8640)
Default	No default

COMPONENT Usgsn Imsi Sc NegotiatedQos (NegQos)

Groups	"GROUP Usgsn Imsi Sc NegQos QosProfile (Qos)"
Scope	Application

Description	*Usgsn Imsi/<imsi> SessionContext/<nsapi> NegotiatedQos* This component represents the negotiated Quality of Service received by the mobile subscriber for this session.
Mib	UmtsServingGprsSupportNode
Common Verbs	Help List Display

GROUP Usgsn Imsi Sc NegQos QosProfile (Qos)

Properties	Operational
Description	This group contains the QOS profile. It contains either the requested Qos, the negotiated Qos, or the subscribed QOS based on which component contains this group.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Imsi Sc NegQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Signalling Data Units (SDUs) order of delivery is guaranteed.
Mib	UmtsServingGprsSupportNode
Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Usgsn Imsi Sc NegQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal
Description	This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network. The erroneous SDUs can be handled in one of the following ways:

subDeliveryOfSdus: The Signalling Data Units (SDUs) are delivered according to the Subscriber's profile.

noDetect: The Signalling Data Units (SDUs) are delivered without considering error detection.

errSdusDelivered: The erroneous Signalling Data Units (SDUs) are delivered together with an error indication.

errSdusNotDelivered: The erroneous Signalling Data Units (SDUs) are discarded.

Mib: UmtsServingGprsSupportNode

Values:
subDeliveryOfSdus
noDetect
errSdusDelivered
errSdusNotDelivered

Default: No default

ATTRIBUTE Usgsn Imsi Sc NegQos trafficClass (traffClass)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the type of application for which the UMTS bearer service is optimized. By including the traffic class itself as an attribute, the UMTS Sgsn can make assumptions about the traffic source and optimize the transport for that traffic type.

The different traffic classes are:

subscribed - This value specifies that the traffic class to be optimized is that indicated by the "subscribed traffic class" field of the user's HLR record.

conversational - This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video

conferencing.

streaming - This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay.

interactive - This class includes applications where a man or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content.

background - This class includes applications where the end-user, typically a computer, sends and receives data files in the background, for eg., emails, SMS and database downloads. This is characterized by the destination not expecting the data within a certain time.

Mib	UmtsServingGprsSupportNode
Values	subscribed (sub) conversational (conv) streaming (strm) interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Usgsn Imsi Sc NegQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDUs). It is used for admission control and policing.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Usgsn Imsi Sc NegQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to UMTS in the uplink direction within a period of time, divided by the duration of the period.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Usgsn Imsi Sc NegQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered by UMTS in the downlink direction within a period of time, divided by the duration of the period.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Usgsn Imsi Sc NegQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal
Description	This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered Signalling Data Units (SDUs). This attribute can take up values ranging from 1 through 9, representing:

1 -> 5*10 -2
2 -> 1*10 -2
3 -> 5*10 -3
4 -> 4*10 -3
5 -> 1*10 -3
6 -> 1*10 -4
7 -> 1*10 -5
8 -> 1*10 -6
9 -> 6*10 -8

Mib: UmtsServingGprsSupportNode

Values: Decimal (1..9)

Default: No default

ATTRIBUTE Usgsn Imsi Sc NegQos sduErrorRatio (sduErrRatio)

Access: Read: All
Write: Illegal

Description: This attribute indicates the fraction of SDUs lost or detected as erroneous. It is defined only for conforming traffic.

This attribute can take up values between the numbers 1 - 7 representing the following:
1 -> 1*10 -2
2 -> 7*10 -3
3 -> 1*10 -3
4 -> 1*10 -4
5 -> 1*10 -5
6 -> 1*10 -6
7 -> 1*10 -1

Mib: UmtsServingGprsSupportNode

Values: Decimal (1..7)

Default: No default

ATTRIBUTE Usgsn Imsi Sc NegQos trafficHandlingPriority (traffHndlPr)

Access: Read: All
Write: Illegal

Description	This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the values ***interactive.***
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Usgsn Imsi Sc NegQos transferDelay (transfDelay)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.
Mib	UmtsServingGprsSupportNode
Values	Decimal (10..4100)
Default	No default

ATTRIBUTE Usgsn Imsi Sc NegQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8640)
Default	No default

ATTRIBUTE Usgsn Imsi Sc NegQos guaranteedDownlinkBitRate (guarDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8640)
Default	No default

COMPONENT Usgsn Imsi SubscriptionRecord (Sr)

Scope	Application
Description	*Usgsn Imsi/<imsi> SubscriptionRecord* This component represents the subscription information downloaded from the Home Location Register (HLR). The *HlrCache* on the *UmtsSubscriberControl* (*Usc*) contains the active subscriber data. A *SubscriptionRecord* instance is created to represent an active subscriber tuple of an HLR Cache in the UMTS Subscriber Control (Usc).
Mib	UmtsServingGprsSupportNode
Dyn. Subcomp.	"COMPONENT Usgsn Imsi Sr PdpContext (PdpC)"
Common Verbs	Help List Display

COMPONENT Usgsn Imsi Sr PdpContext (PdpC)

Instance	Decimal (1..50)

Groups	"GROUP Usgsn Imsi Sr PdpC Operational (PdpCOper)"
Scope	Application
Description	*Usgsn Imsi/<imsi> SubscriptionRecord PdpContext/<nsapi>* This component represents the Packet Data Protocol (PDP) context data downloaded from the Home Location Register (HLR). There is one instance of this component for each PDP profile the subscriber has.
Mib	UmtsServingGprsSupportNode
Dyn. Subcomp.	"COMPONENT Usgsn Imsi Sr PdpC SubscribedQos (SubsQos)"
Common Verbs	Help List Display

GROUP Usgsn Imsi Sr PdpC Operational (PdpCOper)

Properties	Operational
Description	This group contains the operational attributes for *Usgsn Imsi SubscriptionRecord PdpContext*
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Imsi Sr PdpC pdpType (pdpT)

Access	Read: All Write: Illegal
Description	This attribute indicates the end user protocol to be used between the external packet data network and the Mobile Station (MS) such as X.25, IP and PPP. For ***x25***, the currently defined address format is X.121. For ***ip*** protocol, the currently defined address formats are IPV4 and IPV6.

The *pdpAddressFormat* attribute does not apply if *pdpType* is set to ***ppp.***

Mib: UmtsServingGprsSupportNode

Values:
x25
ip
ppp

Default: No default

ATTRIBUTE Usgsn Imsi Sr PdpC ipv4PdpAddress (ipv4Addr)

Access: Read: All
Write: Illegal

Description: This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is an IPv4 address. The address conforms to the standard addressing scheme of the IP version 4 address.

Mib: UmtsServingGprsSupportNode

Values: IP address

Default: No default

ATTRIBUTE Usgsn Imsi Sr PdpC x121PdpAddress (x121Addr)

Access: Read: All
Write: Illegal

Description: This attribute indicates the network layer address of the packet data network. This attribute is displayed when the Packet Data Protocol (PDP) address is X.121.

Mib: UmtsServingGprsSupportNode

Values: BCD (1..14)

Default: No default

ATTRIBUTE Usgsn Imsi Sr PdpC otherPdpAddress (otherAddr)

Access: Read: All
Write: Illegal

Description	This attribute indicates the network layer address of the packet data network. The Packet Data Protocol (PDP) protocol type for the *otherPdpAddress* can be obtained from the attribute *pdpType* and the addressing type from *pdpAddressFormat*.
Mib	UmtsServingGprsSupportNode
Values	String (1..16, Hex)
Default	No default

ATTRIBUTE Usgsn Imsi Sr PdpC pdpAddressFormat (pdpAddrFormat)

Access	Read: All Write: Illegal
Description	This attribute indicates the addressing type, such as X.121, IPv4, or IPv6.
Mib	UmtsServingGprsSupportNode
Values	x121 ipv4 ipv6
Default	No default

ATTRIBUTE Usgsn Imsi Sr PdpC apnNetworkIdentifier (apnNwkId)

Access	Read: All Write: Illegal
Description	This attribute indicates the Access Point Name (APN), or the Logical Name, or the network address of the packet data network, with which this Packet Data Protocol (PDP) context is associated. The APN Network Identifier can be the one received from the mobile as part of the ACTIVATE PDP CONTEXT REQUEST message, can be selected from the subscription record against which this session has been activated, or it can be the *defaultApnNetworkId* (defined in *Usgsn UmtsSubscriberControl*)
Mib	UmtsServingGprsSupportNode
Values	String (1..63, ASCII)

Default	No default

ATTRIBUTE Usgsn Imsi Sr PdpC vplmnAddressAllowed (vplmnAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Mobile Station (MS) is allowed to use the Access Point Name (APN) in the domain of the Visiting Public Land Mobile Network (VPLMN).
Mib	UmtsServingGprsSupportNode
Values	no yes
Default	No default

COMPONENT Usgsn Imsi Sr PdpC SubscribedQos (SubsQos)

Groups	"GROUP Usgsn Imsi Sr PdpC SubsQos QosProfile (Qos)"
Scope	Application
Description	*Usgsn Imsi/<imsi> SubscriptionRecord PdpContext/<nsapi> SubscribedQos* This component represents the Quality of Service (QOS) profile of the subscriber downloaded from the Home Location Register (HLR).
Mib	UmtsServingGprsSupportNode
Common Verbs	Help List Display

GROUP Usgsn Imsi Sr PdpC SubsQos QosProfile (Qos)

Properties	Operational
Description	This group contains the QOS profile. It contains either the requested Qos, the negotiated Qos, or the subscribed QOS based on which component contains this group.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Imsi Sr PdpC SubsQos deliveryOrder (delOrd)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the Signalling Data Units (SDUs) order of delivery is guaranteed.
Mib	UmtsServingGprsSupportNode
Values	withDeliveryOrder withoutDeliveryOrder
Default	No default

ATTRIBUTE Usgsn Imsi Sr PdpC SubsQos deliveryOfErroneousSdus (delErrSdus)

Access	Read: All Write: Illegal
Description	This attribute indicates how erroneous Signaling Data Units (SDUs) are handled by the network. The erroneous SDUs can be handled in one of the following ways: ***subDeliveryOfSdus***: The Signalling Data Units (SDUs) are delivered according to the Subscriber's profile. ***noDetect:*** The Signalling Data Units (SDUs) are delivered without considering error detection. ***errSdusDelivered:*** The erroneous Signalling Data Units (SDUs) are delivered together with an error indication. ***errSdusNotDelivered:*** The erroneous Signalling Data Units (SDUs) are discarded.
Mib	UmtsServingGprsSupportNode
Values	subDeliveryOfSdus noDetect errSdusDelivered errSdusNotDelivered

Default No default

ATTRIBUTE Usgsn Imsi Sr PdpC SubsQos trafficClass (traffClass)

Access Read: All
Write: Illegal

Description This attribute indicates the type of application for which the UMTS bearer service is optimized. By including the traffic class itself as an attribute, the UMTS Sgsn can make assumptions about the traffic source and optimize the transport for that traffic type.

The different traffic classes are:

subscribed **-** This value specifies that the traffic class to be optimized is that indicated by the "subscribed traffic class" field of the user's HLR record.

conversational **-** This class includes real time conversation, characterized by low transfer delay and a strict preservation of the time relation between information entities of the stream. Examples of this class are telephony speech and video conferencing.

streaming **-** This class consists of real time video/audio applications, characterized by a strict preservation of the time relation between the information entities of the stream, but not necessarily a low transfer delay.

interactive **-** This class includes applications where a man or machine requests data from remote equipment, characterized by a request-response pattern of the end-user and the preservation of payload content.

background **-** This class includes applications where the end-user, typically a computer, sends and receives data files in the background, for eg., emails, SMS and database downloads. This is characterized by the destination not expecting the data within a certain time.

Mib UmtsServingGprsSupportNode

Values	subscribed (sub) conversational (conv) streaming (strm) interactive (int) background (bkgr)
Default	No default

ATTRIBUTE Usgsn Imsi Sr PdpC SubsQos maxSduSize (maxSduSize)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum allowed size of the Signalling Data Unit (SDUs). It is used for admission control and policing.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..1502)
Units	octets
Default	No default

ATTRIBUTE Usgsn Imsi Sr PdpC SubsQos maxUplinkBitRate (maxUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of bits delivered to UMTS in the uplink direction within a period of time, divided by the duration of the period.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Usgsn Imsi Sr PdpC SubsQos maxDownlinkBitRate (maxDnBr)

Access	Read: All Write: Illegal

Description	This attribute indicates the maximum number of bits delivered by UMTS in the downlink direction within a period of time, divided by the duration of the period.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8640)
Units	kbit/s
Default	No default

ATTRIBUTE Usgsn Imsi Sr PdpC SubsQos residualBitErrorRate (resBer)

Access	Read: All Write: Illegal
Description	This attribute indicates the undetected bit error ratio in the delivered Signalling Data Units (SDUs). If no error detection is requested, this attribute indicates the bit error ratio in the delivered Signalling Data Units (SDUs). This attribute can take up values ranging from 1 through 9, representing: 1 -> 5*10 -2 2 -> 1*10 -2 3 -> 5*10 -3 4 -> 4*10 -3 5 -> 1*10 -3 6 -> 1*10 -4 7 -> 1*10 -5 8 -> 1*10 -6 9 -> 6*10 -8
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..9)
Default	No default

ATTRIBUTE Usgsn Imsi Sr PdpC SubsQos sduErrorRatio (sduErrRatio)

Access	Read: All Write: Illegal

Description	This attribute indicates the fraction of SDUs lost or detected as erroneous. It is defined only for conforming traffic. This attribute can take up values between the numbers 1 - 7 representing the following: 1 -> 1*10 -2 2 -> 7*10 -3 3 -> 1*10 -3 4 -> 1*10 -4 5 -> 1*10 -5 6 -> 1*10 -6 7 -> 1*10 -1
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..7)
Default	No default

ATTRIBUTE Usgsn Imsi Sr PdpC SubsQos trafficHandlingPriority (traffHndlPr)

Access	Read: All Write: Illegal
Description	This attribute indicates the traffic handling priority. The traffic handling priority attribute is used to prioritize the traffic when the *trafficClass* attribute has the values ***interactive.***
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Usgsn Imsi Sr PdpC SubsQos transferDelay (transfDelay)

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum delay for 95th percentile of the distribution of delay for all delivered Signalling Data Units (SDUs) during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer data from one Service Access Point (SAP) to another SAP.
Mib	UmtsServingGprsSupportNode

Values	Decimal (10..4100)
Default	No default

ATTRIBUTE Usgsn Imsi Sr PdpC SubsQos guaranteedUplinkBitRate (guarUpBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the uplink (Mobile Station to network) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxUplinkBitRate* is set to ***0*** kbits/s.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8640)
Default	No default

ATTRIBUTE Usgsn Imsi Sr PdpC SubsQos guaranteedDownlinkBitRate (guarDnBr)

Access	Read: All Write: Illegal
Description	This attribute indicates the guaranteed number of bits delivered at a Service Access Point (SAP) in the downlink (network to Mobile Station) direction within a period of time, divided by the duration of the period. The value of this attribute is ignored if the *trafficClass* attribute has one of the following values: ***interactive*** or ***background***, or if the *maxDownlinkBitRate* is set to ***0*** kbits/s.
Mib	UmtsServingGprsSupportNode
Values	Decimal (0..8640)
Default	No default

COMPONENT Usgsn DifferentiatedService (Ds)

Groups	"GROUP Usgsn Ds Provisioned (Prov)"
Scope	Application
Description	*Sgsn DifferentiatedService* *Usgsn DifferentiatedService* This component represents the differentiated service (QOS) on the (UMTS) Serving GPRS Support Node (SGSN or USGSN), that governs the behavior of packets and contexts that pass through this node. If this component is not provisioned, the data rate for every context will be best effort.
Mib	UmtsServingGprsSupportNode
Subcomponents	"COMPONENT Usgsn Ds AllocationRetention (Ar)"
Common Verbs	Help List Display Add DELete

GROUP Usgsn Ds Provisioned (Prov)

Properties	Provisioned
Description	This group contains the *Differentiated Service (Ds)* provisioning data of the (UMTS) Serving GPRS Support Node (SGSN or USGSN).
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Ds signalingDscpMark

Access	Read: All Write: All
Description	This attribute specifies the Differentiated Service (DS) Code Point (DSCP) value for signalling traffic. It is used for all signaling traffic.

	The Expedited Forwarding (EF) Per Hop Behaviors (PHB) can be used to build an assured bandwidth end-to-end service through DS domains with low loss, low latency and low jitter. Assured Forwarding (AF) PHB group allows a DS domain to offer different levels of forwarding assurances for IP packets received. Four AF classes and three drop Precedences are defined. A DEfault (DE) PHB defined in [DS Field] is the common, best-effort forwarding behavior available in existing routers as standardized in [RFC1812]. The Class Selector (CS) PHB and associated code points are used to support legacy (non-DS-compliant) routers and switches in a DiffServ-compliant network.
Mib	UmtsServingGprsSupportNode
Values	de cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7 ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43
Default	de

ATTRIBUTE Usgsn Ds defaultRoamerAr

Access	Read: All Write: All
Description	This attribute specifies the allocation and retention priority assigned to a mobile that is a roamer. The actual allocation and retention priority of a roamer will be limited to the value of this attribute. The roamer's subscribed QOS value will be used if it does not exceed the value of this attribute; otherwise the attribute value will be used.
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..3)
Default	3

COMPONENT Usgsn Ds AllocationRetention (Ar)

Instance	Decimal (1..3)
Scope	Application
Description	*Sgsn Ds AllocationRetention/n* *Usgsn Ds AllocationRetention/n* This component represents the allocation and retention priority on the SGSN or USGSN. This allocation and retention levels are the relative importance compared to other Radio access bearers for allocation and retention of the Radio access bearer. The most important level has

the value of ***1***. The allocation is larger and retention is longer for buffers under the most important level.

Mib	UmtsServingGprsSupportNode
Subcomponents	"COMPONENT Usgsn Ds Ar TrafficClass (Tc)"
Common Verbs	Help List Display Add

COMPONENT Usgsn Ds Ar TrafficClass (Tc)

Instance	conversational (conv) streaming (str) interactive (int) background (bkgr)
Groups	"GROUP Usgsn Ds Ar Tc Provisioned (Prov)"
Scope	Application
Description	*Sgsn Ds Ar TrafficClass* *Usgsn Ds Ar TrafficClass* This component represents the traffic class on the SGSN or USGSN. The Traffic Class distinguishes the delay sensitivity, error rate. Conversational class is meant for traffic which is very delay sensitive while Background class is the most delay insensitive traffic class. Interactive class and Background class provide better error rate. The main difference between Interactive and Background class is that Interactive class is mainly used by interactive applications while Background class is meant for background traffic. Background applications use transmission resources only when interactive applications do not need them.

This component provides a mapping from "allocation and retention priority" and "traffic class" to a DS codepoint.

Mib: UmtsServingGprsSupportNode

Common Verbs:
- Help
- List
- Display
- Add

GROUP Usgsn Ds Ar Tc Provisioned (Prov)

Properties: Provisioned

Description: This group contains the *TrafficClass (Tc)* provisioning data of the (UMTS) Serving GPRS Support Node (SGSN or USGSN).

Mib: UmtsServingGprsSupportNode

ATTRIBUTE Usgsn Ds Ar Tc dataDscpMark

Access: Read: All
Write: All

Description: This attribute specifies the Differentiated Service Code Point (DSCP) mark for the data traffic of the corresponding service level (allocation, retention, and traffic class combination).

Mib: UmtsServingGprsSupportNode

Values:
- de
- cs0
- cs1
- cs2
- cs3
- cs4
- cs5
- cs6
- cs7
- ef
- af11
- af12
- af13
- af21

af22
af23
af31
af32
af33
af41
af42
af43

Default de

COMPONENT Usgsn EquivalentPlmn (EquivPlmn)

Instance Decimal (1..200)

Groups "GROUP Usgsn EquivPlmn Provisioned (Prov)"

Scope Application

Description Sgsn EquivalentPlmn/n

This component collectively represents all Public Land Mobile Networks (PLMNs) that must be considered equivalent by the Mobile Station (MS) at PLMN selection, handover, cell re-selection, and so on.

Mib UmtsServingGprsSupportNode

Common Verbs
Help
List
Display
Add
DELete

GROUP Usgsn EquivPlmn Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attributes for one of the Public Land Mobile Network (PLMN) codes that must be considered equivalent.

	PLMN codes consist of a Mobile Country Code (MCC) and a Mobile Network Code (MNC).
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn EquivPlmn plmnList (plmnL)

Access	Read: All Write: All
Description	This attribute specifies the Public Land Mobile Networks (PLMNs) that this *EquivalentPlmn* component is associated with. Each PLMN consists of a three-digit Mobile Country Code (MCC) and a two or three-digit Mobile Network Code (MNC) pair.
Mib	UmtsServingGprsSupportNode
List of	BCD (5..6)
List Size	5
Default	No default

ATTRIBUTE Usgsn EquivPlmn linksToSubscriberClass (lToSubC)

Access	Read: All Write: All
Description	This attribute specifies links to the *SubscriberClass* components (defined in the *Sgsn* or *Usgsn* components).
Mib	UmtsServingGprsSupportNode
List of	Link
Default	No default

COMPONENT Usgsn SubscriberClass (SubsClass)

Instance	Decimal (1..200)
Groups	"GROUP Usgsn SubsClass Provisioned (Prov)"
Scope	Application

Description	*Sgsn SubscriberClass/n* *Usgsn SubscriberClass/n* This component represents the subscriber classes for the Serving GPRS Support Node (SGSN or USGSN).
Mib	UmtsServingGprsSupportNode
Common Verbs	Help List Display Add DELete

GROUP Usgsn SubsClass Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for this component.
Mib	UmtsServingGprsSupportNode

ATTRIBUTE Usgsn SubsClass linkToEquivalentPlmn (lToEqPlmn)

Access	Read: All Write: All
Description	This attribute specifies a link to the *EquivalentPlmn* component (defined in the *Sgsn* or *Usgsn* components). The value of the *linkToEquivalentPlmn* attribute is used only if the value of the *rejectCause* attribute is set to ***disabled***.
Mib	UmtsServingGprsSupportNode
Values	Link (Service, linksToSubscriberClass)
Default	No default

ATTRIBUTE Usgsn SubsClass rejectCause (rejC)

Access	Read: All Write: All

Description	This attribute specifies the cause value for rejecting the mobile. This represents a GPRS location or International Mobile Subscriber Identifier (IMSI) based cause code. A warning is generated if the cause code is not one of the following 3GPP 24.008 specification defined location or IMSI based causes: Cause code 7: GPRS Services Not Allowed Cause code 8: GPRS Services and Non-GPRS Services Not Allowed Cause code 11: PLMN Not Allowed Cause code 12: Location Area Not Allowed Cause code 13: Roaming Not Allowed In This Location Area Cause code 14: GPRS Not Allowed In This PLMN Cause code 15: No Suitable Cells In Location Area
Mib	UmtsServingGprsSupportNode
Values	Decimal (1..255) disabled
Default	disabled

ATTRIBUTE Usgsn SubsClass snrApnOperatorId (apnOp)

Access	Read: All Write: All
Description	This attribute specifies the Access Point Name (APN) Operator Identifier for this Public Land Mobile Network (PLMN). It is a fully qualified domain name according to the Domain Name System (DNS) naming conventions and consists of three labels (that is, <DNS-label>.<DNS-label>.gprs). It is expected that the operator uses this attribute to fill in a human-readable format of the APN Operator Identifier (that is, an APN Operator Identifier not in the mnc<MNC digits>.mcc<MCC digits>.gprs format). The value of the *snrApnOperatorId* attribute is used only if the value of the *rejectCause* attribute is set to ***disabled***.
Mib	UmtsServingGprsSupportNode

Values	String (0..37, ASCII)
Default	No default

ATTRIBUTE Usgsn SubsClass qosEquivalency (qosEq)

Access	Read: All Write: All
Description	This attribute specifies the Equivalent Quality of Service that a roaming mobile may receive due to Seamless National Roaming (SNR). The value of the *qosEquivalency* attribute is used only if the value of the *rejectCause* attribute is set to ***disabled***.
Mib	UmtsServingGprsSupportNode
Values	roamer homer
Default	roamer

ATTRIBUTE Usgsn SubsClass linksToImsiMask (lToImsiM)

Access	Read: All Write: All
Description	This attribute specifies links to the *ImsiMask* components (defined in the *Sgsn* or *Usgsn* components).
Mib	UmtsServingGprsSupportNode
List of	Link
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Usgsn

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Vct

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Vct

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COMPONENT VcTester (Vct)

Instance	Decimal (1..16)
Groups	"GROUP Vct Provisioned (Prov)"
Scope	Application
Description	This is the VcTester: a tool designed to test the Passport Virtual Circuit System (vcs)..
Mib	VcTester
Subcomponents	"COMPONENT Vct DataNetworkAddress (Dna)"
Opt. Subcomp.	"COMPONENT Vct DirectCall (Dc)"
Dyn. Subcomp.	"COMPONENT Vct Vc" "COMPONENT Vct Vcfr"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vct Provisioned (Prov)

Properties	Provisioned

Description	This group provides the set of parameters for theVcTester component
Mib	VcTester

ATTRIBUTE Vct logicalProcessor (lp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the logical processor on which the VcTester will run
Mib	VcTester
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Vct vcName (vcn)

Access	Read and write
Criticality	Component
Description	This attribute specifies the type of vc (fvc or gvc) which will be used by VcTester.
Mib	VcTester
Values	gvc fvc
Default	gvc

COMPONENT Vct DataNetworkAddress (Dna)

Groups	"GROUP Vct Dna Address" "GROUP Vct Dna OutgoingOptions" "GROUP Vct Dna IncomingOptions" "GROUP Vct Dna CallOptions"
Scope	Application

Description	*Fruni/n Dna* This is the description of the generic application *Dna* component. It includes the superset of all attributes which may apply to a *Vc*. Particular applications will typically offer only a subset of these attributes by providing a definition of their own *Dna* subcomponent.
Mib	VcTester
Opt. Subcomp.	"COMPONENT Vct Dna ClosedUserGroup (Cug)" "COMPONENT Vct Dna HuntGroupMember (HgM)"
Common Verbs	Help List Display

GROUP Vct Dna Address

Properties	Provisioned
Description	*Address* group contains attributes common to all *Dna's*. Every *Dna* used in the network is defined with this group of 2 attributes. String of address digits is complemented by type of address and Npi. These attributes are used to interpret format of the address digits.
Mib	VcTester

ATTRIBUTE Vct Dna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Process
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *Dna* that is entered. Address may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Mib	VcTester
Values	x121 e164

Default	x121

ATTRIBUTE Vct Dna dataNetworkAddress (dna)

Access	Read and write
Criticality	Process
Description	*Dna* attribute contains digits which form unique identifier of the customer interface. It can be compared (approximation only) to telephone number where phone number identifies unique telephone set. *Dna* digits are selected and assigned by network operators.
Mib	VcTester
Values	BCD (1..15)
Default	No default

GROUP Vct Dna OutgoingOptions

Properties	Provisioned
Description	*OutgoingOptions* group defines call options of a *Dna* for calls which are made out of the interface represented by *Dna*. All these options are not used for calls arriving to the interface represented by *Dna*.
Mib	VcTester

ATTRIBUTE Vct Dna outCalls (ouc)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing calls (from the DTE to the network) can be made using this particular *D*na. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Outgoing Calls Barred' feature for *Dnas* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	VcTester

Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna outNormalCharge (onc)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing normal charged calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna outReverseCharge (orc)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing reverse charged calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute is ignored if the corresponding attribute, outCalls is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna outForceReverseCharge (ofr)

Access	Read and write

Description	This attribute specifies whether to force outgoing reverse charged calls. This attribute, if set to a value of ***yes*** forces reverse charging on all outgoing calls (from the DTE to the network) using this particular *Dna* unless the caller specifies a NUI in which case the call is charged to the NUI. If set to a value of ***no*** then reverse charging is not forced for outgoing calls. This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***.This attribute must be semantically consistent with the corresponding attribute, *outReverseChargeCalls*.
Mib	VcTester
Values	no yes
Default	no

ATTRIBUTE Vct Dna outNormalPriority (onp)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing normal priority calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***. This option can be also included in X.25 signaling, in such case it will be overruled.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna outHighPriority (ohp)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing high priority calls (from the DTE to the network) can be made

using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***.

This option can be also included in X.25 signaling, in such case it will be overruled.

Mib: VcTester

Values: disallowed
allowed

Default: allowed

ATTRIBUTE Vct Dna outDefaultPriority (odf)

Access: Read and write

Description: This attribute, if set to ***normal*** indicates that the default priority for outgoing calls (from the DTE to the network) using this particular *Dna* is normal priority - if the priority is not specified by the DTE. If this attribute is set to ***high*** then the default priority for outgoing calls using this particular *Dna* is high priority.

It can be overridden by the discardPriority under DLCI Direct Call subcomponent.

This option can be also included in X.25 signaling, in such case it will be overruled.

Mib: VcTester

Values: normal
high

Default: normal

ATTRIBUTE Vct Dna outIntl (oic)

Access: Read and write

Description: This attribute, if set to a value of ***allowed*** indicates that outgoing international calls (from the DTE to the network) can be made using this particular *Dna*. If set to a value of ***disallowed***, then

such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE.

This attribute also currently controls access to the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls are allowed.

This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***.

Mib	VcTester
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Vct Dna outFsRestrictedResponse (ofrc)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing fast select calls (from the DTE to the network) with a restricted response can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Vct Dna outFsUnrestrictedResponse (ofu)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that outgoing fast select calls (from the DTE to the network) with an unrestricted response can be made using this particular *Dna*. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE.

This attribute is ignored if the corresponding attribute, *outCalls* is set to a value of ***disallowed***.

Mib: VcTester

Values: disallowed
allowed

Default: disallowed

ATTRIBUTE Vct Dna outPathSensitivitySignal (oss)

Access: Read and write

Description: This is the sensitivity signaling. If this attribute is set to ***allowed***, the signaled value on sensitivity will be used.

Mib: VcTester

Values: allowed
disallowed

Default: disallowed

ATTRIBUTE Vct Dna outDefaultPathReliability (opr)

Access: Read and write

Description: This attribute specifies the default class of routing for reliability routing for all outgoing calls (from the DTE to the network) using this particular *Dna*. The chosen default class of routing applies to all outgoing calls established using this *Dna*, and applies to the packets travelling in both directions on all outgoing calls (local to remote, and remote to local). For incoming calls, the default class of routing is chosen by the calling party (as opposed to DPN, where either end of the call can choose the default routing class).

This attribute, if set to a value of ***normal***, indicates that the default class of routing is normal reliability routing. If set to a value of ***high***, then the default class of routing is high reliability routing.

High reliability is the standard choice for most DPN and Nortel Networks Multiservice Switch services. It usually indicates that

packets are overflowed or retransmitted at various routing levels. Typically high reliability results in duplication and disordering of packets in the network when errors are detected or during link congestion. However, the *Vc* handles the duplication and disordering to ensure that packets are delivered to the DTE properly.

For the Frame Relay service, duplication of packets is not desired, in which case, ***normal*** reliability may be chosen as the preferred class of routing.

Mib	VcTester
Values	normal high
Default	high

ATTRIBUTE Vct Dna outPathReliabilityOverRide (oro)

Access	Read and write
Description	If outReliabilityOverRide set in the call request, the called end will use the calling end provisioning data on reliability to override his provisioning data.
Mib	VcTester
Values	yes no
Default	no

ATTRIBUTE Vct Dna outPathReliabilitySignal (ores)

Access	Read and write
Description	*outPathReliabilitySignal* is reliability routing signaling. If this attribute is set to ***allowed***, the signaled value on reliability will be used.
Mib	VcTester
Values	allowed disallowed

Default	disallowed

ATTRIBUTE Vct Dna outAccess (oua)

Access	Read and write
Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed*** indicates that outgoing calls (from the DTE to the network) to the open (non-CUG) part of the network are permitted. It also permits outgoing calls to DTE's that have Incoming Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made using this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Closed User Group with Outgoing Access' feature for *Dna's* in that outgoing access is granted if this attribute is set to a value of ***allowed***.
Mib	VcTester
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Vct Dna defaultTransferPriority (dtp)

Access	Read and write
Description	This attribute specifies the default transfer priority to network for all outgoing calls using this particular *Dna*. It is overRidden by the *transferPriority* provisioned in the *DLCI* Direct Call sub-component. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput). When the transfer priority is set at ***high***, the trunk queue is set to

high, the routing metric is set to delay.

When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput.

The default of *defaultTransferPriority* is ***normal.***

Mib	VcTester
Values	normal high
Default	normal

ATTRIBUTE Vct Dna transferPriorityOverRide (tpor)

Access	Read and write
Description	When this attribute is set to ***yes***, the called end will use the calling end provisioning data on transfer priority to override its own provisioning data. If it is set ***no***, the called end will use its own provisioning data on transfer priority. For more information about transfer priority, please refer to the previous attribute *defaultTransferPriority.* The default of *transferPriorityOverRide* is ***no***.
Mib	VcTester
Values	yes no
Default	no

GROUP Vct Dna IncomingOptions

Properties	Provisioned
Description	*IncomingOptions* defines set of options for incoming calls. These options are used for calls arriving to the interface represented by *Dna*. For calls originated from the interface, *IncomingOptions* attributes are not used.
Mib	VcTester

ATTRIBUTE Vct Dna incCalls (inc)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then incoming calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for *Dna's* in that incoming calls are barred if this attribute is set to a value of ***disallowed***. Either *outCalls*, or *incCalls* (or both) must be set to a value of ***allowed*** for this *Dna* to be usable.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna incHighPriorityReverseCharge (ihp)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that incoming high priority, reverse charged calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***,then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute, together with *the incNormalPriorityReverseChargeCalls* attribute corresponds to the ITU-T 'Reverse Charging Acceptance' feature for *Dna's* in that reverse charged calls are accepted if both attributes are set to a value of ***allowed***. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed

Default	allowed

ATTRIBUTE Vct Dna incNormalPriorityReverseCharge (inp)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that incoming normal priority, reverse charged calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute, together with th*e* *incHighPriorityReverseChargeCalls* attribute corresponds to the ITU-T 'Reverse Charging Acceptance' feature for *Dna's* in that reverse charged calls are accepted if both attributes are set to a value of ***allowed***. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna incIntlNormalCharge (iin)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that incoming international normal charged calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute also currently controls access to/from the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls (also normal charged) are allowed. This attribute is ignored if the corresponding attribute, ***incCalls*** is set to a value of ***disallowed***.
Mib	VcTester

Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna incIntlReverseCharge (iir)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that incoming international reverse charged calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute also currently controls access to/from the E.164 numbering plan, and if set to a value of ***allowed***, then cross-numbering plan calls (also normal charged) are allowed. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna incFastSelect (ifs)

Access	Read and write
Description	This attribute specifies whether fast select calls may be received. This attribute, if set to a value of ***allowed*** indicates that incoming fast select calls (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Fast Select Acceptance' feature for *Dnas* in that incoming fast select calls are accepted if this attribute is set to a value of ***allowed***. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	VcTester

Values	disallowed allowed
Default	disallowed

ATTRIBUTE Vct Dna incSameService (iss)

Access	Read and write
Description	This attribute, if set to a value of ***allowed*** indicates that incoming calls from the same service type (eg: X.25, ITI, SNA) (from the network to the DTE) can be made to this *Dna*. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	disallowed allowed
Default	allowed

ATTRIBUTE Vct Dna incChargeTransfer (ict)

Access	Read and write
Description	This attribute, if set to a value of ***yes*** indicates that the charges for incoming normal charged calls from a DTE with the same DNIC (calls from the network to the DTE) will be transferred to the called DTE. If set to a value of ***no***, then charges will not be transferred. This attribute is ignored if the corresponding attribute, *incCalls* is set to a value of ***disallowed***.
Mib	VcTester
Values	no yes
Default	no

ATTRIBUTE Vct Dna incAccess (ina)

Access	Read and write

Description	This attribute is an extension of the Closed User Group (CUG) facility, as follows: This attribute, if set to a value of ***allowed*** indicates that incoming calls (from the network to the DTE) from the open (non-CUG) part of the network are permitted. It also permits incoming calls from DTE's that have Outgoing Access capabilities. If set to a value of ***disallowed***, then such calls cannot be made to this *Dna* - such calls will be cleared by the local DCE. This attribute corresponds to the ITU-T 'Closed User Group with Incoming Access' feature for *Dnas* in that incoming access is granted if this attribute is set to a value of ***allowed***.
Mib	VcTester
Values	disallowed allowed
Default	disallowed

GROUP Vct Dna CallOptions

Properties	Provisioned
Description	*CallOptions* group defines additional options for calls not related directly to direction of a call.
Mib	VcTester

ATTRIBUTE Vct Dna serviceCategory (cat)

Access	Read and write
Description	This attribute is assigned for each different type of service within which this *Dna* is configured. It is placed into the Service Category attribute in the accounting record by both ends of the *Vc*.
Mib	VcTester
Values	gsp x25 enhancedIti ncs mlti sm

ici
dsp3270
iam
mlhi
term3270
iti
bsi
hostIti
x75
hdsp3270
api3201
sdlc
snaMultiHost
redirectionServ
trSnaTpad
offnetNui
gasServer
vapServer
vapAgent
frameRelay
ipiVc
gvcIf

Default frameRelay

ATTRIBUTE Vct Dna packetSizes (pks)

Access Read and write

Description

This attribute indicates the allowable packet sizes supported for call setup using this *Dna*. ITU-T recommends that packet size ***128*** always be supported. Attributes defaultRecvFrmNetworkPacketSize and defaultSendToNetworkPacketSize are related to this attribute.

Mib	VcTester
Set of	16 32 64 128 256 512 1024 2048 4096
Default	(128, 256, 512)

ATTRIBUTE Vct Dna defaultRecvFrmNetworkPacketSize (rps)

Access	Read and write
Description	This attribute indicates the default local receive packet size from network to DTE for all calls using this particular *Dna*. Attribute packetSizes has to be set with corresponding value.
Mib	VcTester
Values	16 32 64 128 256 512 1024 2048 4096
Default	128

ATTRIBUTE Vct Dna defaultSendToNetworkPacketSize (sps)

Access	Read and write
Description	This attribute indicates the default local send packet size from

	DTE to network for all calls using this particular *Dna*. Attribute packetSizes has to be set with corresponding value.
Mib	VcTester
Values	16 32 64 128 256 512 1024 2048 4096
Default	128

ATTRIBUTE Vct Dna defaultRecvFrmNetworkThruputClass (drt)

Access	Read and write
Description	This attribute indicates the default receive throughput class for all calls using this particular *Dna*.
Mib	VcTester
Values	Decimal (3..15)
Default	10

ATTRIBUTE Vct Dna defaultSendToNetworkThruputClass (dst)

Access	Read and write
Description	This attribute indicates the default send throughput class for all calls using this particular *Dna*.
Mib	VcTester
Values	Decimal (0..15)
Default	10

ATTRIBUTE Vct Dna defaultRecvFrmNetworkWindowSize (rws)

Access	Read and write

Description	This attribute indicates the default number of data packets that can be received by the DTE from the DCE before more packets can be received. This view is oriented with respect to the DTE.
Mib	VcTester
Values	Decimal (1..7)
Default	2

ATTRIBUTE Vct Dna defaultSendToNetworkWindowSize (sws)

Access	Read and write
Description	This attribute indicates the number of data packets that can be transmitted from the DTE to the DCE and must be acknowledged before more packets can be transmitted.
Mib	VcTester
Values	Decimal (1..7)
Default	2

ATTRIBUTE Vct Dna packetSizeNegotiation (psn)

Access	Read and write
Description	This attribute, if set to ***local*** indicates that packet sizes can be negotiated locally at the interface irrespective of the remote interface. If set to ***endToEnd***, then local negotiation is not permitted and packet sizes are negotiated between both ends of the VC.
Mib	VcTester
Values	endToEnd local
Default	endToEnd

ATTRIBUTE Vct Dna cugFormat (cft)

Access	Read and write
Description	This attribute specifies which cug format is used when DTE signals CUG indices, basic or extended.

	This attribute, if set to ***extended*** indicates that the DTE signals and receives CUG indices in extended CUG format. If set to a value of ***basic***, then the DTE signals and receives CUG indices in the basic CUG format.
Mib	VcTester
Values	basic extended
Default	basic

ATTRIBUTE Vct Dna cug0AsNonCugCall (cnc)

Access	Read and write
Description	This attribute, if set to ***allowed*** indicates that when a CUG index of 0 is signaled in a call request packet, the call is treated as a non-CUG call. If this attribute is set to ***disallowed***, then a CUG index of 0 is treated as an index, and an attempt is made to find the particular CUG corresponding with the *Dna*.
Mib	VcTester
Values	disallowed allowed
Default	disallowed

ATTRIBUTE Vct Dna signalPreferentialCugToLink (spc)

Access	Read and write
Description	This attribute, if set to ***no***, indicates that, at the destination (called) DTE, when a CUG call is received using the called DTE's preferential CUG, the preferential CUG's index is not signaled to the called DTE in the incoming call request packet. Otherwise, the preferential CUG's index is signaled to the link in the incoming call request packet.
Mib	VcTester
Values	no yes
Default	no

ATTRIBUTE Vct Dna signalIntlAddressToLink (sia)

Access	Read and write
Description	This attribute, if set to ***yes***, indicates that all addresses presented by the network (DCE) to the link (DTE) within incoming call request., call connected and clear packets are presented in international format with no prefix digit. International format includes DNIC in the address.
Mib	VcTester
Values	no yes
Default	no

ATTRIBUTE Vct Dna fastSelectCallsOnly (fso)

Access	Read and write
Description	This attribute, if set to ***yes***, indicates that the service is permitted restricted fast select calls in both the incoming and the outgoing directions using this *Dna*. If set to ***no***, then non fast select calls are permitted as well.
Mib	VcTester
Values	no yes
Default	no

ATTRIBUTE Vct Dna preselectRpoa (prp)

Access	Read and write
Description	This attribute, if set to ***yes***, indicates that this *Dna* subscribes to a pre-selected RPOA, in which case, the pre-selected RPOA is contained in the *rpoa* attribute described below. If set to ***no***, then a pre-selected RPOA is not subscribed.
Mib	VcTester

Values	no yes
Default	no

ATTRIBUTE Vct Dna accountClass (acl)

Access	Read and write
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. Use of this attribute is decided by network operator and it is an arbitrary number.
Mib	VcTester
Values	Decimal (0..255)
Default	0

ATTRIBUTE Vct Dna accountCollection (aco)

Access	Read and write
Description	This attribute indicates that accounting records are to be collected by the network for the various reasons: billing, test, study, auditing. The last of the parameters, force, indicates that accounting records are to be collected irrespective of other collection reasons. If none of these reasons are set, then accounting will be suppressed.
Mib	VcTester
Set of	bill test study audit force
Default	(bill)

ATTRIBUTE Vct Dna serviceExchange (sre)

Access	Read and write

Description	This attribute is an arbitrary number, entered by the network operator. The value of *serviceExchange* is included in the accounting record generated by *Vc*.
Mib	VcTester
Values	Decimal (0..255)
Default	0

ATTRIBUTE Vct Dna egressAccounting (ega)

Access	Read and write
Description	*egressAccounting* specifies if Egress accounting is enabled by Frame Relay service. Disabling of Egress accounting means that only segment counts are collected by VC and there are no frame relay counts in accounting records for Frame Relay service. Enabling of Egress accounting means that the accounting records for Frame Relay contain frame relay specific counts.
Mib	VcTester
Values	yes no
Default	no

ATTRIBUTE Vct Dna rpoa

Access	Read and write
Description	*rpoa* - Recognized Private Operating Agency is a ITU-T specified facility which allows the user to specify--at call setup time--the next transit network the call should use. The *rpoa* can override all routing decisions. If *Dna* subscribes to *preselectRpoa* as indicated by the previously described attribute, (*preselectRpoa* set to ***yes***) then this attribute contains preselected *rpoa*. If the *preselectRpoa* attribute is set to ***no***, then this attribute can be left at its default. This preselected *rpoa* will be used for all outgoing call request packets using this *Dna* if an *rpoa* is not explicitly specified in the call request. The *rpoa* represents the *dnic* of the directly

connected network through which the call will be routed in the presence of the *rpoa*.

Mib VcTester

Values BCD (4)

Default 0000

ATTRIBUTE Vct Dna dataPath (dpa)

Access Read and write

Description

This attribute specifies the data path to be used by Virtual Circuits on this interface. If the connection has a *DirectCall* component then the value can be overridden by the *dataPath* attribute of the *DirectCall* component.

This value applies to the connection after data transfer state is reached. All the data and control traffic will be sent using this data path. If the provisioned *dataPath* is not available the connection is not established.

The value of the *dataPath* is signaled by both ends of the connection. If this value is not the same at both ends ***dprsOnly*** is used for the duration of the connection.

A virtual circuit connection is always established using ***dprsOnly*** even if this attribute is provisioned as some other value.

dprsOnly - dynamic packet routing system is used

dprsMcsOnly - DPRS Multiservice Cut-Through Switching path is used.

dprsMcsFirst - DPRS Multiservice Cut-Through Switching path is used if it is available. If it is not available ***dprsOnly*** is used.

Mib VcTester

Values	dprsOnly dprsMcsOnly dprsMcsFirst
Default	dprsOnly

COMPONENT Vct Dna ClosedUserGroup (Cug)

Instance	Decimal (0..255)
Groups	"GROUP Vct Dna Cug CugOptions"
Scope	Application
Description	*Fruni/n Dna Cug* *ClosedUserGroup* options defines options associated with national or international *Cug* Identifier. Other *Dna's* in the network can have *Cug's* defined which groups these *Dna's* by *Cug interlockCode*. If *Dna's* are defined with *Cugs*, calls from *Dna's* which do not have the same *interlockCode* defined are refused. Attributes *incAccess* and *outAccess* can override this rule.
Mib	VcTester
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vct Dna Cug CugOptions

Properties	Provisioned
Description	This group defines options for. Attributes in this group defines *ClosedUserGroup* options associated with *interlockCode*. *Dna's* with the same *Cug* (*interlockCode*) can make calls within this group. Various combinations which permit or prevent calls in the same *Cug* group are defined here.
Mib	VcTester

ATTRIBUTE Vct Dna Cug type

Access	Read and write
Description	This attribute specifies the Cug type - the Cug is either a national Cug, or an international Cug. International closed user groups are usually established between DTE's for which there is an X.75 Gateway between; whereas national closed user groups are usually established between DTE's for which there is no X.75 Gateway between. (National Cugs cannot normally traverse an X.75 Gateway). If this attribute is set to ***national***, then the *Cug* is a national *Cug*, in which case, the *dnic* should be left at its default value since it is not part of a national *Cug*. If this attribute is set to ***international***, then the *Cug* is an international *Cug*, in which case, the *dnic* should be set appropriately as part of the *Cug interlockCode*.
Mib	VcTester
Values	national international
Default	national

ATTRIBUTE Vct Dna Cug dnic

Access	Read and write
Description	This attribute specifies the *dnic* (Data Network ID Code) of the *Cug* by which packet networks are identified. This attribute is not applicable if the *Cug* is a ***national*** *Cug*, as specified by the Cug *type* attribute. There are usually 1 or 2 *dnics* assigned per country, for public networks. The U.S. is an exception where each BOC has a *dnic*. Also, a group of private networks can have its own *dnic*. *dnic* value is not an arbitrary number. It is assigned by international agreement and controlled by ITU-T.
Mib	VcTester
Values	BCD (4)

Default	0000

ATTRIBUTE Vct Dna Cug interlockCode (ilc)

Access	Read and write
Description	This attribute specifies the *Cug* identifier of a national or international *Cug* call. It is an arbitrary number and it also can be called Cug in some descriptions. Interfaces (*Dna's*) defined with this number can make calls to *Dna's* with the same *interlockCode*.
Mib	VcTester
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vct Dna Cug preferential (pre)

Access	Read and write
Description	This attribute, if set to ***yes*** indicates that this *Cug* is the preferential *Cug*, in which case it will be used during the call establishment phase if the DTE has not explicitly specified a *Cug* index in the call request packet. If set to ***no***, then this *Cug* is not the preferential *Cug*. Only one of the *Cugs* associated with a particular *Dna* can be the preferential *Cug* - only one *Cug* can have this attribute set to ***yes***.
Mib	VcTester
Values	no yes
Default	no

ATTRIBUTE Vct Dna Cug outCalls (ouc)

Access	Read and write
Description	This attribute, if set to ***allowed*** indicates that outgoing calls (from the DTE into the network) can be made using this particular *Cug*. If set to a value of ***disallowed***, then outgoing calls cannot be made using this *Cug* - such calls will be cleared by the local DCE.

This attribute corresponds to the ITU-T 'Outgoing Calls Barred' feature for *cugs* in that outgoing calls are barred if this attribute is set to a value of ***disallowed***.

Mib: VcTester

Values: disallowed
allowed

Default: allowed

ATTRIBUTE Vct Dna Cug incCalls (inc)

Access: Read and write

Description: This attribute, if set to ***allowed*** indicates that incoming calls (from the network to the DTE) can be made using this particular *Cug*. If set to ***disallowed***, then incoming calls cannot be made using this *Cug* - such calls will be cleared by the local DCE.
This attribute corresponds to the ITU-T 'Incoming Calls Barred' feature for *Cugs* in that incoming calls are barred if this attribute is set to a value of ***disallowed***.

Mib: VcTester

Values: disallowed
allowed

Default: allowed

ATTRIBUTE Vct Dna Cug privileged (pri)

Access: Read and write

Description: This attribute, if set to ***yes*** indicates that this *Cug* is a privileged *Cug*. In DPN, at least one side of a call setup within a *Cug* must have the *Cug* as a privileged *Cug*. If set to ***no***, then the *Cug* is not privileged.
If both the local DTE and the remote DTE subscribe to the *Cug*, but it is not privileged, then the call will be cleared. This attribute is typically used for a host DTE which must accept calls from many other DTE's in which case the other DTE's cannot call one another, but can call the host. In this example, the host would have the privileged *Cug*, and the other DTE's would belong to the same *Cug*, but it would not be privileged.

Mib	VcTester
Values	no yes
Default	yes

COMPONENT Vct Dna HuntGroupMember (HgM)

Groups	"GROUP Vct Dna HgM Interface (If)" "GROUP Vct Dna HgM Operational (Op)"
Scope	Application
Description	*GvcIf/n Dna/n HgMember* This component specifies the Hunt Groups to which this member belongs. A hunt group member subscribes to at least one hunt group.
Mib	VcTester
Subcomponents	"COMPONENT Vct Dna HgM HuntGroupAddress (HgAddr)"
Common Verbs	Help List Display Add DELete

GROUP Vct Dna HgM Interface (If)

Properties	Provisioned
Description	This group contains the interface parameters between the *HuntGroupMember* and the Hunt Group server.
Mib	VcTester

ATTRIBUTE Vct Dna HgM availabilityUpdateThreshold (aut)

Access	Read and write
Description	This attribute indicates the number of channels that have to be freed or occupied before the Availability Message Packet (AMP)

	is sent to the Hunt Group Server informing it of the status of this interface.
Mib	VcTester
Values	Decimal (0..4096)
Default	1

GROUP Vct Dna HgM Operational (Op)

Properties	Operational
Description	This group contains the operational attributes of the *HuntGroupMember* component.
Mib	VcTester

ATTRIBUTE Vct Dna HgM maxAvailableChannels (maxAc)

Access	Read only
Description	This attribute indicates the maximum number of available channels for this *HuntGroupMember*.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Dna HgM availableChannels (ac)

Access	Read only
Description	This attribute indicates the number of available channels reported to the hunt group in the Availability Message Packet (AMP). It is modified by adding 1 by the application when a channel is freed and subtracting 1 when a channel is occupied.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Dna HgM availabilityDelta (ad)

Access	Read only
Description	This attribute indicates the net change in the available channels since the last Availability Message Packet (AMP) was sent to the Hunt Group. Once the absolute value of this attribute reaches the *availabilityUpdateThreshold* an AMP is sent to the host and the *availabilityDelta* is reset to 0. If this attribute is positive it means an increase of the number of available channels. If it is negative it means a decrease in the number of available channels.
Mib	VcTester
Values	Signed (-4096..4096)
Default	No default

COMPONENT Vct Dna HgM HuntGroupAddress (HgAddr)

Instance	Decimal (0..1)
Groups	"GROUP Vct Dna HgM HgAddr Address (Addr)"
Scope	Application
Description	*GvcIf/n Dna/n HgM HuntGroupAddress/n* This component specifies the Hunt Group address to which this member belongs. A hunt group member belongs to at least one hunt group.
Mib	VcTester
Common Verbs	Help List Display Add DELete

GROUP Vct Dna HgM HgAddr Address (Addr)

Properties	Provisioned

Description	This group contains attributes common to all DNAs. Every DNA used in the network is defined with this group of 2 attributes. String of address digits complemented by the NPI.
Mib	VcTester

ATTRIBUTE Vct Dna HgM HgAddr numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute indicates the Numbering Plan Indicator (NPI) the *Dna* that is entered. Address may belong to X.121 or E.164 plans.
Mib	VcTester
Values	x121 e164
Default	x121

ATTRIBUTE Vct Dna HgM HgAddr dataNetworkAddress (dna)

Access	Read and write
Description	This attribute contains digits which form unique identifier of the customer interface. It can be compared (approximation only) telephone number where phone number identifies unique telephone set. *Dna* digits are selected and assigned by network operators.
Mib	VcTester
Values	BCD (1..15)
Default	No default

COMPONENT Vct DirectCall (Dc)

Instance	Decimal (1..10)
Groups	"GROUP Vct Dc Options"
Scope	Application
Description	*Fruni/n Dlc*i/n dc This component defines direct call options for calls issued without operator intervention. Connection is complete and can be

initiated automatically. Frequency of connection tries is controlled by retry timer.

Mib: VcTester

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vct Dc Options

Properties: Provisioned

Description: *Options* group defines attributes associated with direct call. It defines complete connection in terms of path and call options. This connection can be permanent (pvc) or switched (svc). It can have facilities. The total number of bytes of facilities including the facility codes, and all of the facility data from all of the four classes of facilities:
ITU-T_Facilities
DTE_Facilities
National_Facilities
International_Facilities
must not exceed maximum subnet packet size defined for the whole network in ModuleData Vcs component.

Mib: VcTester

ATTRIBUTE Vct Dc localNpi (lnpi)

Access: Read and write

Description: This attribute specifies the Numbering Plan Indicator (NPI) of the *localDna*.

Mib: VcTester

Values: x121
e164

Default: x121

ATTRIBUTE Vct Dc localDna (ldna)

Access	Read and write
Description	This attribute specifies the Data Network Address (*Dna*) of the local DTE. This address is used in formatting of call request to *remoteDna*.
Mib	VcTester
Values	BCD (0..15)
Default	No default

ATTRIBUTE Vct Dc remoteNpi (rnpi)

Access	Read and write
Description	Remote numbering Plan Indicator (Npi) indicates the numbering plan used in the *remoteDna*.
Mib	VcTester
Values	x121 e164
Default	x121

ATTRIBUTE Vct Dc remoteDna (rdna)

Access	Read and write
Description	This attribute specifies the Data Network Address (*Dna*) of the remote. This is the called (destination) DTE address (*Dna*) to which this direct call will be sent. Initially, the called DTE address attribute must be present, that is, there must be a valid destination address. However, it may be possible in the future to configure the direct call with a mnemonic address, in which case, this attribute will contain a zero-length *Dna*, and the mnemonic address will be carried as one of the facilities.
Mib	VcTester
Values	BCD (1..15)
Default	No default

ATTRIBUTE Vct Dc remoteLcn (rlcn)

Access	Read and write
Description	This attribute provides the remote LCN (Logical Channel Number) - it is used only for PVCs, where attribute *type* is set to ***permanentMaster*** or ***permanentSlave*** or ***permanentBackupSlave***. In ***switched*** case, value of *remoteLcn* is not known when call request is made.
Mib	VcTester
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vct Dc type

Access	Read and write
Description	This attribute specifies the type of *Vc* call: ***switched,*** ***permanentMaster***, ***permanentSlave***, ***permanentSlaveWithBackup,*** ***permanentBackupSlave***, ***spvcMaster***, ***spvcSlave***, ***spvcSlaveWithBackup,*** ***spvcBackupSlave***. If the value of this attribute is set to ***switched*** then the remote end must also be provisioned as ***switched***. No information at the remote end is defined about this switched interface. If the value is set to ***permanentMaster,*** then a permanent connection will be established between 2 ends. The remote end must be defined as a ***permanentSlave***, ***permanentBackupSlave*** or ***permanentSlaveWithBackup***. The connection cannot be established if the remote end is defined as anything else. The end

defined as ***permanentMaster*** always initiates the calls. It will attempt to call once per minute.

If the value is set to ***permanentSlave*** then a permanent connection will be established between 2 ends. The remote end must be defined as a ***permanentMaster.*** The connection cannot be established if the remote end is defined as anything else. The ***permanentSlave*** *end* will attempt to call once per minute.

If the value is set to ***permanentSlaveWithBackup*** then a permanent connection will be established between the two ends. The remote end must be defined as a ***permanentMaster.*** The connection cannot be established if the remote interface end is defined as anything else. The ***permanentSlaveWithBackup*** *end* will attempt to call once per minute. When *type* is set to ***permanentSlaveWithBackup*** connection will be cleared if interface becomes unavailable. This enables a retry of the connection which can be redirected to ***permanentBackupSlave***.

If the value is set to ***permanentBackupSlave*** then a permanent connection will be established between the 2 ends only if the ***permanentMaster*** end is disconnected from the ***permanentSlaveWithBackup*** end and a backup call is established by the redirection system. If the ***permanentSlaveWithBackup*** interface becomes visible again, the ***permanentBackupSlave*** end is disconnected and the ***permanentSlaveWithBackup*** end is reconnected to the ***permanentMaster*** end. The ***permanentBackupSlave*** end does not try to establish pvc call.

Mib	VcTester
Values	switched (svc) permanentMaster (master) permanentSlave (slave) permanentBackupSlave (backSl) permanentSlaveWithBackup (slavWB) spvcMaster (spvcM) spvcSlave (spvcS) spvcBackupSlave (spvcBackS) spvcSlaveWithBackup (spvcSWBack)
Default	switched

ATTRIBUTE Vct Dc svcAutoCallRetry (acr)

Access	Read and write
Description	*svcAutoCallRetry* is used only for ***switched*** calls, in which case the attribute *type* is set to ***switched***. Otherwise, this attribute is ignored by the *Vc*s. This attribute, if set to ***yes*** for Svc, indicates that the *Vc* will continually try to establish the SVC rather than clearing the *Vc* after the first unsuccessful call attempt. Further, if the call fails while in data transfer phase, then the *Vc* will automatically attempt to reconnect. The call attempts are made by the *Vc* once per time provisioned in *InterfaceOptions* as *callRetryTimer*, repeatedly. If set to ***no*** for SVCs, then the *Vc* behaves in the standard mode, making a single call attempt.
Mib	VcTester
Values	no yes
Default	no

ATTRIBUTE Vct Dc userData (usd)

Access	Read and write
Description	This attribute contains the user data, if present. *userData* is a 0 to 16 length string which is appended to the call request packet that is presented to the called (destination) DTE. User data can be a 0 to 128 byte string for fast select calls; otherwise it is 0 to 16 byte string. Fast select calls are indicated as such using the X.25 ITU-T facility for 'Reverse Charging'. The length of the user data attribute is not verified during service provisioning. If more than 16 bytes of user data is specified on a call without the fast select option, then the call is cleared with a clear cause of 'local procedure error', and a diagnostic code of 39 (as defined in the ITU-T X.25 Recommendation).
Mib	VcTester

Values	String (0..128, Hex)
Default	No default

ATTRIBUTE Vct Dc discardPriority (dp)

Access	Read and write
Description	This attribute specifies the discard priority for outgoing call using this *DLCI*. The discard priority has three provisioning values: ***normal, high,*** and ***useDnaDefPriority***. Traffic with ***normal*** priority are discarded first than the traffic with ***high*** priority. The *Dna* default value (provisioned by *outDefaultPriority*) is taken if this attribute is set to the value ***useDnaDefPriority***. The default of *discardPriority* is ***useDnaDefPriority***.
Mib	VcTester
Values	normal high useDnaDefPriority
Default	useDnaDefPriority

ATTRIBUTE Vct Dc dataPath (dpa)

Access	Read and write
Description	This attribute specifies the data path to be used by Virtual Circuits on this interface. The value of the *dataPath* attribute in the *Dna* component is overridden by this attribute if the value is not ***useDnaValue***. This value applies to the connection after data transfer state is reached. All the data and control traffic will be sent using this data path. If the provisioned *dataPath* is not available the connection is not established. The value of the *dataPath* is signaled by both ends of the connection. If this value is not the same at both ends ***dprsOnly*** is

used for the duration of the connection.

A virtual circuit connection is always established using ***dprsOnly*** even if this attribute is provisioned as some other value.

dprsOnly - dynamic packet routing system is used

dprsMcsOnly - dprs Multi-Service Cut-Through Switching path is used.

dprsMcsFirst - dprs Multi-Service Cut-Through Switching path is used if it is available. If it is not available ***dprsOnly*** is used.

useDnaValue - use the value provisioned in *Dna* component.

Mib: VcTester

Values:
dprsOnly (dpOnly)
dprsMcsOnly (mcOnly)
dprsMcsFirst (mcFrst)
useDnaValue (dnaVal)

Default: dprsOnly

ATTRIBUTE Vct Dc cugIndex (ci)

Access: Read and write

Description

This attribute specifies the CUG index which is to be signaled in PVC call requests to the remote end.

The type of CUG signaling is defined in attribute *cugType* in this component.

Mib: VcTester

Values: Decimal (0..255)

Default: 0

ATTRIBUTE Vct Dc cugType (ct)

Access: Read and write

Description

This attribute specifies the type of CUG signaling to be used in PVC call request. Index of CUG to be used is defined in attribute *cugIndex* in this component.

Possible values are:
cug - signal cug
cugOa - signal cug with outgoing access
doNotSignal - no CUG in call request

Mib: VcTester

Values: cug, cugOa, doNotSignal

Default: doNotSignal

ATTRIBUTE Vct Dc ccittFax (cfa)

Access: Read and write

Description: This is the i'th ITU-T facility required for this direct call. Within the provisioning system, the user specifies the facility code along with the facility parameters. The facility is represented internally as a hexadecimal string following the X.25 ITU-T representation for facility data.
The user specifies the facility code when adding, changing or deleting a facility. The upper two bits of the facility code indicate the class of facility. From the class of the facility, one can derive the number of bytes of facility data, as follows:
Class A - 1 byte of fax data
Class B - 2 bytes of fax data
Class C - 3 bytes of fax data
Class D - variable length of fax data.

Mib: VcTester

Values: String (0..128, Hex)

Replication: Hex (H.1; H.2; H.3; H.4; H.9; H.42; H.43; H.44; H.47; H.48; H.49; H.c4; H.c6)

Default	No default

ATTRIBUTE Vct Dc dteFax (dfa)

Access	Read and write
Description	This is the i'th DTE facility required for this direct call. Within the provisioning system, the user specifies the facility code along with the facility parameters. The facility is represented internally as a hexadecimal string following the X.25 ITU-T representation for facility data.
Mib	VcTester
Values	String (0..128, Hex)
Replication	Hex (H.a; H.b; H.c9; H.ca; H.cb; H.d2; H.d3)
Default	No default

ATTRIBUTE Vct Dc intlFax (ifa)

Access	Read and write
Description	This is the i'th International facility required for this direct call. Within the provisioning system, the user specifies the facility code along with the facility parameters. The facility is represented internally as a hexadecimal string following the X.25 ITU-T representation for facility data.
Mib	VcTester
Values	String (0..128, Hex)
Replication	Hex (H.1..H.ff)
Default	No default

COMPONENT Vct Vc

Groups	"GROUP Vct Vc CallData (Cad)" "GROUP Vct Vc IntervalData (Intd)" "GROUP Vct Vc Statistics (Stats)"

Scope	Application
Description	... *Vc()* This component defines display of general Vc dynamic attributes
Mib	VcTester
Common Verbs	Help List Display

GROUP Vct Vc CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to General *Vc*. It can be displayed only for General *Vc* which is created by application.
Mib	VcTester

ATTRIBUTE Vct Vc type

Access	Read only
Description	This attribute displays the type of call, ***pvc*** or ***svc***. *type* is provided at provisioning time.
Mib	VcTester
Values	pvc svc
Default	No default

ATTRIBUTE Vct Vc state

Access	Read only
Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.

Mib	VcTester
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Vct Vc previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	VcTester
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Vct Vc diagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	VcTester
Values	Decimal (0..255)

Default	No default

ATTRIBUTE Vct Vc previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	VcTester
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vct Vc calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	VcTester
Values	x121 e164
Default	No default

ATTRIBUTE Vct Vc calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	VcTester
Values	BCD (1..15)
Default	No default

ATTRIBUTE Vct Vc calledLcn

Access	Read only

Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	VcTester
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vct Vc callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	VcTester
Values	x121 e164
Default	No default

ATTRIBUTE Vct Vc callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	VcTester
Values	BCD (1..15)
Default	No default

ATTRIBUTE Vct Vc callingLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the calling end.
Mib	VcTester
Values	Decimal (1..65535)

Default	No default

ATTRIBUTE Vct Vc accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	VcTester
Values	yes no
Default	No default

ATTRIBUTE Vct Vc fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	VcTester
Values	yes no
Default	No default

ATTRIBUTE Vct Vc localRxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of send packets.
Mib	VcTester
Values	unknown 16 32 64 128 256

	512 1024 2048 4096
Default	No default

ATTRIBUTE Vct Vc localTxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of send packets.
Mib	VcTester
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE Vct Vc localTxWindowSize

Access	Read only
Description	This attribute displays the send window size provided on incoming call packets or the default when a call request packet does not explicitly provide the window size.
Mib	VcTester
Values	Decimal (0..127)
Default	No default

ATTRIBUTE Vct Vc localRxWindowSize

Access	Read only

Description	This attribute displays the receive window size provided on incoming call packets or the default when a call request does not explicitly provide the window sizes.
Mib	VcTester
Values	Decimal (0..127)
Default	No default

ATTRIBUTE Vct Vc pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	VcTester
Values	high normal
Default	No default

ATTRIBUTE Vct Vc accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	VcTester
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE Vct Vc priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	VcTester

Values	normal high
Default	No default

ATTRIBUTE Vct Vc segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Vc subnetTxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of the data packets on this *Vc*.
Mib	VcTester
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE Vct Vc subnetTxWindowSize

Access	Read only
Description	This attribute displays the current send window size of *Vc*.

Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Vc subnetRxPktSize

Access	Read only
Description	This attribute displays the locally negotiated size of receive packets.
Mib	VcTester
Values	unknown 16 32 64 128 256 512 1024 2048 4096
Default	No default

ATTRIBUTE Vct Vc subnetRxWindowSize

Access	Read only
Description	This attribute displays the receive window size provided on incoming call packets and to the default when a call request does not explicitly provide the window sizes.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Vc maxSubnetPktSize

Access	Read only

Description	This attribute displays the maximum packet size allowed on *Vc*.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Vc transferPriorityToNetwork

Access	Read only
Description	This attribute displays the priority in which data is transferred to the network. The transfer priority is a preference specified by an application according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput). When the transfer priority is set at ***high***, the trunk queue is set to high, the routing metric is set to delay. When the transfer priority is set at ***normal***, the trunk queue is set to normal, the routing metric is set to throughput.
Mib	VcTester
Values	normal high
Default	No default

ATTRIBUTE Vct Vc transferPriorityFromNetwork

Access	Read only
Description	This attribute displays the priority in which data is transferred from the network. The transfer priority is a preference specified by an application

	according to its delay-sensitivity requirement. Frames with high transfer priority are served by the network before the frames with normal priority. Each transfer priority contains a predetermined setting for trunk queue (interrupting, delay or throughput), and routing metric (delay or throughput). When the transfer priority is set at ***high***, and the trunk queue is set to high, the routing metric is set to delay. When the transfer priority is set at ***normal***, the trunk queue is set to normal, and the routing metric is set to throughput.
Mib	VcTester
Values	normal high
Default	No default

GROUP Vct Vc IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	VcTester

ATTRIBUTE Vct Vc elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	VcTester
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Vct Vc segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	VcTester
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Vct Vc segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	VcTester
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Vct Vc startTime

Access	Read only

Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	VcTester
Values	Time (DHMS)
Default	No default

ATTRIBUTE Vct Vc callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	VcTester
Values	Decimal (0..4294967295)
Default	No default

GROUP Vct Vc Statistics (Stats)

Properties	Operational
Description	... *Statistics(Stats)* This group defines general attributes collected by general *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods.
Mib	VcTester

ATTRIBUTE Vct Vc ackStackingTimeouts

Access	Read only
Description	This attribute counts the number of ack stacking timer expiries. It is used as an indicator of the acknowledgment behavior across the subnet when ack stacking is in effect. If it expires often, usually this means end users will experience longer delay. The ack stacking timer specifies how long the *Vc* will wait before finally sending the subnet acknowledgment. if this attribute is set to a value of 0, then the *Vc* will automatically return acknowledgment packets without delay. If this attribute is set to a value other than zero, then the *Vc* will wait for this amount of time in an attempt to piggyback the acknowledgment packet on another credit or data packet. If the *Vc* cannot piggyback the acknowledgment packet within this time, then the packet is returned without piggybacking.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute counts the number of subnet frames discarded due to the sequence number being out of range. Two Categories apply for the General *Vc* 1) lost Acks (previous Range) 2) unexpected Packets (next Range) *Vc* internally maintains its own sequence number of packet order and sequencing. Due to packet retransmission, *Vc* may receive duplicate packets that have the same *Vc* internal sequence number. Only 1 copy is accepted by the *Vc* and other copies of the same packets are detected through this count. This attribute can be used to record the frequency of packet retransmission due to *Vc* and other part of the subnet.
Mib	VcTester
Values	Decimal (0..5000)

Default No default

ATTRIBUTE Vct Vc duplicatesFromSubnet

Access Read only

Description

This attribute counts the number of subnet packets discarded due to duplication. It is used to detect software error fault or duplication caused by retransmitting.

Mib VcTester

Values Decimal (0..5000)

Default No default

ATTRIBUTE Vct Vc frmRetryTimeouts

Access Read only

Description This attribute counts the number of frames which have retransmission time-out.

If packets from *Vc* into the subnet are discarded by the subnet, the source *Vc* will not receive any acknowledgment. The retransmission timer then expires and packets will be retransmitted again. Note that the *Vc* idle probe may be retransmitted and is included in this count. This statistics does not show the distribution of how many times packets are retransmitted (e.g. first retransmission results in successful packet forwarding).

Mib VcTester

Values Decimal (0..5000)

Default No default

ATTRIBUTE Vct Vc peakRetryQueueSize

Access Read only

Description This attribute indicates the peak size of the retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. It records the largest body of unacknowledged packets.

Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc peakOoSeqQueueSize

Access	Read only
Description	This attribute indicates the peak size of the out of sequence queue. This attribute is used as an indicator of the sequencing behavior across the subnet. It records the largest body of out of sequence packets.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc peakOoSeqFrmForwarded

Access	Read only
Description	This attribute indicates the peak size of the sequence packet queue. This attribute is used as an indicator of the sequencing behavior across the subnet. It records the largest body of out of sequence packets, which by the receipt of an expected packet have been transformed to expected packets. The number of times this peak is reached is not recorded as it is traffic dependent.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc peakStackedAcksRx

Access	Read only
Description	This attribute indicates the peak size of wait acks. This attribute is used as an indicator of the acknowledgment

	behavior across the subnet. It records the largest collective acknowledgment.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc subnetRecoveries

Access	Read only
Description	This attribute counts the number of successful *Vc* recovery attempts. This attribute is used as an indicator of how many times the *Vc* path is broken but can be recovered. This attribute is useful to record the number of network path failures.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc windowClosuresToSubnet

Access	Read only
Description	This attribute counts the number of window closures to subnet. A packet may have been sent into the subnet but its acknowledgment from the remote *Vc* has not yet been received. This is a 8 bit sequence number.This number is useful in detecting whether the *Vc* is sending any packet into the subnet.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc windowClosuresFromSubnet

Access	Read only

Description	This attribute counts the number of window closures from subnet. This attribute is useful in detecting whether the *Vc* is receiving any packet from the subnet.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vc wrTriggers

Access	Read only
Description	This attribute displays the number of times the *Vc* stays within the W-R region. The W-R region is a value used to determined the timing of credit transmission. Should the current window size be beneath this value, the credits will be transmitted immediately. Otherwise, they will be transmitted later with actual data. The wrTriggers statistic is therefore used to analyze the flow control and credit mechanism.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

COMPONENT Vct Vcfr

Groups	"GROUP Vct Vcfr CallData (Cad)" "GROUP Vct Vcfr IntervalData (Intd)" "GROUP Vct Vcfr FrameRelayData (Frd)"
Scope	Application
Description	This component defines the statistics collected by Frame Relay Vc. It is needed for lightweight vc.
Mib	VcTester
Common Verbs	Help List Display

VERB Ping Vct Vcfr

Impact Passive

Description *Ping [-roundTripDelay] [-sendPktDataSize(octets)] [-returnPktDataSize(octets)] FrUni/<n> Dlci/<n> Vc*

Ping causes a query packet to be sent to the destination module where the Frame Relay DLCI VC terminates. It can be used to either display the path of the VC being used by the Frame Relay DLCI or to measure the round trip delay of the Frame Relay DLCI connection. Since the query packet carries the same path selector as the Frame Relay data packets and the Frame Relay VC's transfer priority (TP) is used to set the RCOS, reliability and emission priority of the query packet, the path taken by the *ping* query packet will be the same as that of the Frame Relay data except at the source and destination module. The *ping* packets originate from the CP rather than the Frame Relay DLCI's FP. At the far end, it is also the CP that receives the ping packets and returns them, rather than the Frame Relay FP.

Note that this command does not provide any information regarding the status of the far end VC process. If, however, the destination module is unreachable or the VC path is congested, the operator will be notified.

The *ping* command can be issued with or without options. If no options are specified, the command reports the path of the VC associated with the Frame Relay DLCI. When the command is used to find the VC path, it displays the RID and MID of each module that the query packet passes through on its way to the destination. If the *roundTripDelay* option is specified, the command reports the time taken to reach the destination and back. For the *roundTripDelay* option, the path taken by the query packets in both directions (from the source to the destination and from the destination back to the source) is the same as that of the Frame Relay data except at the source and destination where the *ping* packets are generated and bounced back by the CP rather than the Frame Relay DLCI's FP.

The *ping* command supports the following options:

-roundTripDelay (-rtd): If this option is selected, the round trip delay time to reach the destination and back will be reported. The round trip delay is calculated by timing how long it takes to send five packets to the destination node and back. The packet size can be specified using the *sendPktSize* and *returnPktSize* options. The minimum, maximum and average time taken by the returned packets are reported. If this option is not selected, the path taken to the destination is displayed.

-sendPktDataSize: This option specifies the number of data octets to be included in the round trip delay query packet. The rtd query packet consists of the Passport common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the ping control information. If the value specified for this option is less than 12, 12 octets are sent to the destination. The actual number of data octets sent is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default packet data size, 128 octets, will be used. This option is ignored if the *-rtd* option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

-returnPktDataSize: This option specifies the number of data octets to be included in the round trip delay acknowledge packet. The rtd acknowledge packet consists of the Passport common header (2 octets), the subnet header (11 octets), plus the data. The minimum data size is 12, since 12 octets are required to carry the

ping control information. If the value specified for this option is less than 12, 12 octets are returned to the source. The actual number of data octets returned is displayed in the ping response. Note that the total packet size (headers plus data) is identical to that of a Frame Relay packet carrying the same number of octets of data.

If this option is not selected the default packet data size, 128 octets, will be used. This option is ignored if the *-rtd* option is not specified. If the specified packet data size exceeds the capability of some facilities on the path, the packet will be discarded and the operator will get the timeout response.

GROUP Vct Vcfr CallData (Cad)

Properties	Operational
Description	This group represents operational call data related to Frame Relay *Vc*. It can be displayed only for Frame Relay *Vc* which is created by application.
Mib	VcTester

ATTRIBUTE Vct Vcfr type

Access	Read only
Description	This attribute displays the type of call, ***pvc***, ***svc, spvc*** or ***frf10spvc***.
Mib	VcTester
Values	pvc svc spvc frf10spvc
Default	No default

ATTRIBUTE Vct Vcfr state

Access	Read only

Description	This attribute displays the state of call control. P5 state is not supported but is listed for completeness. Transitions from one state to another take very short time. *state* most often displayed is ***dataTransferP4***.
Mib	VcTester
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Vct Vcfr previousState

Access	Read only
Description	This attribute displays the previous state of call control. This is a valuable field to determine how the processing is progressing.
Mib	VcTester
Values	creating readyP1 dteWaitingP2 dceWaitingP3 dataTransferP4 unsupportedP5 dteClearRequestP6 dceClearIndicationP7 termination
Default	No default

ATTRIBUTE Vct Vcfr diagnosticCode

Access	Read only

Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	VcTester
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vct Vcfr previousDiagnosticCode

Access	Read only
Description	This attribute displays the internal substate of call control. It is used to further refine *state* of call processing.
Mib	VcTester
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vct Vcfr calledNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the called end.
Mib	VcTester
Values	x121 e164
Default	No default

ATTRIBUTE Vct Vcfr calledDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the called (destination) DTE to which this call is sent. This address if defined at receiving end will complete *Vc* connection.
Mib	VcTester
Values	BCD (1..15)

Default	No default

ATTRIBUTE Vct Vcfr calledLcn

Access	Read only
Description	This attribute displays the Logical Channel Number of the called end. It is valid only after both ends of *Vc* exchanged relevant information.
Mib	VcTester
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vct Vcfr callingNpi

Access	Read only
Description	This attribute displays the Numbering Plan Indicator (NPI) of the calling end.
Mib	VcTester
Values	x121 e164
Default	No default

ATTRIBUTE Vct Vcfr callingDna

Access	Read only
Description	This attribute displays the Data Network Address (*Dna*) of the calling end.
Mib	VcTester
Values	BCD (1..15)
Default	No default

ATTRIBUTE Vct Vcfr callingLcn

Access	Read only

Description	This attribute displays the Logical Channel Number of the calling end.
Mib	VcTester
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vct Vcfr accountingEnabled

Access	Read only
Description	This attribute indicates that this optional section of accounting record is suppressed or permitted. If *accountingEnabled* is ***yes***, conditions for generation of accounting record were met. These conditions include billing options, vc recovery conditions and Module wide accounting data options.
Mib	VcTester
Values	yes no
Default	No default

ATTRIBUTE Vct Vcfr fastSelectCall

Access	Read only
Description	This attribute displays that this is a fast select call.
Mib	VcTester
Values	yes no
Default	No default

ATTRIBUTE Vct Vcfr pathReliability

Access	Read only
Description	This attribute displays the path reliability.
Mib	VcTester

Values	high normal
Default	No default

ATTRIBUTE Vct Vcfr accountingEnd

Access	Read only
Description	This attribute indicates if this end should generate an accounting record. Normally, ***callingEnd*** is the end to generate an accounting record.
Mib	VcTester
Values	callingEnd calledEnd
Default	No default

ATTRIBUTE Vct Vcfr priority

Access	Read only
Description	This attribute displays whether the call is a ***normal*** or a ***high*** priority call.
Mib	VcTester
Values	normal high
Default	No default

ATTRIBUTE Vct Vcfr segmentSize

Access	Read only
Description	This attribute displays the segment size (in bytes) used on the call. It is used to calculate the number of segments transmitted and received.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Vcfr maxSubnetPktSize

Access	Read only
Description	This attribute indicates the maximum packet size allowed on the *Vc*.
Mib	VcTester
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE Vct Vcfr rcosToNetwork (rcosto)

Access	Read only
Description	This attribute indicates the routing metric routing class of service to the network.
Mib	VcTester
Values	throughput delay multimedia
Default	No default

ATTRIBUTE Vct Vcfr rcosFromNetwork (rcosfrom)

Access	Read only
Description	This attribute displays the routing metric Routing Class of Service from the Network.
Mib	VcTester
Values	throughput delay multimedia
Default	No default

ATTRIBUTE Vct Vcfr emissionPriorityToNetwork (epto)

Access	Read only

Description	This attribute displays the network internal emission priority to the network.
Mib	VcTester
Values	normal high interrupting
Default	No default

ATTRIBUTE Vct Vcfr emissionPriorityFromNetwork (epfrom)

Access	Read only
Description	This attribute displays the network internal emission priority from the network.
Mib	VcTester
Values	normal high interrupting
Default	No default

ATTRIBUTE Vct Vcfr dataPath (dapa)

Access	Read only
Description	This attribute indicates the data path used by the connection. The data path is provisioned in *Dna* and *DirectCall* components. The displayed value of this attribute can be different from the provisioned value. If the connection is using ***dprsOnly*** data path, the string ***dprsOnly*** is displayed. (dynamic packet routing system) If the connection is using ***dprsMcsOnly*** data path, the string ***dprsMcsOnly*** is displayed. If the connection is using ***dprsMcsFirst*** data path, the string ***dprsMcsFirst*** is displayed.

Mib	VcTester
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vct Vcfr dprsMcsEndPoint (dmep)

Access	Read only
Description	This attribute displays the data path used by the connection. Data path is provisioned in *Dna* and *DirectCall* components. If the connection is using ***dprsOnly*** data path, this attribute is empty. If the connection is using ***dprsMcsOnly*** or ***dprsMcsFirst*** data path, this attribute displays component name of the dprsMcsEndPoint.
Mib	VcTester
List of	The name of the component
Default	No default

GROUP Vct Vcfr IntervalData (Intd)

Properties	Operational
Description	This group defines display of interval data collected by *Vc*. Data in this group is variable and may depend on time when this *display* command is issued.
Mib	VcTester

ATTRIBUTE Vct Vcfr elapsedTimeTillNow

Access	Read only
Description	This attribute displays the elapsed time representing the period of this interval data. It is elapsed time in 0.1 second increments since *Vc* started.
Mib	VcTester

Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Vct Vcfr segmentsRx

Access	Read only
Description	This attribute displays the number of segments received at the time command was issued. This is the segment received count maintained by accounting at each end of the *Vc*. This counter is updated only when the packet cannot be successfully delivered out of the sink *Vc* and to the sink AP Conditions in which packets may be discarded by the sink *Vc* include: missing packets due to subnet discards, segmentation protocol violations due to subnet discard, duplicated and out-of-ranged packets and packets that arrive while *Vc* is in path recovery state.
Mib	VcTester
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Vct Vcfr segmentsSent

Access	Read only
Description	This attribute displays the number of segments sent at the time command was issued. This is the segment sent count maintained by accounting at the source *Vc*. *Vc* only counts packets that *Vc* thinks can be delivered successfully into the subnet. In reality, these packets may be dropped by trunking, for instance. This counter is not updated when splitting fails, when *Vc* is in a path recovery state, when packet forwarding fails to forward this packet and when subsequent packets have to be discarded as we want to minimize the chance of out-of-sequence and do not intentionally send out-of-sequenced packets into the subnet.
Mib	VcTester
Values	Decimal (0..16777215)
Default	No default

ATTRIBUTE Vct Vcfr startTime

Access	Read only
Description	This attribute displays the start time of this interval period. If *Vc* spans 12 hour time or time of day change *startTime* reflects new time as recorded at 12 hour periods or time of day changes.
Mib	VcTester
Values	Time (DHMS)
Default	No default

ATTRIBUTE Vct Vcfr callReferenceNumber

Access	Read only
Description	This attribute displays the call reference number which is a unique number generated by the switch.The same Call Reference Number is stored in the interval data (accounting record) at both ends of the call. It can be used as one of the attributes in matching duplicate records generated at each end of the call.
Mib	VcTester
Values	Decimal (0..4294967295)
Default	No default

GROUP Vct Vcfr FrameRelayData (Frd)

Properties	Operational
Description	This group defines Frame Relay attributes collected by Frame Relay *Vc*. The purpose of *Vc* attributes is to aid end users and verification people to understand the *Vc* internal behavior. This is particularly useful when the network has experienced abnormality and we want to isolate problems and pinpoint trouble spots. Attributes are collected on a per *Vc* basis. Until a need is identified, statistics are not collected at a processor level. Each attribute is stored in a 32 bit field and is initialized to zero when a *Vc* enters into the data transfer state. When a PVC is

disconnected and then connected again, the attributes will be reset. Attributes cannot be reset through other methods.
Frame Relay *Vc* uses a best effort data packet delivery protocol and a different packet segmentation and combination methods from the General *Vc*. The Frame Relay *Vc* uses the same call setup and control mechanism (e.g. the support of non-flow control data packets) as in a General *Vc*. Most General *Vc* statistics and internal variables are used in a Frame Relay *Vc* and are displayed by software developers

Mib VcTester

ATTRIBUTE Vct Vcfr frmCongestedToSubnet

Access Read only

Description This attribute displays the number of frames from link discarded due to lack of resources. It keeps track of the number of frames from link that have to be discarded. The discard reasons include insufficient memory for splitting the frame into smaller subnet packet size.

Mib VcTester

Values Decimal (0..5000)

Default No default

ATTRIBUTE Vct Vcfr cannotForwardToSubnet

Access Read only

Description This attribute displays the number of discarded packets that can not be forwarded into the subnet because of subnet congestion. Number of frames from link discarded due to failure in forwarding a packet from *Vc* into the subnet.- This attribute is increased when packet forwarding fails to forward a packet into the subnet. If a frame is split into multiple subnet packets and a partial packet has to be discarded, all subsequent partial packets that have not yet been delivered to the subnet will be discarded as well.

Mib VcTester

Values Decimal (0..5000)

Default	No default

ATTRIBUTE Vct Vcfr notDataXferToSubnet

Access	Read only
Description	This attribute records the number of frames from link discarded when the *Vc* tries to recover from internal path failure.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr outOfRangeFrmFromSubnet

Access	Read only
Description	This attribute displays the number of frames from subnet discarded due to out of sequence range for arriving too late.
Mib	VcTester
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vct Vcfr combErrorsFromSubnet

Access	Read only
Description	This attribute records the number of subnet packets discarded at the sink *Vc* due to the *Vc* segmentation and combination protocol error. Usually, this occurs when the subnet discards packets and thus this statistics can be used to guest the number of subnet packets that are not delivered to the *Vc*. It cannot be used as an actual measure because some subnet packets may have been delivered to *Vc* but have to be discarded because these are partial packets to a frame in which some other partial packets have not been properly delivered to *Vc*
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr duplicatesFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded due to duplication. Although packets are not retransmitted by the Frame Relay *Vc*, it is possible for the subnet to retransmit packets. When packets are out-of-sequenced and copies of the same packets arrive, then this attribute is increased.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr notDataXferFromSubnet

Access	Read only
Description	This attribute displays the number of subnet packets discarded when data transfer is suspended in *Vc* recovery.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr frmLossTimeouts

Access	Read only
Description	This attribute displays the number of lost frame timer expiries. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr ooSeqByteCntExceeded

Access	Read only

Description	This attribute displays the number times that the out of sequence byte threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr peakOoSeqPktCount

Access	Read only
Description	This attribute displays the frame relay peak packet count of the out of sequence queue. This attribute records the maximum queue length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr peakOoSeqFrmForwarded

Access	Read only
Description	This attribute displays the frame relay peak size of the sequence packet queue. The subnet may deliver packets out-of-sequenced. These packets are then queued in an out-of-sequenced queue, waiting for a packet with the expected sequence number to come. When that packet arrives, this attribute records the maximum number of packets that were out-of-sequenced, but now have become in-sequenced. The statistics is used to measure expected queue size due to normal subnet packet disorder (not due to subnet packet discard). Current implementation also uses

	this statistics to set a maximum size for the out-of-sequenced queue.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr sendSequenceNumber

Access	Read only
Description	This attribute displays the Vc internal packet's send sequence number. Note that a "packet" in this context, may be either a user data packet, or an OAM frame.
Mib	VcTester
Values	Decimal (0..1048575)
Default	No default

ATTRIBUTE Vct Vcfr pktRetryTimeouts

Access	Read only
Description	This attribute displays the number of packets which have retransmission time-outs. When this count is excessive, the network is very congested and packets have been discarded in the subnet.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr peakRetryQueueSize

Access	Read only
Description	This attribute displays the peak size of retransmission queue. This attribute is used as an indicator of the acknowledgment behavior across the subnet. Records the largest body of unacknowledged packets.

Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr subnetRecoveries

Access	Read only
Description	This attribute displays the number of successful *Vc* recovery attempts.
Mib	VcTester
Values	Decimal (0..5000)
Default	No default

ATTRIBUTE Vct Vcfr ooSeqPktCntExceeded

Access	Read only
Description	This attribute displays the number times that the out of sequence packet threshold is exceeded. When the threshold is exceeded, this condition is treated as if the loss frame timer has expired and all frames queued at the sink *Vc* are delivered to the AP. We need to keep this count to examine if the threshold is engineered properly. This should be used in conjunction with the peak value of out-of-sequenced queue and the number of times the loss frame timer has expired. This count should be relatively small when compared with loss frame timer expiry count.
Mib	VcTester
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vct Vcfr peakOoSeqByteCount

Access	Read only
Description	This attribute displays the frame relay peak byte count of the out of sequence queue. This attribute records the maximum queue

	length of the out-of-sequenced queue. The counter can be used to deduce the message buffer requirement on a *Vc*.
Mib	VcTester
Values	Decimal (0..50000)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Vct

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Vmg

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Vmg

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COMPONENT VirtualMediaGateway (Vmg)

Instance	Decimal (0..255)
Groups	"GROUP Vmg Provisioned (Prov)" "GROUP Vmg OsiState (State)" "GROUP Vmg Stats" "GROUP Vmg WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS VirtualMediaGateway"

Scope	Application
Description	*VirtualMediaGateway/n* The Virtual Media Gateway component represents a pool of Media Gateway resources managed by a Signalling Gateway.
Mib	VirtualMediaGateway
Subcomponents	"COMPONENT Vmg MediaGatewayInterface (MgIf)" "COMPONENT Vmg Mtp3Connection (Mtp3Conn)"
Common Verbs	Help List Display Add DELete

GROUP Vmg Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes of the *Vmg* component.
Mib	VirtualMediaGateway

ATTRIBUTE Vmg linkToLogicalProcessor (lp)

Access	Read: All Write: All
Description	This attribute specifies the Logical Processor that this component and its subcomponents are associated with.
Mib	VirtualMediaGateway
Values	Link (Hardware, linkToApplications)
Default	No default

ATTRIBUTE Vmg linkToPort (lToPort)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies a link to a *Gips IpAddress Udp Port* component. This determines the IP Address and UDP port that the Media Gateways use to address this Virtual Media Gateway. The *linkToPort* attribute must be set. Changing this value will cause all the Media Gateway interfaces associated with this component to be restarted.
Mib	VirtualMediaGateway
Values	Link (Service, linkToApplication)
Default	No default

ATTRIBUTE Vmg relTimer

Access	Read: All Write: All

Description	This attribute specifies the amount of time that Q.2630 will wait for a RLC (release confirm) from the RNC in response to a Q2630 release message. The timer is started when a REL message is sent. The timer is stopped when an RLC message is received. Upon timer expiration, the resource is released and a reset procedure is initiated.
Mib	VirtualMediaGateway
Values	Decimal (2..60)
Units	seconds
Default	4

ATTRIBUTE Vmg relRetries

Access	Read: All Write: All
Description	This attribute specifies the number of times that Q.2630 will retry the REL (release) command and wait for a RLC (release confirm) command from the RNC.
Mib	VirtualMediaGateway
Values	Decimal (0..5)
Default	0

ATTRIBUTE Vmg linkToCsDomain

Access	Read: All Write: All
Criticality	Process
Description	This attributes specifies the signalling gateway that utilizes the Virtual Media Gateway (VMG) represented by this component to create bearer connections between an RNC and a Call Server. Changing this value will cause all the Media Gateway interfaces associated with this component to be restarted.

	This attribute must be set to *Sg/n CsDomain*.
Mib	VirtualMediaGateway
Values	Link (Service, linkToVirtualMediaGateway)
Default	No default

ATTRIBUTE Vmg usageSetThresh (setThr)

Access	Read: All Write: All
Description	This attribute specifies the threshold at which the Virtual Media Gateway (VMG) High Usage alarm is set. The alarm is set when the percentage of call channels used in the VMG exceeds the threshold value of the *usageSetThresh* attribute. This value must be greater than or equal to the threshold value of the *usageClrThresh* attribute. It is recommended that there is a reasonable gap between the value of usageSetThresh and usageClrThresh to avoid continuous setting and clearing of alarm.
Mib	VirtualMediaGateway
Values	Decimal (50..90)
Units	%
Default	75

ATTRIBUTE Vmg usageClrThresh (clrThr)

Access	Read: All Write: All
Description	This attribute specifies the threshold at which the Virtual Media Gateway (VMG) High Usage alarm is cleared. If the High Usage alarm is active and the percentage of call channels used in the VMG drops below the threshold value of the *usageClrThresh* attribute, the VMG High Usage alarm is cleared.

The value of this threshold must be less than or equal to the value of the *usageSetThresh* attribute.

It is recommended that there is a reasonable gap between the value of usageSetThresh and usageClrThresh to avoid continuous setting and clearing of alarm.

Mib	VirtualMediaGateway
Values	Decimal (1..90)
Units	%
Default	70

GROUP Vmg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VirtualMediaGateway

ATTRIBUTE Vmg adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

	The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VirtualMediaGateway
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vmg operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VirtualMediaGateway
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vmg usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

	The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VirtualMediaGateway
Values	idle active (activ) busy
Default	idle

GROUP Vmg Stats

Properties	Operational
Description	This group contains the operational attributes of this component.
Mib	VirtualMediaGateway

ATTRIBUTE Vmg estReqMsgs (erm)

Access	Read: All Write: Illegal
Description	This attribute counts Q.2630 ERQ (establish request) messages that were received from the RNC. The counter wraps to 0 when it exceeds its maximum value.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg connectedCalls (connCalls)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of calls that are in the connected state.

	The value of this attribute should be equal to the sum of the *connectedCalls* attribute of all the *Vmg/n MgIf/n* subcomponents.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg rejectedCalls (rejCalls)

Access	Read: All Write: Illegal
Description	This attribute counts the number of calls rejected by the Media Gateways controlled by this component. The counter wraps to 0 when it exceeds its maximum value.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg resets

Access	Read: All Write: Illegal
Description	This attribute counts Q.2630 RES (reset) messages that were received from the RNC. The counter wraps to 0 when it exceeds its maximum value.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg blocks

Access	Read: All Write: Illegal

Description	This attribute counts Q.2630 BLK (block) messages that were received from the RNC. The counter wraps to 0 when it exceeds its maximum value.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg unknownMsgs (unkMsgs)

Access	Read: All Write: Illegal
Description	This attribute counts messages of unknown type that were received from the RNC. The counter wraps to 0 when it exceeds its maximum value.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg peakUsedPercentage (pkPct)

Access	Read: All Write: Illegal
Description	This attribute indicates the peak percentage of the provisioned DS0s for this component that are in a non-idle state. The percentage is the peak measured over a collected statistic collection interval. The peak used percentage is reset to the current percentage of non-idle DS0s at the beginning of each collection interval. If collected statistics are disabled and therefore no collection interval exists, the peak used percentage is not periodically reset to the current used percentage.
Mib	VirtualMediaGateway
Values	Decimal (0..100)

Default	No default

ATTRIBUTE Vmg totalChannels (totChnl)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of DS0s provisioned for this component. This value is the summation of all Tdm resources under the VMG component. The value is updated when provisioning changes.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg unavailableChannels (unavailChnl)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of DS0s provisioned for this component that is unavailable. This includes unequipped, resource conflict and Out of Service DS0s. The value is updated when resource status changes or provisioning changes.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

GROUP Vmg WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	VirtualMediaGateway

ATTRIBUTE Vmg customCounter1 (customCntr1)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS VirtualMediaGateway

Description The statistics record generated by the VirtualMediaGateway component.

ATTRIBUTE Vmg estReqMsgs (erm)

Description This attribute counts Q.2630 ERQ (establish request) messages that were received from the RNC.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Vmg rejectedCalls (rejCalls)

Description This attribute counts the number of calls rejected by the Media Gateways controlled by this component.

The counter counts the events in the collection interval.

Values Decimal (0..4294967295)

ATTRIBUTE Vmg peakUsedPercentage (pkPct)

Description This attribute indicates the peak percentage of provisioned DS0s for this component that are in a non-idle state.

The value is set to the current percentage at the beginning of the collection interval.

Values Decimal (0..100)

COMPONENT Vmg MediaGatewayInterface (MgIf)

Instance Decimal (0..255)

Groups "GROUP Vmg MgIf Provisioned (Prov)"
"GROUP Vmg MgIf OsiState (State)"
"GROUP Vmg MgIf Operational (Oper)"
"GROUP Vmg MgIf WlcCustomCounters (WlcCustomCntr)"

"COLLECTED STATS VirtualMediaGateway MediaGatewayInterface"

Scope Application

Description	*Vmg/n MediaGatewayInterface/n* This component represents an interface to a single Media Gateway, a Voice Services Processor (VSP) card, controlled by the *VirtualMediaGateway/n* component. The Media Gateway Interface manages resources associated with the Media Gateway and initiates connection requests and releases.
Mib	VirtualMediaGateway
Opt. Subcomp.	"COMPONENT Vmg MgIf TdmResource (Tdm)" "COMPONENT Vmg MgIf AtmResource (AtmRsrc)"
Common Verbs	Help List Display Add DELete

GROUP Vmg MgIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of this component.
Mib	VirtualMediaGateway

ATTRIBUTE Vmg MgIf mgAtmAddress (mgAtmAddr)

Access	Read: All Write: All
Description	This attribute specifies the ATM Address of the Media Gateway associated with this component.
Mib	VirtualMediaGateway
Values	String (1..44, AESANsapAddress)
Default	No default

ATTRIBUTE Vmg MgIf mgIPAddr (ip)

Access	Read: All Write: All
Description	This attribute specifies the IP Address of the Media Gateway associated with this component. This value must match the IP Address specified by the attribute *ipAddress* provisioned in the *Nsta Vgs Control* component. Changing the value of this attribute will cause outstanding transactions to be affected.
Mib	VirtualMediaGateway
Values	IP address
Default	No default

ATTRIBUTE Vmg MgIf mgUdpPort (port)

Access	Read: All Write: All
Description	This attribute specifies the UDP port of the Media Gateway associated with this component. This value must match the UDP port specified by the instance value of the *Nsta Vgs Control UdpPort* component associated with the Media Gateway. Changing this value will cause outstanding transactions to be affected.
Mib	VirtualMediaGateway
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vmg MgIf mediaGatewayName (mgName)

Access	Read: All Write: All
Description	This attribute specifies the name of the Media Gateway associated with this component.

	This value must be the same as the value of the *hostname* attribute of the *Nsta/n Vgs* component associated with the corresponding Media Gateway.
Mib	VirtualMediaGateway
Values	String (1..255, ASCII)
Default	No default

ATTRIBUTE Vmg MgIf crcxAckTimer (crcxT)

Access	Read: All Write: All
Description	This attribute specifies the value of the ASPEN connection request timer. The timer is started when the Media Gateway Interface sends a Create Connection (CRCX) message to the Media Gateway. The timer is stopped when either an ACK or a NACK is received from the Media Gateway. If the timer expires, and the number of retries exceeds *crcxRetries*, the call is taken down, the ASPEN state machine goes to the Beat state, and a heartbeat message is sent to the Media Gateway. If the number of timer expiries exceeds *crcxRetries*, the attribute *crcxRetriesExhausted* is incremented. The product of *crcxTimer* and *crcxRetries* - 1, that is, the total delay for a connection establishment, should not exceed 30 seconds.
Mib	VirtualMediaGateway
Values	Decimal (1..15)
Units	seconds
Default	2

ATTRIBUTE Vmg MgIf crcxRetries (crcxR)

Access	Read: All Write: All
Description	This attribute specifies the number of retries for the *crcxAckTimer*.
Mib	VirtualMediaGateway
Values	Decimal (1..5)
Default	2

ATTRIBUTE Vmg MgIf dlcxAckTimer (dlcxAckT)

Access	Read: All Write: All
Description	This attribute specifies the value of the ASPEN Delete Connection Timer. This timer is started when the VMG sends an ASPEN DLCX message to the Media Gateway. The timer is stopped when it receives either an ACK or a NACK from the Media Gateway. If the timer expires, and the number of retries exceeds *crcxRetries*, the call is taken down, the ASPEN state machine goes to the Beat state, and a heartbeat message is sent to the Media Gateway. If the number of timer expiries exceeds *dlcxRetries*, the attribute *dlcxRetriesExhausted* is incremented. The product of *dlcxAckTimer* and *dlcxRetries* - 1, that is, the total delay for a connection deletion, should not exceed 30 seconds.
Mib	VirtualMediaGateway
Values	Decimal (1..15)
Units	seconds
Default	1

ATTRIBUTE Vmg MgIf dlcxRetries (dlcxR)

Access	Read: All Write: All
Description	This attribute specifies the number of retries for the *dlcxAckTimer*.
Mib	VirtualMediaGateway
Values	Decimal (1..5)
Default	2

ATTRIBUTE Vmg MgIf rinfAckTimer (rinfAckT)

Access	Read: All Write: All
Description	This attribute specifies the value of the ASPEN Request for Information (RINF) Timer. The timer is started when the Media Gateway Interface sends an ASPEN Request for Information (RINF) message to the Media Gateway. The timer is stopped when an ACK or a NACK is received from the Media Gateway. Upon timer expiry, the RINF message is resent one time to the Media Gateway. If no response is received for the second message, the ASPEN state machine goes to the Beat state, and a heart beat message is sent to the Media Gateway. The number of times no response is received for the resent message is indicated by the attribute *rinfRetriesExhausted*.
Mib	VirtualMediaGateway
Values	Decimal (1..15)
Units	seconds
Default	1

ATTRIBUTE Vmg MgIf svidAckTimer (svidAckT)

Access	Read: All Write: All
Description	This attribute specifies the value of the ASPEN Server Identification (SVID) timer. The timer is started when the VMG sends an ASPEN Server Identification (SVID) message to the Media Gateway. When an ACK is received from the Media Gateway, the timer is stopped, and the ASPEN layer goes to the Active state. Upon timer expiry, the message is resent an unlimited number of timer until an ACK is received from the Media Gateway. The number of timeouts of this timer is indicated by the attribute *svidTimeouts*.
Mib	VirtualMediaGateway
Values	Decimal (1..30)
Units	seconds
Default	5

ATTRIBUTE Vmg MgIf beatAckTimer (beatAckT)

Access	Read: All Write: All
Description	This timer is started when the VMG sends an ASPEN BEAT message to the Media Gateway. The timer is stopped in either of the two cases: An ACK is received from the Media Gateway: In this case, the ASPEN protocol layer goes to the Active State. A Restart In Progress (RSIP) message is received from the Media Gateway: In this case, the ASPEN protocol goes to the Inactive state because the reception of this message indicates that the Media gateway just got restarted.

The ASPEN protocol state for the Media Gateway corresponding to this component is indicated by the state attribute.

Upon timer expiry, the message is resent an unlimited number of times until an ACK is received from the Media Gateway.

Mib	VirtualMediaGateway
Values	Decimal (1..30)
Units	seconds
Default	1

ATTRIBUTE Vmg MgIf mdcxAckTimer (mdcxAckT)

Access	Read: All Write: All
Description	This attribute specifies the value of the ASPEN Modify Connection (MDCX) timer. The MDCX timer is started when the Virtual Media Gateway (VMG) sends an ASPEN Modify Connection (MDCX) message to the Media Gateway (MG). Upon timer expiry, the MDCX message is resent once to the MG. If no response is received after this retry, the ASPEN state machine transitions to the Beat state, and a heart beat message is sent to the MG.
Mib	VirtualMediaGateway
Values	Decimal (1..15)
Units	seconds
Default	1

ATTRIBUTE Vmg MgIf rlrsAckTimer (rlrsAckT)

Access	Read: All Write: All
Description	This attribute specifies the value of the ASPEN Release Resources (RLRS) timer.

	The RLRS timer is started when the Virtual Media Gateway (VMG) sends an ASPEN Release Resource (RLRS) message to the Media Gateway (MG). If this timer expires before either an ACK or NACK is received from the MG, the RLRS message is resent MG. If no response if received after this retry, the ASPEN state machine transitions to the Beat state, and a heart beat message is sent to the MG.
Mib	VirtualMediaGateway
Values	Decimal (1..15)
Units	seconds
Default	1

GROUP Vmg MgIf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VirtualMediaGateway

ATTRIBUTE Vmg MgIf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users

only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: VirtualMediaGateway

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vmg MgIf operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: VirtualMediaGateway

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vmg MgIf usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in

use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: VirtualMediaGateway

Values:
idle
active (activ)
busy

Default: idle

GROUP Vmg MgIf Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of this component.

Mib: VirtualMediaGateway

ATTRIBUTE Vmg MgIf state (st)

Access:
Read: All
Write: Illegal

Description: This attribute indicates the state of the Media gateway Interface.

The different states mean the following:
inactive: The ASPEN protocol is trying to establish a connection to the Media Gateway that has just restarted.
active: The connection with the Media Gateway has been established.
beat: After going to the active state, connection to the Media Gateway was lost, and heart beat messages are being sent to the Media Gateway.

Mib: VirtualMediaGateway

Values	inactive active beat
Default	No default

ATTRIBUTE Vmg MgIf connectedCalls (connCalls)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of calls in the connected state.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg MgIf callsPending (callsPend)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of calls being setup which have not yet reached the connected state.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg MgIf idleResources (idleRsrc)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of DS0s that are available for new call attempts.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg MgIf crcxRetriesExhausted (crcxRetrEx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the maximum retries for the CRCX Timer, specified by the attribute *crcxRetries* is exhausted. The counter wraps to 0 when it exceeds its maximum value.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg MgIf dlcxRetriesExhausted (dlcxRetEx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the maximum retries for the DLCX Timer, specified by the attribute *dlcxRetries* is exhausted. The counter wraps to 0 when it exceeds its maximum value.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg MgIf rinfRetriesExhausted (rinfRetrEx)

Access	Read: All Write: Illegal
Description	This attribute counts the number of times the maximum retries of the RINF Timer, that is, one retry, is exhausted. The counter wraps to 0 when it exceeds its maximum value.
Mib	VirtualMediaGateway

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg MgIf svidTimeouts

Access	Read: All Write: Illegal
Description	This attribute counts the number of timeouts of the *svidTimer*. The counter wraps to zero when it reaches the maximum value.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg MgIf beatTimeouts

Access	Read: All Write: Illegal
Description	This attribute counts the number of timeouts of the *beatAckTimer*. The counter wraps to zero when it reaches the maximum value.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

GROUP Vmg MgIf WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	VirtualMediaGateway

ATTRIBUTE Vmg MgIf customCounter1 (customCntr1)

Access	Read: All Write: Illegal

Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg MgIf customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg MgIf customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

COLLECTED STATS VirtualMediaGateway MediaGatewayInterface

Description — The statistics record generated by the VirtualMediaGateway MediaGatewayInterface component.

ATTRIBUTE Vmg MgIf crcxMsgs (crcxMsgs)

Description — This attribute indicates the number of CONNECTION REQUEST messages sent to the Media Gateway over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf dlcxMsgs (dlcxMsgs)

Description — This attribute indicates the number of DELETE REQUEST messages sent to the Media Gateway over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf rinfMsgs (rinfMsgs)

Description — This attribute indicates the number of REQUEST FOR INFORMATION messages sent to the Media Gateway over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf resetMsgs (resetMsgs)

Description — This attribute indicates the total number of RESET messages sent in either direction over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf crcxAckMsgs (crcxAckMsgs)

Description — This attribute indicates the number of CONNECTION REQUEST ACKNOWLEDGE messages received from the Media Gateway over the collection interval.

Values — Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf dlcxAckMsgs (dlcxAckMsgs)

Description	This attribute indicates the number of DELETE REQUEST ACKNOWLEDGE messages received from the Media Gateway over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf updateCicInfo (updateCicInfo)

Description	This attribute indicates the number of UPDATE CIC INFO messages received from the Media Gateway over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf sigFailMsgs (sigFailMsgs)

Description	This attribute indicates the number of SIGNALLING FAILURE messages received from the Media Gateway over the collection interval.
Values	Decimal (0..4294967295)

ATTRIBUTE Vmg MgIf sigOkMsgs (sigOkMsgs)

Description	This attribute indicates the number of SIGNALLING OK messages received from the Media Gateway over the collection interval.
Values	Decimal (0..4294967295)

COMPONENT Vmg MgIf TdmResource (Tdm)

Instance	Decimal (0..200)
Groups	"GROUP Vmg MgIf Tdm Provisioned (Prov)" "GROUP Vmg MgIf Tdm OsiState (State)" "GROUP Vmg MgIf Tdm WlcCustomCounters (WlcCustomCntr)"
Scope	Device
Description	*Vmg/n MgIf/n TdmResource/n*

	This component represents a TDM resource used by a Media Gateway, an E1 or T1 span.
Mib	VirtualMediaGateway
Dyn. Subcomp.	"COMPONENT Vmg MgIf Tdm DS0Resource (DS0)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vmg MgIf Tdm Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of this component.
Mib	VirtualMediaGateway

ATTRIBUTE Vmg MgIf Tdm startingCic (startcic)

Access	Read: All Write: All
Criticality	Component
Description	The *startingCic* attribute provides a unique logical identifier for a particular E1 resource. The Signalling System Number 7 (SS7) Circuit Identification Codes (CICs) associated with the Digital Signal Level 0 (DS0s) managed by this resource are numbered beginning with the *startingCic* attribute value and ending with *startingCic* + 30, inclusive. CIC numbers are assigned to all 31 DS0s in the *timeslots* attribute whether they are in use or not on this *TdmResource* component. The *startingCic* attribute value for an E1 resource must not fall between the *startingCic* and *startingCic*+30 of any other E1 resource under the same Virtual Media Gatway.

	If a CCS channel exists on the E1 resource, the DS0 for that channel will be assigned a CIC, however this CIC will never be allocated for use by the Call Server.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg Mglf Tdm bearerType

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the bearer type supported by this *TdmResource* component. The value specified by the *bearerRate* attribute must correspond to a rate supported by the bearer type specified. ***speech*** - speech is supported at the following rates: 4.75 kbit/s, 5.15 kbit/s, 5.9 kbit/s, 6.7 kbit/s, 7.4 kbit/s, 7.95 kbit/s, 10.2 kbit/s, and 12.2 kbit/s ***data*** - data is supported at the following rates: 14.4 kbit/s and 64 kbit/s
Mib	VirtualMediaGateway
Values	speech data
Default	speech

ATTRIBUTE Vmg Mglf Tdm timeslots (ts)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the block of timeslots controlled by this *TdmResource* component. There are 31 timeslots within an E1

span that can be controlled. Since this component is used to represent an E1 or T1 span, a maximum of 31 timeslots is used in this attribute.

One timeslot may be reserved for signalling.

More than one *MgIf* component can utilize a single E1/T1 span specified by the *interfaceName* attributes of a *TdmResource* subcomponent. The *timeslots* attribute allows the operator to divide up the timeslots of a given E1/T1 span among multiple *MgIf* components. Two *MgIf* components cannot control the same timeslot; so, the operator must ensure that no two *MgIf* components using a *TdmResource* attribute with the same *interfaceName* attribute specify any of the same values for this attribute. If more than one *TdmResource* component specifies the same timeslots, an alarm is generated when the components are activated, and only one of the *TdmResource* components is enabled. This will be the component that has registered first with the Voice Services Processor (VSP) card for reservation of the timeslots.

By default, this attribute specifies 30 timeslots omitting timeslot 31 for signalling. If a VSP is controlled by two different *MgIf* components, this attribute must be set to specify only the timeslots that this *MgIf* component controls as described above.

There may be no more than one timeslot omitted from the sequence of timeslots specified by this attribute. The timeslot blocks (1,2,3,4) and (1,2,3,5) are valid, but the timeslot block (1,2,4,6) is not valid because two timeslots are omitted from the sequence. The omitted timeslot must be used for signalling and cannot be specified by the *timeslots* attribute of another *TdmResource* component using this span. In addition, the *AmrBrag* component on the VSP represented by this *TdmResource* component must have an *Mtp2* subcomponent with an instance value equal to the number of the omitted timeslot.

Not every E1 span uses a timeslot for signalling. If the *AmrBrag* component or *CsdBrag* component associated with the span represented by this *TdmResource* does not have an *Mtp2* subcomponent, there is no need to omit a timeslot on any of the

TdmResource components that divide up this span. Additionally in this case, the *timeslots* attribute of the *Chan* component associated with the VSP's *AmrBrag* component or *CsdBrag* component must be set to specify timeslots 1 through 30 inclusive.

In the case when this *TdmResource* component is controlling a T1 (DS1) resource on a VSP this attribute will not allow the use of timeslots 25 through 31 inclusive.

Mib	VirtualMediaGateway
Set of	Decimal (1..31)
Default	(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30)

ATTRIBUTE Vmg Mglf Tdm interfaceName (ifName)

Access	Read: All Write: All
Criticality	Component
Description	This attribute specifies the Time Division Multiplexing (TDM) connection component hierarchy on the Voice Services Processor (VSP) associated with this *TdmResource* component. The value specified depends on the TDM interface card type in use on the Media Gateway. For the 32pE1Aal card type, this attribute is set to the value specified by the *Nsta/n Vgs AmrBrag/n interfaceName* attribute or *Nsta/n Vgs CsdBrag/n interfaceName* attribute. For the 4pOc3ChSmIr card type, this attribute is set to the component hierarchy provisioned for this TDM resource on the Media Gateway. The first two format examples below illustrate how this attribute should be set when the 4pOc3ChSmIr card type is in use on the Media Gateway. If Line Automatic Protection Switching (LAPS) is configured, then in the case of a switchover, this attribute may not match the attribute on the Media Gateway (MG) as discussed above. In this case, changes are not required to this attribute value. The VSP card on the MG ensures that the resource names are interpreted

correctly when a LAPS switchover occurs.

The *interfaceName* attribute must have one of the following formats:

Lp/n Sdh/n Vc4/j Vc12/k,l,m E1 Chan/n
Lp/n Sonet/n Sts/j Vt12/l,m DS1 Chan/n
Lp/n E1/n Chan/n

Mib: VirtualMediaGateway

Values: String (1..80, ASCII)

Default: No default

GROUP Vmg Mglf Tdm OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: VirtualMediaGateway

ATTRIBUTE Vmg Mglf Tdm adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: VirtualMediaGateway

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vmg Mglf Tdm operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: VirtualMediaGateway

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vmg Mglf Tdm usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: VirtualMediaGateway

Values:
idle
active (activ)
busy

Default: idle

GROUP Vmg Mglf Tdm WlcCustomCounters (WlcCustomCntr)

Properties: Operational

Description: This group contains the spare counters that can be dynamically patched.

Mib: VirtualMediaGateway

ATTRIBUTE Vmg Mglf Tdm customCounter1 (customCntr1)

Access:
Read: All
Write: Illegal

Description: This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.

Mib: VirtualMediaGateway

Values: Decimal (0..4294967295)

Default: No default

ATTRIBUTE Vmg Mglf Tdm customCounter2 (customCntr2)

Access:
Read: All
Write: Illegal

Description: This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a

	mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg MgIf Tdm customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vmg MgIf Tdm DS0Resource (DS0)

Instance	Decimal (0..31)
Groups	"GROUP Vmg MgIf Tdm DS0 Operational (Oper)" "GROUP Vmg MgIf Tdm DS0 WlcCustomCounters (WlcCustomCntr)"
Scope	Device
Description	Vmg/n MgIf/n TdmResource/n DS0Resource/n This operational component represents a DS0 Resource that is controlled by the Media Gateway.
Mib	VirtualMediaGateway
Common Verbs	Help List Display

GROUP Vmg Mglf Tdm DS0 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *DS0Resource* component.
Mib	VirtualMediaGateway

ATTRIBUTE Vmg Mglf Tdm DS0 cic (cic)

Access	Read: All Write: Illegal
Description	This attribute indicates the SS7 Circuit Identifier Code (CIC) associated with this DS0.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg Mglf Tdm DS0 state (st)

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the DS0. The states of the DS0 are: ***unknown*** - This DS0 is not controlled by this Virtual Media Gateway (VMG). ***regPending*** - Registration to the Media Gateway is pending. ***oos*** - The Media Gateway reports the DS0 as being out of service. ***idle*** - No call is active, and the DS0 is ready to be used in a new call. ***connectionSetup*** - A connection has been requested and bearer signalling establishment is being awaited. ***connectionPending*** - A connection is established and Media Gateway acknowledgment is being awaited. ***connected*** - The call is active. ***releasing*** - The call is disconnecting.
Mib	VirtualMediaGateway

Values	unknown regPending oos idle connectionSetup connectionPending connected releasing
Default	No default

ATTRIBUTE Vmg Mglf Tdm DS0 blockState (bst)

Access	Read: All Write: Illegal
Description	This attribute indicates the current blocking state of the DS0 circuit. The local blocking states of the DS0 circuit are: ***locallyBlocked*** - The DS0 circuit is blocked at the local node and may be blocked at the remote node at the same time. ***remotelyBlocked*** - The DS0 circuit is blocked at the remote node. ***unblocked*** - The DS0 circuit is unblocked at both the local and remote nodes.
Mib	VirtualMediaGateway
Values	locallyBlocked remotelyBlocked unblocked
Default	No default

GROUP Vmg Mglf Tdm DS0 WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	VirtualMediaGateway

ATTRIBUTE Vmg Mglf Tdm DS0 customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg Mglf Tdm DS0 customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg Mglf Tdm DS0 customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vmg MgIf AtmResource (AtmRsrc)

Instance	Decimal (0..32767)
Scope	Device
Description	*Vmg/n MgIf/n AtmResource/<vcci.>* This component represents an ATM trunk that provides connectivity to the Media Gateway identified by the *mgAtmAddr*, *mgIpAddr*, and *mgUdpPort* attributes of the parent *MgIf* component. The instance value indicates the VCCI used by the ATM trunk. It must match the value of the *vcci* attribute of some *AtmTConn* component provisioned on the remote Media Gateway. Within any *Vmg* component hierarchy, *AtmResource* component instance values must be unique across all *MgIf* components.
Mib	VirtualMediaGateway
Common Verbs	Help List Display Add DELete

COMPONENT Vmg Mtp3Connection (Mtp3Conn)

Groups	"GROUP Vmg Mtp3Conn Provisioned (Prov)" "GROUP Vmg Mtp3Conn WlcCustomCounters (WlcCustomCntr)"
Scope	Application
Description	Vmg/n Mtp3Connection Sccp/n Mtp3Connection

	This component represents a connection to an MTP3 layer.
Mib	VirtualMediaGateway
Common Verbs	Help List Display

GROUP Vmg Mtp3Conn Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Mtp3Connection*component.
Mib	VirtualMediaGateway

ATTRIBUTE Vmg Mtp3Conn linkToServiceIndicator (lToSI)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies a link to an *Mtp3/n ServiceIndicator/n* component for MTP 3 services. Changing this attribute will cause the application using the MTP3 layer's services to be restarted.
Mib	VirtualMediaGateway
Values	Link (Service, linkToMtp3Connection)
Default	No default

GROUP Vmg Mtp3Conn WlcCustomCounters (WlcCustomCntr)

Properties	Operational
Description	This group contains the spare counters that can be dynamically patched.
Mib	VirtualMediaGateway

ATTRIBUTE Vmg Mtp3Conn customCounter1 (customCntr1)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg Mtp3Conn customCounter2 (customCntr2)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vmg Mtp3Conn customCounter3 (customCntr3)

Access	Read: All Write: Illegal
Description	This attribute does not count anything and is not displayed under normal operating circumstances. It is included here to provide a mechanism by which custom counters can be set up at runtime through a patch.
Mib	VirtualMediaGateway
Values	Decimal (0..4294967295)

Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Vmg

Release 6.1

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7400/15000/20000

Component Vm

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COMPONENT VirtualMedia (Vm)

Instance	Decimal (0..15)
Scope	Application
Description	*VirtualMedia/n* The *VirtualMedia* component represents an instance of a logical media. *VirtualMedia* provides IP connectivity between virtual routers on the same module, and supports an ‘always-up IP interface’ concept; i.e interface stays up unless it is administratively disabled or the hardware goes down. *VirtualMedia* can be used to support inter-VR communication, or by BGP-4 to establish an ‘always-up IP interface’.
Mib	VirtualMedia
Subcomponents	"COMPONENT Vm Interface (If)"
Common Verbs	Help List Display Add DELete

COMPONENT Vm Interface (If)

Instance	Decimal (0..15)
Groups	"GROUP Vm If MediaProv (Mp)" "GROUP Vm If CustomerIdentifierData (CidData)" "GROUP Vm If IfEntryProv (IfEntry)"

	"GROUP Vm If OperationalStatus (OperStatus)" "GROUP Vm If OsiState (State)" "GROUP Vm If Provisioned (Prov)"
Scope	Application
Description	*Vm/n Interface/n* This component represents a logical interface to the *VirtualMedia*. The given *VirtualMedia* instance can have at most one *Interface* linked to a *ProtocolPort* of a given *VirtualRouter.*
Mib	VirtualMedia
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vm If MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the media base component.
Mib	VirtualMedia

ATTRIBUTE Vm If linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *ProtocolPort* to which this interface is linked to. The protocol port is the logical interface to the network. The protocol port component describes the logical characteristics of this interface.
Mib	VirtualMedia
Values	Link (Service, linkToMedia)

Default	No default

GROUP Vm If CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	VirtualMedia

ATTRIBUTE Vm If customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	VirtualMedia
Values	Decimal (0; 1..8191)
Default	0

GROUP Vm If IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.

Mib	VirtualMedia

ATTRIBUTE Vm If ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	VirtualMedia
Values	up down testing
Default	up

ATTRIBUTE Vm If ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	VirtualMedia
Values	Decimal (1..65535)
Default	No default

GROUP Vm If OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	VirtualMedia

ATTRIBUTE Vm If snmpOperStatus

Access	Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	VirtualMedia
Values	up down testing
Default	up

GROUP Vm If OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VirtualMedia

ATTRIBUTE Vm If adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: VirtualMedia

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vm If operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: VirtualMedia

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vm If usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has

spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	VirtualMedia
Values	idle active (activ) busy
Default	idle

GROUP Vm If Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *If* component.
Mib	VirtualMedia

ATTRIBUTE Vm If mode

Access	Read and write
Criticality	Component
Description	This attribute specifies the mode of operation of the *Vm If*. The following modes are supported: ***alwaysUpInterface***, ***alwaysUpSummaryInterface*** and ***interVrConnection***. ***alwaysUpInterface***: This mode limits the *Vm If* to provide the functionality of an ‘always up interface’ only. Inter-VR communcation is not possible when this mode is selected. Memory consumption by the *Vm If* is significantly less on the FP when this mode is selected. Hence this mode should be used when the sole purpose of the *Vm If* is to provide an always up interface for an application like BGP4. ***alwaysUpSummaryInterface***: This mode limits the *Vm If* to provide the functionality of an ‘always up interface’ in which more than one host can be sumarized. Inter-VR communcation is not possible when this mode is selected. Memory consumption by

	the *Vm If* is significantly less on the FP when this mode is selected. Hence this mode should be used when the sole purpose of the *Vm If* is to provide an always up interface for an application like VPN in which specific host information is configured by the user. ***interVrConnection***: This mode provides the full capability of VirtualMedia, that is, ‘always up interface’ and inter-VR communication.
Mib	VirtualMedia
Values	alwaysUpInterface interVrConnection alwaysUpSummaryInterface
Default	alwaysUpInterface

Nortel Networks Multiservice Switch 7400/15000/20000

Component Vm

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Vncs

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Vncs

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COMPONENT VoiceNetworkingCallServer (Vncs)

Instance	Decimal (1..16)
Groups	"GROUP Vncs Provisioned (Prov)" "GROUP Vncs Statistics (Stats)"

"COLLECTED STATS VoiceNetworkingCallServer"

Scope	Network
Description	*Vncs/n* The *Vncs* component provides the information to the Path Oriented Routing System (PORS) required during switched voice call establishment. It translates the directory number prefix into the routing information and the voice service profile parameters. Each instance of this component represents one numbering plan.
Mib	VncsCallServer
Subcomponents	"COMPONENT Vncs DiallingPlan (DP)" "COMPONENT Vncs VoiceProfile (Vp)"
Common Verbs	Help List Display Add DELete

GROUP Vncs Provisioned (Prov)

Properties	Provisioned
Description	This group represents the provisionable attributes of the VNCS server.
Mib	VncsCallServer

ATTRIBUTE Vncs commentText

Access	Read: All Write: All
Description	This attribute specifies the name of the customer that is using this VNCS server. Typical use of this attribute is to store customer name.
Mib	VncsCallServer
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Vncs voiceRoutes (vRoutes)

Access	Read only
Description	This attribute indicates which *VoiceRoute* components are using this *Vncs*.
Mib	VncsCallServer
List of	Link (Service, voiceNetworkingCallServer)
Default	No default

GROUP Vncs Statistics (Stats)

Properties	Operational
Description	This group provides data for the *Vncs* component.
Mib	VncsCallServer

ATTRIBUTE Vncs totalTranslations

Access	Read: All Write: Illegal
Description	This attribute counts the total number of translation requests received by VNCS. This counter wraps to zero when it reaches its maximum value.
Mib	VncsCallServer
Values	Decimal (0..4294967295)
Default	0

COLLECTED STATS VoiceNetworkingCallServer

Description	The statistics record generated by the VoiceNetworkingCallServer component.

ATTRIBUTE Vncs totalTranslations

Description	This spooled statistic counts the number of translation requests received by *Vncs* in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Vncs completeTranslations

Description	This spooled statistic counts the number of completed translations handled under each *DiallingPlan* component in the last statistics collection interval. The complete translations are the one that resulted in the return by VNCS server of the reply message with the routing information and *VoiceProfile* parameters associated with the directory number prefix supplied in the translation request message.
Vector of	Decimal (0..65535)
Index	Decimal (0..2)

ATTRIBUTE Vncs incompleteTranslations

Description	This spooled statistic counts the number of incomplete translations handled under each *DiallingPlan* component in the last statistics collection interval. The incomplete translations are

	the one that require more digits in the directory number prefix to uniquely identify routing attributes.
Vector of	Decimal (0..65535)
Index	Decimal (0..2)

ATTRIBUTE Vncs failedTranslations

Description	This spooled statistic counts the number of failed translations handled under this *DiallingPlan* component in the last statistics collection interval. The failed translations are the one for which the directory number prefix could not be found in the database.
Vector of	Decimal (0..65535)
Index	Decimal (0..2)

ATTRIBUTE Vncs usageCount

Description	This spooled statistic counts the number of times each *VoiceProfile* useage count is accessed to set up a connection in the last statistics collection interval.
Vector of	Decimal (0..65535)
Index	Decimal (1..16)

COMPONENT Vncs DiallingPlan (DP)

Instance	Decimal (0..2)
Groups	"GROUP Vncs DP Statistics (Stats)"
Scope	Network
Description	*Vncs/n diallingPlan/x* The *DiallingPlan* subcomponent contains part of the Voice Networking Call Server database that belongs under one dialling

	plan. There are three dialling plans supported, dialling plan 0, dialling plan 1 and dialling plan 2.
Mib	VncsCallServer
Opt. Subcomp.	"COMPONENT Vncs DP DirectoryNumber (Dn)"
Common Verbs	Help List Display Add

GROUP Vncs DP Statistics (Stats)

Properties	Operational
Description	This group provides the operational components for the *AccessCode* component. It displays total DirectoryNumber components under this access code, total translation requests received and total requests failed under this access code.
Mib	VncsCallServer

ATTRIBUTE Vncs DP completeTranslations

Access	Read: All Write: Illegal
Description	This attribute counts the total number of complete translations handled under this *AccessCode* component. The complete translations are the one that resulted in the return by VNCS server of the reply message with the routing information and voice profile parameters associated with the directory number prefix supplied in the translation request message. This counter wraps to zero when it reaches its maximum value.
Mib	VncsCallServer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vncs DP incompleteTranslations

Access	Read: All Write: Illegal
Description	This attribute counts the total number of incomplete translations handled under this *AccessCode* component. The incomplete translations are the one that require more digits in the directory number prefix to uniquely identify routing attributes. This counter wraps to zero when it reaches its maximum value.
Mib	VncsCallServer
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vncs DP failedTranslations

Access	Read: All Write: Illegal
Description	This attribute counts the total number of failed translations handled under this *AccessCode* component. The failed translations are the one for which the directory number prefix could not be found in the database. the value wraps up when it reaches maximum.
Mib	VncsCallServer
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vncs DP DirectoryNumber (Dn)

Instance	BCD (1..40, Wildcarded)
Groups	"GROUP Vncs DP Dn Provisioned (Prov)"
Scope	Network
Description	*Vncs/n DP/x DirectoryNumber/x* The *DirectoryNumber* subcomponent represents a prefix directory number excluding the access code. The instance value must be 1 to 40 digits each of value 0 through 9 or wildcard digit.

The wildcard digit is represented by “?”. It is used to indicate to VNCS that the digit in that position should be ignored for routing purposes. Wildcard inconsistencies must not exist. If a prefix directory number already exists with a digit in a particular position, a new prefix may not be added with a wild card in that position and if the prefix already exists with a wild card in the particular position, a new prefix may not be added with a specific digit in the same position.

Mib: VncsCallServer

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vncs DP Dn Provisioned (Prov)

Properties: Provisioned

Description: This group represents attributes that the prefix directory number maps to.

Mib: VncsCallServer

ATTRIBUTE Vncs DP Dn destinationNodeId (nodeId)

Access: Read: All
Write: All

Description: This attribute in conjunction with the *destinationComponentId* attribute identifies the destination of a voice connection.

The *destinationNodeId* and the *destinationComponentId* attributes are being replaced by the *DataNetworkAddress (Dna)* attribute.

For the migration procedure consult NTP NN10600-410.

If the *destinationComponentId*, the *destinationNodeId* and the *Dna* attributes are all set, the call routing is based on the *destinationNodeId* and the *destinationComponentId*, unless the

call is initiated from the MPA module, which will use the *Dna* attribute.

The valid destination call identifier settings are:
1. *destinationNodeId* and *destinationNodeId* attributes set
2. *destinationNodeId*, *destinationNodeId* and *Dna* attributes set
3. *Dna* attribute set
For calls initiated from the MPA, only options 2 and 3 are valid.

Mib: VncsCallServer

Values: Decimal (0..4095)

Default: 0

ATTRIBUTE Vncs DP Dn destinationComponentId (dci)

Access: Read: All
Write: All

Description: This attribute in conjunction with the *destinationNodeId* attribute identifies the destination of a voice connection. The only valid component name for this attribute value is *vroute*.

The *destinationNodeId* and the *destinationComponentId* attributes are being replaced by the *DataNetworkAddress (Dna)* attribute.

For the migration procedure consult NTP NN10600-410

If the *destinationComponentId*, the *destinationNodeId* and the *Dna* attributes are all set, the call routing is based on the *destinationNodeId* and the *destinationComponentId*, unless the call is initiated from the MPA module, which will use the *Dna* attribute.

The valid destination call identifier settings are:
1. *destinationNodeId* and *destinationNodeId* attributes set
2. *destinationNodeId*, *destinationNodeId* and *Dna* attributes set
3. *Dna* attribute set
For calls initiated from the MPA, only options 2 and 3 are valid.

Mib: VncsCallServer

Values	The name of the component
Default	No default

ATTRIBUTE Vncs DP Dn voiceProfileNumber (vpn)

Access	Read: All Write: All
Description	This attribute identifies the voice profile number.
Mib	VncsCallServer
Values	Decimal (1..16)
Default	1

ATTRIBUTE Vncs DP Dn numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *Dna* of the destination component. An address may belong to the X.121 or E.164 numbering plans. X.121 is used in packet switched data networks.
Mib	VncsCallServer
Values	x121 e164
Default	e164

ATTRIBUTE Vncs DP Dn dataNetworkAddress (dna)

Access	Read and write
Description	The *Dna* attribute contains digits which form a unique identifier of the destination of a voice connection. This attribute is used instead of the *destinationNodeId* and *destinationComponentId* attributes to identify the destination of the voice connection. This attribute is only used if the *destinationNodeId* and the *destinationComponentId* attributes are not set or if the call is initiated from the MPA module.

Mib	VncsCallServer
Values	BCD (0..15)
Default	No default

COMPONENT Vncs VoiceProfile (Vp)

Instance	Decimal (1..16)
Groups	"GROUP Vncs Vp LogicalConnectionOptions (LCOps)" "GROUP Vncs Vp FramerOptions (FrOps)" "GROUP Vncs Vp Statistics (Stats)"
Scope	Network
Description	*Vncs/n VoiceProfile/n* A *VoiceProfile* component contains all provisionable logical connection attributes and framer attributes used to set up a virtual circuit. Directory-number prefixes are mapped to *VoiceProfile* instances by the *Vncs Dp Dn* component. Many directory-number prefixes use the same profile.
Mib	VncsCallServer
Common Verbs	Help List Display Add DELete

GROUP Vncs Vp LogicalConnectionOptions (LCOps)

Properties	Provisioned
Description	The attributes of this group collectively form part of a template used to describe and set up a switched logical connection. The attributes of a switched logical connection are similar to the attributes of a permanent logical connection.
Mib	VncsCallServer

ATTRIBUTE Vncs Vp setupPriority (spri)

Access	Read and write

Description	This attribute specifies the priority at which a path is established. Zero is the highest priority and four is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The *holdingPriority*, a complementary attribute of this attribute, indicates the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority.*
Mib	VncsCallServer
Values	Decimal (0..4)
Default	2

ATTRIBUTE Vncs Vp holdingPriority (hpri)

Access	Read and write
Description	This attribute specifies the priority that a path holds once it is established. Zero is the highest priority and four is the lowest. A path's *holdingPriority* determines its likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority.*
Mib	VncsCallServer
Values	Decimal (0..4)
Default	2

ATTRIBUTE Vncs Vp bumpPreference (bpref)

Access	Read and write
Description	This attribute specifies when bumping occurs in the route selection process. A connection with higher (numerically less) *setupPriority* may bump a connection with lower (numerically higher) *setupPriority* in order to acquire its bandwidth and be established. By default, bumping occurs only when it is necessary. That is, a connection will bump another connection

	only if there is no other way for the connection to be established. A connection may be set to bump in order to use the best available route it may have.
Mib	VncsCallServer
Values	bumpWhenNecessary bumpToObtainBestRoute
Default	bumpWhenNecessary

ATTRIBUTE Vncs Vp requiredTrafficType (rttyp)

Access	Read and write
Description	This attribute specifies the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1,*** then only trunks that include ***trafficType1*** in *supportedTrafficType* will be candidates for this connection.
Mib	VncsCallServer
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	voice

ATTRIBUTE Vncs Vp permittedTrunkTypes (pttyp)

Access	Read and write
Description	This attribute specifies up to eight types of trunks that can be used on the route. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS chooses only trunks whose *trunkType*s are in the *permittedTrunkTypes* for the path.
Mib	VncsCallServer
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	(terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Vncs Vp requiredSecurity (rsec)

Access	Read and write
Description	This attribute specifies the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	VncsCallServer
Values	Decimal (0..7)
Default	4

ATTRIBUTE Vncs Vp requiredCustomerParm (rcparm)

Access	Read and write
Description	This attribute specifies the allowed customer defined parameter of the trunks on the route. Its value, a number from zero to seven, is chosen by network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	VncsCallServer
Values	Decimal (0..7)
Default	4

ATTRIBUTE Vncs Vp pathAttributeToMinimize (pamin)

Access	Read and write
Description	This attribute specifies whether a route is selected on the basis of minimizing the cost or the delay. Each trunk has a cost and a delay metric associated with it. The cost of a selected route is the sum of the trunk cost metrics for all trunks included in the route. The delay of a selected route is the sum of the trunk delay metric for all trunks included in the route.
Mib	VncsCallServer
Values	cost delay
Default	cost

ATTRIBUTE Vncs Vp maximumAcceptableCost (maxCost)

Access	Read and write
Description	This attribute specifies an upper bound on the cost metric of a route, which is the sum of the cost metrics of all trunks on the route. The cost metric is the *trunkCost* attribute of the Trunk component. If for any trunk the *trunkCost* is larger than the

maximumAcceptableCost, then that trunk is not considered during the route selection. While a shortest route is being selected, the route cost is being compared with the *maximumAcceptableCost* attribute, and this is done for any minimization criterion. No route is selected if the cost metric of the shortest route is larger than the *maximumAcceptableCost*.

Mib	VncsCallServer
Values	Decimal (0..65535)
Default	1280

ATTRIBUTE Vncs Vp maximumAcceptableDelay (maxDelay)

Access	Read and write
Description	This attribute specifies an upper bound on the delay of a route, which is the sum of the delays of all trunks on the route. It should be provisioned with a reasonable maximum acceptable delay for the end to end one way delay of a 512-byte packet. Remember, that the trunk during its staging measures a *measuredRoundTripDelay.* This delay is divided by two and truncated to an integer number of milliseconds to provide a one way delay which is used to populate the delay in this trunk object in the topological database. The value includes emission, propagation, and queuing delays. A 512-byte packet is used to perform the measurement. If for any trunk the half of the trunk's *measuredRoundTripDelay* is larger than the *maximumAcceptableDelay*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route delay is being compared with the *maximumAcceptableDelay* attribute, and this is done for any minimization criterion. No route is selected if the delay metric of the shortest route is larger than the *maximumAcceptableDelay.*
Mib	VncsCallServer
Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Vncs Vp emissionPriority (epri)

Access	Read and write
Description	This attribute specifies the urgency with which packets on the path are emitted by the trunks on the route. *EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	VncsCallServer
Values	Decimal (0..2)
Default	0

ATTRIBUTE Vncs Vp discardPriority (dpri)

Access	Read and write
Description	This attribute specifies the importance of the packets on the path. One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority* (numerically) are discarded after packets with a higher *discardPriority* (numerically).
Mib	VncsCallServer
Values	Decimal (1..3)
Default	1

ATTRIBUTE Vncs Vp pathFailureAction (pfa)

Access	Read and write
Description	This attribute specifies whether the application can tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is chosen, the application is informed as soon as possible about a failure by disconnection. If the attribute is set to ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails, the application is informed of the failure.

With this option set to ***reRoutePath***, the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect.
All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends.

Mib: VncsCallServer

Values: reRoutePath
disconnectConnection

Default: reRoutePath

ATTRIBUTE Vncs Vp optimization (opt)

Access: Read and write

Description: This attribute specifies whether this connection should attempt to optimize its path when requested by the *Rtg Pors* component. Every path is optimal when it is established, but as network traffic patterns and configurations change this path may no longer be optimal. The PORS connection manager on a module requests circuits to optimize at the *optimizationInterval*.

Mib: VncsCallServer

Values: disabled
enabled

Default: enabled

ATTRIBUTE Vncs Vp maximumAcceptableGatewayCost (maxGateCost)

Access: Read and write

Description: This attribute indicates an upper bound on the gateway cost metric of a route, which is the sum of the gateway cost metrics of all gateway links on the route. It has the same semantics as the *maximumAcceptableCost* except that gateway cost metrics are used instead of trunk cost metrics. Gateway cost metrics are provisioned under *Trunk Address* component of a gateway link

	specifying a gateway costs of reaching an address through the link.
Mib	VncsCallServer
Values	Decimal (0..65535)
Default	2048

GROUP Vncs Vp FramerOptions (FrOps)

Properties	Provisioned
Description	This group contains attributes which define how audio data is carried across the network.
Mib	VncsCallServer

ATTRIBUTE Vncs Vp silenceSuppression

Access	Read and write
Description	This attribute specifies when silence suppression is desired during voice traffic on an audio call. If *silenceSuppression* is ***off***, silence suppression is never desired. If *silenceSuppression* is ***on***, silence suppression is always desired. If *silenceSuppression* is ***congested***, silence suppression is desired only when the network is congested. If *silenceSuppression* is ***slow***, silence suppression is desired only after 20 seconds without audio. If *silenceSuppression* is ***slowAndCongested***, both the ***slow*** and ***congested*** options are desired. The negotiated silence suppression is available in *Vsr Svs Framer negotiatedSilenceSuppression*.
Mib	VncsCallServer
Values	off on congested slow slowAndCongested

Default	on

ATTRIBUTE Vncs Vp silenceSuppressionFactor

Access	Read and write
Description	This attribute specifies the expected savings (percent reduction) in required bandwidth if silence suppression is used. If silence suppression is used, the bandwidth required for the connection will be lower than if silence suppression is not used. However, the routing system will not be aware of the unused bandwidth unless that bandwidth is specified by this attribute. If the value specified for the expected savings is too low, then some bandwidth made available by the use of silence suppression will be wasted. If the value specified for the expected savings is too high, then some connections may fail to set up because the routing system will over-calculate the amount of bandwidth available. The effectiveness of silence suppression can be influenced by language related speech patterns.
Mib	VncsCallServer
Values	Decimal (0..60)
Units	%
Default	40

ATTRIBUTE Vncs Vp dataCallsAccepted (dca)

Access	Read and write
Description	This attribute specifies whether data calls are allowed if this profile is used.
Mib	VncsCallServer
Values	no yes
Default	yes

ATTRIBUTE Vncs Vp faxIdleSuppressionG711G726

Access	Read: Passive Write: Service
Description	This attribute specifies the fax idle suppression parameter used during negotiation with the remote end across the subnet. It applies only to fax traffic, not voice or modem traffic. The negotiated G.711/G.726 fax idle suppression is available in *Vsr Svs Framer negotiatedFisG711G726.*
Mib	VncsCallServer
Values	off on
Default	on

ATTRIBUTE Vncs Vp insertedOutputDelay

Access	Read: Passive Write: Service
Description	This attribute specifies the amount of added output delay used to compensate for cross network delay variations. It applies to voice, modem and fax traffic. It is required to add output delay so that the statistical variation in the transit time of cells crossing the network does not cause gaps in speech. Backbone networks where high priority traffic consumes a high percentage of trunk bandwidth will require a higher *insertedOutputDelay* to compensate for the greater cell delay variation (CDV). This attribute is ignored if this call runs on a ***1pDS1V*** or ***1pE1V*** card.
Mib	VncsCallServer
Values	5 15 22 30 35 40

	45 50 75 100 125 150
Units	msec
Default	22

ATTRIBUTE Vncs Vp dtmfRegeneration (detGen)

Access	Read: Passive Write: Service
Description	This attribute specifies the DTMF regeneration parameter used during negotiation with the remote end across the subnet. If *dtmfRegeneration* is ***on***, it is desired that DTMF tones received from the link are first converted to digits before being sent to the subnet. When a digit is received from the subnet, its respective DTMF tone is desired to be generated before being sent to the link. If *dtmfRegeneration* is ***off***, it is desired that DTMF tones are transported transparently as audio. DTMF regeneration is not supported on ***1pDS1V***, ***1pE1V***, and ***J2MV*** cards. On these cards, the value of *dtmfRegeneration* is ignored. The negotiated DTMF regeneration is available in *Vsr Svs Framer negotiatedDtmfRegeneration*.
Mib	VncsCallServer
Values	off on
Default	off

ATTRIBUTE Vncs Vp v17EncodedAsG711G726

Access	Read and write
Criticality	Process
Description	This attribute specifies how services using this *VoiceProfile* negotiate with V.17 fax machines. This attribute is not used unless the negotiated ***fax*** encoding, available in *Vsr Svs Framer negotiatedEncoding*, is ***v29V27Relay*** and the negotiated ***modemFax*** encoding, available in *Vsr Svs Framer negotiatedEncoding*, is ***g711***, ***g726*** or ***g711G726***. If *v17EncodedAsG711G726* is ***no,*** it is desired that V.17 fax machines be instructed to use V.29 so that V.29 fax traffic sent by fax machines can be demodulated and encoded using fax relay. If *v17EncodedAsG711G726* is ***yes***, it is desired that V.17 fax machines be permitted to use V.17 so that V.17 fax traffic sent by fax machines can be encoded using G.711 or G.726. The actual encoding performed depends on the negotiated minimum and maximum ***modemFax*** rates, available in *Vsr Svs Framer negotiatedRates*. The actual negotiation between services using this *VoiceProfile* and V.17 fax machines is available in *Vsr Svs Framer* ***negotiatedV17AsG711G726***.
Mib	VncsCallServer
Values	no yes
Default	no

ATTRIBUTE Vncs Vp voiceRates

Access	Read: Passive Write: Service
Description	This attribute specifies the minimum and maximum ***voice*** rate parameters used during negotiation with the remote end across the subnet. For ***g711G726*** encoding, rates can change during voice traffic due to congestion in the network. Therefore, you can

have differing minimum and maximum rates for ***g711G726*** encoding. All other encodings have a fixed rate for the duration of voice traffic and so their minimum and maximum rates can not be modified.

The negotiated minimum and maximum ***voice*** rates are available in *Vsr Svs Framer negotiatedRates*.

Mib	VncsCallServer
Array of	Decimal (8.0; 16.0; 24.0; 32.0; 64.0)
Units	kbit/s
Row	encoding [g711Only g711G726 g728Only g729Only]
Column	rate [min max]
Default	(64.0, 64.0, 24.0, 64.0, 16.0, 16.0, 8.0, 8.0)

ATTRIBUTE Vncs Vp voiceEncodingChoice

Access	Read: Passive Write: Service
Description	This attribute specifies preferences regarding the encoding of voice traffic. During the setup of an audio call, the local and remote ends negotiate a common encoding to use. The local end's ordered list of preferred encodings is given by all *voiceEncodingChoice* elements that are not set to *none*. Prior to negotiation, the local end removes encodings from its list that it cannot use for a particular call. For example, the card for a particular call may not support certain encodings. After this local check, the local end sends its voice encoding preferences to the remote end. The remote end chooses the most preferred encoding that it can support from the list and this encoding is the one used during voice traffic. If the remote end cannot support any encodings on the local end's list, a call does not proceed and an alarm is issued.

The current encoding and encoding rate are available in *Vsr Svs currentEncoding* and *Vsr Svs currentRate*.

The encoding choice ***g711Only*** specifies that pulse code modulation (PCM) defined by ITU-T G.711 should be performed to encode voice traffic for calls using this profile. In this case, all voice traffic is carried uncompressed at 64 kbit/s.

The encoding choice ***g711G726*** specifies that either pulse code modulation (PCM) defined by ITU-T G.711 or adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726 should be performed to encode voice traffic for calls using this profile. The actual encoding performed depends on congestion in the network and the settings of the ***g711G726*** row of the *voiceRates* attribute.

The encoding choice of ***g728Only*** specifies that the Low Delay Coded Excited Linear Predictive Coder (LD-CELP) algorithm defined by ITU-T G.728 should be performed to encode voice traffic for calls using this profile. In this case, all voice traffic is carried at 16 kbit/s.

The encoding choice of ***g729Only*** specifies that the Conjugated Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) algorithm defined by ITU-T G.729 should be performed to encode voice traffic for calls using this profile. In this case, all voice traffic is carried at 8 kbit/s.

The encoding choice of ***none*** specifies the end of the encoding choice list. No other encoding choice can appear after ***none***, and ***none*** cannot appear as the first choice. The only encoding choice that can appear more than once in *voiceEncodingChoice* is ***none***.

G.728 and G.729 encoding cannot be performed on a ***1pDS1V***, ***1pE1V*** or ***J2MV*** card.

The negotiated ***voice*** encoding is available in *Vsr Svs Framer negotiatedEncoding*.

Mib	VncsCallServer
Vector of	none g711Only g711G726 g728Only g729Only
Index	first second third
Default	(g729Only, g728Only, g711G726)

ATTRIBUTE Vncs Vp modemFaxRates

Access	Read: Passive Write: Service
Description	This attribute specifies the minimum and maximum modemFax and fax rate parameters used during negotiation with the remote end across the subnet. For ***g711Only*** encoding, all modem/fax traffic is carried uncompressed at 64 kbit/s, so this row of *modemFaxRates* cannot be changed. For ***g711G726*** encoding, rates can change during modemFax and fax traffic due to congestion in the network. The minimum and maximum rates that can occur during the ***modemFax*** traffic are specified by the ***g711G726*** row of *modemFaxRates*. The ***relay*** row of *modemFaxRates* specifies the minimum and maximum rates of sending fax machines that are allowed for fax relay. ***relay*** does not apply to modem calls. The negotiated minimum and maximum ***modemFax*** and ***fax*** rates are available in *Vsr Svs Framer negotiatedRates*.
Mib	VncsCallServer
Array of	Decimal (0.0; 0.3; 1.2; 2.4; 4.8; 7.2; 9.6; 12.0; 14.4; 16.0; 24.0; 32.0; 64.0)

Units	kbit/s	
Row	encoding [g711Only g711G726 relay]	
Column	rate [min max]	
Default	(64.0, 64.0, 32.0, 64.0, 0.0, 14.4)	

ATTRIBUTE Vncs Vp modemFaxEncodingChoice

Access	Read: Passive Write: Service
Description	This attribute specifies preferences regarding the encoding of modemFax and fax traffic. During the setup of an audio call, the local and remote ends negotiate one common encoding to use during modemFax traffic and one common encoding to use during fax traffic. The local end's ordered list of preferred encodings is given by all *modemFaxEncodingChoice* elements that are not set to ***none***. Prior to negotiation, the local end removes encodings from its list that it cannot use for a particular call. For example, the card for a particular call may not be able to support certain encodings, or in the case of ***relay***, the rate of the sending machine may not be supported. After this local check, the local end sends its modem/fax encoding preferences to the remote end. The remote end uses the two most preferred encodings that it can support from the list to determine the encoding used during modemFax traffic and the encoding used during fax traffic. If the remote end cannot support any encodings on the local end's list, a call does not proceed and an alarm is issued. The current encoding and encoding rate are available in *Vsr Svs currentEncoding* and *Vsr Svs currentRate*. The encoding choice ***g711Only*** specifies that pulse code modulation (PCM) defined by ITU-T G.711 should be performed to encode modem/fax traffic for calls using this profile. In this case, all modem/fax traffic is carried uncompressed at 64 kbit/s.

The encoding choice ***g711G726*** specifies that either pulse code modulation (PCM) defined by ITU-T G.711 or adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726 should be performed to encode modem/fax traffic for calls using this profile. The actual encoding performed depends on congestion in the network and the settings of the ***g711G726*** row of the *modemFaxRates* attribute.

The encoding choice of ***relay*** specifies that modulated modem/fax traffic is demodulated and sent through the network as cells at the base rate of the sending machine. The types of modulation/demodulation supported are V.29 up to 9.6 kbit/s and V.27 up to 4.8 kbit/s. Only fax traffic can use ***relay***.

If *modemFaxEncodingChoice* is ***relay, none, none***, modem traffic is not supported. If *modemFaxEncodingChoice* is ***none, none, none***, all traffic is treated like voice traffic.

Fax relay cannot be performed on ***1pDS1V, 1pE1V*** or ***J2MV*** cards.

The negotiated ***modemFax*** and ***fax*** encodings are available in *Vsr Svs Framer negotiatedEncoding*.

Mib	VncsCallServer
Vector of	none g711Only g711G726 relay
Index	first second third
Default	(relay, g711G726, none)

GROUP Vncs Vp Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Voice Networking profile component.

Mib	VncsCallServer

ATTRIBUTE Vncs Vp usageCount

Access	Read only
Description	This attribute counts the number of times this *VoiceProfile* is accessed to set up a connection. This counter wraps to 0 when it reaches its maximum value.
Mib	VncsCallServer
Values	Decimal (0..4294967295)
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Vncs

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component VRoute

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component VRoute

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COMPONENT VoiceRoute (VRoute)

Instance	Decimal (1..153)
Groups	"GROUP VRoute Provisioned (Prov)" "GROUP VRoute CustomerIdentifierData (CidData)" "GROUP VRoute IfEntryProv (IfEntry)" "GROUP VRoute OsiState (State)" "GROUP VRoute OperationalStatus (OperStatus)" "GROUP VRoute Statistics (Stats)" "GROUP VRoute Operational (Oper)"

"COLLECTED STATS VoiceRoute"

Scope	Application
Description	*VoiceRoute/n* A *VoiceRoute* component defines the common characteristics of

	the connections to a Private Branch Exchange (PBX). There is normally one *VoiceRoute* per attached PBX.
Mib	VoiceNetworking
Subcomponents	"COMPONENT VRoute Interface" "COMPONENT VRoute DataNetworkAddress (Dna)" "COMPONENT VRoute VoiceAccounting (Acct)"
Opt. Subcomp.	"COMPONENT VRoute IgDigitManipulation (Idm)" "COMPONENT VRoute EgDigitManipulation (Edm)"
Dyn. Subcomp.	"COMPONENT VRoute VnetRouteDebug (Debug)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP VRoute Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of a Voice Networking *VoiceRoute* component.
Mib	VoiceNetworking

ATTRIBUTE VRoute commentText

Access	Read: All Write: All
Description	Use of this attribute is at the discretion of the system administrator. Typically, it specifies the name of the customer that is using this *VoiceRoute*.
Mib	VoiceNetworking
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE VRoute typeOfRoute (tor)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the type of calls (either voice, data, or both voice and data) that this *VoiceRoute* will accept from the subnet and the local PBX. If *typeOfRoute* is set to ***voice***, then all data calls from the subnet and the local PBX will be rejected. If *typeOfRoute* is set to ***data***, then all voice calls from the subnet and the local PBX will be rejected. If *typeOfRoute* is set to ***voiceData***, then all data and voice calls will be accepted from the subnet and the local PBX.
Mib	VoiceNetworking
Values	voice data voiceData
Default	voiceData

ATTRIBUTE VRoute diallingPlan0 (dp0)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies how to map the numbering plan indication and the type of number into the *Vncs* database *diallingPlan0*. There are three numbering plans that are allowed, unknown, E.164, and private. Within each of these, there are eight possible type of numbers. Since the name for the type of numbers for the private numbering plans varies from protocol to protocol, a generic scheme has been adopted. ***unknown*** means that the sending and receiving switches have no knowledge of the numbering plan. ***international*** means that the sending switch has identified the number format as matching the E.164 international dialling. ***national*** means that the sending switch has identified the number as conforming to the E.164 national dialling plan

subscriber means that the number is the address of a customer conforming to the local public network.
p0, ***p1***, ***p2***, ***p3***, ***p4***, ***p5***, ***p6*** and ***p7*** are private numbering plans, with a type of number zero to seven.
casUnknown means any number received from a Channel Associated Signalling (CAS) trunk.

Mib: VoiceNetworking

Set of:
unknown
international
national
subscriber
p0
p1
p2
p3
p4
p5
p6
p7
casUnknown

Default: (unknown, international, national, subscriber, p0, p1, p2, p3, p4, p5, p6, p7, casUnknown)

ATTRIBUTE VRoute diallingPlan1 (dp1)

Access: Read: All
Write: All

Criticality: Process

Description: This attribute specifies how to map the numbering plan indication and the type of number into the *Vncs* database *diallingPlan1*. There are three numbering plans that are allowed, unknown, E.164, and private. Within each of these, there are eight possible type of numbers. Since the name for the type of numbers for the private numbering plans varies from protocol to protocol, a generic scheme has been adopted.
unknown means that the sending and receiving switches have no knowledge of the numbering plan.
international means that the sending switch has identified the

	number format as matching the E.164 international dialling plan. ***national*** means that the sending switch has identified the number as conforming to the E.164 national dialling plan ***subscriber*** means that the number is the address of a customer conforming to the local public network. ***p0***, ***p1***, ***p2***, ***p3***, ***p4***, ***p5***, ***p6*** and ***p7*** are private numbering plans, with a type of number zero to seven. ***casUnknown*** means any number received from a Channel Associated Signalling (CAS) trunk.
Mib	VoiceNetworking
Set of	unknown international national subscriber p0 p1 p2 p3 p4 p5 p6 p7 casUnknown
Default	No default

ATTRIBUTE VRoute diallingPlan2 (dp2)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies how to map the numbering plan indication and the type of number into the *Vncs* database *diallingPlan2*. There are three numbering plans that are allowed, unknown, E.164, and private. Within each of these, there are eight possible type of numbers. Since the name for the type of numbers for the private numbering plans varies from protocol to protocol, a generic scheme has been adopted. ***unknown*** means that the sending and receiving switches have no

	knowledge of the numbering plan. ***international*** means that the sending switch has identified the number format as matching the E.164 international dialling plan. ***national*** means that the sending switch has identified the number as conforming to the E.164 national dialling plan ***subscriber*** means that the number is the address of a customer conforming to the local public network. ***p0***, ***p1***, ***p2***, ***p3***, ***p4***, ***p5***, ***p6*** and ***p7*** are private numbering plans, with a type of number zero to seven. ***casUnknown*** means any number received from a Channel Associated Signalling (CAS) trunk.
Mib	VoiceNetworking
Set of	unknown international national subscriber p0 p1 p2 p3 p4 p5 p6 p7 casUnknown
Default	No default

ATTRIBUTE VRoute huntingAlgorithm (rha)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the type of hunting algorithm that should be used by the *VoiceRoute* and *VoiceSubroutes* when selecting a channel to make an outgoing call. ***bottomUpLinear*** means that a call from the subnet will be passed to the lowest instance of the *VoiceSubroute*s, which in turn will pass the call to the lowest instance of *SwitchedVoiceService*. If

there are no available *SwitchedVoiceService*s in that *VoiceSubroute* then the process will be repeated for the next lowest instance of *VoiceSubroute.*
topDownLinear means that a call from the subnet will be passed to the highest instance of the *VoiceSubroutes*, which in turn will pass the call to the highest instance of *SwitchedVoiceService*. If there are no available *SwitchedVoiceService*s in that *VoiceSubroute* then the process will be repeated for the next highest instance of *VoiceSubroute*.

Mib: VoiceNetworking

Values: bottomUpLinear
topDownLinear

Default: bottomUpLinear

ATTRIBUTE VRoute minimumDigitsToRoute (mdtr)

Access: Read: All
Write: All

Criticality: Process

Description: This attribute specifies the number of digits that must be received before an address resolution request will be sent to the *VoiceNetworkingCallServer.* Once this level has been exceeded an address resolution request will be sent for every digit received until the dialled number has been resolved in the database.
This number should be set to a value which represents the average number of digits that will allow for a unique end-point to be identified. If the number is set too low, then the number of simultaneous calls that can be handled by the *VoiceNetworkingCallServer* will be reduced since the number of address resolution requests sent for each call will be increased. If it is set too high then address resolution request messages will not be sent to the *VoiceNetworkingCallServer* until the end-of-dial timer has expired (approximately 12 seconds after the last digit has been received). This can result in very long call setup times.

Mib: VoiceNetworking

Values: Decimal (1..16)

Default	3

ATTRIBUTE VRoute voiceNetworkingCallServer (vncs)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies which *Vncs* instance should be used by all calls into this *VoiceRoute* from the PBX.
Mib	VoiceNetworking
Values	Link (Service, voiceRoutes)
Default	No default

ATTRIBUTE VRoute overrideDirectoryNumber (odn)

Access	Read: All Write: All
Criticality	Process
Description	The number specified here will be used in place of the dialled number to lookup the destination in the *VoiceNetworkingCallServer*. A null string means that the routing decision should be based on the dialled number. The numbering plan type that will be used will be *noAccessCode*.
Mib	VoiceNetworking
Values	BCD (0..24)
Default	""

ATTRIBUTE VRoute privateNetworkIdentifer (pni)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the private network identifier (PNI) value. If the value is zero then connection-less supplementary service

	transport for TCAP formatted FACILITY messages is not supported.
Mib	VoiceNetworking
Values	Decimal (0..32700)
Default	0

ATTRIBUTE VRoute subroutes

Access	Read: All Write: All
Description	This attribute specifies all of the *VoiceSubroutes* which are associated with this *VoiceRoute*. There is a maximum of 16 *VoiceSubroutes* allowed per *VoiceRoute*.
Mib	VoiceNetworking
List of	Link (Service, voiceRoute)
List Size	16
Default	No default

GROUP VRoute CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	VoiceNetworking

ATTRIBUTE VRoute customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0.

	Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	VoiceNetworking
Values	Decimal (0; 1..8191)
Default	0

GROUP VRoute IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	VoiceNetworking

ATTRIBUTE VRoute ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing
Default	up

ATTRIBUTE VRoute ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	VoiceNetworking
Values	Decimal (1..65535)
Default	No default

GROUP VRoute OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE VRoute adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

	The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE VRoute operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE VRoute usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

	The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VoiceNetworking
Values	idle active (activ) busy
Default	idle

GROUP VRoute OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	VoiceNetworking

ATTRIBUTE VRoute snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing
Default	up

GROUP VRoute Statistics (Stats)

Properties	Operational

Description	This group provides the operational attributes for the *VoiceRoute* component. It contains information relating to calls that originate from the network.
Mib	VoiceNetworking

ATTRIBUTE VRoute totalCallsFromSubnet

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls that have been received from the subnet, including calls that fail. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE VRoute callsClearedNoChannel

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls from the subnet that were rejected when all of the in-service channels were busy. When a call is rejected for this reason, the cause code sent to the originator is 34, no circuit/channel available. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE VRoute callsClearedOutOfService

Access	Read: All Write: Illegal

Description	This attribute counts the total number of calls from the subnet that were rejected because all of the channels were out-of-service. A channel is considered out-of-service if it is unavailable for any reason other than it is being engaged in handling a call. That is, an operator lock of any of the components required for the channel's operation, or problems which interfere with the connection to the PBX, will cause the channel to be considered out-of-service. When a call is rejected for this reason, the cause code sent back to the originator is 27, destination out-of-service. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE VRoute callsRejected

Access	Read: All Write: Illegal
Description	This attribute counts the total number of calls from the subnet that were rejected because they were: 1) voice calls to a *typeOfRoute* which is set *to* ***data***, 2) data calls to a *typeOfRoute* which is set to ***voice***, 3) using a signalling protocol which is incompatible with this end. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

GROUP VRoute Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the *VoiceRoute* component. It displays information relating to calls that originate from the subnet.

Mib	VoiceNetworking

ATTRIBUTE VRoute degradedSubroutes

Access	Read: All Write: Illegal
Description	This attribute indicates all of the *VoiceSubroute*s that have at least one *SwitchedVoiceService* whose *operationalState* is ***disabled***.
Mib	VoiceNetworking
List of	The name of the component
List Size	16
Default	No default

COLLECTED STATS VoiceRoute

Description	The statistics record generated by the VoiceRoute component.

ATTRIBUTE VRoute totalCallsFromSubnet

Description	This spooled statistic counts the calls that have been received from the subnet in the last statistics collection interval, including calls that fail.
Values	Decimal (0..65535)

ATTRIBUTE VRoute callsClearedNoChannel

Description	This spooled statistic counts the calls from the subnet that were rejected when all of the in-service channels were busy in the last statistics collection interval. When a call is rejected for this reason, the cause code sent to the originator is 34, no circuit/ channel available.
Values	Decimal (0..65535)

ATTRIBUTE VRoute callsClearedOutOfService

Description	This spooled statistic counts the calls from the subnet that were rejected because all of the channels were out-of-service in the last statistics collection interval. A channel is considered out-of-service if it is unavailable for any reason other than it is being

engaged in handling a call. That is, an operator lock of any of the components required for the channel's operation, or problems which interfere with the connection to the PBX, will cause the channel to be considered out-of-service. When a call is rejected for this reason, the cause code sent back to the originator is 27, destination out-of-service.

Values: Decimal (0..65535)

ATTRIBUTE VRoute callsRejected

Description: This spooled statistic counts the calls from the subnet that were rejected in the last statistics collection interval because they were:
1) voice calls to a *typeOfRoute* which is set *to* ***data***,
2) data calls to a *typeOfRoute* which is set to ***voice***,
3) using a signalling protocol which is incompatible with this end.

Values: Decimal (0..65535)

COMPONENT VRoute VnetRouteDebug (Debug)

Scope: Application

Description: *VRoute/n Debug*
The *Debug* component defines the debug operational characteristics of the *VoiceRoute* component.

Mib: VoiceNetworking

Common Verbs:
- Help
- List
- Display

COMPONENT VRoute Interface

Groups: "GROUP VRoute Interface Provisioned (Prov)"

Scope: Application

Description	*VoiceRoute/n Interface* This component defines the interface between a voice route and a PBX. It is ignored for calls running on ***1pDS1V*** or ***1pE1V*** cards.
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP VRoute Interface Provisioned (Prov)

Properties	Provisioned
Description	This group contains attributes specifying the interface to a PBX.
Mib	VoiceNetworking

ATTRIBUTE VRoute Interface ingressAudioGain

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the gain in dB that is applied to data coming from outside the network before it is transferred across the network. It applies to voice, modem and fax traffic. For example, ingress gain is applied to audio data coming from a PBX. If *ingressAudioGain* is negative, a loss is applied. *ingressAudioGain* and *egressAudioGain* are used in loss planning, which is the configuration of the devices in a network to ensure that the signal level from any point in the network to any other point is correct. *ingressAudioGain* is ignored for calls on ***1pDS1V*** and ***1pE1V*** cards. For calls running on these cards, ingress audio gain is not under the user's control and egress audio gain is determined by the *audioGain* attribute in the appropriate *Vncs/m VoiceProfile/n*.
Mib	VoiceNetworking
Values	Signed (-12..12)

Units	dB
Default	0

ATTRIBUTE VRoute Interface egressAudioGain

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the gain in dB that is applied to data leaving the network. It applies to voice, modem and fax traffic. For example, egress gain is applied to audio data going to a PBX. If *egressAudioGain* is negative, a loss is applied. *ingressAudioGain* and *egressAudioGain* are used in loss planning, which is the configuration of the devices in the network to ensure that the signal level from any point in the network to any other point is correct. *egressAudioGain* is ignored for calls running on ***1pDS1V*** and ***1pE1V*** cards. For calls running on these cards, egress audio gain is determined by the *audioGain* attribute in the appropriate *Vncs/m VoiceProfile/n*.
Mib	VoiceNetworking
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE VRoute Interface tandemPassThrough (tpt)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies whether tandem pass through is desired. If *tandemPassThrough* is ***enabled***, tandem pass through is used if possible. If *tandemPassThrough* is ***disabled***, tandem pass through is not used under any circumstances. The actual state of tandem

	pass through is indicated in *Vsr Svs Framer tptStatus*. The negotiated tandem pass through is available in *Vsr Svs Framer negotiatedTandemPassThrough*. Tandem pass through is not supported on ***1pDS1V*** and ***1pE1V*** cards, so *tandemPassThrough* is ignored on these cards.
Mib	VoiceNetworking
Values	enabled disabled
Default	disabled

ATTRIBUTE VRoute Interface comfortNoiseCap

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the maximum level at which comfort noise is generated. The comfort noise is limited by *comfortNoiseCap* before *egressAudioGain* is applied. The default value of ***-40*** dBm0 equates to the maximum level of comfort noise available and effectively disables the *comfortNoiseCap*.
Mib	VoiceNetworking
Values	Signed (-78; -65; -60; -54; -52; -50; -48; -46; -44; -42; -40)
Units	dBm0
Default	-40

ATTRIBUTE VRoute Interface speechHangoverTime

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the time after the end of speech before silence suppression starts. It applies only to voice traffic. It is not used unless *Vsr Svs Framer negotiatedSilenceSuppression* is ***on***,

congested or ***slowAndCongested***.

Higher values of *speechHangoverTime* reduce undesirable clipping but increase bandwidth usage.

speechHangoverTime is not used on ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** cards.

Mib	VoiceNetworking
Values	Decimal (10..500)
Units	msec
Default	150

ATTRIBUTE VRoute Interface faxHangoverTimeG711G726

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the time after the end of fax traffic before G.711/G.726 fax idle suppression starts. It applies only if the negotiated fax encoding, available in *Vsr Svs Framer negotiatedEncoding*, is ***g711***, ***g726*** or ***g711G726*** and *Vsr Svs Framer negotiatedFisG711G726* is ***on***. Higher values of *faxHangoverTimeG711G726* reduce undesirable clipping but increase bandwidth usage. *faxHangoverTimeG711G726* is not used on ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** cards.
Mib	VoiceNetworking
Values	Decimal (300..20000)
Units	msec
Default	1000

ATTRIBUTE VRoute Interface modemFaxSpeechDiscrim (fsd)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies whether this *VoiceRoute* differentiates between modemFax traffic and speech. If *modemFaxSpeechDiscrim* is ***on*** and a false 2100 Hz tone is detected, any *Svs* using this route reverts to speech mode when speech is detected. *modemFaxSpeechDiscrim* is not used on ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** cards.
Mib	VoiceNetworking
Values	on off
Default	on

ATTRIBUTE VRoute Interface echoTailDelay

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum echo canceller tail delay coverage. It should be selected higher than the summation of the round trip delay of echo and hybrid response time. A ***32***ms setting is good for a radius of 2700 km, assuming that the signal is going through 4 exchanges and the hybrid response time is 6ms. A ***64***ms setting offers even greater coverage (more distance or more switches), with comparable convergence time. The recommended setting is ***64***ms. This attribute is not used on ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V***, ***J2MV***, ***1pE1Mvp***, ***1pDS1Mvp,*** or ***1pTTC2mMvp*** card.
Mib	VoiceNetworking
Values	Decimal (32; 64)
Units	msec

Default	64

ATTRIBUTE VRoute Interface echoReturnLoss

Access	Read and write
Criticality	Process
Description	This attribute specifies the echo return loss parameter of the echo canceller. If the line quality is poor, in terms of echo, selecting a higher value may allow the echo canceller to perform better. A side effect is that the voice level is attenuated by the same amount, which may not always be acceptable. This attribute is not used on ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V***, ***J2MV***, ***1pE1Mvp***, ***1pDS1Mvp,*** or ***1pTTC2mMvp*** card.
Mib	VoiceNetworking
Values	Decimal (0; 3; 6)
Units	dB
Default	6

ATTRIBUTE VRoute Interface ecanBypassMode

Access	Read and write
Criticality	Process
Description	This attribute specifies when version 2 internal echo cancellers are placed in bypass mode on this *VoiceRoute*. This attribute only applies if ***v2*** of *echoCancellation* is ***on***. If *ecanBypassMode* is ***g165***, the internal echo canceller is placed in bypass mode as per ITU-T G.165. If *ecanBypassMode* is ***g164***, the internal echo canceller is placed in bypass mode as per ITU-T G.164. If *ecanBypassMode* is ***never***, the internal echo canceller is never placed in bypass mode. This mode should only be used for debugging. This attribute does not apply to ***1pE1V***, ***1pDS1V***, ***J2MV***, ***1pE1Mvp***, ***1pDS1Mvp,*** or ***1pTTC2mMvp*** cards.
Mib	VoiceNetworking

Values	g164 g165 never
Default	g165

ATTRIBUTE VRoute Interface echoCancellation

Access	Read and write
Criticality	Process
Description	This attribute specifies whether echo cancellation is performed on this *VoiceRoute*. ***v1*** specifies whether echo cancellation is performed by version 1 internal echo cancellers. ***v2*** specifies whether echo cancellation is performed by version 2 echo cancellers. If *echoCancellation* is ***on***, the internal echo canceller is enabled and echo cancellation is performed. If *echoCancellation* is ***off***, the internal echo canceller is placed in transparent bypass mode and echo cancellation is never performed.
Mib	VoiceNetworking
Vector of	off on
Index	v1 v2
Default	(on, on)

COMPONENT VRoute DataNetworkAddress (Dna)

Groups	"GROUP VRoute Dna Address"
Scope	Application

Description	*vroute/n Dna* This is the description of the VRoute *Dna* component. It offers a subset of the generic *Dna* component attributes.
Mib	VoiceNetworking
Opt. Subcomp.	"COMPONENT VRoute Dna HuntGroupMember (Hgm)"
Common Verbs	Help List Display

GROUP VRoute Dna Address

Properties	Provisioned
Description	*Address* group contains attributes common to all *Dna's*. Every *Dna* used in the network is defined with this group of 2 attributes. String of address digits is complemented by type of address and Npi. These attributes are used to interpret format of the address digits.
Mib	VoiceNetworking

ATTRIBUTE VRoute Dna numberingPlanIndicator (npi)

Access	Read and write
Criticality	Process
Description	This attribute indicates the Numbering Plan Indicator (NPI) of the *Dna* that is entered. Address may belong to X.121 or E.164 plans. X.121 is used in packet switched data networks.
Mib	VoiceNetworking
Values	x121 e164
Default	e164

ATTRIBUTE VRoute Dna dataNetworkAddress (dna)

Access	Read and write
Criticality	Process
Description	*Dna* attribute contains digits which form unique identifier of the customer interface. It can be compared (approximation only) to telephone number where phone number identifies unique telephone set. *Dna* digits are selected and assigned by network operators.
Mib	VoiceNetworking
Values	BCD (0..15)
Default	No default

COMPONENT VRoute Dna HuntGroupMember (Hgm)

Groups	"GROUP VRoute Dna Hgm Provisioned (Prov)" "GROUP VRoute Dna Hgm Operational (Op)"
Scope	Application
Description	*Vroute/n Dna/n HuntGroupMember* When present under a DNA component, this component specifies that the DNA is a member of a hunt group. Each hunt group member subscribes to at least one hunt group. The hunt group server's DNA must be added to the VnetHuntGroupAddress which is the sub-component of VnetHuntGroupMember. By adding the DNA correct availability of the vroute will be reported to the hunt group to process calls.
Mib	VoiceNetworking
Subcomponents	"COMPONENT VRoute Dna Hgm HuntGroupAddress (HgAddr)"
Common Verbs	Help List Display Add DELete

GROUP VRoute Dna Hgm Provisioned (Prov)

Properties	Provisioned
Description	This group contains the interface parameters between the *HuntGroupMember* and the hunt group server.
Mib	VoiceNetworking

ATTRIBUTE VRoute Dna Hgm usageDeltaUpdateThreshold (aut)

Access	Read and write
Description	This attribute specifies by how much the availability of a hunt group member must change before the member's availability is updated to the hunt group server. A value of zero ensures that an update will be sent if the value of the availability changes. The attribute that reports the availability is *currentAvailability.*
Mib	VoiceNetworking
Values	Decimal (0..4096)
Default	1

GROUP VRoute Dna Hgm Operational (Op)

Properties	Operational
Description	This group contains the operational attributes of the *HuntGroupMember* component.
Mib	VoiceNetworking

ATTRIBUTE VRoute Dna Hgm maxAvailableChannels (maxAc)

Access	Read only
Description	This attribute indicates the maximum number of available channels for this *HuntGroupMember.*
Mib	VoiceNetworking
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE VRoute Dna Hgm availableChannels (ac)

Access	Read only
Description	This attribute indicates the number of available channels reported to the hunt group in the Availability Message Packet (AMP). It is incremented by the application when a channel is freed and decremented when a channel is active.
Mib	VoiceNetworking
Values	Decimal (0..4096)
Default	No default

ATTRIBUTE VRoute Dna Hgm availabilityDelta (ad)

Access	Read only
Description	This attribute specifies the delta between the actual availability of a hunt group member and the hunt group member's *currentAvailability.* Once the absolute value of this attribute reaches the *usageDeltaUpdateThreshold*, the *currentAvailability* of the hunt group member is updated with the actual availability and the *availabilityDelta* is reset to 0. If this attribute is positive, the number of available channels has increased since the last Availability Message Packet was sent. If it is negative, the number of available channels has decreased since the last AMP was sent.
Mib	VoiceNetworking
Values	Signed (-4096..4096)
Default	No default

COMPONENT VRoute Dna Hgm HuntGroupAddress (HgAddr)

Instance	Decimal (0..1)
Groups	"GROUP VRoute Dna Hgm HgAddr Address (Addr)"
Scope	Application

Description	*Vroute/n Dna/n HgM HuntGroupAddress/n* This component specifies the hunt group address to which this member belongs. A hunt group member belongs to at least one hunt group.
Mib	VoiceNetworking
Common Verbs	Help List Display Add DELete

GROUP VRoute Dna Hgm HgAddr Address (Addr)

Properties	Provisioned
Description	This group contains DNA attributes common to all DNAs.
Mib	VoiceNetworking

ATTRIBUTE VRoute Dna Hgm HgAddr numberingPlanIndicator (npi)

Access	Read and write
Description	This attribute specifies the Numbering Plan Indicator (NPI) of the *DNA* that is entered. The address may belong to the X.121 or E.164 numbering plans.
Mib	VoiceNetworking
Values	x121 e164
Default	x121

ATTRIBUTE VRoute Dna Hgm HgAddr dataNetworkAddress (dna)

Access	Read and write
Description	This attribute specifies the digits that form the unique identifier of the customer interface. It can be compared to a telephone number where phone number identifies unique telephone set. DNA digits are selected and assigned by network operators.

Mib	VoiceNetworking
Values	BCD (1..15)
Default	No default

COMPONENT VRoute VoiceAccounting (Acct)

Groups	"GROUP VRoute Acct Provisioned (Prov)"
Scope	Application
Description	*Vroute/n VoiceAccounting* The *VoiceAccounting* component defines the operational characteristics of the accounting system of the *Vroute* component. Accounting record generation for calls on the *Vroute* is managed by this component.
Mib	VoiceNetworking
Common Verbs	Help List Display

GROUP VRoute Acct Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of a *VoiceAccounting* component.
Mib	VoiceNetworking

ATTRIBUTE VRoute Acct accountCollection (aco)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies that accounting records are to be collected for the various reasons: ***bill***, ***test***, ***study***, ***audit***. The last of the parameters, ***force***, specifies that accounting records are to be collected irrespective of other collection reasons. If none of these reasons is set, then accounting will be suppressed.

Mib	VoiceNetworking
Set of	bill test study audit force
Default	No default

ATTRIBUTE VRoute Acct accountClass (acl)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the accounting class which is reserved for network operations usage. Its value is returned in the accounting record in the local and remote service type attributes. The use of this attribute is decided by the network operator.
Mib	VoiceNetworking
Values	Decimal (0..255)
Default	0

ATTRIBUTE VRoute Acct serviceExchange (sre)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies a user defined value, Data Service Exchange, as entered by the network operator and reported in the accounting record.
Mib	VoiceNetworking
Values	Decimal (0..255)
Default	0

ATTRIBUTE VRoute Acct digitsSuppressed (ds)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the number of trailing digits which will be suppressed in the *calledNumber* in the accounting records. Each of the specified number of trailing digits are replaced with an “X”. This option exists to satisfy privacy requirements in a number of countries.
Mib	VoiceNetworking
Values	Decimal (0..8)
Default	0

ATTRIBUTE VRoute Acct accountingOptions (ao)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies optional settings for the voice networking accounting system. The options are: ***suppressTerminatingEndRecords*** - setting this option suppresses the generation of accounting records at the destination node. This reduces the volume of accounting data. This option has local significance only. It only suppresses the generation of accounting records for calls received by this node.
Mib	VoiceNetworking
Set of	suppressTerminatingEndRecords (ster)
Default	No default

COMPONENT VRoute IgDigitManipulation (Idm)

Groups	"GROUP VRoute Idm Provisioned (Prov)"
Scope	Application

Description	*VRoute/n IgDigitManipulation* This component specifies ingress digit manipulation properties.
Mib	VoiceNetworking
Common Verbs	Help List Display Add DELete

GROUP VRoute Idm Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *IgDigitManipulation* component.
Mib	VoiceNetworking

ATTRIBUTE VRoute Idm variant (var)

Access	Read and write
Criticality	Process
Description	This attribute specifies the variant of ingress digit manipulation to perform. Selecting ***blindLeading*** specifies ingress digit manipulation is performed on the leading end of the called number. Selecting ***none*** disables ingress digit manipulation. A warning is generated if ***none*** is selected and *digitsToInsert* is not empty or *numDigitsToDelete* is not 0.
Mib	VoiceNetworking
Values	none blindLeading
Default	blindLeading

ATTRIBUTE VRoute Idm digitsToInsert (dti)

Access	Read and write
Criticality	Process

Description	This attribute specifies the digits to insert and only applies when *variant* is ***blindLeading***. There can be up to 16 digits inserted. Acceptable values are the digits 0 through 9 and the characters # (octothorpe) and * (star). An error is generated if any of the digits are not in the acceptable range. A warning is generated if *digitsToInsert* is not empty and the *variant* selection is ***none***.
Mib	VoiceNetworking
Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE VRoute Idm numDigitsToDelete (ndtd)

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of leading digits to delete and only applies when *variant* is ***blindLeading***. There can be up to 16 digits deleted. A warning is generated if *numDigitsToDelete* is not 0 and the *variant* selection is ***none***.
Mib	VoiceNetworking
Values	Decimal (0..16)
Default	0

ATTRIBUTE VRoute Idm callRouting (cr)

Access	Read and write
Criticality	Process
Description	This attribute specifies whether calls are routed before or after performing digit manipulation and only applies when *variant* is ***blindLeading***. Selecting ***routeOnDialledDigits*** specifies that calls are routed prior to performing ingress digit manipulation. Selecting ***routeOnModifiedDigits*** specifies that calls are routed after performing ingress digit manipulation.
Mib	VoiceNetworking

Values	routeOnDialledDigits routeOnModifiedDigits
Default	routeOnModifiedDigits

COMPONENT VRoute EgDigitManipulation (Edm)

Groups	"GROUP VRoute Edm Provisioned (Prov)"
Scope	Application
Description	*VRoute/n EgDigitManipulation* This component specifies egress digit manipulation properties.
Mib	VoiceNetworking
Common Verbs	Help List Display Add DELete

GROUP VRoute Edm Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *EgDigitManipulation* component.
Mib	VoiceNetworking

ATTRIBUTE VRoute Edm variant (var)

Access	Read and write
Criticality	Process
Description	This attribute specifies the variant of egress digit manipulation to perform. Selecting ***blindLeading*** specifies egress digit manipulation is performed on the leading end of the called number. Selecting ***none*** disables egress digit manipulation. A warning is generated if ***none*** is selected and *digitsToInsert* is not empty or *numDigitsToDelete* is not 0.
Mib	VoiceNetworking

Values	none blindLeading
Default	blindLeading

ATTRIBUTE VRoute Edm digitsToInsert (dti)

Access	Read and write
Criticality	Process
Description	This attribute specifies the digits to insert and only applies when *variant* is ***blindLeading***. There can be up to 16 digits inserted. Acceptable values are the digits 0 through 9 and the characters # (octothorpe) and * (star). An error is generated if any of the digits are not in the acceptable range. A warning is generated if *digitsToInsert* is not empty and the *variant* selected is ***none***.
Mib	VoiceNetworking
Values	String (0..16, ASCII)
Default	No default

ATTRIBUTE VRoute Edm numDigitsToDelete (ndtd)

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of leading digits to delete and only applies when *variant* is ***blindLeading***. There can be up to 16 digits deleted. A warning is generated if *numDigitsToDelete* is not 0 and the *variant* selected is ***none***.
Mib	VoiceNetworking
Values	Decimal (0..16)
Default	0

ATTRIBUTE VRoute Edm callHandlingWhenNoDigits (chwnd)

Access	Read and write
Criticality	Process

Description	This attribute specifies how calls are handled when no digits remain following egress digit manipulation and only applies when *variant* is ***blindLeading***. Selecting ***releaseCall*** specifies the call is released if no digits remain following egress digit manipulation. Selecting ***attemptCompletion*** specifies that call completion is attempted if no digits remain upon following egress digit manipulation.
Mib	VoiceNetworking
Values	attemptCompletion releaseCall
Default	releaseCall

Nortel Networks Multiservice Switch 7400/15000/20000

Component VRoute

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Vr

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Vr

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COMPONENT VirtualRouter (Vr)

Instance	String (1..16, ASCII)
Groups	"GROUP Vr AdministrativeControl (AdminContorl)" "GROUP Vr CustomerIdentifierData (CidData)" "GROUP Vr OperationalStatus (OperStatus)" "GROUP Vr OsiState (State)" "GROUP Vr IfNumberOper"
Scope	Application
Description	*Vr/<string>* The *VirtualRouter* component represents an instance of a Router on the platform. *Vr* provides a mechanism to segregate router traffic and maintenance activities based on a logical separation of ports into separate *VirtualRouters*. At any time the number of *VirtualRouter* components existing in the current view plus the number of newly created *VirtualRouter* components in the edit view must be less than the maximum allowed number of virtual routers. This is regardless of how many *VirtualRouter* components may have been deleted in the edit view. Any *VirtualRouter* which, when created in the edit view, results in a total count greater than the maximum allowed, is labelled as invalid and must be deleted. It is recommended that the deletion of any *VirtualRouter* components existing in the current view should be activated using

	the *Activate Prov* command before creating any new *VirtualRouter* components.
Mib	VirtualRouter
Subcomponents	"COMPONENT Vr MemoryManagement (Mm)"
Opt. Subcomp.	"COMPONENT Vr DifferentiatedServicesDomain (Dsd)" "COMPONENT Vr ProtocolPort (Pp)" "COMPONENT Vr NetSentry (Ns)" "COMPONENT Vr Bridge (Br)" "COMPONENT Vr Ip" "COMPONENT Vr Ipx" "COMPONENT Vr Snmp" "COMPONENT Vr SourceRouteEndStation (Sres)" "COMPONENT Vr CustomizationSpecification (CustSpec)"
Dyn. Subcomp.	"COMPONENT Vr IfTableEntry"
Common Verbs	Help List Display Add DELete LOCK Unlock

VERB TELNET Vr

Impact	Passive
Description	*Telnet -ipAddress(<IP address>) Vr/<string>* This command allows access to the Telnet client, attempting to set up a connection from this node to the specified IP address within the specified VR address space. Options: *ipAddress* - This mandatory option specifies the IP address of the remote node to which the user wants to Telnet within this VR's address space.

GROUP Vr AdministrativeControl (AdminContorl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	VirtualRouter

ATTRIBUTE Vr snmpAdminStatus

Access	Read and write
Description	This sets the desired state of this Virtual Router (VR). The ***up*** state indicates the VR is operational. The ***down*** state indicates the VR is not operational. The ***down*** state is only valid when the *managementAccess* attribute is ***disabled***. The ***testing*** state is invalid for a VR.
Mib	VirtualRouter
Values	up down testing
Default	up

ATTRIBUTE Vr managementAccess

Access	Read and write
Description	This attributes specifies the routing capabilities of this Virtual Router (VR) and controls the TCP access into that VR. External access is only permitted through the VR that has this attribute ***enabled***. The attribute allows the following subcomponents to be provisioned: *Ipx*, *Bridging*, *Sna*, *Sres*, *NetSentry*, and *Snmp*. Exactly one VR must have this attribute set to ***enabled.***

	The first provisioned VR has its *managementAccess* attribute set to ***enabled*** by default. The *managementAccess* attribute of subsequent VRs is set to ***disabled***.
Mib	VirtualRouter
Values	disabled enabled
Default	No default

ATTRIBUTE Vr virtualPrivateIntranetIdentifier (vpiId)

Access	Read and write
Description	This attribute specifies the Virtual Private Intranet (VPI) associated with this Virtual Router. If this attribute is not set to the default value, it must be unique on the node. Virtual Routers on different nodes that are interconnected with each other should have the same VPI value. Note that this attribute will be obsoleted in the near future. It's functionality is replaced by the *virtualPrivateNetworkIdentifier* attribute. Any affected tools using this attribute should be converted to use the *vpnId* attribute instead.
Mib	VirtualRouter
Values	Decimal (0..2047)
Default	0

ATTRIBUTE Vr vpnMode (vpnm)

Access	Read and write
Description	This attribute specifies if the virtual router behaves as a carrier Virtual Router or a customer Virtual Router.
Mib	VirtualRouter

Values	customer carrier
Default	customer

ATTRIBUTE Vr virtualPrivateNetworkIdentifier (vpnId)

Access	Read and write
Description	This attribute specifies the Virtual Private Network (VPN) associated with this Virtual Router. This is a globally unique identifier composed of a three-octet long Organizationally Unique Identifier (OUI) followed by a four-octet long VPN index. The value “00-00-00-00-00-00-00” identifies an unspecified vpnId and should be set to other non-zero values when the autoDiscovery attribute under same virtual router ***vr***/x ***ip tunnel msep/***y is enabled.
Mib	VirtualRouter
Values	String (7, Dashed Hex)
Default	00-00-00-00-00-00-00

ATTRIBUTE Vr virtualRouterProcessor (vrp)

Access	Read and write
Criticality	Process
Description	This attribute specifies the *LogicalProcessor* on which this *VirtualRouter* resides. The Management Virtual Router must reside on ***Lp/0***. The following card types may support a Virtual Router: ***CP*** ***CPeD*** ***CPeE*** ***VpnXc***
Mib	VirtualRouter
Values	Link (Hardware, linkToApplications)

Default	No default

GROUP Vr CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	VirtualRouter

ATTRIBUTE Vr customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.
Mib	VirtualRouter
Values	Decimal (0; 1..8191)
Default	0

GROUP Vr OperationalStatus (OperStatus)

Properties	Operational

Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	VirtualRouter

ATTRIBUTE Vr snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	VirtualRouter
Values	up down testing
Default	up

GROUP Vr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VirtualRouter

ATTRIBUTE Vr adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or

Lock command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	VirtualRouter
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VirtualRouter
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VirtualRouter
Values	idle active (activ) busy
Default	idle

GROUP Vr IfNumberOper

Properties	Operational
Description	This group contains the ifNumber attribute.
Mib	VirtualRouter

ATTRIBUTE Vr ifNumber (ifN)

Access	Read only
Description	This attribute defines the number of *IfEntries* in the *IfTable*.
Mib	VirtualRouter
Values	Decimal (0..65535)
Default	No default

COMPONENT Vr DifferentiatedServicesDomain (Dsd)

Instance	multiservice (ms) classSelector (cs) assuredForwarding (af) packetVoice (pv) wirelessUmts (umts) custom (cu)
Groups	"GROUP Vr Dsd LocalSourcePackets (Local)"
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum>* *Rtr/<string> DifferentiatedServicesDomain/<enum>* *Rtr/<string> Vrf/<string> DifferentiatedServicesDomain/<enum>* This component and its supcomponents represent a Differentiated Services administration domain for traffic management and congestion control. The *DifferentiatedServicesDomain* component instance identifies the domain type. The following domain types are available: *Multiservice (ms)* *ClassSelector (cs)* *AssuredForwarding (af)* *PacketVoice (pv)* *WirelessUmts (umts)* *Custom (cu)* The *DifferentiatedServicesDomain* component is an optional subcomponent of the *Router*, *VpnRouteForwarder* and *VirtualRouter* components. The *Router*, *VpnRouteForwarder*, and *VirtualRouter* components can have at most one *DifferentiatedServicesDomain* subcomponent. If a *Router* component does not have a *DifferentiatedServicesDomain* subcomponent, then the *Router*

operates as by default as follows. IP packets with Differentiated ServiceCode Point (DSCP) field value 48, and MPLS packets with Experimental Bits (EXP) field value 6, are treated with Per Hop Behavior (PHB) CS6; other IP and MPLS packets are treated with PHB DF for default forwarding. Locally generated routing control packets are treated with PHB CS6; other locally generated packets are treated with PHB DF. Per Hop Behaviors CS6 and DF are configured to provide the following values of scheduling class for 8, 4, 3, 2 queues, drop precedence, and EXP for MPLS encapsulation: (5, 2, 2, 0, low, 6) and (0, 0, 0, 0,, high, 0), respectively. This is equivalent to the default the configuration of the *DifferentiatedServicesDomain/custom* component instance.

If a *VpnRouteForwarder* component does not have a *DifferentiatedServicesDomain* subcomponent, then the *VpnRouteForwarder* component uses the *DifferentiatedServicesDomain* configuration of the *Router*.

Mib	VirtualRouter
Opt. Subcomp.	"COMPONENT Vr Dsd MplsServiceMap (MplsMap)" "COMPONENT Vr Dsd VpnDscpMap (VpnDscpMap)" "COMPONENT Vr Dsd VpnCosMap (VpnCosMap)" "COMPONENT Vr Dsd PerHopBehavior (Phb)" "COMPONENT Vr Dsd TrafficClass (Tc)"
Common Verbs	Help List Display Add DELete

GROUP Vr Dsd LocalSourcePackets (Local)

Properties	Provisioned
Description	This group contains provisioned attributes of the *DifferentiatedServicesDomain* component.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd phbGeneralSource (phbG)

Access	Read and write
Description	This attribute indicates the *PerHopBehavior* component instance that controls the forwarding behavior of each locally generated packet that is not used for network routing control. For a locally-generated IP packet that is not used for network routing control, the Differentiated Services Code Point (DSCP) field of the packet is set equal to this attribute value. For a locally-generated ICMP echo request packet, the DSCP field is overridden by the *-tos* or *-dscp* option of the *Ping* command. For a locally-generated ICMP echo reply packet, the DSCP field is set to the DSCP value contained in the IP header of the received request packet. In any case, the forwarding behavior of the ICMP packet controlled by the *PerHopBehavior* component instance that is equal to value of the DSCP field.
Mib	VirtualRouter
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4

	cs5 cs6 cs7
Default	df

ATTRIBUTE Vr Dsd phbRoutingSource (phbR)

Access	Read and write
Description	This attribute indicates the *PerHopBehavior* component instance that controls the forwarding behavior of each locally generated packet that is used for network routing control. For a locally generated IP packet that is used for network routing control, the Differentiated Services Code Point (DSCP) field of the packet is set equal to this attribute value.
Mib	VirtualRouter
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7

Default	cs6

ATTRIBUTE Vr Dsd linkToVpnDscpMap (vpnMap)

Access	Read and write
Description	This attribute specifies a *VpnDscpMap* component instance that is used to translate the value of the DSCP field in an IP packet forwarded by a customer Virtual Router (cVr) to the value of the DSCP field in the IP header that encapsulates the packet when it is forwarded by a Virtual Connection Gateway (VCG). If no *VpnDscpMap* component is specified, then the value of the DSCP field in the carrier IP header is set equal to the value of the DSCP field in the customer IP header. This attribute is relevant only to a VR configured as a customer router in an IP VPN (RFC2764) network.
Mib	VirtualRouter
Values	Link (Service, linkToVpnDscpMapUsers)
Default	No default

COMPONENT Vr Dsd MplsServiceMap (MplsMap)

Instance	0
Scope	Application
Description	*Vr/<string> Dsd/<enum> MplsServiceMap/<n>* *Rtr/<string> Dsd/<enum> MplsServiceMap/<n>* The subcomponents of the *MplsServiceMap* component specify mappings used to control how MPLS packets are forwarded over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The *MpslServiceMap/0* subcomponent instance is added automatically to a *DifferentiatedServicesDomain* subcomponent being added to a *Router* component where the *Ldp* subcomponent is already activated.

The *MpslServiceMap/0* subcomponent instance is not allowed under a *DifferentiatedServicesDomain* component whose immediate parent is a *VirtualRouter* component or a *VirtualRouteForwarder* component.

Mib	VirtualRouter
Opt. Subcomp.	"COMPONENT Vr Dsd MplsMap ExperimentalBitsMap (ExpMap)" "COMPONENT Vr Dsd MplsMap PerHopBehaviorMap (PhbMap)" "COMPONENT Vr Dsd MplsMap MarkingPerformance"
Common Verbs	Help List Display Add DELete

COMPONENT Vr Dsd MplsMap ExperimentalBitsMap (ExpMap)

Instance	0 1 2 3 4 5 6 7
Groups	"GROUP Vr Dsd MplsMap ExpMap Provisioned (Prov)" "GROUP Vr Dsd MplsMap ExpMap Operational (Oper)"
Scope	Application
Description	*Vr/<string> Dsd/<enum> MplsMap/<n> ExperimentalBitsMap/<exp>* *Rtr/<string> Dsd/<enum> MplsMap/<n> ExperimentalBitsMap/<exp>* This component specifies a mapping from a three-bit

Experimental (EXP) field value in an MPLS label to a *DifferentiatedServicesDomain PerHopBehavior* component instance value.

This mapping controls how an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value is treated when the packet is forwarded by a Label Switched Router (LSR) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The *MplsServiceMap* component must have eight *ExperimentalBitMap* subcomponents, each with a unique instance value in the range from **0** to **7**. These subcomponents are added automatically when the *MplsServiceMap* component is created.

Mib	VirtualRouter
Common Verbs	Help List Display Add DELete

GROUP Vr Dsd MplsMap ExpMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *ExperimentalBitsMap* component.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd MplsMap ExpMap perHopBehavior (phb)

Access	Read and write
Description	This attribute specifies the *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the

packet is forwarded by a Label Switch Router (LSR) over an Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The value of this attribute must be equal to an exisiting *DifferentiatedServicesDomain PerHopBehavior* component instance value. A default value is set automatically according to a function of the *ExperimentalBitsMap* and *DifferentiatedServicesDomain* component instance values when the *ExperimentalBitsMap* component is created.

Mib	VirtualRouter
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af31 af23 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Default	No default

GROUP Vr Dsd MplsMap ExpMap Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *ExperimentalBitsMap* component.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd MplsMap ExpMap operPerHopBehavior (operPhb)

Access	Read only
Description	This attribute indicates the *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The value of this attribute is equal to the *perHopBehavior* provisioned attribute value.
Mib	VirtualRouter
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af31 af23 af32 af33 af41 af42 af43 cs0 cs1 cs2

cs3
cs4
cs5
cs6
cs7

Default: No default

ATTRIBUTE Vr Dsd MplsMap ExpMap trafficClass (tc)

Access: Read only

Description: This attribute indicates the *TrafficClass* component instance used to treat an MPLS packet whose three-bit Experimental (EXP) field value is equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *trafficClass* provisioned attribute value of the *DifferentiatedServices PerHopBehavior* component instance that is equal to the *ExperimentalBitsMap perHopBehavior* provisioned attribute value.

Mib: VirtualRouter

Values:
critical
network
premium
platinum
gold
silver
bronze
standard

Default: No default

ATTRIBUTE Vr Dsd MplsMap ExpMap dropPrecedence (dp)

Access: Read only

Description: This attribute indicates the drop precedence value used to treat an MPLS packet whose three-bit Experimental (EXP) field value is

equal to the *ExperimentalBitsMap* component instance value when the packet is forwarded by a Label Switch Router (LSR) over an LSP where the *MplsServiceMap* component is applied.

The value of this attribute is equal to the *dropPrecedence* provisioned attribute value of *DifferentiatedServices PerHopBehavior* component instance that is equal to the *ExperimentalBitsMap perHopBehavior* provisioned attribute value.

Mib	VirtualRouter
Values	low medium high
Default	No default

COMPONENT Vr Dsd MplsMap PerHopBehaviorMap (PhbMap)

Instance	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

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df
ef
af11
af12
af13
af21
af22
af31
af23
af32
af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups

"GROUP Vr Dsd MplsMap PhbMap Provisioned (Prov)"
"GROUP Vr Dsd MplsMap PhbMap Operational (Oper)"

Scope

Application

Description

Vr/<string> Dsd/<enum> MplsMap/<n> PerHopBehaviorMap/<phb>
Rtr/<string> Dsd/<enum> MplsMap/<n> PerHopBehaviorMap/<phb>

This component specifies a mapping from a *PerHopBehavior* component instance value to a three-bit Experimental (EXP) field value.

This mapping controls how the EXP field in an MPLS label is marked when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the

MplsServiceMap component is applied.

The *DifferentiatedServicesDomain PerHopBehavior* component instance used to treat the packet prior to label encapsulation is used to select the EXP value for the label. If the *PerHopBehavior* component instance value used to treat the packet is not included among the existing *PerHopBehaviorMap* component instances, then the EXP value indicated by the *PerHopBehaviorMap* component whose instance is equal to 0 is used.

Each *PerHopBehaviorMap* component instance is equal to a decimal value in the range from 0 to 63. The following pairs of *PerHopBehaviorMap* component instances values are equal:
AF11 = 10,
AF12 =12,
AF13 =14,
AF31 = 26,
AF32 = 28,
AF33 = 30,
AF21 = 18,
AF22 = 20,
AF23 = 22,
AF41 = 34,
AF42 =36,
AF43 = 38
CS0 = 0,
CS1 = 8,
CS2 =16,
CS3 = 24,
CS4 =32 ,
CS5 = 40,
CS6 = 48,
CS7 = 56,
DF = 0,
EF = 46.

The first item in each pair above is a Per Hop Behavior designation identified in one of following IETF standards: RFC 2764 (“DiffServ Field Definition in IPv4 and IPv6 Headers”), RFC 2597 (“Assured Forwarding PHB Group”) or RFC 3246 (“An Expedited Forwarding PHB”). The the second item in each

pair is the IETF recommended Differentiated Services Code Point (DSCP) value.

Each *PerHopBehaviorMap* subcomponent of the *MplsServiceMap* must have a unique instance value. A *PerHopBehaviorMap* subcomponent whose instance value is equal to 0 must exist.

A set of *PerHopBehaviorMap* subcomponents with instance values equal to the *DifferentiatedServicesDomain PerHopBehavior* subcomponent instance values is added automatically when the *MplsServiceMap* component is created.

Mib	VirtualRouter
Common Verbs	Help List Display Add DELete

GROUP Vr Dsd MplsMap PhbMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *PerHopBehaviorMap* component.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd MplsMap PhbMap experimentalBits (exp)

Access	Read and write
Description	This attribute specifies a three-bit Experimental (EXP) field value in the range from ***0*** to ***7*** that is marked into the MPLS label when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The EXP value is selected according to the *PerHopBehaviorMap* component whose instance value is equal to the instance value of

the *DifferentiatedServicesDomain PerHopBehavior* component used to treat the packet prior to label encapsulation.

This attribute is set automatically to a default value according to a function of the *PerHopBehaviorMap* and *DifferentiatedServicesDomain* component instance values when the *PerHopBehaviorMap* component is created.

Mib	VirtualRouter
Values	Decimal (0..7)
Default	No default

GROUP Vr Dsd MplsMap PhbMap Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *PerHopBehaviorMap* component.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd MplsMap PhbMap operExperimentalBits (operExp)

Access	Read only
Description	This attribute indicates a three-bit Experimental (EXP) field value in the range from ***0*** to ***7*** that is marked into the MPLS label when a packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) where the *MplsServiceMap* component is applied. The EXP value is selected according to the *PerHopBehaviorMap* component whose instance value is equal to the instance value of the *DifferentiatedServicesDomain PerHopBehavior* component used to treat the packet prior to label encapsulation. The value of this attribute is equal to the *experimentalBits* provisioned attribute.
Mib	VirtualRouter

Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vr Dsd MplsMap PhbMap operExperimentalBitsAlternative (operExpAlt)

Access	Read only
Description	This attribute is similar to the *operExperimentalBits* operational attribute, except that it used only on PQC-based access FPs with ASIC Version 2.0 when an IP packet is forwarded by a Label Edge Router (LER) over a Label Switched Path (LSP) via a PQC-based trunk FP. In such situations only, the value of this attribute, instead of the *operExperimentalBits* operational attribute value, is used to mark the Experimental (EXP) field of the MPLS label. If the *MplsServiceMap* does not have a *MarkingPerformance* subcomponent, then the value of this attribute is equal to the *experimentalBits* provisioned attribute; otherwise the value of this attribute is determined as explained in the next paragraph. If "***x***" is the *schedulingClass4Queues* operational attribute value of the *DifferentiatedServicesDomain PerHopBehavior* component whose instance value is equal to the *PerHopBehaviorMap* component instance value, then the *PerHopBehaviorMap experimentalBitsAlternative* operational attribute value is equal to the "***x***th" element of the *MarkingPerformance experimentalBitsAlternative* provisioned attribute.
Mib	VirtualRouter
Values	Decimal (0..7)
Default	No default

COMPONENT Vr Dsd MplsMap MarkingPerformance

Groups	"GROUP Vr Dsd MplsMap MarkingPerformance Provisioned (Prov)"
Scope	Application

Description

Vr/<string> Dsd/<enum> MplsMap/<n> MarkingPerformance
Rtr/<string> Dsd/<enum> MplsMap/<n> MarkingPerformance

This subcomponent is added to the *MplsServiceMap* component to enable high performance MPLS label encapsulation on some PQC-based ingress access FPs .

IP packets that are forwarded from access FPs with PQC-ASIC Version 2.0 via PQC-based trunk FPs (any ASIC version) over an MPLS Label Switched Path (LSP) where the *MplsServiceMap* is applied are affected.

Adding this component to the *MplsServiceMap* improves IP packet throughput on the affected access FPs but restricts how the three-bit Experimental (EXP) field of MPLS labels are marked, as explained in the description of the *operExperiementalBitsAlternative* operational attribute of the *MplsServiceMap PerHopBehaviorMap* component.

Without the *MarkingPerformance* subcomponent, IP packets after being routed in hardware are encapsulated with MPLS labels by a software-assisted datapath that does not restrict how the EXP field of MPLS labels are marked.

The *MarkingPerformance* subcomponent is added automatically to a *MpslServiceMap* subcomponent being added to a *DifferentiatedServicesDomain* component. This ensures that the high performance MPLS label encapsulation data path is used by default.

Mib

VirtualRouter

Common Verbs

Help
List
Display
Add
DELete

GROUP Vr Dsd MplsMap MarkingPerformance Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *MarkingPerformance* component.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd MplsMap MarkingPerformance expermentalBitsAlternative (expAlt)

Access	Read and write
Description	This attribute is an array of four values that specifies a mapping of scheduling class values for four queues to three-bit Experimental (EXP) field values for marking MPLS labels. This array controls the value of the *operExperimentalBitsAlternative* operational attribute of the *MplsServiceMap PerHopBehaviorMap* components, as explained in the description of that attribute. Each element of this attribute is set automatically to a default value according to a function of the *DifferentiatedServicesDomain* component instance value and the element index when the *MarkingPerformance* component is created. The default values are listed below. Default values for all domains, except *assuredForwarding (af)* and *custom(cu)* : ---------- -- *schedulingClass4Queues* *experimentalBitsAlternative* ---------- -- *3* ***5*** *2* ***6*** *1* ***1*** *0* ***0*** Default values for *assuredForwarding (af)* domain: ---------- -- *schedulingClass4Queues* *experimentalBitsAlternative* ----------

```
--          3                    7
2                    5
1                    3
0                    0
```

Default values for *custom(cu)* domain:

```
-----------------------------------------------------------------------------
--
schedulingClass4Queues   experimentalBitsAlternative
-----------------------------------------------------------------------------
--          3                    0
2                    6
1                    0
0                    0
```

Mib	VirtualRouter
Vector of	Decimal (0..7)
Index	Decimal (0..3)
Default	No default

COMPONENT Vr Dsd VpnDscpMap (VpnDscpMap)

Instance	String (1..20, ASCII)
Groups	"GROUP Vr Dsd VpnDscpMap Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum> VpnDscpMap/<string>* This component provides a mapping of customer DSCP values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. When an IP packet is forwarded from a customer Virtual Router (cVr) to a Virtual Connection Gateway (VCG) the customer IP header is encapsulated with a carrier IP header for transmission through the carrier network.

If the customer virtual router (cVr) has a *DifferentiatedServicesDomain* subcomponent where the *linkToVpnDscpMap* attribute is set, then the value of DSCP field in the IP packet forwarded by the customer Virtual Router (cVr) is translated by the mapping specified by the *assignedPhb* attribute of the associated *VpnDscpMap* to a DSCP value that is marked in the carrier IP header. If the customer *DifferentiatedServicesDomain linkToVpnDscpMap* attribute is not set, then the value of the DSCP field in the carrier IP header is set equal to the value of the DSCP field in the customer IP header.

The encapsulated IP packet is treated by the Virtual Connection Gateway (VCG) as specified by the *DifferentiatedServicesDomain PerHopBehavior* component instance associated with the carrier header DSCP value. If the carrier header DSCP value does not correspond to a *PerHopBehavior* subcomponent of the VCG's *DifferentiatedServicesDomain* component, then the IP packet is treated as specified by the *PerHopBehavior* component instance associated with DSCP ***0***.

The *VpnDscpMap* component can be added only to the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***carrier***. It can be linked only to the *linkToVpnDscpMap* attribute of the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***customer***.

The component instance is an arbitrary text string to allow the operator to assign a meaningful name for easy reference.

The *DiffServDomain* component is not allowed to have more than eight *VpnDscpMap* subcomponents.

	No more than one *DiffServDomain* component instance is allowed to have *VpnDscpMap* subcomponents
Mib	VirtualRouter
Common Verbs	Help List Display Add DELete

GROUP Vr Dsd VpnDscpMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *VpnDscpMap* component.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd VpnDscpMap linkToVpnDscpMapUsers (users)

Access	Read and write
Description	This attribute specifies all the customer virtual routers that use the *VpnDscpMap* component.
Mib	VirtualRouter
List of	Link (Service, linkToVpnDscpMap)
List Size	256
Default	No default

ATTRIBUTE Vr Dsd VpnDscpMap assignedPhb (phb)

Access	Read and write
Description	This attribute specifies a mapping of customer DSCP values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. See the description of the *VpnDscpMap* component for more information.

Mib	VirtualRouter
Vector of	Decimal (0..63)
Index	Decimal (0..63)
Default	([1] 0, [63] 0)

COMPONENT Vr Dsd VpnCosMap (VpnCosMap)

Groups	"GROUP Vr Dsd VpnCosMap Provisioned (Prov)" "GROUP Vr Dsd VpnCosMap Operational (Oper)"
Scope	Application
Description	*Vr/<string> DifferentiatedServicesDomain/<enum> VpnCosMap* This component provides a mapping of customer CoS values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. When an IP packet is forwarded from a customer Virtual Router (cVr) to a Virtual Connection Gateway (VCG) the customer IP header is encapsulated with a carrier IP header for transmission through the carrier network. If the customer virtual router (cVr) does not have a *DifferentiatedServicesDomain* subcomponent and the Virtual Connection Gateway (VCG) has a *DifferentiatedServicesDomain VpnCosMap* component, then the IP CoS value assigned to the packet by the customer virtual router is translated by the mapping specified by the *assignedPhb* attribute of the *VpnCosMap* to a DSCP value that is marked in the carrier IP header. If the *DifferentiatedServicesDomain* of the Virtual Connection Gateway (VCG) does not have a *VpnCosMap* subcomponent, then the value of the DSCP field in the carrier IP header is set to ***0*** unless the customer header DSCP value is ***48*** (which corresponds to PHB CS6 for IP network control packets). In the latter case the carrier header DSCP value is set to ***48*** also. The encapsulated IP packet is treated by the Virtual Connection Gateway (VCG) as specified by the

DifferentiatedServicesDomain PerHopBehavior component instance associated with the carrier header DSCP value. If the carrier header DSCP value does not correspond to a *PerHopBehavior* subcomponent of the VCG's *DifferentiatedServicesDomain* component, then the IP packet is treated as specified by the *PerHopBehavior* component instance associated with DSCP ***0***.

The *VpnCosMap* component can be added only to the *DiffServDomain* subcomponent of a *VirtualRouter* component where the *vpnMode* attribute is set to ***carrier***.

The *VpnCosMap* component is used to assist the migration of an IP VPN network without *DifferentiatedServicesDomain* components to an IP VPN network where every customer Virtual Router (cVr) and Virtual Connection Gateway (VCG) has a *DifferentiatedServicesDomain* component. The *VpnCosMap* components can be removed once the CoS to DiffServ network migration is completed.

Mib	VirtualRouter
Common Verbs	Help List Display Add DELete

GROUP Vr Dsd VpnCosMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *VpnCosMap* component.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd VpnCosMap assignedPhb (phb)

Access	Read and write

Description	This attribute specifies a mapping of customer CoS values to carrier DSCP values for IP tunnel encapsulation in an IP VPN (RFC2764) network. See the description of the *VpnCosMap* component for more information.
Mib	VirtualRouter
Vector of	Decimal (0..63)
Index	Decimal (0..3)
Default	(0: 0, 1: 0, 2: 0, 3: 0)

GROUP Vr Dsd VpnCosMap Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *VpnCosMap* component.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd VpnCosMap users (users)

Access	Read only
Description	This attribute indicates the customer virtual routers that use the *VpnCosMap* component. This is the list of all customer virtual routers (cVRs) without a *DifferentiatedServicesDomain* subcomponent that forward IP packets to the Virtual Connection Gateway (VCG).
Mib	VirtualRouter
List of	The name of the component
List Size	256
Default	No default

COMPONENT Vr Dsd PerHopBehavior (Phb)

Instance	0
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62
63
df
ef
af11
af12
af13
af21
af22
af23
af31
af32

af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups

"GROUP Vr Dsd Phb Provisioned (Prov)"
"GROUP Vr Dsd Phb Operational (Oper)"
"GROUP Vr Dsd Phb IpOperational (IpOper)"

Scope

Application

Description

Vr/<string> Dsd/<enum> PerHopBehavior/<phb>
Rtr/<string> Dsd/<enum> PerHopBehavior/<phb>
Rtr/<string> Vrf/<string> Dsd/<enum> PerHopBehavior/<phb>

The attributes of the *PerHopBehavior* component specify per-packet traffic management parameters that control how individual packets are forwarded.

A packet is associated with a *PerHopBehavior* component instance by a packet classification mechanism. For IP packets, the associated *PerHopBehavior* component instance is equal to the value of the six-bit Differentiated Services Code Point (DSCP) field in the IP header. For MPLS packets forwarded by a Label Switched Router (LSR) over a Label Switched Path (LSP) where an *MplsServiceMap* component is applied, the associated *PerHopBehavior* component instance is equal to value of the *perHopBehavior* attribute of the *MplsServiceMap ExperimentalBitsMap* component whose instance is equal to the value of the three-bit Experimental (EXP) field of the MPLS label.

If the *PerHopBehavior* component instance associated with a

packet is not included among the existing *PerHopBehavior* subcomponents of the *DifferentiatedServicesDomain*, then the packet is treated according to the *PerHopBehavior* component whose instance is equal to 0.

Each *PerHopBehavior* component instance is equal to a decimal value in the range from 0 to 63. The following pairs of *PerHopBehavior* component instances values are equal:
AF11 = 10,
AF12 =12,
AF13 =14,
AF31 = 26,
AF32 = 28,
AF33 = 30,
AF21 = 18,
AF22 = 20,
AF23 = 22,
AF41 = 34,
AF42 =36,
AF43 = 38
CS0 = 0,
CS1 = 8,
CS2 =16,
CS3 = 24,
CS4 =32,
CS5 = 40,
CS6 = 48,
CS7 = 56,
DF = 0,
EF = 46.

The first item in each pair above is a Per Hop Behavior designation identified in one of following IETF standards: RFC 2764 (“DiffServ Field Definition in IPv4 and IPv6 Headers”), RFC 2597 (“Assured Forwarding PHB Group”) or RFC 3246 (“An Expedited Forwarding PHB”). The the second item in each pair is the IETF recommended Differentiated Services Code Point (DSCP) value.

Each *PerHopBehavior* subcomponent of the *DifferentiatedServicesDomain* must have a unique instance value.

A *PerHopBehavior* subcomponent whose instance value is equal to 0 must exist.

A set of *PerHopBehavior* subcomponents is added automatically when the *DifferentiatedServicesDomain* component is created. The members of this set is a function of the *DifferentiatedServicesDomain* component instance as indicated below.

Multiservice (ms):
CS7, CS6, CS5, CS4, CS3, CS2, CS1, EF, AF41, AF42, AF43, AF31, AF32, AF33, AF21, AF22, AF23, AF11, AF12, AF13, DF

ClassSelector (cs):
CS7, CS6, CS5, CS4, CS3, CS2, CS1, CS0

AssuredForwarding (af):
CS6, AF41, AF42, AF43, AF31, AF32, AF33, AF21, AF22 AF23, AF11, AF12, AF13, DF

Packet Voice (pv):
CS7, CS6, CS5, CS1, EF, AF11, AF12, AF13, DF

WirelessUmts (umts):
CS7, CS6, CS1, EF, AF31, AF32, AF33, AF21, AF22, AF23, DF

Custom (cu):
CS6, DF

Mib: VirtualRouter

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Dsd Phb Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *PerHopBehavior* component.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd Phb trafficClass (tc)

Access	Read and write
Description	This attribute specifies the *TrafficClass* component instance associated with the *PerHopBehavior* component instance. This attribute allows *PerHopBehavior* component instances to be aggregated into groups that specify the same packet scheduling characteristics. This attribute is set automatically to a default value according to a function of the *PerHopBehavior* component instance value when the *PerHopBehavior* component is created. The default values are listed below.

```
-----------------------------------------------------------------------------
--
PeHopBehavior     trafficClass
-----------------------------------------------------------------------------
--CS7 (56)          critical
CS6 (48)           network
EF   (46)           premium
CS5 (40)           premium
CS4 (32)           platinum
AF41 (34)           platinum
AF42 (36)           platinum
AF43 (38)           platinum
CS3 (24)           gold
AF31 (26)           gold
AF32 (28)           gold
AF33 (30)           gold
CS2 (16)           silver
AF21 (18)           silver
```

AF22 (20)	***silver***
AF23 (22)	***silver***
CS1 (8)	***bronze***
AF11 (10)	***bronze***
AF12 (12)	***bronze***
AF13 (14)	***bronze***
CS0, DF (0)	***standard***
all others	***standard***

The value of this attribute must be equal to an existing *TrafficClass* subcomponent instance of the *DifferentiatedServicesDomain*.

If the *PerHopBehavior* component instance is ***0***, ***cs0***, or ***df***, then the value of this attribute must be ***standard***.

Mib: VirtualRouter

Values:
critical
network
premium
platinum
gold
silver
bronze
standard

Default: No default

ATTRIBUTE Vr Dsd Phb dropPrecedence (dp)

Access: Read and write

Description: This attribute specifies the drop precedence value given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a congestion threshold when the packet is placed on a queue that supports multiple congestion thresholds.

A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high***

value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

This attribute is set automatically to a default value according to a function of the *PerHopBehavior* component instance value when the *PerHopBehavior* component is created. The default values are listed below.

PerHopBehavior	*dropPrecedence*
CS7 (56)	***low***
CS6 (48)	***low***
EF (46)	***low***
CS5 (40)	***low***
CS4 (32)	***low***
AF41 (34)	***low***
AF42 (36)	***medium***
AF43 (38)	***high***
CS3 (24)	***low***
AF31 (26)	***low***
AF32 (28)	***medium***
AF33 (30)	***high***
CS2 (16)	***low***
AF21 (18)	***low***
AF22 (20)	***medium***
AF23 (22)	***high***
CS1 (8)	***low***
AF11 (10)	***low***
AF12 (12)	***medium***
AF13 (14)	***high***
CS0, DF (0)	***high***
all others	***high***

Mib VirtualRouter

Values	low medium high
Default	No default

GROUP Vr Dsd Phb Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *PerHopBehavior* component that control the relative forwarding behaviors of packets.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd Phb operTrafficClass (operTc)

Access	Read only
Description	This attribute indicates the *TrafficClass* component instance associated with the *PerHopBehavior* component instance. This attribute allows *PerHopBehavior* component instances to be aggregated into groups that indicate the same packet scheduling characteristics. The value of this attribute is equal to value of the *trafficClass* provisioned attribute of the *PerHopBehavior* component.
Mib	VirtualRouter
Values	critical network premium platinum gold silver bronze standard
Default	No default

ATTRIBUTE Vr Dsd Phb schedulingClass8Queues (sc8q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is equal to value of the *schedulingClass8Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.
Mib	VirtualRouter
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vr Dsd Phb schedulingClass4Queues (sc4q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This

traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This value is also used to select a one of up to four Layer 2 connections at ATM and Frame Relay interfaces where the packet is transmitted. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information.

The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib	VirtualRouter
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Vr Dsd Phb schedulingClass3Queues (sc3q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***2*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports three queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass3Queues* operational attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib: VirtualRouter

Values: Decimal (0..2)

Default: No default

ATTRIBUTE Vr Dsd Phb schedulingClass2Queues (sc2q)

Access: Read only

Description: This attribute indicates a logical scheduling class value in the range from ***0*** to ***1*** given to a packet that uses the *PerHopBehavior* component.instance. This value is used to select a queue when the packet is transmitted at an interface that supports two queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass2Queues* operational attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.

Mib: VirtualRouter

Values: Decimal (0..1)

Default: No default

ATTRIBUTE Vr Dsd Phb connectionClass (cos)

Access	Read only
Description	This attribute indicates the connection class value in the range from ***0*** to ***3*** that is associated with the Layer 2 connection used to forward a packet that uses the *PerHopBehavior* component instance when it is transmitted at an ATM or Frame Relay interface that has four Layer 2 connections, each with a different connection class value, to the next hop router. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information per-packet selection of egress connections. The value of this attribute is equal to value of the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component whose instance is equal to the *PerHopBehavior trafficClass* provisioned attribute value.
Mib	VirtualRouter
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Vr Dsd Phb operDropPrecedence (operDp)

Access	Read only
Description	This attribute indicates the drop precedence value given to a packet that uses the *PerHopBehavior* component instance. This value is used to select a congestion threshold when the packet is placed on a queue that supports multiple congestion thresholds. A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

	The value of this attribute is equal to value of the *dropPrecedence* provisioned attribute of the *PerHopBehavior* component.
Mib	VirtualRouter
Values	low medium high
Default	No default

GROUP Vr Dsd Phb IpOperational (IpOper)

Properties	Operational
Description	This group contains *PerHopBehavior* operational attributes that pertain to IP packets only.
Mib	VirtualRouter

ATTRIBUTE Vr Dsd Phb dscpDecimal (dscp)

Access	Read only
Description	This attribute indicates the decimal value of the six-bit Differentiated Services Code Point (DSCP) field of an IP packet that uses the *PerHopBehavior* component instance.
Mib	VirtualRouter
Values	Decimal (0..63)
Default	No default

ATTRIBUTE Vr Dsd Phb tosDecimal (tos)

Access	Read only
Description	This attribute indicates the decimal value of the eight-bit Type Of Service (ToS) field of an IP packet that uses the *PerHopBehavior* component instance when the two least significant bits are set to zero. The six most significant bits of the ToS field are the same six bits of the Differentiated Services Code Point (DSCP) field. Only these six bits are used to select the *PerHopBehavior* component instance for treating the packet.

Mib	VirtualRouter
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vr Dsd Phb typeOfServiceFieldHex (hex)

Access	Read only
Description	This attribute indicates the hexadecimal value of the eight-bit Type Of Service (ToS) field of an IP packet that uses the *PerHopBehavior* component instance when the two least significant bits are set to zero. The six most significant bits of the ToS field are the same six bits of the Differentiated Services Code Point (DSCP) field. Only these six bits are used to select the *PerHopBehavior* component instance for treating the packet.
Mib	VirtualRouter
Values	Hex (H.0..H.ff)
Default	No default

COMPONENT Vr Dsd TrafficClass (Tc)

Instance	critical network premium platinum gold silver bronze standard
Groups	"GROUP Vr Dsd Tc Provisioned (Prov)" "GROUP Vr Dsd Tc Operational (Oper)"
Scope	Application
Description	*Vr/<string> Dsd/<enum> TrafficClass/<tc>* *Rtr/<string> Dsd/<enum> TrafficClass/<tc>* *Rtr/<string> Vrf/<string> Dsd/<enum> TrafficClass/<tc>* The attributes of the *TrafficClass* component specify per-packet

traffic management parameters that control how individual packets are forwarded.

A packet is associated with a *TrafficClass* component instance according to the *trafficClass* provisioned attribute of the *PerHopBehavior* component instance the packet is using. See the description of the *PerHopBehavior* component for an explanation of how *PerHopBehavior* component instances are associated with packets.

The *DifferentiatedServicesDomain* must have a *TrafficClass/ standard* subcomponent instance.

Each of the *TrafficClass* component instances should be referenced by at least one of the *DifferentiatedServicesDomain PerHopBehavior* component instances.

Mib: VirtualRouter

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Dsd Tc Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioned attributes of the *TrafficClass* component.

Mib: VirtualRouter

ATTRIBUTE Vr Dsd Tc schedulingClass8Queues (sc8q)

Access: Read and write

Description: This attribute specifies a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This attribute is set automatically to a default value according to a function of the *TrafficClass*component instance value when the *TrafficClass* component is created. The default values are listed below. If the *TrafficClass* component instance is ***standard***, then this attribute must be set to ***0***.

TrafficClass	*schedulingClass8Queues*
critical	***7***
premium	***6***
network	***5***
platinum	***4***
gold	***3***
silver	***2***
bronze	***1***
standard	***0***

Mib VirtualRouter

Values Decimal (0..7)

Default No default

ATTRIBUTE Vr Dsd Tc schedulingClass4Queues (sc4q)

Access Read and write

Description This attribute specifies a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when

the packet is transmitted at an interface that supports four queues per connection. It may also be used to select one of up to four link layer connections at interfaces where per-packet selection of egress connections is supported.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

This value is also used to select a one of up to four Layer 2 connections at the interface where the packet is transmitted. Per-packet selection of egress connections is supported only if these conditions are all true:

i) for the *Vr* component, the value of the associated *mediaType* attribute under the *IpPort* component is ***frameRelay***, ***atmMpeLlcEncap***, or ***atmMpeVcEncap***; for *Router* and *Vrf*, the media associated with the interface is *AtmMpe* or *IpoDlci*.
ii) more than one Layer 2 connection is configured to the next hop IP router, and
iii) each connection is configured with a different connection class value.

Normally the packet is transmitted on the connection whose connection class is equal to the *schedulingClass4Queues* value given to the packet. If that connection does not exist, then the connection having the next lower connection class is used. If that connection does not exist also, then the connection having the next higher connection class is used.

Locally generated IP multicast and IP broadcast packets are not eligible for per-packet selection of egress connections. Each of these packets is copied and transmitted individually on each of the available connections to the next hop IP router.

For *AtmMpe*, the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte* the connection class is specified by the *ipCos* attribute of the *StaticDlci* and *DynamicDlciDef* subcomponents. For *IpDlciGroup* and *IpoDlci* the connection class is specified by the *ipCos* attribute of the *FrConnection* subcomponent.

If each Layer 2 connection is configured to provide different policing and scheduling characteristics, then the forwarding behaviors of IP and MPLS packets are differentiated as they transit through the Layer 2 network. In general, the scheduling characteristics of the connections should be configured to be better for numerically greater connection class values. For example, if four *AtmConnection* components are associated with *AtmIf* components configured for ATM service classes ***UBR***, ***nrtVBR***, ***rtVBR***, and ***CBR***, then the *ipCos* attributes of the *AtmConnection* components should be either ***0***,***1***,***2***, and ***3***, respectively, or ***0***,***1***,***3***, and ***2*** respectively.

The *schedulingClass4Queues* attribute is set automatically to a default value according to a function of the *TrafficClass*component instance value when the *TrafficClass* component is created. The default values are listed below. If the *TrafficClass* component instance is ***standard***, then this attribute must be set to ***0***.

Default values for all domains, except *assuredForwarding (af)*:

--

TrafficClass	*schedulingClass4Queues*
critical	***2***
premium	***3***
network	***2***
platinum	***1***
gold	***1***
silver	***1***
bronze	***1***
standard	***0***

Default values for *assuredForwarding (af)* domain only:

```
-----------------------------------------------------------------------------
--
TrafficClass     schedulingClass4Queues
-----------------------------------------------------------------------------
--critical          2
premium          3
network          2
platinum         3
gold             2
silver           1
bronze           0
standard         0
```

Mib VirtualRouter

Values Decimal (0..3)

Default No default

GROUP Vr Dsd Tc Operational (Oper)

Properties Operational

Description This group contains the operational attributes of the *TrafficClass* component.

Mib VirtualRouter

ATTRIBUTE Vr Dsd Tc operSchedulingClass8Queues (operSc8q)

Access Read only

Description This attribute indicates a logical scheduling class value in the range from ***0*** to ***7*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports eight queues per connection.

A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be

delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface.

The value of this attribute is equal to value of the *schedulingClass8Queues* provisioned attribute of the *TrafficClass* component.

Mib	VirtualRouter
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vr Dsd Tc operSchedulingClass4Queues (operSc4q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***3*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports four queues per connection. It may also be used to select one of up to four link layer connections at interfaces where per-packet selection of egress connections is supported. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. This value is also used to select a one of up to four Layer 2 connections at ATM and Frame Relay interfaces where the packet is transmitted. See the description of the *TrafficClass schedulingClass4Queues* provisioned attribute for more information. The value of this attribute is equal to value of the

	schedulingClass4Queues provisioned attribute of the *TrafficClass* component.
Mib	VirtualRouter
Values	Decimal (0..3)
Default	No default

ATTRIBUTE Vr Dsd Tc operSchedulingClass3Queues (operSc3q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***2*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports three queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is controlled by the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component. If the *schedulingClass4Queues* attribute value is ***3 or 2***, then the *operSchedulingClass3Queues* attribute value is ***2***; otherwise both values are equal.
Mib	VirtualRouter
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Vr Dsd Tc operSchedulingClass2Queues (operSc2q)

Access	Read only
Description	This attribute indicates a logical scheduling class value in the range from ***0*** to ***1*** given to a packet that uses the *TrafficClass* component instance. This value is used to select a queue when the packet is transmitted at an interface that supports two queues per connection. A scheduling class is assigned to a packet to control its scheduling behavior relative to other packets at the interface where the packets are transmitted. Generally, a numerically higher value indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism at the interface. The value of this attribute is controlled by the *schedulingClass4Queues* provisioned attribute of the *TrafficClass* component. If the *schedulingClass4Queues* attribute value is ***3***, then the *operSchedulingClass2Queues* attribute value is ***1***; otherwise it is ***0***.
Mib	VirtualRouter
Values	Decimal (0..1)
Default	No default

COMPONENT Vr MemoryManagement (Mm)

Groups	"GROUP Vr Mm Provisioned (Prov)" "GROUP Vr Mm Operational (Oper)"
Scope	Application
Description	*Vr/<string> MemoryManagement* *Rtr/<string> MemoryManagement* *Rtr/<string> Vrf/<string> MemoryManagement* This component represents a mechanism to control and monitor

	dynamic memory usage within a *VirtualRouter*, *Router*, or *VpnRouteForwarder*.
Mib	VirtualRouter
Common Verbs	Help List Display

GROUP Vr Mm Provisioned (Prov)

Properties	Provisioned
Description	This group contains all provisioned attributes for the *MemoryManagement* component.
Mib	VirtualRouter

ATTRIBUTE Vr Mm vrMaxHeapSpace (vrMax)

Access	Read and write
Description	This attribute specifies the maximum percentage of the total system heap space that is allowed for use by this *VirtualRouter*, *Router*, or *VpnRouteForwarder*. Attempted memory allocation beyond this limit will cause a *VirtualRouter* or *VpnRouteForwarder* to automatically lock. If memory allocation for a *Router* exceeds this limit, an alarm is raised but the component is not locked.
Mib	VirtualRouter
Values	Decimal (0..100)
Units	%
Default	100

GROUP Vr Mm Operational (Oper)

Properties	Operational
Description	This group contains all operational attributes for the *MemoryManagement* component.

Mib	VirtualRouter

ATTRIBUTE Vr Mm vrHeapSpaceBytesAllocated (vrBytesAlloc)

Access	Read only
Description	This attribute indicates the number of bytes of system dynamic memory which has been allocated to this *VirtualRouter*, *Router*, or *VpnRouteForwarder* component.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Mm vrHeapSpaceAllocated (vrAlloc)

Access	Read only
Description	This attribute indicates the percentage of the maximum permitted heap space for this *VirtualRouter*, *Router*, or *VpnRouteForwarder* component (as specified by *vrMaxHeapSpace* attribute) which is currently allocated.
Mib	VirtualRouter
Values	Decimal (0..100)
Units	%
Default	No default

COMPONENT Vr ProtocolPort (Pp)

Instance	String (1..20, ASCII)
Groups	"GROUP Vr Pp AdministrativeControl (AdminControl)" "GROUP Vr Pp Provisioned (Prov)" "GROUP Vr Pp OperationalStatus (OperStatus)" "GROUP Vr Pp OsiState (State)" "GROUP Vr Pp Operational (Oper)" "GROUP Vr Pp NbmaAddress" "GROUP Vr Pp ProtocolPortAcct (PpAcct)"
Scope	Application

Description	*Vr/<string> Pp/<string>* This component represents a logical interface to the network. Protocol Ports are associated with physical or logical media via a linkage attribute. Protocol Ports allow for individual upper layer protocols to be enabled or disabled.
Mib	VirtualRouter
Opt. Subcomp.	"COMPONENT Vr Pp ClusterTbBridgePort (Tbcl)" "COMPONENT Vr Pp FddiEncapTbPort (FddiETB)" "COMPONENT Vr Pp TransparentBridgePort (Tbp)" "COMPONENT Vr Pp IpPort" "COMPONENT Vr Pp IpxPort (IpxP)" "COMPONENT Vr Pp SourceRouteBridgePort (SrBp)" "COMPONENT Vr Pp SourceRouteTransparentBridgePort (SrtBp)" "COMPONENT Vr Pp SrseBridgePort (Srse)" "COMPONENT Vr Pp TbseBridgePort (Tbse)" "COMPONENT Vr Pp SrsgBridgePort (Srsg)" "COMPONENT Vr Pp TbsgBridgePort (Tbsg)" "COMPONENT Vr Pp ClusterSrBridgePort (Srcl)"
Dyn. Subcomp.	"COMPONENT Vr Pp ShortcutConnection (Sc)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	VirtualRouter

ATTRIBUTE Vr Pp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	VirtualRouter
Values	up down testing
Default	up

GROUP Vr Pp Provisioned (Prov)

Properties	Provisioned
Description	This group includes provisioned attributes specific to the ProtocolPort component.
Mib	VirtualRouter

ATTRIBUTE Vr Pp linkToMedia (media)

Access	Read and write
Description	This attribute defines the Media Application which this Protocol Port is using as an interface to the network.
Mib	VirtualRouter
Values	Link (Service, linkToProtocolPort)
Default	No default

GROUP Vr Pp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib	VirtualRouter

ATTRIBUTE Vr Pp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	VirtualRouter
Values	up down testing
Default	up

GROUP Vr Pp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VirtualRouter

ATTRIBUTE Vr Pp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: VirtualRouter

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Pp operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: VirtualRouter

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Pp usageState (osiUsage)

Access: Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VirtualRouter
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp Operational (Oper)

Properties	Operational
Description	This group includes operational attributes specific to the ProtocolPort component.
Mib	VirtualRouter

ATTRIBUTE Vr Pp ifIndex

Access	Read only
Description	This represents the SNMP ifIndex which is associated with this PP. This ifIndex can be used to extract detailed information about the PP from the ifTable.
Mib	VirtualRouter
Values	Decimal (1..65535)
Default	No default

GROUP Vr Pp NbmaAddress

Properties	Operational

Description	This group contains the operational attributes of the ProtocolPort component specific to NHRP.
Mib	VirtualRouter

ATTRIBUTE Vr Pp atmAddress

Access	Read only
Description	This attribute indicates the ATM address which is associated with this protocol port. NHRP uses this address to establish shortcut connections. This attribute is not displayed if NHRP is not provisioned on this protocol port.
Mib	VirtualRouter
Values	String (0..20, Hex)
Default	No default

GROUP Vr Pp ProtocolPortAcct (PpAcct)

Properties	Provisioned
Description	This group includes the protocol port Accounting options for the *ProtocolPort* component.
Mib	VirtualRouter

ATTRIBUTE Vr Pp accountingControl (acc)

Access	Read and write
Description	This attribute is used to control accounting for the protocol port. ***disable*** signifies that accounting is disabled unconditionally with this option for the *ProtocolPort.* ***sameAsProtocol*** signifies that accounting for the *ProtocolPort* is controlled by the attribute *accountCollection* in the *Vr Ip* component.
Mib	VirtualRouter
Values	sameAsProtocol disabled

Default	sameAsProtocol

COMPONENT Vr Pp ClusterTbBridgePort (Tbcl)

Groups	"GROUP Vr Pp Tbcl Provisioned (Prov)" "GROUP Vr Pp Tbcl TbProvisioned (TbProv)" "GROUP Vr Pp Tbcl StpProvisioned (StpProv)" "GROUP Vr Pp Tbcl DomainInfoProvisioned (DIProv)" "GROUP Vr Pp Tbcl OsiState (State)" "GROUP Vr Pp Tbcl OperationalStatus (OperStatus)" "GROUP Vr Pp Tbcl Operational (Oper)" "GROUP Vr Pp Tbcl TbOperational (TbOper)" "GROUP Vr Pp Tbcl StpOperational (StpOper)" "GROUP Vr Pp Tbcl Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Pp/<string> ClusterTbBridgePort* This component represents the functionality called Cluster Bridging. Cluster Bridging allows for MAC frames, carrying packets belonging a certain network protocol, to be bridged and routed at the same time. Also, it provides for a convenient way to manage the entire cluster of LANs, using a single attachment point to the cluster of LANs, the Cluster Bridge Port. To realize these features, the network protocol(s) should also be provisioned on same port as the Cluster Bridge Port. *ClusterTbBridgePort* represents a cluster of Tb LANs.
Mib	Bridge
Opt. Subcomp.	"COMPONENT Vr Pp Tbcl NetSentry (Ns)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp Tbcl Provisioned (Prov)

Properties	Provisioned

Description	This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl fragmentIp (fIp)

Access	Read and write
Description	This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.
Mib	Bridge
Values	off on
Default	off

ATTRIBUTE Vr Pp Tbcl portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending

deletion state, the same port number could be temporarily assigned to two ports for a short period of time.

The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.

Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Tbcl TbProvisioned (TbProv)

Properties	Provisioned
Description	This group contains all the port specific provisionable attributes that belong to the Tb group. These attributes in part influence the working of a bridge port operating in the transparent bridge mode.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl secureOption (sos)

Access	Read and write
Description	This attribute specifies whether the port secure feature is enabled. The secure feature, if enabled causes the following things to happen: a) disallows dynamic learning, b) disallows frames to be forwarded that do not satisfy the following condition: the MAC address of the source should be found in the forwarding table and the destination MAC address of the frame should also be found in the forwarding table. In addition to this, the port the frame was received on should figure as the in port, given the destination MAC address found in the frame. c) disallows frames to be forwarded if the allowed to go port map for the destination MAC address is empty. This feature in effect allows the user to choose the hosts that can

	generate traffic and the hosts that can receive traffic through this bridge unit.
Mib	Bridge
Values	disabled enabled
Default	disabled

GROUP Vr Pp Tbcl StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp Tbcl portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is

controlled by the stp.
A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.

Mib: Bridge

Values: off
on

Default: on

ATTRIBUTE Vr Pp Tbcl stpTypeProv (stptProv)

Access: Read and write

Description: This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper*.

Mib: Bridge

Values: dec
ieee8021

Default: ieee8021

ATTRIBUTE Vr Pp Tbcl portPriority (ppr)

Access: Read and write

Description: This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows:
1) 0-255 for stp type DEC and
2) 0-65535 for stp type IEEE.

Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp Tbcl pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp Tbcl pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost*.
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp Tbcl DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp Tbcl preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it. Preserve domain is relevant only when used in conjunction with ATM MPE.

Mib	Bridge
Values	off on
Default	No default

GROUP Vr Pp Tbcl OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp Tbcl operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Bridge
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp Tbcl usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp Tbcl OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp Tbcl Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Tbcl upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbcl downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbcl bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp Tbcl bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp Tbcl bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.

Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort srEncapSrBridgePort srEncapTbBridgePort sourceGateSrBridgePort sourceGateTbBridgePort srtbBridgePort tbsrBridgePort clusterSrBridgePort clusterTbBridgePort snaDlrBridgePort unknown
Default	No default

ATTRIBUTE Vr Pp Tbcl ifIndex (ifin)

Access	Read only
Description	This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Tbcl mtuExceededDiscards (med)

Access	Read only
Description	This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295. This counter is influenced by the attribute *fragmentIp*. This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Tbcl TbOperational (TbOper)

Properties	Operational
Description	This group contains all the port specific operational attributes that belong to the Tb group. This group also contains all the port specific statistical attributes that belong to the Tb group. These attributes reflect the state of a bridge port operating in the transparent bridge mode
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl maxInfo (mi)

Access	Read only
Description	This attribute indicates the maximum size of the information field in a transparent bridge frame. This excludes the header field.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl badVerifyDiscards (bvd)

Access	Read only
Description	This attribute counts the number of incoming frames that were discarded because the value of the *secureOption* attribute was set to ***on*** and: a) it is not allowed to receive frames originating from the MAC address found in the source address field of the frame (source MAC address lookup in the forwarding table failed) on this bridge port, or b) for the destination MAC address found in the frame the port the frame was received on does not appear as in port in the corresponding static table entry. Permission to receive frames from a MAC address is granted via the static table entries. This attribute, *badVerifyDiscards*, is directly influenced by: 1. *secureOption* and 2. the static table entries. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl staticEntryDiscards (sed)

Access	Read only
Description	This attribute counts the number of frames that were discarded because of the following three reasons: a) there was no entry for the “allowed to go” field in the static table entry, where the input port is this bridge port. b) the MAC destination address in the frame was not found in the forwarding table but the frame cannot be flooded because this bridge has not other ports in forwarding state. c) for spanning tree bpdus that are locally processed. This counter wraps around its maximum value of 4294967295. It might prove useful to check the static table entry corresponding to the bridge port in question, if this counter consistently displays a high value. Ideally this counter should be as low as possible.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl dynamicEntryDiscards (dend)

Access	Read only
Description	This attribute counts the number of incoming frames that: a) were discarded because of the fact that the bridge port, the frame is to go out of matches the bridge port it came in from, or b) if the stp port state of the out port is not ***forwarding***. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl learningDiscards (ld)

Access	Read only
Description	This attribute counts the number of frames that were discarded while this bridge port was in a state other than the ***forwarding*** state. While in ***learning*** state the frame is discarded after the information from its header is learnt. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl inDiscards (id)

Access	Read only
Description	This attribute counts the number of frames that were received by this bridge port and were discarded by the forwarding process. This includes frames that could have been discarded due to filtering. A rapidly increasing value for this attribute could

	indicate a shortage of resource in terms of memory needed to process the incoming frames. More memory can be provisioned through the *VirtualRouter*'s memory manager.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl inFrames (if)

Access	Read only
Description	This attribute counts the number of frames that have been received by this port from its segment. Note that a frame received on this bridge port is counted if and only if it can be processed by the bridge logic contained in this bridge unit. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl outFrames (of)

Access	Read only
Description	This attribute counts the number of frames that have been transmitted out this bridge port. This also includes management frames.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Tbcl StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge

ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.

Mib Bridge

ATTRIBUTE Vr Pp Tbcl stpPortState (sps)

Access Read only

Description This attribute indicates the stp state of the bridge port.

Mib Bridge

Values
disabled
blocking
listening
learning
forwarding
broken

Default disabled

ATTRIBUTE Vr Pp Tbcl stpTypeOper (stptOper)

Access Read only

Description This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.

Mib Bridge

Values
none
dec
ieee8021

Default ieee8021

ATTRIBUTE Vr Pp Tbcl designatedCost (dc)

Access Read only

Description This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.

Mib Bridge

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Tbcl pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Tbcl designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp Tbcl designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Tbcl forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp Tbcl Statistics (Stats)

Properties	Operational

Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbcl outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp Tbcl NetSentry (Ns)

Groups	"GROUP Vr Pp Tbcl Ns Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Pp/<string> TransparentBridgePort NetSentry* This component represents the *Ns* functionality that can be applied to a bridge port. It contains all the attribute groups (provisionable) that are necessary for the application of Ns functionality to a bridge port. In essence, it allows for the

	definition of filters, at the incoming and outgoing points, specific to the interface represented by this bridge port.
Mib	Bridge
Common Verbs	Help List Display Add DELete

GROUP Vr Pp Tbcl Ns Provisioned (Prov)

Properties	Provisioned
Description	This group houses all the port specific provisionable attributes associated with Ns. These attributes influence the application of filters to incoming and outgoing frames.
Mib	Bridge

ATTRIBUTE Vr Pp Tbcl Ns incomingFilter (if)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the incoming filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Pp Tbcl Ns outgoingFilter (of)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the out going filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Pp FddiEncapTbPort (FddiETB)

Groups	"GROUP Vr Pp FddiETB Provisioned (Prov)" "GROUP Vr Pp FddiETB TbProvisioned (TbProv)" "GROUP Vr Pp FddiETB StpProvisioned (StpProv)" "GROUP Vr Pp FddiETB DomainInfoProvisioned (DIProv)" "GROUP Vr Pp FddiETB OsiState (State)" "GROUP Vr Pp FddiETB OperationalStatus (OperStatus)" "GROUP Vr Pp FddiETB Operational (Oper)" "GROUP Vr Pp FddiETB TbOperational (TbOper)" "GROUP Vr Pp FddiETB StpOperational (StpOper)" "GROUP Vr Pp FddiETB Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Pp/<string> FddiEncapTbPort* This component represents a FDDI encapsulated port, working in the TB mode. It contains all the attribute groups (provisionable and operational) necessary for the working of this bridge port. In this mode the domain information can optionally be preserved in the frames. This bridge port is characterized as a backbone port and can be used to tunnel TB frames, through the backbone. It participates in the transparent bridge (man) spanning tree protocol. Backbone ports are not associated with any domain as multiple domains should be able to multiplex traffic through them and thus share the backbone's bandwidth. Please note that when this bridge port is provisioned multiple instances of the component *SpanningTreeProtocol* exist, there

should exist exactly one instance of the *SpanningTreeProtocol* component with its attribute *stpMode* set to a value of ***backbone***.

Mib: Bridge

Opt. Subcomp.: "COMPONENT Vr Pp FddiETB NetSentry (Ns)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Vr Pp FddiETB Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.

Mib: Bridge

ATTRIBUTE Vr Pp FddiETB fragmentIp (fIp)

Access: Read and write

Description: This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.

Mib: Bridge

Values:
- off
- on

Default: off

ATTRIBUTE Vr Pp FddiETB portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time. The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.
Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp FddiETB TbProvisioned (TbProv)

Properties	Provisioned
Description	This group contains all the port specific provisionable attributes that belong to the Tb group. These attributes in part influence the working of a bridge port operating in the transparent bridge mode.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB secureOption (sos)

Access	Read and write
Description	This attribute specifies whether the port secure feature is enabled. The secure feature, if enabled causes the following things to happen: a) disallows dynamic learning, b) disallows frames to be forwarded that do not satisfy the following condition: the MAC address of the source should be found in the forwarding table and the destination MAC address of the frame should also be found in the forwarding table. In addition to this, the port the frame was received on should figure as the in port, given the destination MAC address found in the frame. c) disallows frames to be forwarded if the allowed to go port map for the destination MAC address is empty. This feature in effect allows the user to choose the hosts that can generate traffic and the hosts that can receive traffic through this bridge unit.
Mib	Bridge
Values	disabled enabled
Default	disabled

GROUP Vr Pp FddiETB StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for

operation. ***disabled*** indicates the component is unavailable for operation.

Mib: Bridge

Values: up
down

Default: up

ATTRIBUTE Vr Pp FddiETB portStateStpControl (psstpc)

Access: Read and write

Description: This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same.
on signifies that this bridge port's spanning tree port state is controlled by the stp.
A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.

Mib: Bridge

Values: off
on

Default: on

ATTRIBUTE Vr Pp FddiETB stpTypeProv (stptProv)

Access: Read and write

Description: This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail.

	Prevailing stp type is reflected in the value of the attribute *stpTypeOper*.
Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp FddiETB portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp FddiETB pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp FddiETB pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root

bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost*.

Mib: Bridge

Values:
off
dec
ieee8021

Default: ieee8021

GROUP Vr Pp FddiETB DomainInfoProvisioned (DIProv)

Properties: Provisioned

Description: This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.

Mib: Bridge

ATTRIBUTE Vr Pp FddiETB domainNum (dn)

Access: Read and write

Description: This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293.
This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.

Mib: Bridge

Values: Decimal (1..4294967293)

Default: 1

ATTRIBUTE Vr Pp FddiETB preserveDomain (pds)

Access: Read and write

Criticality: Component

Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it. Preserve domain is relevant only when used in conjunction with ATM MPE.
Mib	Bridge
Values	off on
Default	No default

GROUP Vr Pp FddiETB OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp FddiETB operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Bridge
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp FddiETB usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp FddiETB OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge

Values	up down testing
Default	up

GROUP Vr Pp FddiETB Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp FddiETB upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp FddiETB downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp FddiETB bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp FddiETB bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.

Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp FddiETB bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort srEncapSrBridgePort srEncapTbBridgePort sourceGateSrBridgePort sourceGateTbBridgePort srtbBridgePort tbsrBridgePort clusterSrBridgePort clusterTbBridgePort snaDlrBridgePort unknown
Default	No default

ATTRIBUTE Vr Pp FddiETB ifIndex (ifin)

Access	Read only
Description	This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp FddiETB mtuExceededDiscards (med)

Access	Read only
Description	This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295. This counter is influenced by the attribute *fragmentIp*. This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp FddiETB TbOperational (TbOper)

Properties	Operational
Description	This group contains all the port specific operational attributes that belong to the Tb group. This group also contains all the port specific statistical attributes that belong to the Tb group. These attributes reflect the state of a bridge port operating in the transparent bridge mode
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB maxInfo (mi)

Access	Read only
Description	This attribute indicates the maximum size of the information field in a transparent bridge frame. This excludes the header field.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB badVerifyDiscards (bvd)

Access	Read only
Description	This attribute counts the number of incoming frames that were discarded because the value of the *secureOption* attribute was set to ***on*** and: a) it is not allowed to receive frames originating from the MAC address found in the source address field of the frame (source MAC address lookup in the forwarding table failed) on this bridge port, or b) for the destination MAC address found in the frame the port the frame was received on does not appear as in port in the corresponding static table entry. Permission to receive frames from a MAC address is granted via the static table entries. This attribute, *badVerifyDiscards*, is directly influenced by: 1. *secureOption* and 2. the static table entries. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB staticEntryDiscards (sed)

Access	Read only

Description	This attribute counts the number of frames that were discarded because of the following three reasons: a) there was no entry for the “allowed to go” field in the static table entry, where the input port is this bridge port. b) the MAC destination address in the frame was not found in the forwarding table but the frame cannot be flooded because this bridge has not other ports in forwarding state. c) for spanning tree bpdus that are locally processed. This counter wraps around its maximum value of 4294967295. It might prove useful to check the static table entry corresponding to the bridge port in question, if this counter consistently displays a high value. Ideally this counter should be as low as possible.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB dynamicEntryDiscards (dend)

Access	Read only
Description	This attribute counts the number of incoming frames that: a) were discarded because of the fact that the bridge port, the frame is to go out of matches the bridge port it came in from, or b) if the stp port state of the out port is not ***forwarding***. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB learningDiscards (ld)

Access	Read only
Description	This attribute counts the number of frames that were discarded while this bridge port was in a state other than the ***forwarding*** state. While in ***learning*** state the frame is discarded after the information from its header is learnt. This counter wraps around its maximum value of 4294967295.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB inDiscards (id)

Access	Read only
Description	This attribute counts the number of frames that were received by this bridge port and were discarded by the forwarding process. This includes frames that could have been discarded due to filtering. A rapidly increasing value for this attribute could indicate a shortage of resource in terms of memory needed to process the incoming frames. More memory can be provisioned through the *VirtualRouter*'s memory manager.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB inFrames (if)

Access	Read only
Description	This attribute counts the number of frames that have been received by this port from its segment. Note that a frame received on this bridge port is counted if and only if it can be processed by the bridge logic contained in this bridge unit. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB outFrames (of)

Access	Read only
Description	This attribute counts the number of frames that have been transmitted out this bridge port. This also includes management

	frames.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp FddiETB StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp FddiETB stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge

Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp FddiETB designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp FddiETB pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp FddiETB designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp FddiETB designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp FddiETB forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB designatedRoot (dr)

Access	Read only

Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp FddiETB Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Vr Pp FddiETB tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp FddiETB outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp FddiETB NetSentry (Ns)

Groups	"GROUP Vr Pp FddiETB Ns Provisioned (Prov)"
Scope	Application

Description	*Vr/<string> Pp/<string> TransparentBridgePort NetSentry* This component represents the *Ns* functionality that can be applied to a bridge port. It contains all the attribute groups (provisionable) that are necessary for the application of Ns functionality to a bridge port. In essence, it allows for the definition of filters, at the incoming and outgoing points, specific to the interface represented by this bridge port.
Mib	Bridge
Common Verbs	Help List Display Add DELete

GROUP Vr Pp FddiETB Ns Provisioned (Prov)

Properties	Provisioned
Description	This group houses all the port specific provisionable attributes associated with Ns. These attributes influence the application of filters to incoming and outgoing frames.
Mib	Bridge

ATTRIBUTE Vr Pp FddiETB Ns incomingFilter (if)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the incoming filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Pp FddiETB Ns outgoingFilter (of)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the out going filter point.

Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Pp TransparentBridgePort (Tbp)

Groups	"GROUP Vr Pp Tbp Provisioned (Prov)" "GROUP Vr Pp Tbp TbProvisioned (TbProv)" "GROUP Vr Pp Tbp StpProvisioned (StpProv)" "GROUP Vr Pp Tbp DomainInfoProvisioned (DIProv)" "GROUP Vr Pp Tbp OsiState (State)" "GROUP Vr Pp Tbp OperationalStatus (OperStatus)" "GROUP Vr Pp Tbp Operational (Oper)" "GROUP Vr Pp Tbp TbOperational (TbOper)" "GROUP Vr Pp Tbp StpOperational (StpOper)" "GROUP Vr Pp Tbp Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Pp/<string> TransparentBridgePort* This component represents a transparent bridge port. It contains all the attribute groups (provisionable and operational) that are required for the operation of such a port. Transparent bridge ports participate in the transparent bridging spanning tree protocol. They also have associated with them a domain number. Domains are logical partitions of an extended network and each partition is completely segregated in terms of traffic. Each domain has an identifier that identifies it uniquely, called the domain number.
Mib	Bridge
Opt. Subcomp.	"COMPONENT Vr Pp Tbp NetSentry (Ns)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp Tbp Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp fragmentIp (fIp)

Access	Read and write
Description	This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.
Mib	Bridge
Values	off on
Default	off

ATTRIBUTE Vr Pp Tbp portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be

re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time.

The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.

Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Tbp TbProvisioned (TbProv)

Properties	Provisioned
Description	This group contains all the port specific provisionable attributes that belong to the Tb group. These attributes in part influence the working of a bridge port operating in the transparent bridge mode.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp secureOption (sos)

Access	Read and write
Description	This attribute specifies whether the port secure feature is enabled. The secure feature, if enabled causes the following things to happen: a) disallows dynamic learning, b) disallows frames to be forwarded that do not satisfy the following condition: the MAC address of the source should be found in the forwarding table and the destination MAC address of the frame should also be found in the forwarding table. In addition to this, the port the frame was received on should figure as the in port, given the destination MAC address found in the frame. c) disallows frames to be forwarded if the allowed to go port map

for the destination MAC address is empty.
This feature in effect allows the user to choose the hosts that can generate traffic and the hosts that can receive traffic through this bridge unit.

Mib: Bridge

Values: disabled
enabled

Default: disabled

GROUP Vr Pp Tbp StpProvisioned (StpProv)

Properties: Provisioned

Description: This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.

Mib: Bridge

ATTRIBUTE Vr Pp Tbp adminStatus (as)

Access: Read and write

Description: This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.

Mib: Bridge

Values: up
down

Default: up

ATTRIBUTE Vr Pp Tbp portStateStpControl (psstpc)

Access: Read and write

Description: This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received

bridge protocol data units and by sending out the same.
on signifies that this bridge port's spanning tree port state is controlled by the stp.
A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.

Mib: Bridge

Values: off
on

Default: on

ATTRIBUTE Vr Pp Tbp stpTypeProv (stptProv)

Access: Read and write

Description: This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper*.

Mib: Bridge

Values: dec
ieee8021

Default: ieee8021

ATTRIBUTE Vr Pp Tbp portPriority (ppr)

Access: Read and write

Description: This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows:

	1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp Tbp pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp Tbp pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost*.
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp Tbp DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.

Mib	Bridge

ATTRIBUTE Vr Pp Tbp domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp Tbp preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it.

Preserve domain is relevant only when used in conjunction with ATM MPE.

Mib: Bridge

Values: off
on

Default: No default

GROUP Vr Pp Tbp OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Bridge

ATTRIBUTE Vr Pp Tbp adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp Tbp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Bridge
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp Tbp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp Tbp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp Tbp Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.

Mib	Bridge

ATTRIBUTE Vr Pp Tbp portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Tbp upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbp downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds

Default	0

ATTRIBUTE Vr Pp Tbp bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp Tbp bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp Tbp bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*,

	bridgePortConfig and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort srEncapSrBridgePort srEncapTbBridgePort sourceGateSrBridgePort sourceGateTbBridgePort srtbBridgePort tbsrBridgePort clusterSrBridgePort clusterTbBridgePort snaDlrBridgePort unknown
Default	No default

ATTRIBUTE Vr Pp Tbp ifIndex (ifin)

Access	Read only
Description	This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Tbp mtuExceededDiscards (med)

Access	Read only
Description	This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295. This counter is influenced by the attribute *fragmentIp*. This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Tbp TbOperational (TbOper)

Properties	Operational
Description	This group contains all the port specific operational attributes that belong to the Tb group. This group also contains all the port specific statistical attributes that belong to the Tb group. These attributes reflect the state of a bridge port operating in the transparent bridge mode
Mib	Bridge

ATTRIBUTE Vr Pp Tbp maxInfo (mi)

Access	Read only
Description	This attribute indicates the maximum size of the information field in a transparent bridge frame. This excludes the header field.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp badVerifyDiscards (bvd)

Access	Read only
Description	This attribute counts the number of incoming frames that were discarded because the value of the *secureOption* attribute was set to ***on*** and: a) it is not allowed to receive frames originating from the MAC address found in the source address field of the frame (source MAC address lookup in the forwarding table failed) on this bridge port, or b) for the destination MAC address found in the frame the port the frame was received on does not appear as in port in the corresponding static table entry. Permission to receive frames from a MAC address is granted via the static table entries. This attribute, *badVerifyDiscards*, is directly influenced by: 1. *secureOption* and 2. the static table entries. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp staticEntryDiscards (sed)

Access	Read only
Description	This attribute counts the number of frames that were discarded because of the following three reasons: a) there was no entry for the “allowed to go” field in the static table entry, where the input port is this bridge port. b) the MAC destination address in the frame was not found in the forwarding table but the frame cannot be flooded because this bridge has not other ports in forwarding state. c) for spanning tree bpdus that are locally processed. This counter wraps around its maximum value of 4294967295. It might prove useful to check the static table entry corresponding to the bridge port in question, if this counter consistently displays

	a high value. Ideally this counter should be as low as possible.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp dynamicEntryDiscards (dend)

Access	Read only
Description	This attribute counts the number of incoming frames that: a) were discarded because of the fact that the bridge port, the frame is to go out of matches the bridge port it came in from, or b) if the stp port state of the out port is not ***forwarding***. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp learningDiscards (ld)

Access	Read only
Description	This attribute counts the number of frames that were discarded while this bridge port was in a state other than the ***forwarding*** state. While in ***learning*** state the frame is discarded after the information from its header is learnt. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp inDiscards (id)

Access	Read only
Description	This attribute counts the number of frames that were received by this bridge port and were discarded by the forwarding process.

	This includes frames that could have been discarded due to filtering. A rapidly increasing value for this attribute could indicate a shortage of resource in terms of memory needed to process the incoming frames. More memory can be provisioned through the *VirtualRouter*'s memory manager.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp inFrames (if)

Access	Read only
Description	This attribute counts the number of frames that have been received by this port from its segment. Note that a frame received on this bridge port is counted if and only if it can be processed by the bridge logic contained in this bridge unit. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp outFrames (of)

Access	Read only
Description	This attribute counts the number of frames that have been transmitted out this bridge port. This also includes management frames.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Tbp StpOperational (StpOper)

Properties	Operational

Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp Tbp stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Tbp designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Tbp pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Tbp designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp Tbp designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Tbp forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp Tbp Statistics (Stats)

Properties	Operational

Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbp badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbp outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp Tbp NetSentry (Ns)

Groups	"GROUP Vr Pp Tbp Ns Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Pp/<string> TransparentBridgePort NetSentry* This component represents the *Ns* functionality that can be applied to a bridge port. It contains all the attribute groups (provisionable) that are necessary for the application of Ns functionality to a bridge port. In essence, it allows for the

definition of filters, at the incoming and outgoing points, specific to the interface represented by this bridge port.

Mib: Bridge

Common Verbs:
Help
List
Display
Add
DELete

GROUP Vr Pp Tbp Ns Provisioned (Prov)

Properties: Provisioned

Description: This group houses all the port specific provisionable attributes associated with Ns. These attributes influence the application of filters to incoming and outgoing frames.

Mib: Bridge

ATTRIBUTE Vr Pp Tbp Ns incomingFilter (if)

Access: Read and write

Description: This attribute specifies the name of the filter to be applied at the incoming filter point.

Mib: Bridge

Values: String (0..32, ASCII)

Default: No default

ATTRIBUTE Vr Pp Tbp Ns outgoingFilter (of)

Access: Read and write

Description: This attribute specifies the name of the filter to be applied at the out going filter point.

Mib: Bridge

Values: String (0..32, ASCII)

Default: No default

COMPONENT Vr Pp IpPort

Groups	"GROUP Vr Pp IpPort Provisioned (Prov)" "GROUP Vr Pp IpPort SresProvisioned (SresProv)" "GROUP Vr Pp IpPort AdministrativeControl (AdminControl)" "GROUP Vr Pp IpPort Operational (Oper)" "GROUP Vr Pp IpPort RelayBcOperational (RelayBcOper)" "GROUP Vr Pp IpPort OsiState (State)" "GROUP Vr Pp IpPort OperationalStatus (OperStatus)"
Scope	Application
Description	*Vr<string> Pp<string> IpPort* The *IpPort* component contains IP attributes specific to this port.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Pp IpPort IngressServices (IS)" "COMPONENT Vr Pp IpPort EgressServices (ES)" "COMPONENT Vr Pp IpPort IpLogicalInterface (LogicalIf)" "COMPONENT Vr Pp IpPort NetSentry (Ns)" "COMPONENT Vr Pp IpPort BootpPort (BootpP)" "COMPONENT Vr Pp IpPort VrrpPort" "COMPONENT Vr Pp IpPort CriticalIp"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp IpPort Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for IP ports.
Mib	Ip

ATTRIBUTE Vr Pp IpPort maxTxUnit (mtu)

Access	Read and write

Description	This attribute specifies the IP MTU (Maximum Transmission Unit) supported by this *IpPort*. The specified MTU must be within the valid range for the *IpPort* media type.
Mib	Ip
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Vr Pp IpPort arpStatus

Access	Read and write
Description	This attribute specifies whether ARP is enabled or disabled on this *IpPort*. If ***auto*** is specified, an appropriate value will be selected based on the *IpPort* media type.
Mib	Ip
Values	enabled disabled auto
Default	auto

ATTRIBUTE Vr Pp IpPort proxyArpStatus

Access	Read and write
Description	This attribute specifies whether Proxy ARP is enabled or disabled for this *IpPort*.
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Pp IpPort arpNoLearn

Access	Read and write
Description	This attribute specifies whether or not dynamic host entries will be installed in the ARP table when ARP packets are received on this *IpPort*.

Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Pp IpPort sendRedirect

Access	Read and write
Description	This attribute specifies whether or not ICMP host redirects will be sent out this *IpPort*.
Mib	Ip
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Pp IpPort multicastStatus

Access	Read and write
Description	This attribute specifies whether or not IP multicast packets can be sent out this *IpPort*. If ***auto*** is specified, an appropriate value will be selected based on the *IpPort* media type.
Mib	Ip
Values	enabled disabled auto
Default	auto

ATTRIBUTE Vr Pp IpPort relayAddress

Access	Read and write
Description	This attribute specifies a relay broadcast address for this *IpPort*. Each packet, received on this *IpPort*, meeting the relay broadcast criteria will be forwarded to the specified relay broadcast address. An relay address of all zero's indicates no relay broadcast address.

Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort relayBroadcast

Access	Read and write
Description	This attribute specifies how packets, received on other *IpPort*s, meeting the relay broadcast criteria, will be forwarded out this *IpPort*. The three options are described as follows: ***enabled***: packets will be forwarded out this *IpPort*. ***disabled***: packets will not be forwarded out this *IpPort*. ***auto***: packets will be forwarded out this *IpPort* only when the bridge state is forwarding.
Mib	Ip
Values	enabled disabled auto
Default	disabled

ATTRIBUTE Vr Pp IpPort linkModel

Access	Read and write
Criticality	Component
Description	This attribute specifies the link model to use when the media type for this *IpPort* is ***PPP*** (Point to Point Protocol). A value of ***localAreaNetwork*** causes IP to treat this *IpPort* like a LAN. A value of ***pointToPoint*** causes IP to treat this *IpPort* like two directly connected IP hosts.
Mib	Ip
Values	localAreaNetwork (lan) pointToPoint (ptop)
Default	localAreaNetwork

ATTRIBUTE Vr Pp IpPort lanModel

Access	Read and write
Criticality	Component
Description	This attribute specifies the lan model to use for this *IpPort*.
Mib	Ip
Values	localAreaNetwork (lan) nonBroadcastMultipleAccess (nbma)
Default	localAreaNetwork

ATTRIBUTE Vr Pp IpPort encap

Access	Read and write
Description	This attribute specifies the encapsulation type to be used when sending packets out this *IpPort*. If ***auto*** is specified, an appropriate value is selected based on the *IpPort* media type. The values ***ieee8023*** and ***ethernet*** can only be specified if the media type is ethernet. Otherwise, ***auto*** must be specified. For ethernet media type, the default encapsulation is ***ethernet***.
Mib	Ip
Values	ieee8023 ethernet auto
Default	auto

ATTRIBUTE Vr Pp IpPort icmpMaskReply

Access	Read and write
Description	This attribute specifies whether or not replies will be generated in response to ICMP Address Mask Requests received on this *IpPort*.
Mib	Ip
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Pp IpPort directedBroadcast

Access	Read and write
Description	This attribute specifies whether or not directed broadcast to physical broadcast translation is enabled for incoming traffic on this *IpPort*. The IP router requirement (RFC1812) says this translation should be ***enabled***; however, in some network environments, setting this attribute to ***disabled*** may prevent operational problem such as broadcast storms. Note that in some configuration, setting this attribute to ***disabled*** may cause Bootp to fail.
Mib	Ip
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Pp IpPort allowMcastMacDest (ammd)

Access	Read and write
Description	This attribute specifies whether a multicast destination MAC address is valid on this *IpPort* or not. Setting this attribute to ***enabled*** results in non-standard behavior and is intended for applications such as transparent server backup. Multicast destination MAC address is only supported on LAN media.
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Pp IpPort cosPolicyAssignment (policy)

Access	Read and write
Description	This attribute specifies the *CosPolicyGroup* the *IpPort* is using. If this attribute is not set, then the *cosPolicyAssignment* attribute of the *Ip* specifies the *CosPolicyGroup* in use.

The assigned *CosPolicyGroup* controls the forwarding behavior of IP packets recieved and transmitted at the *IpPort*. See the description of *Vr Ip CosPolicyGroup* for more information.

If the *VirtualRouter* has a *DifferentiatedServicesDomain* subcomponent, then this attribute cannot be set.

The assigned *CosPolicyGroup* must be a subcomponent of the same *VirtualRouter.*

Mib	Ip
Values	Link (Service, linkToPolicyUsers)
Default	No default

ATTRIBUTE Vr Pp IpPort filterAssignment (filtAss)

Access	Read and write
Description	This attribute specifies the *Filter* the *IpPort* is using. If this attribute is not set, then the *filterAssignment* attribute of the *Ip* specifies the *Filter* in use. This attribute cannot be set if the *linkToMedia* attribute of the parent *ProtocolPort* is linked to *Vr Ip Tunnel Sep* or *Vr Ip Tunnel Msep*. The assigned *Filter* must be a subcomponent of the same *Virtual Router.*
Mib	Ip
Values	Link (Service, linkToFilterUsers)
Default	No default

ATTRIBUTE Vr Pp IpPort ipCos

Access	Read and write

Description	This attribute specifies the IP connection class value of the link layer connection used by the *IpPort* if the media linked to the *ProtocolPort* is not *AtmMpe*, *FrDte* or *IpDlciGroup*. If the *VirtualRouter* does not have a *DifferentiatedServicesDomain* subcomponent, then *ipCos* specifies the initial Class of Service (CoS) value assigned to an IP packet received at the *IpPort* if the media linked to the *ProtocolPort* is not *AtmMpe*, *FrDte* or *IpDlciGroup*. See the description of *Vr Ip CosPolicyGroup* for more information.
Mib	Ip
Values	Decimal (0..3)
Default	0

ATTRIBUTE Vr Pp IpPort mcastDomain (mDomain)

Access	Read and write
Criticality	Component
Description	This attribute specifies the multicast domain index which all traffic coming in from this *IpPort* use. The numerical value of this attribute selects *Vr/<string> Ip Mcast Domain/n*.
Mib	Ip
Values	Decimal (0..3)
Default	0

ATTRIBUTE Vr Pp IpPort mcastPolicyAssignment (mPolicy)

Access	Read and write
Description	This attribute specifies the policyGroup component that this IpPort component is using.
Mib	Ip
Values	Link (Service, linkToPolicyUser)
Default	No default

GROUP Vr Pp IpPort SresProvisioned (SresProv)

Properties	Provisioned
Description	This group contains the provisioned attributes for *SourceRouteEndStation* support.
Mib	Ip

ATTRIBUTE Vr Pp IpPort sourceRouteEndStationSupport (sresSupport)

Access	Read and write
Description	This attribute is used to ***enable*** or ***disable*** support for *SourceRouteEndStation (Sres)*. If set to ***enable***, *Sres* will be supported on this protocol on this *ProtocolPort (Pp)*. If set to ***disable***, it will not be supported. An *Sres* component must be provisioned under the VirtualRouter if this attribute is set to ***enable***. If this attribute is set to ***enable*** and this *Pp* has its *linkToMedia* attribute set, it must be linked to a *LanApplication* (*La*) that has its *Framer interfaceName* linked to a *Fddi* or *TokenRing* component.
Mib	Ip
Values	enable disable
Default	disable

GROUP Vr Pp IpPort AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The

down state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.

Mib: Ip

Values:
up
down
testing

Default: up

GROUP Vr Pp IpPort Operational (Oper)

Properties: Operational

Description: This group contains operational attributes for an *IpPort*.

Mib: Ip

ATTRIBUTE Vr Pp IpPort mediaType

Access: Read only

Description: This attribute indicates the media type of this *IpPort*.

Mib: Ip

Values:
ethernet
fddi
tokenRing
ppp
bnx
vcpEther
vcpToken
x25
frameRelay
clusterBridge
smds
atmMpeVcEncap
atmMpeLlcEncap
lecEther
lecToken
tunnel
virtual

	locaMedia invalid
Default	invalid

ATTRIBUTE Vr Pp IpPort operMtu

Access	Read only
Description	This attribute indicates the current operational IP MTU for this *IpPort*. Note that this value may be different than the provisioned *maxTxUnit*.
Mib	Ip
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Vr Pp IpPort operArpStatus

Access	Read only
Description	This attribute indicates the current operational ARP status. If the provisioned *arpStatus* is set to ***auto***, then the IP application automatically determines the *operArpStatus* based on the *IpPort* media type.
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Pp IpPort operMulticastStatus

Access	Read only
Description	This attribute indicates the current operational Multicast status. If the provisioned *multicastStatus* is set to ***auto***, then the IP application automatically determines the *operMulticastStatus* based on the *IpPort* media type.
Mib	Ip

Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Pp IpPort operEncap

Access	Read only
Description	This attribute indicates the current operational encapsulation type. If the provisioned *encap* is set to auto, then the IP application automatically determines the *operEncap* based on the *IpPort* media type.
Mib	Ip
Values	ieee8023 ethernet notApplicable
Default	notApplicable

ATTRIBUTE Vr Pp IpPort operCosPolicyAssignment

Access	Read only
Description	This attribute indicates the *CosPolicyGroup* the *IpPort* is using.
Mib	Ip
Values	The name of the component
Default	No default

ATTRIBUTE Vr Pp IpPort operDiffServAssignment

Access	Read only
Description	This attribute indicates the *DifferentiatedServices* interface configuration the *IpPort* is using. **This attribute is OBSOLETE because the d*iffServAssignment* attribute is obsolete.**
Mib	Ip
Values	The name of the component

Default	No default

ATTRIBUTE Vr Pp IpPort operFilterAssignment

Access	Read only
Description	This attribute indicates the *Filter* the *IpPort* is using.
Mib	Ip
Values	The name of the component
Default	No default

GROUP Vr Pp IpPort RelayBcOperational (RelayBcOper)

Properties	Operational
Description	This group contains operational attributes for an *Interface*'s or *IpPort*'s RelayBc counters.
Mib	Ip

ATTRIBUTE Vr Pp IpPort relayAddressCount

Access	Read only
Description	This attribute indicates the number of frames received on this *Interface* or *IpPort* which were forwarded to the provisioned *relayAddress* for this port. This counter wraps to zero when it reaches it's maximum.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort relayBcCount

Access	Read only
Description	This attribute indicates the number of frames received on this port which were forwarded to the *broadcastAddress* on other *IpPorts* or *Interfaces*. This counter is incremented once for every frame received on this port regardless of how many other ports it was

sent on. This counter wraps to zero when it reaches it's maximum.

Mib: Ip

Values: Decimal (0..4294967295)

Default: 0

GROUP Vr Pp IpPort OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Ip

ATTRIBUTE Vr Pp IpPort adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ip

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp IpPort operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp IpPort usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp IpPort OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

COMPONENT Vr Pp IpPort IngressServices (IS)

Groups	"GROUP Vr Pp IpPort IS IngressServicesLinks (IsLinks)" "GROUP Vr Pp IpPort IS ServiceSpecification (Sp)" "GROUP Vr Pp IpPort IS InterfaceServices (IntServ)"
Scope	Application
Description	*Vr/<string> Pp/<string> Ip IngressServices* *Rtr/<string> Vrf/<string> If/<x.x.x.x> IngressServices*

	This component and its subcomponents represent various traffic management services applied to IP traffic entering an interface.
Mib	Ip
Dyn. Subcomp.	"COMPONENT Vr Pp IpPort IS MeterStatistics (Meter)"
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort IS IngressServicesLinks (IsLinks)

Properties	Provisioned
Description	This group contains links to various components for traffic management services applied to IP traffic entering an interface.
Mib	Ip

ATTRIBUTE Vr Pp IpPort IS linkToDiffServProfile (dsLink)

Access	Read and write
Description	This attribute specifies the *DiffServProfile* component applied to IP traffic entering an interface.
Mib	Ip
Values	Link (Service, linkToDiffServUsers)
Default	No default

ATTRIBUTE Vr Pp IpPort IS linkToPolicerProfile (policerLink)

Access	Read and write
Description	This attribute specifies the *PolicerProfile* component applied to IP traffic entering an interface.
Mib	Ip
Values	Link (Service, linkToPolicerUsers)

Default	No default

GROUP Vr Pp IpPort IS ServiceSpecification (Sp)

Properties	Provisioned
Description	This group contains provisionable attributes of the *IngressServices* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort IS discardPriorityMode (dpMode)

Access	Read and write
Description	This attribute specifies how drop precedence is assigned to IP traffic entering an interface. If this attribute is set to ***mapPhbToDp*** then drop precedence is assigned to IP traffic entering the interface as explained in the description of the *DifferentiatedServicesDomain* component. If this attribute is set to ***mapLayer2ToDp*** then the drop precedence assigned to IP traffic entering the interface is determined by the ingress Layer 2 media. For an IP packet arriving on *AtmMpe* the cell loss priority (CLP) bit in the ingress cell header is mapped to drop precedence value according to ATM traffic management provisioning. For an IP packet arriving on *FrDte or IpDlciGroup* the discard eligible (DE) bit in the ingress frame header is mapped to drop precedence value according to Frame Relay traffic management provisioning. For IP traffic arriving on other media ***high*** drop precedence is assigned. The *Rtr Interface IngressServices dpMode* and *Rtr Vrf Interface IngressServices dpMode* attributes must be set to ***mapPhbToDp***. The *IpPort IngressServices dpMode* attribute must be set to ***mapPhbToDp*** if the *linkToPolicerProfile* attribute is set or if the *IpPort* is associated with IP tunnel media. The *IpPort IngressServices dpMode* attribute has no effect if either of the following two conditions is true:

1) the *VirtualRouter* component does not have *DifferentiatedServicesDomain* subcomponent (see the description of the *CosPolicyGroup* component for more information about drop precedence in this case);
2) the IP packet leaves an interface where the *IpPort EgressServices linkToPolicerProfile* attribute is set (see the description of the *PolicerProfile Meter PolicedPhb outOfProfile* attribute for more information about drop precedence in this case).

Mib: Ip

Values: mapPhbToDp
mapLayer2ToDp

Default: mapPhbToDp

GROUP Vr Pp IpPort IS InterfaceServices (IntServ)

Properties: Provisioned

Description: This group contains provisionable attributes that are common to both *IngressServices* and *EgressServices* components..

Mib: Ip

ATTRIBUTE Vr Pp IpPort IS policerStatsSpooling (spool)

Access: Read and write

Description: This attribute specifies whether spooling of IP traffic meter statistics at an interface is enabled or disabled.

This attribute is applicable at at an ingress interface only if the *IngressServices linkToPolicerProfile* attribute is set.

This attribute is applicable at at an egress interface only if the *EgressServices linkToPolicerProfile* attribute is set.

Mib: Ip

Values: off
on

Default	off

COMPONENT Vr Pp IpPort IS MeterStatistics (Meter)

Instance	String (1..20, ASCII)
Groups	"GROUP Vr Pp IpPort IS Meter Operational (Oper)" "GROUP Vr Pp IpPort IS Meter Statistics (Stats)"

"COLLECTED STATS VirtualRouter ProtocolPort IpPort IngressServices MeterStatistics"

Scope	Application
Description	*Vr/<string> Pp/<string> Ip Is MeterStatistics/<string>* *Vr/<string> Pp/<string> Ip Es MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Is MeterStatistics/ <string>* *Rtr/<string> Vrf<string> If<ipAddress> Es MeterStatistics/ <string>* This component represents operational data for a *Meter* component that has been activated at an interface. One *MeterStatistics* component is created dynamically under the *Is* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Is* component; likewise, one *MeterStatistics* subcomponent is created dynamically under the *Es* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Es* component.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Pp IpPort IS Meter Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *MeterStatistics* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort IS Meter committedInformationRate (cir)

Access	Read only
Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	Ip
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter excessInformationRate (eir)

Access	Read only
Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).
Mib	Ip
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*.

	The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	Ip
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter excessBurstSize (be)

Access	Read only
Description	This attribute indicates the excess burst size (be) in bits for the *Meter.* The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	Ip
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter measurmentInterval (t)

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter.* The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Mib	Ip
Values	Decimal (0..4294967295)
Units	msec

Default	No default

GROUP Vr Pp IpPort IS Meter Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the *MeterStatistics* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort IS Meter packetsReceived

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter. It includes packets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter octetsReceived

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter. It includes octets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter eirPacketsReceived (excessPackets)

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip

Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter eirOctetsReceived (excessOctets)

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter packetsRemarked

Access	Read only
Description	This attribute counts the number of packets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter octetsRemarked

Access	Read only
Description	This attribute counts the number of octets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter packetsDiscarded

Access	Read only

Description	This attribute counts the number of packets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort IS Meter octetsDiscarded

Access	Read only
Description	This attribute counts the number of octets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default
Default	COLLECTED STATS VirtualRouter ProtocolPort IpPort IngressServices MeterStatistics
Description	The statistics record generated by the VirtualRouter ProtocolPort IpPort IngressServices MeterStatistics component.

ATTRIBUTE Vr Pp IpPort IS Meter committedInformationRate (cir)

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort IS Meter excessInformationRate (eir)

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information.

The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t)*.

Values Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort IS Meter committedBurstSize (bc)

Description This attribute indicates the committed burst size (bc) in bits for the *Meter.*
The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort IS Meter excessBurstSize (be)

Description This attribute indicates the excess burst size (be) in bits for the *Meter.*
The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Values Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort IS Meter measurmentInterval (t)

Description This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter.*
The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.

Values Decimal (0..4294967295)

ATTRIBUTE Vr Pp IpPort IS Meter packetsReceived

Description This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter octetsReceived

Description This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter eirPacketsReceived (excessPackets)

Description This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter eirOctetsReceived (excessOctets)

Description This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter packetsRemarked

Description This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter octetsRemarked

Description This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter packetsDiscarded

Description This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort IS Meter octetsDiscarded

Description This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values	Long Integer

COMPONENT Vr Pp IpPort EgressServices (ES)

Groups	"GROUP Vr Pp IpPort ES EgressServicesLinks (EsLinks)" "GROUP Vr Pp IpPort ES InterfaceServices (IntServ)"
Scope	Application
Description	*Vr/<string> Pp/<string> Ip EgressServices* *Rtr/<string> Vrf/<string> If/<x.x.x.x> EgressServices* This component and its subcomponents represent various traffic management services applied to IP traffic leaving an interface.
Mib	Ip
Dyn. Subcomp.	"COMPONENT Vr Pp IpPort ES MeterStatistics (Meter)"
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort ES EgressServicesLinks (EsLinks)

Properties	Provisioned
Description	This group contains links to various components for traffic management services applied to IP traffic leaving an interface.
Mib	Ip

ATTRIBUTE Vr Pp IpPort ES linkToDiffServProfile (dsLink)

Access	Read and write
Description	This attribute specifies the *DiffServProfile* component applied to IP traffic leaving an interface.
Mib	Ip
Values	Link (Service, linkToDiffServUsers)
Default	No default

ATTRIBUTE Vr Pp IpPort ES linkToPolicerProfile (policerLink)

Access	Read and write
Description	This attribute specifies the *PolicerProfile* component applied to IP traffic leaving an interface.
Mib	Ip
Values	Link (Service, linkToPolicerUsers)
Default	No default

GROUP Vr Pp IpPort ES InterfaceServices (IntServ)

Properties	Provisioned
Description	This group contains provisionable attributes that are common to both *IngressServices* and *EgressServices* components..
Mib	Ip

ATTRIBUTE Vr Pp IpPort ES policerStatsSpooling (spool)

Access	Read and write
Description	This attribute specifies whether spooling of IP traffic meter statistics at an interface is enabled or disabled. This attribute is applicable at at an ingress interface only if the *IngressServices linkToPolicerProfile* attribute is set. This attribute is applicable at at an egress interface only if the *EgressServices linkToPolicerProfile* attribute is set.
Mib	Ip
Values	off on
Default	off

COMPONENT Vr Pp IpPort ES MeterStatistics (Meter)

Instance	String (1..20, ASCII)

Groups	"GROUP Vr Pp IpPort ES Meter Operational (Oper)" "GROUP Vr Pp IpPort ES Meter Statistics (Stats)"

"COLLECTED STATS VirtualRouter ProtocolPort IpPort EgressServices MeterStatistics"

Scope	Application
Description	*Vr/<string> Pp/<string> Ip Is MeterStatistics/<string>* *Vr/<string> Pp/<string> Ip Es MeterStatistics/<string>* *Rtr/<string> Vrf<string> If<ipAddress> Is MeterStatistics/ <string>* *Rtr/<string> Vrf<string> If<ipAddress> Es MeterStatistics/ <string>* This component represents operational data for a *Meter* component that has been activated at an interface. One *MeterStatistics* component is created dynamically under the *Is* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Is* component; likewise, one *MeterStatistics* subcomponent is created dynamically under the *Es* component for each *Meter* subcomponent of a *PolicerProfile* that is assigned to the *Es* component.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Pp IpPort ES Meter Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *MeterStatistics* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort ES Meter committedInformationRate (cir)

Access	Read only

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	Ip
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter excessInformationRate (eir)

Access	Read only
Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).
Mib	Ip
Values	Decimal (0..50000000)
Units	bit/s
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter committedBurstSize (bc)

Access	Read only
Description	This attribute indicates the committed burst size (bc) in bits for the *Meter*. The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.

Mib	Ip
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter excessBurstSize (be)

Access	Read only
Description	This attribute indicates the excess burst size (be) in bits for the *Meter*. The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Mib	Ip
Values	Decimal (0..50000000)
Units	bits
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter measurmentInterval (t)

Access	Read only
Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter*. The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Mib	Ip
Values	Decimal (0..4294967295)
Units	msec
Default	No default

GROUP Vr Pp IpPort ES Meter Statistics (Stats)

Properties	Operational

Description	This group contains the statistical attributes of the *MeterStatistics* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort ES Meter packetsReceived

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter. It includes packets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter octetsReceived

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter. It includes octets that are discarded due to excess. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter eirPacketsReceived (excessPackets)

Access	Read only
Description	This attribute counts the number of packets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter eirOctetsReceived (excessOctets)

Access	Read only
Description	This attribute counts the number of octets received by the traffic meter that contributed only to the excess information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter packetsRemarked

Access	Read only
Description	This attribute counts the number of packets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter octetsRemarked

Access	Read only
Description	This attribute counts the number of octets that contributed to and exceeded the commited information rate. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter packetsDiscarded

Access	Read only
Description	This attribute counts the number of packets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.

Mib	Ip
Values	Long Integer
Default	No default

ATTRIBUTE Vr Pp IpPort ES Meter octetsDiscarded

Access	Read only
Description	This attribute counts the number of octets discarded by the traffic meter. When this count exceeds maximum value, it wraps to 0.
Mib	Ip
Values	Long Integer
Default	No default
Default	COLLECTED STATS VirtualRouter ProtocolPort IpPort EgressServices MeterStatistics
Description	The statistics record generated by the VirtualRouter ProtocolPort IpPort EgressServices MeterStatistics component.

ATTRIBUTE Vr Pp IpPort ES Meter committedInformationRate (cir)

Description	This attribute indicates the committed information rate (cir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network agrees to transfer information under normal conditions. The provisioned *cir* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort ES Meter excessInformationRate (eir)

Description	This attribute indicates the excess information rate (eir) in bits per second (bits/s) for the *Meter*. It represents the rate at which network will attempt to transfer information. The value of this attribute is derived from the *excessBurstSize* (*be*) and *measurmentInterval* (*t*) operational attribute values (eir = *be*/*t*).

Values	Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort ES Meter committedBurstSize (bc)

Description	This attribute indicates the committed burst size (bc) in bits for the *Meter.* The provisioned *bc* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort ES Meter excessBurstSize (be)

Description	This attribute indicates the excess burst size (be) in bits for the *Meter.* The provisioned *be* attribute of the *Meter* component specifies the upper bound of this attribute value which might be adjusted in some cases.
Values	Decimal (0..50000000)

ATTRIBUTE Vr Pp IpPort ES Meter measurmentInterval (t)

Description	This attribute indicates the time interval (in milliseconds) over which rates and burst sizes are measured by the *Meter.* The value of this attribute is derived from the provisioned *cir* and *bc* attributes values when both of those attributes are non-zero (t=*bc/cir*); otherwise, it is equal to the provisioned *Meter measurmentInterval* attribute value.
Values	Decimal (0..4294967295)

ATTRIBUTE Vr Pp IpPort ES Meter packetsReceived

Description	This attribute indicates the number of packets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess.
Values	Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter octetsReceived

Description	This attribute indicates the number of octets received by the traffic meter during the prior statistics collection interval. It includes packets that are discarded due to excess

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter eirPacketsReceived (excessPackets)

Description This attribute indicates the number of packets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter eirOctetsReceived (excessOctets)

Description This attribute indicates the number of octets received by the traffic meter that contributed only to the excess information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter packetsRemarked

Description This attribute indicates the number of packets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter octetsRemarked

Description This attribute indicates the number of octets that contributed to and exceeded the committed information rate during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter packetsDiscarded

Description This attribute indicates the number of packets discarded by the traffic meter during the prior statistics collection interval.

Values Long Integer

ATTRIBUTE Vr Pp IpPort ES Meter octetsDiscarded

Description This attribute indicates the number of octets discarded by the traffic meter during the prior statistics collection interval. .

Values Long Integer

COMPONENT Vr Pp IpPort IpLogicalInterface (LogicalIf)

Instance	IP address
Groups	"GROUP Vr Pp IpPort LogicalIf Provisioned (Prov)" "GROUP Vr Pp IpPort LogicalIf ConnLink"
Scope	Application
Description	*Vr/<string> PP/<string> IpPort IpLogicalInterface/<IP address>* The *IpLogicalInterface* component defines a single *IpPort* address on a logical IP network. In general, *IpPort*'s can have multiple *IpLogicalInterface*'s. However, if the media type is ***PPP*** (Point to Point Protocol), then only one *IpLogicalInterface* is allowed for that *IpPort*.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Pp IpPort LogicalIf IsisInterface (IsisIf)" "COMPONENT Vr Pp IpPort LogicalIf OspfInterface (OspfIf)" "COMPONENT Vr Pp IpPort LogicalIf RipInterface (RipIf)" "COMPONENT Vr Pp IpPort LogicalIf NhrpInterface (NhrpIf)" "COMPONENT Vr Pp IpPort LogicalIf IgmpInterface (IgmpIf)" "COMPONENT Vr Pp IpPort LogicalIf PimSparseModeInterface (PimSmIf)"
Dyn. Subcomp.	"COMPONENT Vr Pp IpPort LogicalIf LocalHost (Host)"
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains attributes required to define an *IpLogicalInterface*.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf netMask

Access	Read and write
Description	This attribute specifies the subnet mask for this *IpLogicalInterface*. This attribute must be specified because the IP application will not automatically provide a default value. The value must be ***255.255.255.255*** if *linkModel* attribute of *IpPort* component is set to ***pointToPoint***. For example, when *linkToMedia* attribute is set to ***alwaysUpInterface*** *mode VirtualMedia Interface* or *PPP* (Point to Point Protocol), *linkModel* attribute of *IpPort* component will be ***pointToPoint***. The value must be one of classA, classB or classC if the *linkModel* attribute of *ipPort* component is set to ***localAreaNetwork***.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort LogicalIf broadcastAddress

Access	Read and write
Description	This attribute specifies the broadcast address for this *IpLogicalInterface*. This attribute is ignored if the *IpPort mediaType* is ***ppp*** (Point to Point Protocol). If the value is 0.0.0.0, the actual broadcast address will be derived from the IP address of this *LogicalIf* and the *netmask* attribute.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort LogicalIf linkDestinationAddress

Access	Read and write

Description	This attribute specifies the address for the link destination for this *IpLogicalInterface*. This attribute is only required if the *IpPort* media type is ***PPP*** (Point to Point Protocol).
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort LogicalIf linkToPimSmCandidateRp

Access	Read and write
Description	This attribute specifies a link to the *CandidateRendezvousPoint* component which uses this logicalIf as it's RendezvousPoint (*CRp*).
Mib	Ip
Values	Link (Service, address)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf linkToPimSmCandidateBsr

Access	Read and write
Description	This attribute specifies a link to the *CandidateBootstrapRouter* component which uses this logicalIf as it's BootstrapRouter Interface.
Mib	Ip
Values	Link (Service, address)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf linkToMulticastStaticGroup

Access	Read and write
Description	This attribute specifies a link to the component *RouteEntry* which uses this *LogicalIf* as its *outInterface*. There is a limit of up to 1000 *RouteEntry's* that could reference this *LogicalIf* as its *outInterface*.

Mib	Ip
List of	Link (Service, outInterfaces)
List Size	1000
Default	No default

GROUP Vr Pp IpPort LogicalIf ConnLink

Properties	Provisioned
Description	This group contains the links between this component and the associated media connections.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf linkToMediaConnection (conn)

Access	Read and write
Description	This attribute specifies the media connections, *AtmMpe/m Ac/n* or *FrDte/m staticDlci/n*, that are associated with this component.
Mib	Ip
List of	Link (Service, linkToIpLogicalInterface)
Default	No default

COMPONENT Vr Pp IpPort LogicalIf IsisInterface (IsisIf)

Groups	"GROUP Vr Pp IpPort LogicalIf IsisIf Provisioned (Prov)" "GROUP Vr Pp IpPort LogicalIf IsisIf Operational (Oper)" "GROUP Vr Pp IpPort LogicalIf IsisIf Statistics (Stats)" "GROUP Vr Pp IpPort LogicalIf IsisIf ErrorStatistics (Errors)"
Scope	Application
Description	*Rtr/<string> Interface/<Ip Address> IsisInterface* An *IsisIf* component can be created under each *Interface* component to run the ISIS protocol. This component requires an associated *Isis* component to be provisioned. This component requires at least one *Level* subcomponent to be

provisioned.

If the underlying media is ATM based, this component requires an *AtmConn* subcomponent to be provisioned.

Mib: Ip

Opt. Subcomp.: "COMPONENT Vr Pp IpPort LogicalIf IsisIf IsisIfLevel (Level)"

Common Verbs:
Help
List
Display
Add
DELete

GROUP Vr Pp IpPort LogicalIf IsisIf Provisioned (Prov)

Properties: Provisioned

Description: This group contains the set of attributes used to configure an ISIS Interface.

Mib: Ip

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf snmpAdminStatus

Access: Read: All
Write: All

Description: This attribute specifies the administrative status of this *IsisInterface* component on this *Router.*

Mib: Ip

Values:
up
down
testing

Default: up

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf passive

Access: Read: All
Write: All

Description	This attribute specifies whether the *IsisInterface* should be passive. A passive interface is one whose IP address is advertised in the LSP, but is not involved in ISIS protocol activities (for example, transmitting LSPs and establishing adjacencies).
Mib	Ip
Values	no yes
Default	no

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf lspInterval

Access	Read: All Write: All
Description	This attribute specifies, in milliseconds, the minimum time between transmission of successive LSPs on this interface. This minimum time applies to any LSP, whether it is the LSP of this *Router*, or another router's LSP that is being retransmitted.
Mib	Ip
Values	Decimal (33..65535)
Units	msec
Default	100

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf lspRetransmitInterval

Access	Read: All Write: All
Description	This attribute specifies, in seconds, the minimum time to wait before retransmitting this *Router's* LSP on this interface. An LSP retransmission occurs if a previously transmitted LSP is not acknowledged. Retransmissions only occur on point-to-point links.
Mib	Ip
Values	Decimal (1..300)
Units	seconds

Default	5

GROUP Vr Pp IpPort LogicalIf IsisIf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes associated with the ISIS protocol running on this interface.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf upTime

Access	Read: All Write: Illegal
Description	This attribute indicates the time, in seconds, that the ISIS protocol has been operational on this interface.
Mib	Ip
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf adjacencyChanges (adjChanges)

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that an adjacency on this interface has changed state.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf operState (state)

Access	Read: All Write: Illegal
Description	This attribute indicates the operational state of the ISIS Interface.
Mib	Ip

Values	adminDown down up
Default	No default

GROUP Vr Pp IpPort LogicalIf IsisIf Statistics (Stats)

Properties	Operational
Description	The attributes in this group are statistics associated with the normal operation of this *IsisInterface* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf txLsps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSPs transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf rxLsps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of LSPs received on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf txPtpHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of point-to-point hellos transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf rxPtpHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of point-to-point hellos received on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf txBroadcastHellos

Access	Read: All Write: Illegal
Description	This attribute indicates the number of broadcast hellos transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf rxBroadcastHellos

Access	Read: All Write: Illegal

Description	This attribute indicates the number of broadcast hellos received on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf txCsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Complete Sequence Number PDUs (CSNPs) transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf rxCsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Complete Sequence Number PDUs (CSNPs) received on this interface since the last time this *Isis*If component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf txPsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Partial Sequence Number PDUs (PSNPs) transmitted on this interface since the last time this *IsisIf* component became enabled.

Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf rxPsnps

Access	Read: All Write: Illegal
Description	This attribute indicates the number of Partial Sequence Number PDUs (PSNPs) received on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf totalPacketsTxd

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of packets transmitted on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf totalPacketsRxd

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of packets received on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)

Default	No default

GROUP Vr Pp IpPort LogicalIf IsisIf ErrorStatistics (Errors)

Properties	Operational
Description	The attributes in this group are statistics associated with the operation of this *IsisInterface* component. Each attribute counts a specific abnormal event that has occurred since this component was last enabled.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf initFails

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that initialization of this ISIS interface has failed.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf adjRejects

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that an attempt to form an adjacency on this interface has failed.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf rxUnknownPacketTypes

Access	Read: All Write: Illegal

Description	This attribute indicates the number of packets of unknown type that were received on this interface since the last time this *IsisIf* component became enabled.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Pp IpPort LogicalIf IsisIf IsisIfLevel (Level)

Instance	Decimal (1..1)
Groups	"GROUP Vr Pp IpPort LogicalIf IsisIf Level Provisioned (Prov)" "GROUP Vr Pp IpPort LogicalIf IsisIf Level Operational (Oper)"
Scope	Application
Description	*Rtr/<string> Interface/<Ip Address> IsisIf Level/<1..2>* The ISIS routing protocol supports a two-level routing hierarchy. This component represents ISIS routing aspects that are specific to each routing level for this ISIS interface. In the current release, only *Level/1* is supported.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf IsisIf Level Provisioned (Prov)

Properties	Provisioned
Description	This group contains the attributes used to independently configure each ISIS interface routing level.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level metric

Access	Read: All Write: All

Description	This attribute specifies the cost of this interface, which is used by the SPF algorithm in this and other routers. This value is advertised in the LSP.
Mib	Ip
Values	Decimal (0..63)
Default	10

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level helloInterval

Access	Read: All Write: All
Description	This attribute specifies the time, in seconds, between transmission of successive hello messages (IIH PDU).
Mib	Ip
Values	Decimal (1..20000)
Units	seconds
Default	10

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level helloMultiplier

Access	Read: All Write: All
Description	This attribute specifies the factor by which the *helloInterval* attribute is multiplied in order to create the hold time value transmitted in the hello packets (IIH PDU). The hold time value is used by the receiving router to determine how long it should maintain the adjacency if a subsequent hello packet is not received.
Mib	Ip
Values	Decimal (2..100)
Default	3

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level csnpInterval

Access	Read: All Write: All
Description	This attribute specifies the time interval, in seconds, between successive transmissions of the CSNP PDUs.
Mib	Ip
Values	Decimal (1..600)
Units	seconds
Default	10

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level priority

Access	Read: All Write: All
Description	This attribute specifies the DIS priority for this router. On a multi-access LAN, the router with the highest DIS priority is elected to represent the LAN. The elected router transmits an LSP for the pseudonode representing the LAN.
Mib	Ip
Values	Decimal (0..127)
Default	64

GROUP Vr Pp IpPort LogicalIf IsisIf Level Operational (Oper)

Properties	Operational
Description	This group contains attributes representing the operational state of this *IsisIf Level* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level disId

Access	Read: All Write: Illegal
Description	This attribute indicates the system ID of the ISIS router acting as DIS for the LAN to which this interface is attached. For non-LAN interfaces, the value of this attribute is ***N/A***.

Mib	Ip
Values	String (1..14, ASCII)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level disChanges

Access	Read: All Write: Illegal
Description	This attribute indicates the number of DIS changes that have occurred on this interface for this level.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level adjacencies

Access	Read: All Write: Illegal
Description	This attribute indicates the number of active adjacencies that exist on this interface for this level.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf IsisIf Level timeToNextTxHello

Access	Read: All Write: Illegal
Description	This attribute indicates the time, in seconds, until the next Hello message is to be transmitted on this interface for this level.
Mib	Ip
Values	Decimal (0..600)
Units	seconds

Default	No default

COMPONENT Vr Pp IpPort LogicalIf OspfInterface (OspfIf)

Groups	"GROUP Vr Pp IpPort LogicalIf OspfIf Provisioned (Prov)" "GROUP Vr Pp IpPort LogicalIf OspfIf Operational (Oper)" "GROUP Vr Pp IpPort LogicalIf OspfIf Metric"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf* *Rtr/<string> Interface/<Ip Address> OspfIf* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf* An OspfIf component can be created under each *logicalIf* or *Interface* to run OSPF protocol.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Pp IpPort LogicalIf OspfIf Md5KeyId (KeyId)" "COMPONENT Vr Pp IpPort LogicalIf OspfIf TypeOfService (TOS)" "COMPONENT Vr Pp IpPort LogicalIf OspfIf Neighbor (Nbr)"
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf OspfIf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes identifies a provisionable set of attributes.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf areaId

Access	Read and write
Description	The area Id this Ospf interface belongs to.
Mib	Ip

Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf ifType

Access	Read and write
Description	This attribute specifies the type of this *OspfInterface*. Neighbors are dynamically discovered using the Hello protocol for an *ifType* of ***broadcast***, ***pointToPoint***, or ***pointToMultipoint*** when *pointToMultiPointMode* is set to ***broadcast***. A *Neighbor* component must be configured for an *ifType of* ***nbma*** or ***pointToMultiPoint***, when *pointToMultiPointMode* is set to ***nonBroadcast***. When *ifType* is set to ***passive***, neighbors are not required.
Mib	Ip
Values	broadcast nbma pointToPoint passive pointToMultiPoint (ptmp)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf snmpAdminStatus

Access	Read and write
Description	The administrative status of this Ospf interface.
Mib	Ip
Values	up down
Default	up

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf rtrPriority (rtrPri)

Access	Read and write
Description	The priority of this interface. Used in multi-access networks, this field is used in the designated router election algorithm. The value 0 signifies that the router is not eligible to become the

	designated router on this particular protocol port. In the event of a tie in this value, routers will use their *routerId* as a tie breaker.
Mib	Ip
Values	Decimal (0..255)
Default	1

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf transitDelay

Access	Read and write
Description	The estimated number of seconds it takes to transmit a link-state update packet over this interface.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	1

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf retransInterval (retransInt)

Access	Read and write
Description	The number of seconds between link-state advertisements retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	5

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf helloInterval (helloInt)

Access	Read and write
Description	The length of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for all routers attached to a common network.

Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf rtrDeadInterval (rtrDeadInt)

Access	Read and write
Description	The number of seconds that a router's hello packets have not been seen before it's neighbors declare the router down. This should be some multiple of the *helloIntereval*. This value must be the same for all routers attached to a common network.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	40

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf pollInterval (pollInt)

Access	Read and write
Description	The largest time interval, in seconds, between the hello packets sent to an inactive non-broadcast multi-access neighbor.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	120

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf authKey

Access	Write only
Description	The Authentication Key. If the value of the attribute *authType* of an *AreaEntry* is ***simplePassword***, and the *authKey* length is shorter than 8 octets, then the value of *authKey* will be left adjusted zero-filled to 8 octets.

Mib	Ip
Values	String (1..8, Hex)
Default	0000000000000000

ATTRIBUTE Vr Pp IpPort LogicalIf Ospfif multicastForwarding (multicastFwd)

Access	Read and write
Description	The way multicasts should be forwarded on this interface; non forwarded, forwarded as data-link multicasts, or forwarded as data-link unicasts. Data-link multicasting is not meaningful on point-to-point and NBMA(No Broadcast Multi Access) interfaces, and setting this attribute to blocked effectively disables all multicast forwarding.
Mib	Ip
Values	blocked
Default	blocked

ATTRIBUTE Vr Pp IpPort LogicalIf Ospfif pointToMultiPointMode (ptmpmode)

Access	Read and write
Description	This attribute specifies the Point-to-Multipoint mode to use when the *ifType* of this *OspfInterface* is ***pointToMultipoint***. A value of ***nonBroadcast*** restricts this interface to only send unicast packets, Hence, a *Neighbor* component must be configured. A value of ***broadcast*** enables sending multicast OSPF Hello packets to dynamically discover neighbors.
Mib	Ip
Values	nonBroadcast (nbc) broadcast (bc)
Default	nonBroadcast

ATTRIBUTE Vr Pp IpPort LogicalIf Ospfif authType

Access	Read and write
Description	The authentication type specified for this *Ospf* interface.
Mib	Ip

Values	none simplePassword md5 SameAsArea
Default	SameAsArea

GROUP Vr Pp IpPort LogicalIf OspfIf Operational (Oper)

Properties	Operational
Description	This group of attributes identifies operational state that this interface is performing.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf state

Access	Read only
Description	The state of the OSPF interface.
Mib	Ip
Values	down loopback waiting pointToPoint designatedRouter backupDesignatedRouter otherDesignatedRouter
Default	designatedRouter

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf designatedRouter

Access	Read only
Description	The Ip address of the designated router.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf backupDesignatedRouter

Access	Read only
Description	The Ip address of the backup designated router
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf events

Access	Read only
Description	The number of times this OSPF interface has changed its state or an error has occurred.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

GROUP Vr Pp IpPort LogicalIf OspfIf Metric

Properties	Operational
Description	This group contains the operational metric attribute of this interface.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf metric

Access	Read only
Description	This attribute indicates the metric being used by this *OspfIf*. The metric is derived in one of two ways: 1. If there is a *TypeOfService* component provisioned under this *OspfIf* component, then the value of the *metric* attribute is copied from the provisionable attribute *tosMetric*. 2. Otherwise, the metric is computed based on the interface speed. If the interface speed is greater than 100 Mbit/s, then the *metric* is 1. If the interface speed is less than 100 Mbit/s, then the metric is 100 Mbit/s divided by the interface speed. If the interface speed is unknown, then it is treated as 1.54 Mbit/s during the calculation.

The value of interface speed is available by displaying the *ifSpeed* attribute of the corresponding *IfTableEntry* component.

Mib: Ip

Values: Decimal (0..4294967295)

Default: No default

COMPONENT Vr Pp IpPort LogicalIf OspfIf Md5KeyId (KeyId)

Instance: Decimal (1..255)

Groups: "GROUP Vr Pp IpPort LogicalIf OspfIf KeyId Provisioned (Prov)"
"GROUP Vr Pp IpPort LogicalIf OspfIf KeyId Operational (Oper)"

Scope: Application

Description: *Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf KeyId/<ID>*
Rtr/<string> Interface/<Ip Address> OspfIf KeyId/<ID>
Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf KeyId/<ID>
Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>
Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>
Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>
This component contains the information about various MD5 Authentication keys.

Mib: Ip

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Pp IpPort LogicalIf OspfIf KeyId Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisional attributes for the *KeyId* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf KeyId md5Key (Key)

Access	Write only
Description	The MD5 authentication key for the *KeyId* component.
Mib	Ip
Values	String (0..16, ASCII)
Default	""

GROUP Vr Pp IpPort LogicalIf OspfIf KeyId Operational (Oper)

Properties	Operational
Description	This group describes the set of operational attributes for the *KeyId* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf KeyId inUseForGeneration (inUse)

Access	Read only
Description	This attribute indicates whether the *Key* is currently in use or not. If this attribute is equal to ***true***, it indicates the *Key* is active.
Mib	Ip
Values	true false
Default	false

COMPONENT Vr Pp IpPort LogicalIf OspfIf TypeOfService (TOS)

Instance	Decimal (0..0)
Groups	"GROUP Vr Pp IpPort LogicalIf OspfIf TOS Provisioned (Prov)"
Scope	Application

Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>* *Rtr/<string> If/<Ip Address> ospfIf OspfIfTypeOfService/ <Decimal>* *Rtr/<string> Vrf/<string> If/<Ip Address> ospfIf OspfIfTypeOfService/<Decimal>* This component describes the metrics to be advertised for a specified interface at various types-of-service.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf OspfIf TOS Provisioned (Prov)

Properties	Provisioned
Description	Identifies a provisionable set of attributes.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf TOS tosMetric

Access	Read and write
Description	The metric using this typeOfService on this interface.
Mib	Ip
Values	Decimal (0..65535)
Default	1

COMPONENT Vr Pp IpPort LogicalIf OspfIf Neighbor (Nbr)

Instance	IP address
Groups	"GROUP Vr Pp IpPort LogicalIf OspfIf Nbr Provisioned (Prov)" "GROUP Vr Pp IpPort LogicalIf OspfIf Nbr Operational (Oper)"
Scope	Application

Description

Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>
Rtr/<string> If/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>
Rtr/<string> Vrf/<string> If/<Ip Address> ospfIf OspfIfNeighbor/<Ip Address>
This component represents a neighbor on a multi-access non-broadcast *OspfInterface* configured with its *ifType* attribute set to one of the following:
- ***nbma*** and the *rtrPriority* attribute is set to non-zero or
- ***pointToMultiPoint*** and *pointToMultiPointMode* is set to ***nonBroadcast***.

The operational attributes for this component can also be viewed from:
Vr/<string> Ip Ospf NbrEntry/<Ip Address>,<Decimal> or
Rtr/<string> Ospf NbrEntry/<Ip Address>,<Decimal> or
Rtr/<string> Vrf/<string> Ospf NbrEntry/<Ip Address>,<Decimal>

Mib

Ip

Common Verbs

Help
List
Display
Add
DELete

GROUP Vr Pp IpPort LogicalIf OspfIf Nbr Provisioned (Prov)

Properties

Provisioned

Description

Identifies a group of Provisionable attributes.

Mib

Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr priority

Access

Read and write

Description

The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network. The

	higher the number, the better are the chances of being a designated router.
Mib	Ip
Values	Decimal (0..255)
Default	1

GROUP Vr Pp IpPort LogicalIf OspfIf Nbr Operational (Oper)

Properties	Operational
Description	Contains the Operational set of attributes for the Neighbor.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr rtrId

Access	Read only
Description	An Ip Address uniquely identifying the neighboring router in the Autonomous System.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr options

Access	Read only
Description	A bit mask corresponding to the neighbor's options field. Bit 0, if set, indicates that the area accepts and operates on external information, if zero, it is a stub area. Bit 1, if set, indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	Ip
Values	Decimal (0..15)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr state

Access	Read only
Description	The state of the relationship with this neighbor.
Mib	Ip
Values	down attempt init twoWay exchangeStart exchange loading full
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr events

Access	Read only
Description	The number of times this neighbor relationship has changed state, or an error has occurred.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr exchangeStatus

Access	Read only

Description	Indicates the exchange status for a neighbor Entry.
Mib	Ip
Values	master slave
Default	No default

ATTRIBUTE Vr Pp IpPort LogicalIf OspfIf Nbr permanance

Access	Read only
Description	This attribute displays how the neighbor became an entry.
Mib	Ip
Values	permanent dynamic
Default	permanent

COMPONENT Vr Pp IpPort LogicalIf RipInterface (RipIf)

Groups	"GROUP Vr Pp IpPort LogicalIf RipIf Provisioned (Prov)" "GROUP Vr Pp IpPort LogicalIf RipIf Operational (Stat)"
Scope	Application
Description	*Vr/<X> Pp/<X> IpPort LogicalIf/<Ip Address> RipInterface* *Rtr/<X> Interface/<X> RipInterface* *Rtr/<X> Vrf/<X> Interface/<X> RipInterface* This component is used to configure a *LogicalIf* or an *Interface* to run RIP protocol.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Pp IpPort LogicalIf RipIf Neighbor (Nbr)"
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf RipIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *RipIf* component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf snmpAdminStatus

Access	Read and write
Description	Identifies the administrative status of this *RipInterface*. Setting this value to ***disabled*** will have the effect of rendering it inactive.
Mib	Ip
Values	up down
Default	up

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf metric

Access	Read and write
Description	This attribute is the RIP metric for this logical interface.
Mib	Ip
Values	Decimal (1..16)
Default	1

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf poisonReverseFlag (poison)

Access	Read and write
Description	If the value of this attribute is set to ***true***, then poison reverse algorithm is used when sending out the updates otherwise use split horizon only.
Mib	Ip
Values	true false
Default	false

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf flashUpdateFlag

Access	Read and write
Description	This attribute when set to ***true*** will send updates when updates are received; otherwise RIP will wait till the next update period.
Mib	Ip
Values	true false
Default	true

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf networkRouteStatus

Access	Read and write
Description	This attribute determines what type of network routes will be sent and whether a default route will be generated for this *RipInterface*. Generated default routes will not go into the routing table, but are sent in the updates going out on the interface. The possible values for this attribute are: ***naturalNetWithOutDefaultRoute*** - This value will cause normal RIP network routes to be put in the update. This means that the address of *logicalIf* or *Interface* pertaining to this *RipInterface* knowledge is taken into account in determining if the subnetted network or the natural network is sent for any route going into this update. ***naturalNetWithDefaultRoute*** - Selecting this value will cause a default route to be generated with the value of the metric selected for the attribute *defaultRouteMetric*. ***defaultRouteOnly*** - Selection of this value causes the default route to be generated with the value of the metric selected for the attribute *defaultRouteMetric*. NOTE: No other routes will go in the update. ***subnetsOnly*** - selection of this value will cause only subnet information to be put in the update. No default routes will be generated or passed on. Only subnetted routes that are part of the same subnetted network that this *logicalInterface* or *Interface* is

on will be put in the update.
NOTE: this also effects receiving of updates on this interface. Only subnetted routes that are part of the same subnetted network that this *logicalInterface* or *Interface* is on will be accepted on a received RIP update on this *RipInterface*.

Mib: Ip

Values:
naturalNetWithOutDefaultRoute (noDefault)
naturalNetWithDefaultRoute (withDefault)
defaultRouteOnly (defaultOnly)
subnetsOnly (subnets)

Default: naturalNetWithOutDefaultRoute

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf defaultRouteMetric

Access: Read and write

Description: This attribute identifies the metric value for the default route. This value is only used if the attribute *networkRouteStatus* is configured with a value of either ***naturalNetWithDefaultRoute*** or ***defaultRouteOnly***

Mib: Ip

Values: Decimal (1..16)

Default: 1

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf acceptDefault

Access: Read and write

Description: If this attribute is set to true, then accept the default route from this interface.

Mib: Ip

Values:
true
false

Default: true

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf ifConfSend

Access: Read and write

Description	This attribute identifies what the router sends on this *RipIf*. ***ripVersion1*** implies sending RIP updates compliant with RFC 1058. ***rip1Compatible*** implies broadcasting RIP-2 updates according to RFC 1058. ***ripVersion2*** implies multicasting RIP-2 updates.
Mib	Ip
Values	doNotSend (silent) ripVersion1 (v1) rip1Compatible (v2b) ripVersion2 (v2)
Default	rip1Compatible

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf ifConfReceive

Access	Read and write
Description	This attribute identifies which version of RIP updates are to be accepted on this *RipIf*. Note that ***rip2*** and ***rip1OrRip2*** implies reception of multicast packets.
Mib	Ip
Values	rip1 (v1) rip2 (v2) rip1OrRip2 (both) doNotReceive (reject)
Default	rip1OrRip2

GROUP Vr Pp IpPort LogicalIf RipIf Operational (Stat)

Properties	Operational
Description	This group contains operational attributes of the *RipIf* component. These attributes are statistical data corresponding to the RIP-2 standard MIB (rfc 1724) rip2Status table.
Mib	Ip

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf ifBadPacketRcv

Access	Read only

Description	This attribute counts the number of RIP response packets recieved by the RIP process which were subsequently discarded for any reason.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf ifBadRouteRcv

Access	Read only
Description	This attribute counts how many routes, in valid RIP packets, were ignored for any reason.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort LogicalIf RipIf ifTriggeredUpdates

Access	Read only
Description	This attribute counts the number of triggered updates actually sent on this interface. This explicitly does NOT include full updates sent containing new information.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp IpPort LogicalIf RipIf Neighbor (Nbr)

Instance	IP address
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> RipIf Neighbor/<Ip address>* *Rtr/<string> Interface/<Ip Address> RipIf Neighbor/<Ip address>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> RipIf*

Neighbor/<Ip address>

This component is used to configure the Ip Address of the non broadcast multi access (NBMA) neighbor.

Mib: Ip

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT Vr Pp IpPort LogicalIf NhrpInterface (NhrpIf)

Scope: Application

Description: *Vr/x Pp/x IpPort LogicalIf/<ipAddress> NhrpInterface*
This component is used to configure a *LogicalIf* to run NHRP protocol.

Mib: IpNhrp

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT Vr Pp IpPort LogicalIf LocalHost (Host)

Instance: IP address

Groups: "GROUP Vr Pp IpPort LogicalIf Host Operational (Oper)"

Scope: Application

Description: *Vr/<n> Pp/<n> IpPort LogicalIf/<addr> LocalHost/<addr>*

This component represents an instance of *LocalHost* functionality, which is used by an application to access the IP forwarding capability of this *VirtualRouter.*

The instance value is the IP address used by the application, and is a member of the local subnet represented by the parent *LogicalIf* component.

Mib: Ip

Common Verbs: Help, List, Display

GROUP Vr Pp IpPort LogicalIf Host Operational (Oper)

Properties: Operational

Description: This group contains the operational status information for this *LocalHost* component.

Mib: Ip

ATTRIBUTE Vr Pp IpPort LogicalIf Host hostName

Access: Read only

Description: This attribute identifies the component name representing the application which is registered as this *LocalHost*.

Mib: Ip

Values: The name of the component

Default: No default

ATTRIBUTE Vr Pp IpPort LogicalIf Host hostStatus

Access: Read only

Description: This attribute identifies the activity status of the application which is registered as this *LocalHost*.

A value of ***up*** means that the application is ready to accept IP traffic from and supply IP traffic to the *VirtualRouter*.

A value of ***down*** means that the application is not ready to accept IP traffic from the *VirtualRouter*, and is not supplying IP traffic to the *VirtualRouter*.

Mib	Ip
Values	up down
Default	No default

COMPONENT Vr Pp IpPort LogicalIf IgmpInterface (IgmpIf)

Groups	"GROUP Vr Pp IpPort LogicalIf IgmpIf Provisioned (Prov)" "GROUP Vr Pp IpPort LogicalIf IgmpIf Operational (Oper)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort LogicalIf/<Ip Address> IgmpIf* This component is used to configure a *logicalIf* to run the Igmp protocol. The *Igmp* component must be added under multicast. Only 1 *logicalIf* that can have a *IgmpIf* under the same port.
Mib	IpMcast
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf IgmpIf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *IpIgmpIf* component.
Mib	IpMcast

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf version (ver)

Access	Read and write
Description	This attribute specifies the IGMP protocol version running on this interface. v2 is the only supported version at this time.
Mib	IpMcast
Values	v2

Default	v2

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf queryInterval

Access	Read and write
Description	This attribute specifies the frequency at which IGMP Host-Query packets are transmitted on this interface.
Mib	IpMcast
Values	Decimal (1..3600)
Units	seconds
Default	125

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf queryMaxRespTime

Access	Read and write
Description	This attribute specifies the maximum query response time advertised in IGMPv2 queries on this interface. The number of seconds represented by the *queryMaxRespTime* must be less than the Query Interval.
Mib	IpMcast
Values	Decimal (1..3600)
Units	seconds
Default	10

GROUP Vr Pp IpPort LogicalIf IgmpIf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of *IpIgmpIf* component.
Mib	IpMcast

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf querier

Access	Read only
Description	This attribute indicates the address of the IGMP Querier on the IP subnet to which this interface is attached.

Mib	IpMcast
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf wrongVersionQuery (wvq)

Access	Read only
Description	This attribute indicates the number of queries received whose IGMP version does not match that configured for this interface. IGMP requires that all routers on a LAN be configured to run the same version of IGMP.
Mib	IpMcast
Values	Decimal (0..4292967295)
Default	0

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf joins

Access	Read only
Description	This attribute indicates the number of times a group membership has been added on this interface.
Mib	IpMcast
Values	Decimal (0..4292967295)
Default	0

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf groups

Access	Read only
Description	This attribute indicates the current number of entries for this interface in the cache table.
Mib	IpMcast
Values	Decimal (0..4292967295)
Default	0

ATTRIBUTE Vr Pp IpPort LogicalIf IgmpIf querierExpiryTime (qet)

Access	Read only
Description	This attribute indicates the amount of time remaining before the other querier present timer expires. If the local system is the querier, the value of this attribute is zero.
Mib	IpMcast
Values	Decimal (0..3600)
Units	seconds
Default	0

COMPONENT Vr Pp IpPort LogicalIf PimSparseModeInterface (PimSmIf)

Groups	"GROUP Vr Pp IpPort LogicalIf PimSmIf Porvisioned (Prov)" "GROUP Vr Pp IpPort LogicalIf PimSmIf Operational (Oper)"
Scope	Application
Description	Vr/<string> Pp/<string> Ipport Logical/<addr> PimSmIf. This component is used to configure a logicalIf to run PIM-SM protocol.
Mib	IpPim
Common Verbs	Help List Display Add DELete

GROUP Vr Pp IpPort LogicalIf PimSmIf Porvisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *PimSmIf* component.
Mib	IpPim

ATTRIBUTE Vr Pp IpPort LogicalIf PimSmIf helloInterval (hello)

Access	Read and write

Description	This attribute specifies the frequency at which PIM-SM hello messages are transmitted on this interface.
Mib	IpPim
Values	Decimal (1..3600)
Units	seconds
Default	30

GROUP Vr Pp IpPort LogicalIf PimSmIf Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *PimSmIf* component.
Mib	IpPim

ATTRIBUTE Vr Pp IpPort LogicalIf PimSmIf designatedRouter (dr)

Access	Read only
Description	This attribute indicates the Designated Router on this PIM-SM interface. For non-broadcast media such as AtmMpe and FrDte, this attribute has the value 0.0.0.0.
Mib	IpPim
Values	IP address
Default	No default

COMPONENT Vr Pp IpPort NetSentry (Ns)

Groups	"GROUP Vr Pp IpPort Ns Provisioned (Prov)"
Scope	Application

Description	This component allows the configuration of *NetSentry* filters for this *IpPort*.
Mib	Ip
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp IpPort Ns Provisioned (Prov)

Properties	Provisioned
Description	This group contains the attributes required by *NetSentry* to be applied to all IP packets going through this *IpPort*.
Mib	Ip

ATTRIBUTE Vr Pp IpPort Ns incomingFilter

Access	Read and write
Description	An ASCII string which provides the name of the *NetSentry* filter which will be applied to all IP datagrams arriving from this *IpPort*.
Mib	Ip
Values	String (0..32, ASCII)
Default	""

ATTRIBUTE Vr Pp IpPort Ns outgoingFilter

Access	Read and write
Description	An ASCII string which provides the name of *NetSentry* filter which will be applied to all IP datagrams sent to this *IpPort*.
Mib	Ip
Values	String (0..32, ASCII)

Default ""

COMPONENT Vr Pp IpPort BootpPort (BootpP)

Groups "GROUP Vr Pp IpPort BootpP Provisioned (Prov)"
"GROUP Vr Pp IpPort BootpP AdministrativeControl (AdminControl)"
"GROUP Vr Pp IpPort BootpP OperationalStatus (OperStatus)"
"GROUP Vr Pp IpPort BootpP OsiState (State)"
"GROUP Vr Pp IpPort BootpP Statistics (Stats)"

Scope Application

Description *Vr/<string> Pp/<string> IpPort BootpPort*
Rtr/<string> Interface/<string> BootpPort
Rtr/<string> Vrf/<string> Interface/<string> BootpPort
An *BootpPort* component must be provisioned for each *IpPort* or *Interface* where BOOTP request messages will be received. Each *BootpPort* component can be provisioned with a set of relay addresses. Each BOOTP request message received on this port will be sent to the provisioned set of relay addresses.

Mib Ip

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Vr Pp IpPort BootpP Provisioned (Prov)

Properties Provisioned

Description This group contains provisionable attributes for the *BootpPort* component.

Mib Ip

ATTRIBUTE Vr Pp IpPort BootpP relayForwardStatus (status)

Access Read and write

Description	This attribute controls how BOOTP request packets, received on another port, will be flooded out this port. If *relayForwardStatus* is ***enabled***, BOOTP requests received on another port will be broadcast out this port. When *relayForwardStatus* is ***disabled***, BOOTP requests will not be broadcast out this port. If ***auto*** is used, the bridge spanning tree database is used to determine if BOOTP requests should be broadcast out this port. Note that when using ***enabled***, it is possible to create misconfigurations which will result in broadcast storms. When using this feature with multiple routers, make sure there are no broadcast forwarding loops. Using ***auto*** with bridge spanning tree is safer to use if the network is running bridge spanning tree. Note that for ***auto*** to have effect, bridge spanning tree must be running on the corresponding *VirtualRouter ProtocolPort* or *Rtr Interface* or *Rtr Vrf Interface*.
Mib	Ip
Values	enabled disabled auto
Default	disabled

ATTRIBUTE Vr Pp IpPort BootpP bootpLogicalInterface (portIf)

Access	Read and write
Description	This attribute identifies the logical interface whose address is to be the GIADDR of this BOOTP port. If not set, the address of the first logical port or Interface is chosen.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Pp IpPort BootpP relayAddress (addr)

Access	Read and write

Description	This attribute identifies a list of relay addresses. When a BOOTP request message is received on this port, the request will be forwarded to the IP addresses provisioned in *relayAddress*. Note that BOOTP requests are also broadcast out all other *BootpPort*'s according to the *relayForwardStatus* of the outgoing port.
Mib	Ip
List of	IP address
List Size	3
Default	No default

GROUP Vr Pp IpPort BootpP AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort BootpP snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

GROUP Vr Pp IpPort BootpP OperationalStatus (OperStatus)

Properties	Operational

Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Pp IpPort BootpP snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

GROUP Vr Pp IpPort BootpP OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Pp IpPort BootpP adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component.

When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ip

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Pp IpPort BootpP operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ip

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Pp IpPort BootpP usageState (osiUsage)

Access: Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp IpPort BootpP Statistics (Stats)

Properties	Operational
Description	This group contains *BootpPortEntry* component statistics.
Mib	Ip

ATTRIBUTE Vr Pp IpPort BootpP inRequests

Access	Read only
Description	This attribute counts the total number of BOOTP Request messages received on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort BootpP inReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages received on this port.

Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort BootpP outRequests

Access	Read only
Description	This attribute counts total the number of BOOTP Request messages broadcast out on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort BootpP outReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages sent out on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort BootpP inRequestErrors

Access	Read only
Description	This attribute counts the number of BOOTP Request messages received on this port but not forwarded due to an error. An error occurs if the BOOTP hop limit has been exceeded.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpPort BootpP inReplyErrors

Access	Read only

Description	This attribute counts the number of BOOTP Reply messages received on this port but not forwarded due to an error. An error occurs if the giaddr field in the BOOTP reply does not match an IP address assigned to this *VirtualRouter* or *Rtr* or *Rtr Vrf*, or if the output *IpPort* or *Interface* for the BOOTP reply is not provisioned for BOOTP.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp IpPort VrrpPort

Instance	Decimal (1..255)
Groups	"GROUP Vr Pp IpPort VrrpPort Provisioned (Prov)" "GROUP Vr Pp IpPort VrrpPort Operational (Oper)" "GROUP Vr Pp IpPort VrrpPort AdministrativeControl (AdminControl)" "GROUP Vr Pp IpPort VrrpPort OperationalStatus (OperStatus)" "GROUP Vr Pp IpPort VrrpPort OsiState (State)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort VrrpPort/<n>* *Rtr/<string> Vrf/<string> Interface VrrpPort/<n>* This component contains attributes that define a VRRP virtual router instance associated with this *IpPort*. The component instance (n) is the VRRP virtual router VRID.
Mib	IpVrrp
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp IpPort VrrpPort Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the VrrpPort component.
Mib	IpVrrp

ATTRIBUTE Vr Pp IpPort VrrpPort priority

Access	Read and write
Description	This attribute specifies the priority of *VrrpPort* during election of a master VRRP virtual router. A priority of 0 (zero) is reserved for the master to indicate it is releasing responsibility for the VRRP virtual router. A priority of 255 is reserved for the VRRP virtual router that owns (has as real interfaces) the IP addresses associated with this *VrrpPort*.
Mib	IpVrrp
Values	Decimal (1..255)
Default	100

ATTRIBUTE Vr Pp IpPort VrrpPort advertisementInterval

Access	Read and write
Description	This attribute specifies the time interval between VRRP advertisements which will be sent by the master VRRP virtual router.
Mib	IpVrrp
Values	Decimal (1..255)
Units	seconds
Default	1

ATTRIBUTE Vr Pp IpPort VrrpPort listLinkToCriticalIp (listLinkToCIp)

Access	Read and write
Description	This attribute specifies the *CriticalIp* instance to which the *VrrpPort* instance is linked. If the *IpPort* associated with this

	CriticalIp instance becomes disabled, the *VrrpPort* becomes disabled..
Mib	IpVrrp
Values	Link (Service, listLinkToVrrp)
Default	No default

ATTRIBUTE Vr Pp IpPort VrrpPort ipAddresses

Access	Read and write
Description	This attribute specifies one or more IP addresses associated with this *VrrpPort* instance (VRID). All VRRP virtual routers with this VRID must have the same set of IP addresses configured. Each of the IP addresses in the list must be on the same subnet as an *IpLogicalInterface* for the *IpPort*. All the IP addresses in the list must be owned by this VRRP virtual router or by other VRRP virtual routers but not a combination.
Mib	IpVrrp
List of	IP address
Default	No default

GROUP Vr Pp IpPort VrrpPort Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *VrrpPort* component.
Mib	IpVrrp

ATTRIBUTE Vr Pp IpPort VrrpPort virtualRouterState

Access	Read only
Description	This attribute indicates the state of this *VrrpPort* instance. It will be one of three states: initialize, backup and master.
Mib	IpVrrp

Values	initialize backup master
Default	initialize

ATTRIBUTE Vr Pp IpPort VrrpPort virtualRouterPhysicalAddress

Access	Read only
Description	This attributes indicates the physcial address of the *VrrpPort*. The address is a virtual physical address of the form “00-00-5e-00-01-VRID” where the VRID is the instance value of the *VrrpPort*.
Mib	IpVrrp
Values	String (6, Dashed Hex)
Default	No default

GROUP Vr Pp IpPort VrrpPort AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	IpVrrp

ATTRIBUTE Vr Pp IpPort VrrpPort snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	IpVrrp
Values	up down testing
Default	up

GROUP Vr Pp IpPort VrrpPort OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	IpVrrp

ATTRIBUTE Vr Pp IpPort VrrpPort snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	IpVrrp
Values	up down testing
Default	up

GROUP Vr Pp IpPort VrrpPort OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpVrrp

ATTRIBUTE Vr Pp IpPort VrrpPort adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: IpVrrp

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Pp IpPort VrrpPort operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: IpVrrp

Values:
enabled (ena)
disabled (dis)

Default	disabled

ATTRIBUTE Vr Pp IpPort VrrpPort usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	IpVrrp
Values	idle active (activ) busy
Default	idle

COMPONENT Vr Pp IpPort CriticalIp

Instance	Decimal (1..255)
Groups	"GROUP Vr Pp IpPort CriticalIp Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort CriticalIp/n* The *CriticalIp* component defines a critical *IpPort* for use by the VRRP virtual router with the same instance (VRID) as the *CriticalIp* instance. If the *IpPort* associated with this *CriticalIp*

instance becomes disabled the *VrrpPort* linked to this *CriticalIp* is disabled.

Mib IpVrrp

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

GROUP Vr Pp IpPort CriticalIp Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attributes for the *CriticalIp* component.

Mib IpVrrp

ATTRIBUTE Vr Pp IpPort CriticalIp listLinkToVrrp

Access Read and write

Description This attribute specifies the list of *VrrpPort* to which the *CriticalIp* has been linked. When the *IpPort* associated with this *CriticalIp* becomes disabled, the linked *VrrpPort* is disabled.

Mib IpVrrp

List of Link (Service, listLinkToCriticalIp)

Default No default

COMPONENT Vr Pp IpxPort (IpxP)

Instance link
ethernet
novell
sap
snap
vns
tunnel

Groups	"GROUP Vr Pp IpxP AdministrativeControl (AdminControl)" "GROUP Vr Pp IpxP Provisioned (Prov)" "GROUP Vr Pp IpxP SresProvisioned (SresProv)" "GROUP Vr Pp IpxP OsiState (State)" "GROUP Vr Pp IpxP OperationalStatus (OperStatus)" "GROUP Vr Pp IpxP Operational (Oper)" "GROUP Vr Pp IpxP Statistics (Stats)"
Scope	Application
Description	*Vr/<string> PP/<string> IpxP* The IPX protocol specific information relating to this *ProtocolPort* instance.
Mib	Ipx
Subcomponents	"COMPONENT Vr Pp IpxP RipPort (RipP)" "COMPONENT Vr Pp IpxP SapPort (SapP)"
Opt. Subcomp.	"COMPONENT Vr Pp IpxP NetSentryPort (NetSentryP)"
Dyn. Subcomp.	"COMPONENT Vr Pp IpxP IpxWanPort (IWP)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp IpxP AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP snmpAdminStatus

Access	Read and write

Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ipx
Values	up down testing
Default	up

GROUP Vr Pp IpxP Provisioned (Prov)

Properties	Provisioned
Description	The Provisionable group for the *IpxPort* component.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP networkNumberProv (netP)

Access	Read and write
Description	The Ipx network number of the network directly connected to this port.
Mib	Ipx
Values	String (0..4, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp IpxP defaultType (defType)

Access	Read and write
Description	This attribute indicates which protocol is to run on a protocol port. In the case of a lan media it is to be set to broadcast. In the case of WAN media the following choices are to be exercised: For running Pre-IPXWAN RIP set value to *other*. For running numbered RIP set value to *wanRip*.

	For running un-numbered RIP set value to *unnumberedRip*. Setting this value to *ppp* will signify unnumbered Rip running on a ppp port.
Mib	Ipx
Values	other broadcast ppp wanRip unnumberedRip
Default	No default

ATTRIBUTE Vr Pp IpxP broadcastInhibit (bInh)

Access	Read and write
Description	If this attribute is set, all outgoing periodic and triggered updates for RIP and SAP will be inhibited for the port. However the port will still accept incoming RIP and SAP packets on the port. This may be useful for ports with only a bank of servers on its network in order to limit the routing traffic, assuming that servers don't require routing information or other server information.
Mib	Ipx
Values	enabled disabled
Default	disabled

GROUP Vr Pp IpxP SresProvisioned (SresProv)

Properties	Provisioned
Description	This group contains the provisioned attributes for *SourceRouteEndStation* support.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP sourceRouteEndStationSupport (sresSupport)

Access	Read and write

Description

This attribute is used to ***enable*** or ***disable*** support for *SourceRouteEndStation (Sres)*. If set to ***enable***, *Sres* will be supported on this protocol on this *ProtocolPort (Pp)*. If set to ***disable***, it will not be supported. An *Sres* component must be provisioned under the VirtualRouter if this attribute is set to ***enable***. If this attribute is set to ***enable*** and this *Pp* has its *linkToMedia* attribute set, it must be linked to a *LanApplication* (*La*) that has its *Framer interfaceName* linked to a *Fddi* or *TokenRing* component.

Mib

Ipx

Values

enable
disable

Default

disable

GROUP Vr Pp IpxP OsiState (State)

Properties

Operational

Description

This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib

Ipx

ATTRIBUTE Vr Pp IpxP adminState (osiAdmin)

Access

Read only

Description

This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users

only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ipx

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Pp IpxP operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ipx

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Pp IpxP usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in

use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Ipx

Values:
idle
active (activ)
busy

Default: idle

GROUP Vr Pp IpxP OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: Ipx

ATTRIBUTE Vr Pp IpxP snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: Ipx

Values:
up
down
testing

Default: up

GROUP Vr Pp IpxP Operational (Oper)

Properties: Operational

Description	The *IpxPort* Operational Attributes.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP type

Access	Read only
Description	The type of the circuit. This would differ from the provisioned type when a different routing protocol is negotiated with the peer.
Mib	Ipx
Values	other broadcast ppp wanRip unnumberedRip
Default	No default

ATTRIBUTE Vr Pp IpxP encapsulation (encapO)

Access	Read only
Description	Packet encapsulation type that the router has determined to use on the port. There are seven encapsulation types used to identify IPX datagram as listed below. 1. ***link***: IPX encapsulation type for PPP, ATM MPE, and X25DTE media types. 2. ***ethernet*:** IPX encapsulation type for Ethernet and FrDte media types. 3. ***novell*:** IPX encapsulation type for Ethernet and FrDte media types. 4. ***sap*:** IPX encapsulation type for FDDI, Token Ring, Ethernet and FrDte media types. 5. ***snap*:** IPX encapsulation type for FDDI, Token Ring, Ethernet, and FrDte media types.

6. ***vns*:** IPX encapsulation type for VNS media type.

7. ***tunnel***: IPX encapsulation type for Tunnel media type.

Mib	Ipx
Values	link ethernet novell sap snap vns tunnel
Default	No default

ATTRIBUTE Vr Pp IpxP networkNumber (netO)

Access	Read only
Description	The Ipx network number from the provisioned *networkNumberProv* value.
Mib	Ipx
Values	String (0..4, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp IpxP node

Access	Read only
Description	The Ipx node address of this *IpxPort*.
Mib	Ipx
Values	String (1..6, Dashed Hex)
Default	No default

GROUP Vr Pp IpxP Statistics (Stats)

Properties	Operational
Description	The *IpxPort* Statistics group.

Mib	Ipx

ATTRIBUTE Vr Pp IpxP stateChanges

Access	Read only
Description	Number of times the port has changed state. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP inReceives

Access	Read only
Description	Total number of packets received. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP forwarded

Access	Read only
Description	Number of packets forwarded. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp IpxP RipPort (RipP)

Groups	"GROUP Vr Pp IpxP RipP Statistics (Stats)"
Scope	Application

Description	*Vr/<string> PP/<string> IpxP RipP* The RIP specific information pertaining to this *IpxPort* component.
Mib	Ipx
Common Verbs	Help List Display

GROUP Vr Pp IpxP RipP Statistics (Stats)

Properties	Operational
Description	RIP specific statistics for this *IpxPort*.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP RipP inPackets (inPkts)

Access	Read only
Description	The number of RIP packets received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP RipP inRequests

Access	Read only
Description	The number of RIP request packets received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP RipP inResponses

Access	Read only
Description	The number of RIP response packets received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP RipP outPackets (outPkts)

Access	Read only
Description	The number of RIP packets sent out on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP RipP outRequests

Access	Read only
Description	The number of RIP request packets sent out on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP RipP outResponses

Access	Read only

Description	The number of RIP response packets sent out on this *IpxPort*. This includes RIP periodic update packets. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP RipP incorrectPackets

Access	Read only
Description	Number of times that an incorrectly formatted RIP packet was received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp IpxP SapPort (SapP)

Groups	"GROUP Vr Pp IpxP SapP Statistics (Stats)"
Scope	Application
Description	*Vr/<string> PP/<string> IpxP SapP* The SAP specific information pertaining to this *IpxPort* component.
Mib	Ipx
Common Verbs	Help List Display

GROUP Vr Pp IpxP SapP Statistics (Stats)

Properties	Operational
Description	SAP specific statistics for this *IpxPort*.

Mib	Ipx

ATTRIBUTE Vr Pp IpxP SapP inPackets (inPkts)

Access	Read only
Description	The total number of SAP packets received on this *IpxPort*. Includes SAP requests and responses. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP SapP inRequests

Access	Read only
Description	The number of SAP Request packets received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP SapP inResponses

Access	Read only
Description	The number of SAP response packets received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP SapP outPackets (outPkts)

Access	Read only

Description	The total number of SAP packets sent out this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP SapP outRequests

Access	Read only
Description	The number of SAP request packets sent out on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP SapP outResponses

Access	Read only
Description	The number of SAP response packets sent out this *IpxPort*. This includes periodic SAP update packets. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp IpxP SapP incorrectPackets

Access	Read only
Description	Number of times an incorrectly formatted SAP packet was received on this *IpxPort*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx

Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp IpxP IpxWanPort (IWP)

Instance	String (1..8, Dashed Hex)
Groups	"GROUP Vr Pp IpxP IWP Operational (Oper)"
Scope	Application
Description	*Vr/<string> PP/<string> IpxP IWP* This component contains information for this *IpxPort* that are specific to the IPXWAN protocol.
Mib	Ipx
Common Verbs	Help List Display

GROUP Vr Pp IpxP IWP Operational (Oper)

Properties	Operational
Description	This group contains operational attributes that are specific for the IPXWAN protocol.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP IWP neighbourRouterName (neiName)

Access	Read only
Description	The name of the neighboring router on a WAN circuit.
Mib	Ipx
Values	String (0..48, ASCII)
Default	No default

ATTRIBUTE Vr Pp IpxP IWP neighbourInternalNetworkNumber (neiNet)

Access	Read only

Description	The internal network number of the neighboring router on a WAN circuit.
Mib	Ipx
Values	String (1..4, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp IpxP IWP initFails

Access	Read only
Description	The number of times initialization has failed on this circuit. This counter wraps around to zero after reaching the maximum value of 4294967295
Mib	Ipx
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Pp IpxP NetSentryPort (NetSentryP)

Groups	"GROUP Vr Pp IpxP NetSentryP Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpxP NetSentryPort* This component contains the NetSentry attributes that specify the names of the NetSentry filters which will be applied to IPX packets as incoming and outgoing filters.
Mib	Ipx
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp IpxP NetSentryP Provisioned (Prov)

Properties	Provisioned
Description	This group contains the NetSentry attributes that specify the names of the NetSentry filters which will be applied to IPX packets as incoming and outgoing filters.
Mib	Ipx

ATTRIBUTE Vr Pp IpxP NetSentryP inComingFilter (inFilt)

Access	Read and write
Description	This attribute specifies the name of the NetSentry filter applied to incoming IPX packets on this port.
Mib	Ipx
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Pp IpxP NetSentryP outGoingFilter (outFilt)

Access	Read and write
Description	The name of the filter applied to outgoing IPX packets on this port.
Mib	Ipx
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Pp SourceRouteBridgePort (SrBp)

Groups	"GROUP Vr Pp SrBp Provisioned (Prov)" "GROUP Vr Pp SrBp StpProvisioned (StpProv)" "GROUP Vr Pp SrBp DomainInfoProvisioned (DIProv)" "GROUP Vr Pp SrBp OsiState (State)" "GROUP Vr Pp SrBp OperationalStatus (OperStatus)" "GROUP Vr Pp SrBp Operational (Oper)" "GROUP Vr Pp SrBp StpOperational (StpOper)" "GROUP Vr Pp SrBp Statistics (Stats)" "GROUP Vr Pp SrBp SrProvisioned (SrProv)" "GROUP Vr Pp SrBp SrStatistics (SrStats)"

Scope	Application
Description	*Vr/<string> Pp/<string> SourceRouteBridgePort* This component represents a source route bridge port. It contains all the attributes (provisionable and operational attributes) necessary for the operation of this bridge port. The source route bridge port provides a way to facilitate source route bridging on a media interface.
Mib	Bridge
Opt. Subcomp.	"COMPONENT Vr Pp SrBp NetSentry (Ns)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp SrBp Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp fragmentIp (fIp)

Access	Read and write
Description	This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.
Mib	Bridge
Values	off on

Default	off

ATTRIBUTE Vr Pp SrBp portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time. The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.
Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp SrBp StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge

ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.

Mib — Bridge

ATTRIBUTE Vr Pp SrBp adminStatus (as)

Access — Read and write

Description — This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.

Mib — Bridge

Values — up
down

Default — up

ATTRIBUTE Vr Pp SrBp portStateStpControl (psstpc)

Access — Read and write

Description — This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same.
on signifies that this bridge port's spanning tree port state is controlled by the stp.
A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.

Mib — Bridge

Values — off
on

Default — on

ATTRIBUTE Vr Pp SrBp stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper*.
Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp SrBp portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp SrBp pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge

Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp SrBp pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost*.
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp SrBp DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge

Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp SrBp preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it. Preserve domain is relevant only when used in conjunction with ATM MPE.
Mib	Bridge
Values	off on
Default	No default

GROUP Vr Pp SrBp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	Bridge

ATTRIBUTE Vr Pp SrBp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp SrBp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Bridge

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Pp SrBp usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Bridge

Values: idle
active (activ)
busy

Default: idle

GROUP Vr Pp SrBp OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: Bridge

ATTRIBUTE Vr Pp SrBp snmpOperStatus

Access: Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp SrBp Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp SrBp upTime (ut)

Access	Read only

Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp SrBp downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp SrBp bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp SrBp bridgePortConfig (bpc)

Access	Read only

Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp SrBp bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort srEncapSrBridgePort

srEncapTbBridgePort
sourceGateSrBridgePort
sourceGateTbBridgePort
srtbBridgePort
tbsrBridgePort
clusterSrBridgePort
clusterTbBridgePort
snaDlrBridgePort
unknown

Default: No default

ATTRIBUTE Vr Pp SrBp ifIndex (ifin)

Access: Read only

Description: This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.

Mib: Bridge

Values: Decimal (1..65535)

Default: No default

ATTRIBUTE Vr Pp SrBp mtuExceededDiscards (med)

Access: Read only

Description: This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295.
This counter is influenced by the attribute *fragmentIp*. This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.

Mib: Bridge

Values: Decimal (0..4294967295)

Default	0

GROUP Vr Pp SrBp StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp SrBp stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp SrBp designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp SrBp pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp SrBp designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp SrBp designatedPort (dp)

Access	Read only

Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp SrBp forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.

Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp SrBp Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp SrBp SrProvisioned (SrProv)

Properties	Provisioned
Description	This group contains all port specific, provisionable attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp hopCount (hc)

Access	Read and write
Description	This attribute specifies the maximum number of hops allowed in Spanning Tree Explore and All Routes Explore frames. This value is one less than the maximum number of route descriptors allowed in a source route frame
Mib	Bridge
Values	Decimal (1..7)
Default	7

ATTRIBUTE Vr Pp SrBp exploreFrameTreatment (eft)

Access	Read and write
Description	This attribute specifies whether or not explore frames received from *SourceRouteBridge* ports will be sent to the SRTB-8209 translation or the encapsulated *SourceRouteBridge* logic. This option is used only when both the *TbsrBridgePort* and the *SrtbBridgePort* are provisioned and enabled. A value of ***Xlate*** implies that the explore frames will be sent to the Srtb translation logic and a value of ***Encap*** implies that the frames will be sent to the Encapsulated source route bridging logic.
Mib	Bridge
Values	encap xlate
Default	encap

ATTRIBUTE Vr Pp SrBp lanId (lid)

Access	Read and write
Description	This attribute specifies the identifier for the physical LAN that this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.

Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp SrBp internalLanId (ilid)

Access	Read and write
Description	This attribute specifies the identifier for the internal logical LAN this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp SrBp bridgeNum (bid)

Access	Read and write
Description	This attribute specifies the value that is used to identify this bridge when more than one bridge is used to span the same two LAN segments.
Mib	Bridge
Values	Decimal (0..15)
Default	7

ATTRIBUTE Vr Pp SrBp largestFrame (lf)

Access	Read and write
Description	This attribute specifies the maximum frame size (LLC and above) in octets, allowed by this *SourceRouteBridge* port. This field is used to determine whether a modification of the largest frame field of the routing control field of the routing information field is warranted.
Mib	Bridge

Values	Decimal (516; 1470; 2052; 4399; 8130; 11407; 17749)
Units	octets
Default	No default

ATTRIBUTE Vr Pp SrBp steSpanMode (steSm)

Access	Read and write
Description	This attribute determines how this bridge port will react when presented with a Spanning Tree Explore frame. If ***disabled,*** the Spanning Tree Explore frame is discarded regardless of the value of *stpPortState*. If the value of this attribute is ***forced***, the Spanning Tree Explore frame is forwarded regardless of the value of *stpPortState*. ***autoSpan*** uses the *stpPortState* value to decide whether or not Spanning Tree Explore frames should be forwarded out this bridge port. If the port is in the ***forwarding*** state, the frame is received and transmitted otherwise the frame is discarded.
Mib	Bridge
Values	autoSpan disabled forced
Default	autoSpan

ATTRIBUTE Vr Pp SrBp areRdLimit (arl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in an All Routes Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *areRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

ATTRIBUTE Vr Pp SrBp steRdLimit (srl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in a Spanning Tree Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *steRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

GROUP Vr Pp SrBp SrStatistics (SrStats)

Properties	Operational
Description	This group contains all port specific statistical attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp specInFrames (sif)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were received by this bridge port. A specifically routed frame has a route descriptor, constructed by the originating host which details an explicit route to the destination host. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp specOutFrames (srfof)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were transmitted from this bridge port. This counter will wrap to zero when it exceeds its maximum.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp apeInFrames (apeif)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames received on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState*s. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp apeOutFrames (apeof)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames transmitted on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState* state. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp steInFrames (steif)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Explore frames received on this bridge port. The Spanning Tree Explore frames are only forwarded through bridge ports whose

	portStpState has a value of ***forwarding.*** This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp steOutFrames (steof)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Frames transmitted on this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp segmentMismatchDiscards (lidmd)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames that were discarded due to an invalid next segment value in the routing information field. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp dupSegmentDiscards (dsd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to the presence of a duplicate segment identifier in the route descriptor field which may indicate a loop in the network topology. This counter will wrap to zero when it exceeds its maximum.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp hopCountExceededDiscards (hced)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames discarded by this bridge port due to a frame exceeding the maximum size allowed for a route descriptor length. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp dupLanIdOrTreeErrors (dlte)

Access	Read only
Description	This attribute specifies the number frames received which contain duplicate LAN IDs or Tree errors. This attribute is helpful in debugging problems in networks which contain older IBM-SR bridges. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp lanIdMismatches

Access	Read only
Description	This attributes counts the number of All Routes Explore or Spanning Tree Explore frames that were discarded because the last LAN ID in the routing information field did not equal the

	LAN ID. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp staticDiscards (sd)

Access	Read only
Description	This attribute is indicative of the number of explorer frames discarded due to fact that the outbound *SourceRouteBridge* port was disabled or deleted. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrBp dynamicDiscards (dd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to receiving a frame with a target LAN ID which did not match the internal LAN ID of the receiving bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp SrBp NetSentry (Ns)

Groups	"GROUP Vr Pp SrBp Ns Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Pp/<string> TransparentBridgePort NetSentry* This component represents the *Ns* functionality that can be

	applied to a bridge port. It contains all the attribute groups (provisionable) that are necessary for the application of Ns functionality to a bridge port. In essence, it allows for the definition of filters, at the incoming and outgoing points, specific to the interface represented by this bridge port.
Mib	Bridge
Common Verbs	Help List Display Add DELete

GROUP Vr Pp SrBp Ns Provisioned (Prov)

Properties	Provisioned
Description	This group houses all the port specific provisionable attributes associated with Ns. These attributes influence the application of filters to incoming and outgoing frames.
Mib	Bridge

ATTRIBUTE Vr Pp SrBp Ns incomingFilter (if)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the incoming filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Pp SrBp Ns outgoingFilter (of)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the out going filter point.
Mib	Bridge

Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Pp SourceRouteTransparentBridgePort (SrtBp)

Groups	"GROUP Vr Pp SrtBp Provisioned (Prov)" "GROUP Vr Pp SrtBp TbProvisioned (TbProv)" "GROUP Vr Pp SrtBp StpProvisioned (StpProv)" "GROUP Vr Pp SrtBp DomainInfoProvisioned (DIProv)" "GROUP Vr Pp SrtBp OsiState (State)" "GROUP Vr Pp SrtBp OperationalStatus (OperStatus)" "GROUP Vr Pp SrtBp Operational (Oper)" "GROUP Vr Pp SrtBp TbOperational (TbOper)" "GROUP Vr Pp SrtBp StpOperational (StpOper)" "GROUP Vr Pp SrtBp Statistics (Stats)" "GROUP Vr Pp SrtBp SrProvisioned (SrProv)" "GROUP Vr Pp SrtBp SrStatistics (SrStats)"
Scope	Application
Description	Vr/*<string>* *Pp/<string>* *SourceRouteTransparentBridgePort* This component represents a Source Route Transparent (SRT) bridge port. It contains all the attributes (provisionable and operational attributes) necessary for the operation of the bridge port. The SRT bridge port provides a mechanism to transmit and receive both source route and transparent bridge frames. In essence, the SRT bridging scheme defines a method for TB bridges to handle SR frames. SRT bridge ports participate in the transparent bridging spanning tree protocol.
Mib	Bridge
Opt. Subcomp.	"COMPONENT Vr Pp SrtBp NetSentry (Ns)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp SrtBp Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp fragmentIp (fIp)

Access	Read and write
Description	This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.
Mib	Bridge
Values	off on
Default	off

ATTRIBUTE Vr Pp SrtBp portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be

re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time.

The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.

Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp SrtBp TbProvisioned (TbProv)

Properties	Provisioned
Description	This group contains all the port specific provisionable attributes that belong to the Tb group. These attributes in part influence the working of a bridge port operating in the transparent bridge mode.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp secureOption (sos)

Access	Read and write
Description	This attribute specifies whether the port secure feature is enabled. The secure feature, if enabled causes the following things to happen: a) disallows dynamic learning, b) disallows frames to be forwarded that do not satisfy the following condition: the MAC address of the source should be found in the forwarding table and the destination MAC address of the frame should also be found in the forwarding table. In addition to this, the port the frame was received on should figure as the in port, given the destination MAC address found in the frame. c) disallows frames to be forwarded if the allowed to go port map

for the destination MAC address is empty.
This feature in effect allows the user to choose the hosts that can generate traffic and the hosts that can receive traffic through this bridge unit.

Mib: Bridge

Values: disabled
enabled

Default: disabled

GROUP Vr Pp SrtBp StpProvisioned (StpProv)

Properties: Provisioned

Description: This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.

Mib: Bridge

ATTRIBUTE Vr Pp SrtBp adminStatus (as)

Access: Read and write

Description: This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.

Mib: Bridge

Values: up
down

Default: up

ATTRIBUTE Vr Pp SrtBp portStateStpControl (psstpc)

Access: Read and write

Description: This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received

bridge protocol data units and by sending out the same.
on signifies that this bridge port's spanning tree port state is controlled by the stp.
A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.

Mib: Bridge

Values: off
on

Default: on

ATTRIBUTE Vr Pp SrtBp stpTypeProv (stptProv)

Access: Read and write

Description: This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper*.

Mib: Bridge

Values: dec
ieee8021

Default: ieee8021

ATTRIBUTE Vr Pp SrtBp portPriority (ppr)

Access: Read and write

Description: This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows:

	1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp SrtBp pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp SrtBp pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost*.
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp SrtBp DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.

Mib	Bridge

ATTRIBUTE Vr Pp SrtBp domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp SrtBp preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it.

	Preserve domain is relevant only when used in conjunction with ATM MPE.
Mib	Bridge
Values	off on
Default	No default

GROUP Vr Pp SrtBp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp SrtBp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Bridge
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp SrtBp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp SrtBp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp SrtBp Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.

Mib	Bridge

ATTRIBUTE Vr Pp SrtBp portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp SrtBp upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp SrtBp downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds

Default	0

ATTRIBUTE Vr Pp SrtBp bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp SrtBp bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp SrtBp bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*,

bridgePortConfig and the media the bridge port is linked to before branding a bridge port.

Mib: Bridge

Values:
ethernetBridgePort
tokenRingBridgePort
fddiBridgePort
tokenBusBridgePort
lanEmulationClientEthernet
fddiEncapsulatingBridgePort
vnsBridgePort
frameRelayBridgePort
pppBridgePort
smdsBridgePort
vcpBridgePort
x25BridgePort
atmMpeBridgePort
srEncapSrBridgePort
srEncapTbBridgePort
sourceGateSrBridgePort
sourceGateTbBridgePort
srtbBridgePort
tbsrBridgePort
clusterSrBridgePort
clusterTbBridgePort
snaDlrBridgePort
unknown

Default: No default

ATTRIBUTE Vr Pp SrtBp ifIndex (ifin)

Access: Read only

Description: This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.

Mib: Bridge

Values: Decimal (1..65535)

Default: No default

ATTRIBUTE Vr Pp SrtBp mtuExceededDiscards (med)

Access	Read only
Description	This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295. This counter is influenced by the attribute *fragmentIp*. This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp SrtBp TbOperational (TbOper)

Properties	Operational
Description	This group contains all the port specific operational attributes that belong to the Tb group. This group also contains all the port specific statistical attributes that belong to the Tb group. These attributes reflect the state of a bridge port operating in the transparent bridge mode
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp maxInfo (mi)

Access	Read only
Description	This attribute indicates the maximum size of the information field in a transparent bridge frame. This excludes the header field.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp badVerifyDiscards (bvd)

Access	Read only
Description	This attribute counts the number of incoming frames that were discarded because the value of the *secureOption* attribute was set to ***on*** and: a) it is not allowed to receive frames originating from the MAC address found in the source address field of the frame (source MAC address lookup in the forwarding table failed) on this bridge port, or b) for the destination MAC address found in the frame the port the frame was received on does not appear as in port in the corresponding static table entry. Permission to receive frames from a MAC address is granted via the static table entries. This attribute, *badVerifyDiscards*, is directly influenced by: 1. *secureOption* and 2. the static table entries. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp staticEntryDiscards (sed)

Access	Read only
Description	This attribute counts the number of frames that were discarded because of the following three reasons: a) there was no entry for the “allowed to go” field in the static table entry, where the input port is this bridge port. b) the MAC destination address in the frame was not found in the forwarding table but the frame cannot be flooded because this bridge has not other ports in forwarding state. c) for spanning tree bpdus that are locally processed. This counter wraps around its maximum value of 4294967295. It might prove useful to check the static table entry corresponding to the bridge port in question, if this counter consistently displays

	a high value. Ideally this counter should be as low as possible.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp dynamicEntryDiscards (dend)

Access	Read only
Description	This attribute counts the number of incoming frames that: a) were discarded because of the fact that the bridge port, the frame is to go out of matches the bridge port it came in from, or b) if the stp port state of the out port is not ***forwarding***. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp learningDiscards (ld)

Access	Read only
Description	This attribute counts the number of frames that were discarded while this bridge port was in a state other than the ***forwarding*** state. While in ***learning*** state the frame is discarded after the information from its header is learnt. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp inDiscards (id)

Access	Read only
Description	This attribute counts the number of frames that were received by this bridge port and were discarded by the forwarding process.

	This includes frames that could have been discarded due to filtering. A rapidly increasing value for this attribute could indicate a shortage of resource in terms of memory needed to process the incoming frames. More memory can be provisioned through the *VirtualRouter*'s memory manager.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp inFrames (if)

Access	Read only
Description	This attribute counts the number of frames that have been received by this port from its segment. Note that a frame received on this bridge port is counted if and only if it can be processed by the bridge logic contained in this bridge unit. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp outFrames (of)

Access	Read only
Description	This attribute counts the number of frames that have been transmitted out this bridge port. This also includes management frames.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp SrtBp StpOperational (StpOper)

Properties	Operational

Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp SrtBp stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp SrtBp designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp SrtBp pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp SrtBp designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp SrtBp designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp SrtBp forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp SrtBp Statistics (Stats)

Properties	Operational

Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp SrtBp SrProvisioned (SrProv)

Properties	Provisioned
Description	This group contains all port specific, provisionable attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp hopCount (hc)

Access	Read and write
Description	This attribute specifies the maximum number of hops allowed in Spanning Tree Explore and All Routes Explore frames. This value is one less than the maximum number of route descriptors allowed in a source route frame
Mib	Bridge

Values	Decimal (1..7)
Default	7

ATTRIBUTE Vr Pp SrtBp exploreFrameTreatment (eft)

Access	Read and write
Description	This attribute specifies whether or not explore frames received from *SourceRouteBridge* ports will be sent to the SRTB-8209 translation or the encapsulated *SourceRouteBridge* logic. This option is used only when both the *TbsrBridgePort* and the *SrtbBridgePort* are provisioned and enabled. A value of ***Xlate*** implies that the explore frames will be sent to the Srtb translation logic and a value of ***Encap*** implies that the frames will be sent to the Encapsulated source route bridging logic.
Mib	Bridge
Values	encap xlate
Default	encap

ATTRIBUTE Vr Pp SrtBp lanId (lid)

Access	Read and write
Description	This attribute specifies the identifier for the physical LAN that this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp SrtBp internalLanId (ilid)

Access	Read and write

Description	This attribute specifies the identifier for the internal logical LAN this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp SrtBp bridgeNum (bid)

Access	Read and write
Description	This attribute specifies the value that is used to identify this bridge when more than one bridge is used to span the same two LAN segments.
Mib	Bridge
Values	Decimal (0..15)
Default	7

ATTRIBUTE Vr Pp SrtBp largestFrame (lf)

Access	Read and write
Description	This attribute specifies the maximum frame size (LLC and above) in octets, allowed by this *SourceRouteBridge* port. This field is used to determine whether a modification of the largest frame field of the routing control field of the routing information field is warranted.
Mib	Bridge
Values	Decimal (516; 1470; 2052; 4399; 8130; 11407; 17749)
Units	octets
Default	No default

ATTRIBUTE Vr Pp SrtBp steSpanMode (steSm)

Access	Read and write

Description	This attribute determines how this bridge port will react when presented with a Spanning Tree Explore frame. If ***disabled,*** the Spanning Tree Explore frame is discarded regardless of the value of *stpPortState*. If the value of this attribute is ***forced***, the Spanning Tree Explore frame is forwarded regardless of the value of *stpPortState*. ***autoSpan*** uses the *stpPortState* value to decide whether or not Spanning Tree Explore frames should be forwarded out this bridge port. If the port is in the ***forwarding*** state, the frame is received and transmitted otherwise the frame is discarded.
Mib	Bridge
Values	autoSpan disabled forced
Default	autoSpan

ATTRIBUTE Vr Pp SrtBp areRdLimit (arl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in an All Routes Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *areRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

ATTRIBUTE Vr Pp SrtBp steRdLimit (srl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in a Spanning Tree Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *steRdLimit* to a value in the range 0 to 8.

Mib	Bridge
Values	Decimal (0..8)
Default	8

GROUP Vr Pp SrtBp SrStatistics (SrStats)

Properties	Operational
Description	This group contains all port specific statistical attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp specInFrames (sif)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were received by this bridge port. A specifically routed frame has a route descriptor, constructed by the originating host which details an explicit route to the destination host. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp specOutFrames (srfof)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were transmitted from this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp apeInFrames (apeif)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames received on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState*s. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp apeOutFrames (apeof)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames transmitted on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState* state. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp steInFrames (steif)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Explore frames received on this bridge port. The Spanning Tree Explore frames are only forwarded through bridge ports whose *portStpState* has a value of ***forwarding.*** This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp steOutFrames (steof)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Frames transmitted on this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp segmentMismatchDiscards (lidmd)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames that were discarded due to an invalid next segment value in the routing information field. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp dupSegmentDiscards (dsd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to the presence of a duplicate segment identifier in the route descriptor field which may indicate a loop in the network topology. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp hopCountExceededDiscards (hced)

Access	Read only

Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames discarded by this bridge port due to a frame exceeding the maximum size allowed for a route descriptor length. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp dupLanIdOrTreeErrors (dlte)

Access	Read only
Description	This attribute specifies the number frames received which contain duplicate LAN IDs or Tree errors. This attribute is helpful in debugging problems in networks which contain older IBM-SR bridges. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp lanIdMismatches

Access	Read only
Description	This attributes counts the number of All Routes Explore or Spanning Tree Explore frames that were discarded because the last LAN ID in the routing information field did not equal the LAN ID. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp staticDiscards (sd)

Access	Read only
Description	This attribute is indicative of the number of explorer frames discarded due to fact that the outbound *SourceRouteBridge* port was disabled or deleted. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp SrtBp dynamicDiscards (dd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to receiving a frame with a target LAN ID which did not match the internal LAN ID of the receiving bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp SrtBp NetSentry (Ns)

Groups	"GROUP Vr Pp SrtBp Ns Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Pp/<string> TransparentBridgePort NetSentry* This component represents the *Ns* functionality that can be applied to a bridge port. It contains all the attribute groups (provisionable) that are necessary for the application of Ns functionality to a bridge port. In essence, it allows for the

	definition of filters, at the incoming and outgoing points, specific to the interface represented by this bridge port.
Mib	Bridge
Common Verbs	Help List Display Add DELete

GROUP Vr Pp SrtBp Ns Provisioned (Prov)

Properties	Provisioned
Description	This group houses all the port specific provisionable attributes associated with Ns. These attributes influence the application of filters to incoming and outgoing frames.
Mib	Bridge

ATTRIBUTE Vr Pp SrtBp Ns incomingFilter (if)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the incoming filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Pp SrtBp Ns outgoingFilter (of)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the out going filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Pp SrseBridgePort (Srse)

Groups	"GROUP Vr Pp Srse Provisioned (Prov)" "GROUP Vr Pp Srse StpProvisioned (StpProv)" "GROUP Vr Pp Srse DomainInfoProvisioned (DIProv)" "GROUP Vr Pp Srse OsiState (State)" "GROUP Vr Pp Srse OperationalStatus (OperStatus)" "GROUP Vr Pp Srse Operational (Oper)" "GROUP Vr Pp Srse StpOperational (StpOper)" "GROUP Vr Pp Srse Statistics (Stats)" "GROUP Vr Pp Srse SrProvisioned (SrProv)" "GROUP Vr Pp Srse SrStatistics (SrStats)"
Scope	Application
Description	Vr/*<string> Pp/<string> SrseBridgePort* This component represents the access point for source route frames destined for the source route encapsulating logic. Source route encapsulated bridging enables source routed frames to be tunneled through a transparent bridge/source route transparent cloud in order to reach a remote source route network. This mechanism provides for virtual connectivity of source route networks across non source route networks. The *SrseBridgePort* essentially provides an access point for source route frames into this virtual connectivity. Note that the *SrseBridgePort* and the *TbseBridgePort* must be provisioned in the same provisioning session. Enabling/disabling the *SrseBridgePort* automatically enables/disables the *TbseBridgePort*.
Mib	Bridge
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp Srse Provisioned (Prov)

Properties	Provisioned

Description	This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srse fragmentIp (fIp)

Access	Read and write
Description	This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.
Mib	Bridge
Values	off on
Default	off

ATTRIBUTE Vr Pp Srse portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending

deletion state, the same port number could be temporarily assigned to two ports for a short period of time.

The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.

Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Srse StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Srse adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp Srse portStateStpControl (psstpc)

Access	Read and write

Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.
Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp Srse stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper*.
Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Srse portPriority (ppr)

Access	Read and write

Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp Srse pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp Srse pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost*.
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp Srse DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srse domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp Srse preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network.

If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it.
Preserve domain is relevant only when used in conjunction with ATM MPE.

Mib: Bridge

Values: off
on

Default: No default

GROUP Vr Pp Srse OsiState (State)

Properties: Operational

Description: This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib: Bridge

ATTRIBUTE Vr Pp Srse adminState (osiAdmin)

Access: Read only

Description: This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Bridge

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Pp Srse operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Bridge

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Pp Srse usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Bridge

Values:
idle
active (activ)
busy

Default: idle

GROUP Vr Pp Srse OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: Bridge

ATTRIBUTE Vr Pp Srse snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: Bridge

Values:
up
down
testing

Default: up

GROUP Vr Pp Srse Operational (Oper)

Properties: Operational

Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srse portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Srse upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Srse downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge

Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Srse bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp Srse bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp Srse bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort srEncapSrBridgePort srEncapTbBridgePort sourceGateSrBridgePort sourceGateTbBridgePort srtbBridgePort tbsrBridgePort clusterSrBridgePort clusterTbBridgePort snaDlrBridgePort unknown
Default	No default

ATTRIBUTE Vr Pp Srse ifIndex (ifin)

Access	Read only
Description	This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.

Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Srse mtuExceededDiscards (med)

Access	Read only
Description	This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295. This counter is influenced by the attribute *fragmentIp*. This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Srse StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Srse stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge

Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp Srse stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Srse designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Srse pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.

Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Srse designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp Srse designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Srse forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Vr Pp Srse blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp Srse Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srse badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the

	bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Srse SrProvisioned (SrProv)

Properties	Provisioned
Description	This group contains all port specific, provisionable attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp Srse hopCount (hc)

Access	Read and write
Description	This attribute specifies the maximum number of hops allowed in Spanning Tree Explore and All Routes Explore frames. This value is one less than the maximum number of route descriptors allowed in a source route frame
Mib	Bridge
Values	Decimal (1..7)
Default	7

ATTRIBUTE Vr Pp Srse exploreFrameTreatment (eft)

Access	Read and write
Description	This attribute specifies whether or not explore frames received from *SourceRouteBridge* ports will be sent to the SRTB-8209 translation or the encapsulated *SourceRouteBridge* logic. This option is used only when both the *TbsrBridgePort* and the *SrtbBridgePort* are provisioned and enabled.

	A value of ***Xlate*** implies that the explore frames will be sent to the Srtb translation logic and a value of ***Encap*** implies that the frames will be sent to the Encapsulated source route bridging logic.
Mib	Bridge
Values	encap xlate
Default	encap

ATTRIBUTE Vr Pp Srse lanId (lid)

Access	Read and write
Description	This attribute specifies the identifier for the physical LAN that this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp Srse internalLanId (ilid)

Access	Read and write
Description	This attribute specifies the identifier for the internal logical LAN this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp Srse bridgeNum (bid)

Access	Read and write
Description	This attribute specifies the value that is used to identify this bridge when more than one bridge is used to span the same two LAN segments.
Mib	Bridge
Values	Decimal (0..15)
Default	7

ATTRIBUTE Vr Pp Srse largestFrame (lf)

Access	Read and write
Description	This attribute specifies the maximum frame size (LLC and above) in octets, allowed by this *SourceRouteBridge* port. This field is used to determine whether a modification of the largest frame field of the routing control field of the routing information field is warranted.
Mib	Bridge
Values	Decimal (516; 1470; 2052; 4399; 8130; 11407; 17749)
Units	octets
Default	No default

ATTRIBUTE Vr Pp Srse steSpanMode (steSm)

Access	Read and write
Description	This attribute determines how this bridge port will react when presented with a Spanning Tree Explore frame. If ***disabled,*** the Spanning Tree Explore frame is discarded regardless of the value of *stpPortState*. If the value of this attribute is ***forced***, the Spanning Tree Explore frame is forwarded regardless of the value of *stpPortState*. ***autoSpan*** uses the *stpPortState* value to decide whether or not Spanning Tree Explore frames should be forwarded out this bridge port. If the port is in the ***forwarding*** state, the frame is received and transmitted otherwise the frame is discarded.
Mib	Bridge

Values	autoSpan disabled forced
Default	autoSpan

ATTRIBUTE Vr Pp Srse areRdLimit (arl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in an All Routes Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *areRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

ATTRIBUTE Vr Pp Srse steRdLimit (srl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in a Spanning Tree Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *steRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

GROUP Vr Pp Srse SrStatistics (SrStats)

Properties	Operational
Description	This group contains all port specific statistical attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp Srse specInFrames (sif)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were received by this bridge port. A specifically routed frame has a route descriptor, constructed by the originating host which details an explicit route to the destination host. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse specOutFrames (srfof)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were transmitted from this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse apeInFrames (apeif)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames received on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState*s. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse apeOutFrames (apeof)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames transmitted on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState* state. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse steInFrames (steif)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Explore frames received on this bridge port. The Spanning Tree Explore frames are only forwarded through bridge ports whose *portStpState* has a value of ***forwarding.*** This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse steOutFrames (steof)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Frames transmitted on this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse segmentMismatchDiscards (lidmd)

Access	Read only

Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames that were discarded due to an invalid next segment value in the routing information field. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse dupSegmentDiscards (dsd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to the presence of a duplicate segment identifier in the route descriptor field which may indicate a loop in the network topology. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse hopCountExceededDiscards (hced)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames discarded by this bridge port due to a frame exceeding the maximum size allowed for a route descriptor length. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse dupLanIdOrTreeErrors (dlte)

Access	Read only

Description	This attribute specifies the number frames received which contain duplicate LAN IDs or Tree errors. This attribute is helpful in debugging problems in networks which contain older IBM-SR bridges. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse lanIdMismatches

Access	Read only
Description	This attributes counts the number of All Routes Explore or Spanning Tree Explore frames that were discarded because the last LAN ID in the routing information field did not equal the LAN ID. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse staticDiscards (sd)

Access	Read only
Description	This attribute is indicative of the number of explorer frames discarded due to fact that the outbound *SourceRouteBridge* port was disabled or deleted. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srse dynamicDiscards (dd)

Access	Read only

Description	This attribute specifies the number of frames discarded due to receiving a frame with a target LAN ID which did not match the internal LAN ID of the receiving bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp TbseBridgePort (Tbse)

Groups	"GROUP Vr Pp Tbse Provisioned (Prov)" "GROUP Vr Pp Tbse TbProvisioned (TbProv)" "GROUP Vr Pp Tbse StpProvisioned (StpProv)" "GROUP Vr Pp Tbse DomainInfoProvisioned (DIProv)" "GROUP Vr Pp Tbse OsiState (State)" "GROUP Vr Pp Tbse OperationalStatus (OperStatus)" "GROUP Vr Pp Tbse Operational (Oper)" "GROUP Vr Pp Tbse TbOperational (TbOper)" "GROUP Vr Pp Tbse StpOperational (StpOper)" "GROUP Vr Pp Tbse Statistics (Stats)"
Scope	Application
Description	Vr/*<string> Pp/<string> TbseBridgePort* This component represents the access point or TB/SRT frames carrying a payload of a SR frame, into the SR encapsulation logic. After the encapsulated frame is stripped and the SR frame extracted, the extracted frame is handed down to regular SR bridging logic for further forwarding. The *TbseBridgePort* is the end point in the remote bridge unit with a MAC address, the TB/SRT encapsulated SR frames are directed to. This MAC address of a *TbseBridgePort* in the remote bridge unit, is learned and stored in the Lan Id Table (*peerMACAddress)* of the local bridge unit. Please note that the *SrseBridgePort* and the *TbseBridgePort* are always to be provisioned together. Enabling/disabling the

SrseBridgePort automatically enables/disables the *TbseBridgePort*.

Mib	Bridge
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Pp Tbse Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse fragmentIp (fIp)

Access	Read and write
Description	This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.
Mib	Bridge
Values	off on
Default	off

ATTRIBUTE Vr Pp Tbse portNum (pNum)

Access	Read only
Criticality	Component

Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time. The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.
Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Tbse TbProvisioned (TbProv)

Properties	Provisioned
Description	This group contains all the port specific provisionable attributes that belong to the Tb group. These attributes in part influence the working of a bridge port operating in the transparent bridge mode.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse secureOption (sos)

Access	Read and write

Description	This attribute specifies whether the port secure feature is enabled. The secure feature, if enabled causes the following things to happen: a) disallows dynamic learning, b) disallows frames to be forwarded that do not satisfy the following condition: the MAC address of the source should be found in the forwarding table and the destination MAC address of the frame should also be found in the forwarding table. In addition to this, the port the frame was received on should figure as the in port, given the destination MAC address found in the frame. c) disallows frames to be forwarded if the allowed to go port map for the destination MAC address is empty. This feature in effect allows the user to choose the hosts that can generate traffic and the hosts that can receive traffic through this bridge unit.
Mib	Bridge
Values	disabled enabled
Default	disabled

GROUP Vr Pp Tbse StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.

Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp Tbse portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.
Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp Tbse stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper*.
Mib	Bridge

Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Tbse portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp Tbse pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp Tbse pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost*.
Mib	Bridge

Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp Tbse DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp Tbse preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain

information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network.
If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it.
Preserve domain is relevant only when used in conjunction with ATM MPE.

Mib	Bridge
Values	off on
Default	No default

GROUP Vr Pp Tbse OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Bridge

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Pp Tbse operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Bridge

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Pp Tbse usageState (osiUsage)

Access: Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp Tbse OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp Tbse Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Tbse upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbse downTime (dt)

Access	Read only

Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbse bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp Tbse bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone

Default	No default

ATTRIBUTE Vr Pp Tbse bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort srEncapSrBridgePort srEncapTbBridgePort sourceGateSrBridgePort sourceGateTbBridgePort srtbBridgePort tbsrBridgePort clusterSrBridgePort clusterTbBridgePort snaDlrBridgePort unknown
Default	No default

ATTRIBUTE Vr Pp Tbse ifIndex (ifin)

Access	Read only

Description	This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Tbse mtuExceededDiscards (med)

Access	Read only
Description	This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295. This counter is influenced by the attribute *fragmentIp*. This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Tbse TbOperational (TbOper)

Properties	Operational
Description	This group contains all the port specific operational attributes that belong to the Tb group. This group also contains all the port specific statistical attributes that belong to the Tb group. These attributes reflect the state of a bridge port operating in the transparent bridge mode
Mib	Bridge

ATTRIBUTE Vr Pp Tbse maxInfo (mi)

Access	Read only

Description	This attribute indicates the maximum size of the information field in a transparent bridge frame. This excludes the header field.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse badVerifyDiscards (bvd)

Access	Read only
Description	This attribute counts the number of incoming frames that were discarded because the value of the *secureOption* attribute was set to ***on*** and: a) it is not allowed to receive frames originating from the MAC address found in the source address field of the frame (source MAC address lookup in the forwarding table failed) on this bridge port, or b) for the destination MAC address found in the frame the port the frame was received on does not appear as in port in the corresponding static table entry. Permission to receive frames from a MAC address is granted via the static table entries. This attribute, *badVerifyDiscards*, is directly influenced by: 1. *secureOption* and 2. the static table entries. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse staticEntryDiscards (sed)

Access	Read only
Description	This attribute counts the number of frames that were discarded because of the following three reasons: a) there was no entry for the “allowed to go” field in the static table entry, where the input port is this bridge port.

	b) the MAC destination address in the frame was not found in the forwarding table but the frame cannot be flooded because this bridge has not other ports in forwarding state. c) for spanning tree bpdus that are locally processed. This counter wraps around its maximum value of 4294967295. It might prove useful to check the static table entry corresponding to the bridge port in question, if this counter consistently displays a high value. Ideally this counter should be as low as possible.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse dynamicEntryDiscards (dend)

Access	Read only
Description	This attribute counts the number of incoming frames that: a) were discarded because of the fact that the bridge port, the frame is to go out of matches the bridge port it came in from, or b) if the stp port state of the out port is not ***forwarding***. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse learningDiscards (ld)

Access	Read only
Description	This attribute counts the number of frames that were discarded while this bridge port was in a state other than the ***forwarding*** state. While in ***learning*** state the frame is discarded after the information from its header is learnt. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Vr Pp Tbse inDiscards (id)

Access	Read only
Description	This attribute counts the number of frames that were received by this bridge port and were discarded by the forwarding process. This includes frames that could have been discarded due to filtering. A rapidly increasing value for this attribute could indicate a shortage of resource in terms of memory needed to process the incoming frames. More memory can be provisioned through the *VirtualRouter*'s memory manager.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse inFrames (if)

Access	Read only
Description	This attribute counts the number of frames that have been received by this port from its segment. Note that a frame received on this bridge port is counted if and only if it can be processed by the bridge logic contained in this bridge unit. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse outFrames (of)

Access	Read only
Description	This attribute counts the number of frames that have been transmitted out this bridge port. This also includes management frames.This counter wraps around its maximum value of 4294967295.
Mib	Bridge

Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Tbse StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp Tbse stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021

Default	ieee8021

ATTRIBUTE Vr Pp Tbse designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Tbse pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Tbse designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp Tbse designatedPort (dp)

Access	Read only

Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Tbse forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.

Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp Tbse Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbse badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbse outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp SrsgBridgePort (Srsg)

Groups	"GROUP Vr Pp Srsg Provisioned (Prov)" "GROUP Vr Pp Srsg StpProvisioned (StpProv)" "GROUP Vr Pp Srsg DomainInfoProvisioned (DIProv)" "GROUP Vr Pp Srsg OsiState (State)" "GROUP Vr Pp Srsg OperationalStatus (OperStatus)" "GROUP Vr Pp Srsg Operational (Oper)"

"GROUP Vr Pp Srsg StpOperational (StpOper)"
"GROUP Vr Pp Srsg Statistics (Stats)"
"GROUP Vr Pp Srsg SrProvisioned (SrProv)"
"GROUP Vr Pp Srsg SrStatistics (SrStats)"

Scope

Application

Description

Vr/*<string> Pp/<string> SrsgBridgePort*
This component represents a controlled method to allow exchange of explorer frames between source route (SR) and source route transparent (SRT) networks.The *SrsgBridgePort* provides a cross over point for explorer frames from the source route network into the source route gating logic and vice-versa. The source route gating performs required verification before forwarding the frames into the source route transparent network. The *SrsgBridgePort* participates in the source route spanning tree to eliminate possible loops caused by multiple active cross over points on multiple bridges and to provide for fault tolerance of these cross over points. While enabled, source route spanning tree BPDUs are sent across the source route transparent network, through this cross over point and the gating logic. Note that these explorer frames cross over based on the port's *stpPortState.*
All route explorer frames (ARE) are exchanged regardless of the *stpPortState*.
Spanning tree explorer frames (STE) are exchanged only if *stpPortState* has a value of ***Forwarding.***
If *stpPortState* has a value of ***Blocking*** STE frames will be sent out on bridge ports that are operating in the same mode, i.e. no exchange across SR and SRT networks takes place. Nevertheless, SR spanning tree BPDUs are still sent across the SRT network. Note that the *SrsgBridgePort* and the *TbsgBridgePort* must be

provisioned during the same provisioning session as one cannot function without the other.

Mib: Bridge

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Vr Pp Srsg Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.

Mib: Bridge

ATTRIBUTE Vr Pp Srsg fragmentIp (fIp)

Access: Read and write

Description: This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.

Mib: Bridge

Values:
- off
- on

Default: off

ATTRIBUTE Vr Pp Srsg portNum (pNum)

Access: Read only

Criticality: Component

Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time. The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.
Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Srsg StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg adminStatus (as)

Access	Read and write

Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp Srsg portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.
Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp Srsg stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of

this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper*.

Mib: Bridge

Values: dec
ieee8021

Default: ieee8021

ATTRIBUTE Vr Pp Srsg portPriority (ppr)

Access: Read and write

Description: This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows:
1) 0-255 for stp type DEC and
2) 0-65535 for stp type IEEE.

Mib: Bridge

Values: Decimal (0..65535)

Default: 128

ATTRIBUTE Vr Pp Srsg pathCost (pc)

Access: Read and write

Description: This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.

Mib: Bridge

Values: Decimal (1..65535)

Default: 10

ATTRIBUTE Vr Pp Srsg pathCostMethod (pcm)

Access: Read and write

Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost*.
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp Srsg DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp Srsg preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it. Preserve domain is relevant only when used in conjunction with ATM MPE.
Mib	Bridge
Values	off on
Default	No default

GROUP Vr Pp Srsg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp Srsg operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Bridge

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp Srsg usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp Srsg OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable

	to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp Srsg Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Srsg upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge

Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Srsg downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Srsg bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp Srsg bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the

encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.

Mib: Bridge

Values:
access
backbone

Default: No default

ATTRIBUTE Vr Pp Srsg bridgePortType (bpt)

Access: Read only

Description: This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.

Mib: Bridge

Values:
ethernetBridgePort
tokenRingBridgePort
fddiBridgePort
tokenBusBridgePort
lanEmulationClientEthernet
fddiEncapsulatingBridgePort
vnsBridgePort
frameRelayBridgePort
pppBridgePort
smdsBridgePort
vcpBridgePort
x25BridgePort
atmMpeBridgePort
srEncapSrBridgePort
srEncapTbBridgePort
sourceGateSrBridgePort
sourceGateTbBridgePort
srtbBridgePort
tbsrBridgePort
clusterSrBridgePort

	clusterTbBridgePort snaDlrBridgePort unknown
Default	No default

ATTRIBUTE Vr Pp Srsg ifIndex (ifin)

Access	Read only
Description	This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Srsg mtuExceededDiscards (med)

Access	Read only
Description	This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295. This counter is influenced by the attribute *fragmentIp*. This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Srsg StpOperational (StpOper)

Properties	Operational

Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp Srsg stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Srsg designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Srsg pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Srsg designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp Srsg designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Srsg forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp Srsg Statistics (Stats)

Properties	Operational

Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Srsg SrProvisioned (SrProv)

Properties	Provisioned
Description	This group contains all port specific, provisionable attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg hopCount (hc)

Access	Read and write
Description	This attribute specifies the maximum number of hops allowed in Spanning Tree Explore and All Routes Explore frames. This value is one less than the maximum number of route descriptors allowed in a source route frame
Mib	Bridge

Values	Decimal (1..7)
Default	7

ATTRIBUTE Vr Pp Srsg exploreFrameTreatment (eft)

Access	Read and write
Description	This attribute specifies whether or not explore frames received from *SourceRouteBridge* ports will be sent to the SRTB-8209 translation or the encapsulated *SourceRouteBridge* logic. This option is used only when both the *TbsrBridgePort* and the *SrtbBridgePort* are provisioned and enabled. A value of ***Xlate*** implies that the explore frames will be sent to the Srtb translation logic and a value of ***Encap*** implies that the frames will be sent to the Encapsulated source route bridging logic.
Mib	Bridge
Values	encap xlate
Default	encap

ATTRIBUTE Vr Pp Srsg lanId (lid)

Access	Read and write
Description	This attribute specifies the identifier for the physical LAN that this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp Srsg internalLanId (ilid)

Access	Read and write

Description	This attribute specifies the identifier for the internal logical LAN this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp Srsg bridgeNum (bid)

Access	Read and write
Description	This attribute specifies the value that is used to identify this bridge when more than one bridge is used to span the same two LAN segments.
Mib	Bridge
Values	Decimal (0..15)
Default	7

ATTRIBUTE Vr Pp Srsg largestFrame (lf)

Access	Read and write
Description	This attribute specifies the maximum frame size (LLC and above) in octets, allowed by this *SourceRouteBridge* port. This field is used to determine whether a modification of the largest frame field of the routing control field of the routing information field is warranted.
Mib	Bridge
Values	Decimal (516; 1470; 2052; 4399; 8130; 11407; 17749)
Units	octets
Default	No default

ATTRIBUTE Vr Pp Srsg steSpanMode (steSm)

Access	Read and write

Description	This attribute determines how this bridge port will react when presented with a Spanning Tree Explore frame. If ***disabled,*** the Spanning Tree Explore frame is discarded regardless of the value of *stpPortState*. If the value of this attribute is ***forced***, the Spanning Tree Explore frame is forwarded regardless of the value of *stpPortState*. ***autoSpan*** uses the *stpPortState* value to decide whether or not Spanning Tree Explore frames should be forwarded out this bridge port. If the port is in the ***forwarding*** state, the frame is received and transmitted otherwise the frame is discarded.
Mib	Bridge
Values	autoSpan disabled forced
Default	autoSpan

ATTRIBUTE Vr Pp Srsg areRdLimit (arl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in an All Routes Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *areRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

ATTRIBUTE Vr Pp Srsg steRdLimit (srl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in a Spanning Tree Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *steRdLimit* to a value in the range 0 to 8.

Mib	Bridge
Values	Decimal (0..8)
Default	8

GROUP Vr Pp Srsg SrStatistics (SrStats)

Properties	Operational
Description	This group contains all port specific statistical attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp Srsg specInFrames (sif)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were received by this bridge port. A specifically routed frame has a route descriptor, constructed by the originating host which details an explicit route to the destination host. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg specOutFrames (srfof)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were transmitted from this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg apeInFrames (apeif)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames received on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState*s. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg apeOutFrames (apeof)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames transmitted on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState* state. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg steInFrames (steif)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Explore frames received on this bridge port. The Spanning Tree Explore frames are only forwarded through bridge ports whose *portStpState* has a value of ***forwarding.*** This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg steOutFrames (steof)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Frames transmitted on this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg segmentMismatchDiscards (lidmd)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames that were discarded due to an invalid next segment value in the routing information field. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg dupSegmentDiscards (dsd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to the presence of a duplicate segment identifier in the route descriptor field which may indicate a loop in the network topology. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg hopCountExceededDiscards (hced)

Access	Read only

Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames discarded by this bridge port due to a frame exceeding the maximum size allowed for a route descriptor length. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg dupLanIdOrTreeErrors (dlte)

Access	Read only
Description	This attribute specifies the number frames received which contain duplicate LAN IDs or Tree errors. This attribute is helpful in debugging problems in networks which contain older IBM-SR bridges. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg lanIdMismatches

Access	Read only
Description	This attributes counts the number of All Routes Explore or Spanning Tree Explore frames that were discarded because the last LAN ID in the routing information field did not equal the LAN ID. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg staticDiscards (sd)

Access	Read only
Description	This attribute is indicative of the number of explorer frames discarded due to fact that the outbound *SourceRouteBridge* port was disabled or deleted. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srsg dynamicDiscards (dd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to receiving a frame with a target LAN ID which did not match the internal LAN ID of the receiving bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp TbsgBridgePort (Tbsg)

Groups	"GROUP Vr Pp Tbsg Provisioned (Prov)" "GROUP Vr Pp Tbsg TbProvisioned (TbProv)" "GROUP Vr Pp Tbsg StpProvisioned (StpProv)" "GROUP Vr Pp Tbsg DomainInfoProvisioned (DIProv)" "GROUP Vr Pp Tbsg OsiState (State)" "GROUP Vr Pp Tbsg OperationalStatus (OperStatus)" "GROUP Vr Pp Tbsg Operational (Oper)" "GROUP Vr Pp Tbsg TbOperational (TbOper)" "GROUP Vr Pp Tbsg StpOperational (StpOper)" "GROUP Vr Pp Tbsg Statistics (Stats)"
Scope	Application
Description	Vr/*<string> Pp/<string> TbsgBridgePort* This component represents a controlled way to allow exchange of

explorer frames between SR and SRT networks.The *TbsgBridgePort* provides a cross over point for explorer frames from the source route gating logic into a SRT network and vice-versa. This port can and should be enabled / disabled through the *SrsgBridgePort*. This bridge port does not participate in the SR spanning tree protocol. Nevertheless, SR spanning tree BPDUs are still sent out across into the SRT network. Note that the *SrsgBridgePort* and the *TbsgBridgePort* should always be provisioned together, as one of these bridge ports cannot function without the other.

Mib: Bridge

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Vr Pp Tbsg Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.

Mib: Bridge

ATTRIBUTE Vr Pp Tbsg fragmentIp (fIp)

Access: Read and write

Description: This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.

Mib: Bridge

Values	off on
Default	off

ATTRIBUTE Vr Pp Tbsg portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time. The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.
Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Tbsg TbProvisioned (TbProv)

Properties	Provisioned

Description	This group contains all the port specific provisionable attributes that belong to the Tb group. These attributes in part influence the working of a bridge port operating in the transparent bridge mode.
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg secureOption (sos)

Access	Read and write
Description	This attribute specifies whether the port secure feature is enabled. The secure feature, if enabled causes the following things to happen: a) disallows dynamic learning, b) disallows frames to be forwarded that do not satisfy the following condition: the MAC address of the source should be found in the forwarding table and the destination MAC address of the frame should also be found in the forwarding table. In addition to this, the port the frame was received on should figure as the in port, given the destination MAC address found in the frame. c) disallows frames to be forwarded if the allowed to go port map for the destination MAC address is empty. This feature in effect allows the user to choose the hosts that can generate traffic and the hosts that can receive traffic through this bridge unit.
Mib	Bridge
Values	disabled enabled
Default	disabled

GROUP Vr Pp Tbsg StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.

Mib	Bridge

ATTRIBUTE Vr Pp Tbsg adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp Tbsg portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.
Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp Tbsg stpTypeProv (stptProv)

Access	Read and write
Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper*.
Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Tbsg portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp Tbsg pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)

Default	10

ATTRIBUTE Vr Pp Tbsg pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost*.
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp Tbsg DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)

Default	1

ATTRIBUTE Vr Pp Tbsg preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it. Preserve domain is relevant only when used in conjunction with ATM MPE.
Mib	Bridge
Values	off on
Default	No default

GROUP Vr Pp Tbsg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp Tbsg operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Bridge

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Pp Tbsg usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Bridge

Values: idle
active (activ)
busy

Default: idle

GROUP Vr Pp Tbsg OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: Bridge

ATTRIBUTE Vr Pp Tbsg snmpOperStatus

Access: Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp Tbsg Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Tbsg upTime (ut)

Access	Read only

Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbsg downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Tbsg bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp Tbsg bridgePortConfig (bpc)

Access	Read only

Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.
Mib	Bridge
Values	access backbone
Default	No default

ATTRIBUTE Vr Pp Tbsg bridgePortType (bpt)

Access	Read only
Description	This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.
Mib	Bridge
Values	ethernetBridgePort tokenRingBridgePort fddiBridgePort tokenBusBridgePort lanEmulationClientEthernet fddiEncapsulatingBridgePort vnsBridgePort frameRelayBridgePort pppBridgePort smdsBridgePort vcpBridgePort x25BridgePort atmMpeBridgePort srEncapSrBridgePort

srEncapTbBridgePort
sourceGateSrBridgePort
sourceGateTbBridgePort
srtbBridgePort
tbsrBridgePort
clusterSrBridgePort
clusterTbBridgePort
snaDlrBridgePort
unknown

Default: No default

ATTRIBUTE Vr Pp Tbsg ifIndex (ifin)

Access: Read only

Description: This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.

Mib: Bridge

Values: Decimal (1..65535)

Default: No default

ATTRIBUTE Vr Pp Tbsg mtuExceededDiscards (med)

Access: Read only

Description: This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295.
This counter is influenced by the attribute *fragmentIp*. This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.

Mib: Bridge

Values: Decimal (0..4294967295)

Default	0

GROUP Vr Pp Tbsg TbOperational (TbOper)

Properties	Operational
Description	This group contains all the port specific operational attributes that belong to the Tb group. This group also contains all the port specific statistical attributes that belong to the Tb group. These attributes reflect the state of a bridge port operating in the transparent bridge mode
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg maxInfo (mi)

Access	Read only
Description	This attribute indicates the maximum size of the information field in a transparent bridge frame. This excludes the header field.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg badVerifyDiscards (bvd)

Access	Read only
Description	This attribute counts the number of incoming frames that were discarded because the value of the *secureOption* attribute was set to ***on*** and: a) it is not allowed to receive frames originating from the MAC address found in the source address field of the frame (source MAC address lookup in the forwarding table failed) on this bridge port, or b) for the destination MAC address found in the frame the port the frame was received on does not appear as in port in the corresponding static table entry. Permission to receive frames from a MAC address is granted via the static table entries. This attribute, *badVerifyDiscards*, is directly influenced by: 1. *secureOption* and

2. the static table entries.
This counter wraps around its maximum value of 4294967295.

Mib: Bridge

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Vr Pp Tbsg staticEntryDiscards (sed)

Access: Read only

Description: This attribute counts the number of frames that were discarded because of the following three reasons:
a) there was no entry for the “allowed to go” field in the static table entry, where the input port is this bridge port.
b) the MAC destination address in the frame was not found in the forwarding table but the frame cannot be flooded because this bridge has not other ports in forwarding state.
c) for spanning tree bpdus that are locally processed.
This counter wraps around its maximum value of 4294967295.
It might prove useful to check the static table entry corresponding to the bridge port in question, if this counter consistently displays a high value.
Ideally this counter should be as low as possible.

Mib: Bridge

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Vr Pp Tbsg dynamicEntryDiscards (dend)

Access: Read only

Description: This attribute counts the number of incoming frames that:
a) were discarded because of the fact that the bridge port, the frame is to go out of matches the bridge port it came in from, or
b) if the stp port state of the out port is not ***forwarding***.
This counter wraps around its maximum value of 4294967295.

Mib: Bridge

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg learningDiscards (ld)

Access	Read only
Description	This attribute counts the number of frames that were discarded while this bridge port was in a state other than the ***forwarding*** state. While in ***learning*** state the frame is discarded after the information from its header is learnt. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg inDiscards (id)

Access	Read only
Description	This attribute counts the number of frames that were received by this bridge port and were discarded by the forwarding process. This includes frames that could have been discarded due to filtering. A rapidly increasing value for this attribute could indicate a shortage of resource in terms of memory needed to process the incoming frames. More memory can be provisioned through the *VirtualRouter*'s memory manager.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg inFrames (if)

Access	Read only
Description	This attribute counts the number of frames that have been received by this port from its segment. Note that a frame received on this bridge port is counted if and only if it can be processed by

	the bridge logic contained in this bridge unit. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg outFrames (of)

Access	Read only
Description	This attribute counts the number of frames that have been transmitted out this bridge port. This also includes management frames.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Tbsg StpOperational (StpOper)

Properties	Operational
Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning

	forwarding broken
Default	disabled

ATTRIBUTE Vr Pp Tbsg stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Tbsg designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Tbsg pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)

Default	No default

ATTRIBUTE Vr Pp Tbsg designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp Tbsg designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Tbsg forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp Tbsg Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Tbsg badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Tbsg outFilterDiscards (ofd)

Access	Read only

Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp ClusterSrBridgePort (Srcl)

Groups	"GROUP Vr Pp Srcl Provisioned (Prov)" "GROUP Vr Pp Srcl StpProvisioned (StpProv)" "GROUP Vr Pp Srcl DomainInfoProvisioned (DIProv)" "GROUP Vr Pp Srcl OsiState (State)" "GROUP Vr Pp Srcl OperationalStatus (OperStatus)" "GROUP Vr Pp Srcl Operational (Oper)" "GROUP Vr Pp Srcl StpOperational (StpOper)" "GROUP Vr Pp Srcl Statistics (Stats)" "GROUP Vr Pp Srcl SrProvisioned (SrProv)" "GROUP Vr Pp Srcl SrStatistics (SrStats)"
Scope	Application
Description	*Vr/<string> Pp/<string> ClusterSrBridgePort* This component represents the functionality called Cluster Bridging. Cluster Bridging allows for MAC frames, carrying packets belonging a certain network protocol, to be bridged and routed at the same time. Also, it provides for a convenient way to manage the entire cluster of LANs, using a single attachment point to the cluster of LANs, the Cluster Bridge Port. To realize these features, the network protocol(s) should also be provisioned

on same port as the Cluster Bridge Port. *ClusterSrBridgePort* represents a cluster of Sr LANs.

Mib: Bridge

Opt. Subcomp.: "COMPONENT Vr Pp Srcl NetSentry (Ns)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Vr Pp Srcl Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the provisionable attributes that belong to this group. This group of attributes is applicable to all types of bridge ports and represent the common factor between them. These attributes influence the working of a bridge port.

Mib: Bridge

ATTRIBUTE Vr Pp Srcl fragmentIp (fIp)

Access: Read and write

Description: This attribute specifies if outbound frames carrying IP datagrams should be fragmented to conform to message transfer unit (*mtu*) sizes dictated by the media.

Mib: Bridge

Values:
- off
- on

Default: off

ATTRIBUTE Vr Pp Srcl portNum (pNum)

Access	Read only
Criticality	Component
Description	This attribute indicates the unique number assigned to the bridge port. It is used for SNMP management of this bridge port and in spanning tree as an identifier for this bridge port. Notes: Escape routines exist for initializing, copying, and deleting port numbers. This is necessary because SNMP requires a unique port instance identifier. The initPortNum escape routine sets the port number to a value in the range 1-255 for this purpose. The setCopiedPortNum escape routine exists to maintain the uniqueness of the port number in cases when one port is copied to another. When a bridge port is deleted, the releasePortNum escape routine places the port number being released into a pending deletion state. This is because the port number cannot be re-allocated until the port is truly deleted in the current view. This is necessary since there is no guarantee of order when processing changes to multiple protocol ports so without the pending deletion state, the same port number could be temporarily assigned to two ports for a short period of time. The portNum is set as component critical since bridging also uses the port number as a key for indexing into its data structures. If a port is deleted then re-added under the same protocol port, CAS treats the change as a SET to the portNum attribute.
Mib	Bridge
Values	Decimal (0..255)
Default	0

GROUP Vr Pp Srcl StpProvisioned (StpProv)

Properties	Provisioned
Description	This group contains all port specific provisionable attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes influence the participation of the bridge port in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl adminStatus (as)

Access	Read and write
Description	This attribute defines the current administrative state for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation.
Mib	Bridge
Values	up down
Default	up

ATTRIBUTE Vr Pp Srcl portStateStpControl (psstpc)

Access	Read and write
Description	This attribute specifies whether or not stp state for this bridge port is controlled by the stp. In essence it indicates the participation of this bridge port in the stp by accepting and acting on received bridge protocol data units and by sending out the same. ***on*** signifies that this bridge port's spanning tree port state is controlled by the stp. A value of ***off*** signifies that the spanning tree port state of this bridge port is unaffected by the stp. This in effect puts the bridge port out of reach of the stp decisions. Its stp state will be always ***forwarding***. Care should be taken while assigning a value of ***off*** to this attribute, as this might cause network loops. Please do not set this attribute to ***off*** unless you are absolutely sure about the effect of such an action on your network topology.
Mib	Bridge
Values	off on
Default	on

ATTRIBUTE Vr Pp Srcl stpTypeProv (stptProv)

Access	Read and write

Description	This attribute specifies the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp. If the value of the attribute *protocolSpec* in the *SpanningTreeProtocol* component is in conflict with the value of this attribute, the value of the *protocolSpec* attribute will prevail. Prevailing stp type is reflected in the value of the attribute *stpTypeOper*.
Mib	Bridge
Values	dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Srcl portPriority (ppr)

Access	Read and write
Description	This attribute specifies the value for this bridge port priority which is contained in the first octet of the port identifier. Valid values are as follows: 1) 0-255 for stp type DEC and 2) 0-65535 for stp type IEEE.
Mib	Bridge
Values	Decimal (0..65535)
Default	128

ATTRIBUTE Vr Pp Srcl pathCost (pc)

Access	Read and write
Description	This attribute specifies the contribution of this port to all the paths to the root bridge that include this port. Please note that the value of the attribute *pathCost* is applied only when the value of the attribute *pathCostMethod* is set to ***on*** and is ignored if otherwise.
Mib	Bridge
Values	Decimal (1..65535)
Default	10

ATTRIBUTE Vr Pp Srcl pathCostMethod (pcm)

Access	Read and write
Description	This attribute specifies the method used by the bridging logic to calculate the path cost to the bridge considered to be the root bridge in the spanning tree topology. This attribute should be set to ***off*** before attempting to provision a value for *pathCost*.
Mib	Bridge
Values	off dec ieee8021
Default	ieee8021

GROUP Vr Pp Srcl DomainInfoProvisioned (DIProv)

Properties	Provisioned
Description	This group contains all the provisionable, domain specific attributes for a non-encapsulating bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl domainNum (dn)

Access	Read and write
Description	This attribute specifies the domain number associated with this bridge port. Domain numbers are used for confining frames to a domain. Domain based filtering provides a complete segregation of traffic based on domain number associated with frames. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293. This attribute is of no relevance when associated with backbone bridge port. Its value is ignored in such a situation.
Mib	Bridge
Values	Decimal (1..4294967293)
Default	1

ATTRIBUTE Vr Pp Srcl preserveDomain (pds)

Access	Read and write
Criticality	Component
Description	This attribute specifies if the domain information should be preserved or embedded in the frame header. This attribute applies only to ***backbone*** ports and does not affect the ***access*** bridge ports. By setting this attribute to a value of ***on***, domain information could be preserved in frames being tunnelled across the backbone, so that this information can be deciphered at the other end of the backbone tunnel. This preserves the integrity of the domains thus preventing domain breaches while tunnelling frames across backbone network. If the value of this attribute is set to ***off*** then domain information is not preserved in the header of the frames tunnelling through the backbone. This eliminates the overhead incurred to preserve domain information across the backbone while tunnelling frames across it. Preserve domain is relevant only when used in conjunction with ATM MPE.
Mib	Bridge
Values	off on
Default	No default

GROUP Vr Pp Srcl OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bridge
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Pp Srcl operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib	Bridge
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Pp Srcl usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Bridge
Values	idle active (activ) busy
Default	idle

GROUP Vr Pp Srcl OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable

	to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bridge
Values	up down testing
Default	up

GROUP Vr Pp Srcl Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes belonging to the base group. These attributes in part, reflect the state of a bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl portName (pn)

Access	Read only
Description	The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/ETH100A* would have a name ***TBP-ETH100A.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Pp Srcl upTime (ut)

Access	Read only
Description	This attribute indicates the accumulated up time of this bridge port since the last reset occurred.
Mib	Bridge

Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Srcl downTime (dt)

Access	Read only
Description	This attribute indicates the accumulated down time of this bridge port since the last reset occurred.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Pp Srcl bridgingMode (bm)

Access	Read only
Description	This attribute indicates the mode of bridging this port can support. The transparent bridge mode is the only mode supported.
Mib	Bridge
Values	unknown tb sr srt
Default	No default

ATTRIBUTE Vr Pp Srcl bridgePortConfig (bpc)

Access	Read only
Description	This attribute indicates the bridge port's configuration. It indicates if the bridge port is operating as an ***access*** port or as a ***backbone*** port. An ***access*** bridge port does not encapsulate a MAC frame and does not preserve domain information in the encapsulation, whereas a ***backbone*** bridge port encapsulates the MAC frame and optionally preserves domain information in the

encapsulated frame.A ***backbone*** bridge port is typically used to transport frames across a high bandwidth backbone network to another bridge unit for further processing/forwarding of the frame.

Mib: Bridge

Values:
access
backbone

Default: No default

ATTRIBUTE Vr Pp Srcl bridgePortType (bpt)

Access: Read only

Description: This attribute indicates the type of the bridge port that was provisioned. It takes into consideration the *bridgingMode*, *bridgePortConfig* and the media the bridge port is linked to before branding a bridge port.

Mib: Bridge

Values:
ethernetBridgePort
tokenRingBridgePort
fddiBridgePort
tokenBusBridgePort
lanEmulationClientEthernet
fddiEncapsulatingBridgePort
vnsBridgePort
frameRelayBridgePort
pppBridgePort
smdsBridgePort
vcpBridgePort
x25BridgePort
atmMpeBridgePort
srEncapSrBridgePort
srEncapTbBridgePort
sourceGateSrBridgePort
sourceGateTbBridgePort
srtbBridgePort
tbsrBridgePort
clusterSrBridgePort

	clusterTbBridgePort snaDlrBridgePort unknown
Default	No default

ATTRIBUTE Vr Pp Srcl ifIndex (ifin)

Access	Read only
Description	This attribute indicates the index into the Interface Table where information about the media interface corresponding to this bridge port is maintained.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Srcl mtuExceededDiscards (med)

Access	Read only
Description	This attribute counts the number of frames discarded because the size of the outbound frame exceeded the message transfer unit (mtu) allowed for the bridge port. Note that this counter only refers to the outbound frames for this bridge port. This counter wraps around its maximum value of 4294967295. This counter is influenced by the attribute *fragmentIp*. This counter is incremented when a frame larger than the mtu allowed is encountered and cannot be fragmented. If this counter is increasing steadily, it might be useful to set the value of the attribute *fragmentIp* to a value of ***on***.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Srcl StpOperational (StpOper)

Properties	Operational

Description	This group contains all port specific operational attributes that belong to the Stp group. The Stp group is applicable to all bridge ports that participate in the stp. These attributes reflect the state of the bridge port's participation in the stp.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl stpPortState (sps)

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening learning forwarding broken
Default	disabled

ATTRIBUTE Vr Pp Srcl stpTypeOper (stptOper)

Access	Read only
Description	This attribute indicates the type of the stp the port is participating in. A bridge port could participate in either the ***ieee8021*** stp or the ***dec*** stp.
Mib	Bridge
Values	none dec ieee8021
Default	ieee8021

ATTRIBUTE Vr Pp Srcl designatedCost (dc)

Access	Read only
Description	This attribute indicates the path cost of the designated port of the lan segment the designated port is connected to.

Mib	Bridge
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Pp Srcl pathCostOper (pco)

Access	Read only
Description	This attribute indicates the contribution of this port to all the paths to the root bridge that include this port. This attribute *pathCostOper* will track the value of the attribute *pathCost* when the value of the attribute *pathCostMethod* is set of ***off***.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Pp Srcl designatedBridge (db)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this port considers to be the designated bridge.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Pp Srcl designatedPort (dp)

Access	Read only
Description	This attribute indicates the port identifier of the port on the designated bridge attached to the same LAN segment as this port is attached to.
Mib	Bridge
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Pp Srcl forwardTransitions (ft)

Access	Read only
Description	This attribute counts the number of times this bridge port transitioned from the ***learning*** state to the ***forwarding*** state. This counter wraps around its maximum value of 4294967295. A rapidly increasing value might be indicative of an unstable spanning tree topology.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl blockingDiscards (bd)

Access	Read only
Description	This attribute counts the number of the incoming frames that were discarded because the bridge port was in the ***blocking*** state. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl designatedRoot (dr)

Access	Read only
Description	This attribute indicates the bridge identifier of the bridge recorded as the root bridge in the configuration BPDUs sent out by the designated bridge on the segment this port is attached to.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

GROUP Vr Pp Srcl Statistics (Stats)

Properties	Operational

Description	This group contains all the statistical attributes applicable to all types of bridge ports and represents the common factor between them. These attributes in part reflect the state of the bridge port.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl badAbstractDiscards (bad)

Access	Read only
Description	This attribute counts the number of frames that were discarded because the data abstracted from the frames coming in through this bridge port did not conform to the format expected by the bridge logic.This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl tinygramFramesIn (tfi)

Access	Read only
Description	This attribute counts the number of frames received on this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl tinygramFramesOut (tfo)

Access	Read only
Description	This attribute counts the number of frames transmitted out this bridge port that used the tinygram compression scheme.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl inFilterDiscards (ifd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the in filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl outFilterDiscards (ofd)

Access	Read only
Description	This attribute counts the number of frames discarded due to domain based filtering at the out filter point. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Pp Srcl SrProvisioned (SrProv)

Properties	Provisioned
Description	This group contains all port specific, provisionable attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl hopCount (hc)

Access	Read and write
Description	This attribute specifies the maximum number of hops allowed in Spanning Tree Explore and All Routes Explore frames. This value is one less than the maximum number of route descriptors allowed in a source route frame
Mib	Bridge

Values	Decimal (1..7)
Default	7

ATTRIBUTE Vr Pp Srcl exploreFrameTreatment (eft)

Access	Read and write
Description	This attribute specifies whether or not explore frames received from *SourceRouteBridge* ports will be sent to the SRTB-8209 translation or the encapsulated *SourceRouteBridge* logic. This option is used only when both the *TbsrBridgePort* and the *SrtbBridgePort* are provisioned and enabled. A value of ***Xlate*** implies that the explore frames will be sent to the Srtb translation logic and a value of ***Encap*** implies that the frames will be sent to the Encapsulated source route bridging logic.
Mib	Bridge
Values	encap xlate
Default	encap

ATTRIBUTE Vr Pp Srcl lanId (lid)

Access	Read and write
Description	This attribute specifies the identifier for the physical LAN that this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp Srcl internalLanId (ilid)

Access	Read and write

Description	This attribute specifies the identifier for the internal logical LAN this port is attached. All *SourceRouteBridge* ports are assigned to a physical LAN and a logical internal LAN. Current source route bridge implementations limit the lanId to a value in the range 0 to 4095.
Mib	Bridge
Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Pp Srcl bridgeNum (bid)

Access	Read and write
Description	This attribute specifies the value that is used to identify this bridge when more than one bridge is used to span the same two LAN segments.
Mib	Bridge
Values	Decimal (0..15)
Default	7

ATTRIBUTE Vr Pp Srcl largestFrame (lf)

Access	Read and write
Description	This attribute specifies the maximum frame size (LLC and above) in octets, allowed by this *SourceRouteBridge* port. This field is used to determine whether a modification of the largest frame field of the routing control field of the routing information field is warranted.
Mib	Bridge
Values	Decimal (516; 1470; 2052; 4399; 8130; 11407; 17749)
Units	octets
Default	No default

ATTRIBUTE Vr Pp Srcl steSpanMode (steSm)

Access	Read and write

Description	This attribute determines how this bridge port will react when presented with a Spanning Tree Explore frame. If ***disabled,*** the Spanning Tree Explore frame is discarded regardless of the value of *stpPortState*. If the value of this attribute is ***forced***, the Spanning Tree Explore frame is forwarded regardless of the value of *stpPortState*. ***autoSpan*** uses the *stpPortState* value to decide whether or not Spanning Tree Explore frames should be forwarded out this bridge port. If the port is in the ***forwarding*** state, the frame is received and transmitted otherwise the frame is discarded.
Mib	Bridge
Values	autoSpan disabled forced
Default	autoSpan

ATTRIBUTE Vr Pp SrcI areRdLimit (arl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in an All Routes Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *areRdLimit* to a value in the range 0 to 8.
Mib	Bridge
Values	Decimal (0..8)
Default	8

ATTRIBUTE Vr Pp SrcI steRdLimit (srl)

Access	Read and write
Description	This attribute specifies the number of route descriptors allowed in a Spanning Tree Explore frame received on a *SourceRouteBridgePort* or *SourceRouteTransparentBridgePort*. Current source route bridge implementations limit the *steRdLimit* to a value in the range 0 to 8.

Mib	Bridge
Values	Decimal (0..8)
Default	8

GROUP Vr Pp Srcl SrStatistics (SrStats)

Properties	Operational
Description	This group contains all port specific statistical attributes associated with *SourceRouteBridge* ports.
Mib	Bridge

ATTRIBUTE Vr Pp Srcl specInFrames (sif)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were received by this bridge port. A specifically routed frame has a route descriptor, constructed by the originating host which details an explicit route to the destination host. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl specOutFrames (srfof)

Access	Read only
Description	This attribute specifies the number of specifically routed frames that were transmitted from this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl apeInFrames (apeif)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames received on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState*s. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl apeOutFrames (apeof)

Access	Read only
Description	This attribute specifies the number of All Path Explore frames transmitted on this bridge port. The All Path Explore frames are forwarded to all *SourceRouteBridge* ports assigned to this bridge regardless of the port's *portStpState* state. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl steInFrames (steif)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Explore frames received on this bridge port. The Spanning Tree Explore frames are only forwarded through bridge ports whose *portStpState* has a value of ***forwarding.*** This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl steOutFrames (steof)

Access	Read only
Description	This attribute specifies the number of Spanning Tree Frames transmitted on this bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl segmentMismatchDiscards (lidmd)

Access	Read only
Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames that were discarded due to an invalid next segment value in the routing information field. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl dupSegmentDiscards (dsd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to the presence of a duplicate segment identifier in the route descriptor field which may indicate a loop in the network topology. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl hopCountExceededDiscards (hced)

Access	Read only

Description	This attribute specifies the number of All Routes Explore and Spanning Tree Explore frames discarded by this bridge port due to a frame exceeding the maximum size allowed for a route descriptor length. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl dupLanIdOrTreeErrors (dlte)

Access	Read only
Description	This attribute specifies the number frames received which contain duplicate LAN IDs or Tree errors. This attribute is helpful in debugging problems in networks which contain older IBM-SR bridges. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl lanIdMismatches

Access	Read only
Description	This attributes counts the number of All Routes Explore or Spanning Tree Explore frames that were discarded because the last LAN ID in the routing information field did not equal the LAN ID. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl staticDiscards (sd)

Access	Read only
Description	This attribute is indicative of the number of explorer frames discarded due to fact that the outbound *SourceRouteBridge* port was disabled or deleted. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Pp Srcl dynamicDiscards (dd)

Access	Read only
Description	This attribute specifies the number of frames discarded due to receiving a frame with a target LAN ID which did not match the internal LAN ID of the receiving bridge port. This counter will wrap to zero when it exceeds its maximum.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Pp Srcl NetSentry (Ns)

Groups	"GROUP Vr Pp Srcl Ns Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Pp/<string> TransparentBridgePort NetSentry* This component represents the *Ns* functionality that can be applied to a bridge port. It contains all the attribute groups (provisionable) that are necessary for the application of Ns functionality to a bridge port. In essence, it allows for the

definition of filters, at the incoming and outgoing points, specific to the interface represented by this bridge port.

Mib: Bridge

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Pp Srcl Ns Provisioned (Prov)

Properties: Provisioned

Description: This group houses all the port specific provisionable attributes associated with Ns. These attributes influence the application of filters to incoming and outgoing frames.

Mib: Bridge

ATTRIBUTE Vr Pp Srcl Ns incomingFilter (if)

Access: Read and write

Description: This attribute specifies the name of the filter to be applied at the incoming filter point.

Mib: Bridge

Values: String (0..32, ASCII)

Default: No default

ATTRIBUTE Vr Pp Srcl Ns outgoingFilter (of)

Access: Read and write

Description: This attribute specifies the name of the filter to be applied at the out going filter point.

Mib: Bridge

Values: String (0..32, ASCII)

Default: No default

COMPONENT Vr Pp ShortcutConnection (Sc)

Instance	Decimal (0..1023)
Groups	"GROUP Vr Pp Sc Operational (Oper)" "GROUP Vr Pp Sc Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Pp/<string> ShortcutConnection/n* This component represents a shortcut connection (SVC) for use by NHRP.
Mib	ShortcutConnection
Dyn. Subcomp.	"COMPONENT Vr Pp Sc AtmConnection (AtmCon)"
Common Verbs	Help List Display

VERB Clear Vr Pp Sc

Impact	Service
Description	Clear Vr/<string> Pp/<string> ShortcutConnection/n This command clears the specified *ShortcutConnection*. The connection associated with this component is released.

GROUP Vr Pp Sc Operational (Oper)

Properties	Operational
Description	This group contains the operational status attributes of the *ShortcutConnection* component.
Mib	ShortcutConnection

ATTRIBUTE Vr Pp Sc remoteNbmaAddress

Access	Read only
Description	This attribute indicates the NBMA address of the far (remote) end.
Mib	ShortcutConnection

Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Vr Pp Sc age

Access	Read only
Description	This attribute indicates how long the connection has been up.
Mib	ShortcutConnection
Values	Decimal (0..4292967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Pp Sc mtu

Access	Read only
Description	This attribute indicates the Layer 2 MTU (that is, CPCS-SDU for ATM) of this connection.
Mib	ShortcutConnection
Values	Decimal (0..0; 576..18944)
Units	octets
Default	No default

ATTRIBUTE Vr Pp Sc connSource

Access	Read only
Description	This attributes indicates which end originated the connect request for this connection.
Mib	ShortcutConnection
Values	local remote
Default	No default

ATTRIBUTE Vr Pp Sc type

Access	Read only
Description	This attributes indicates the type of this connection.
Mib	ShortcutConnection
Values	unidirectional bidirectional
Default	No default

GROUP Vr Pp Sc Statistics (Stats)

Properties	Operational
Description	This group contains the statistical attributes of the *ShortcutConnection* component.
Mib	ShortcutConnection

ATTRIBUTE Vr Pp Sc txFrames

Access	Read only
Description	This attribute counts the frames transmitted over this connection. This counter wraps to zero when the maximum value is exceeded.
Mib	ShortcutConnection
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Pp Sc rxFrames

Access	Read only
Description	This attributes counts the frames received over this connection. This counter wraps to zero when the maximum value is exceeded.
Mib	ShortcutConnection
Values	Decimal (0..4292967295)
Default	No default

COMPONENT Vr Pp Sc AtmConnection (AtmCon)

Groups	"GROUP Vr Pp Sc AtmCon Operational (Oper)"
Scope	Device
Description	An AtmConnection component is created for each ATM connection established by an application. It shows where the data traffic for this connection is directed.
Mib	ShortcutConnection
Common Verbs	Help List Display

GROUP Vr Pp Sc AtmCon Operational (Oper)

Properties	Operational
Description	This attribute group contains the operational attributes for the *NapAtmConnection* component.
Mib	ShortcutConnection

ATTRIBUTE Vr Pp Sc AtmCon nextHop

Access	Read only
Description	This attribute shows the component name of the *AtmIf Vcc Ep* or *AtmCon* component to which this switched connection is established.
Mib	ShortcutConnection
Values	The name of the component
Default	No default

COMPONENT Vr NetSentry (Ns)

Groups	"GROUP Vr Ns Provisioned (Prov)" "GROUP Vr Ns Statistics (Stats)"
Scope	Application

Description	*Vr/<string> NetSentry* This is the top-level component for NetSentry. It exists to hold global NetSentry data, and the subcomponents.
Mib	NetSentry
Opt. Subcomp.	"COMPONENT Vr Ns File" "COMPONENT Vr Ns Engine" "COMPONENT Vr Ns IPStatistics (IPStats)" "COMPONENT Vr Ns IPXStatistics (IPXStats)" "COMPONENT Vr Ns AppletalkStatistics (ATStats)" "COMPONENT Vr Ns DECnetStatistics (DNStats)" "COMPONENT Vr Ns BridgingStatistics (BrStats)"
Dyn. Subcomp.	"COMPONENT Vr Ns Filter"
Common Verbs	Help List Display Add DELete

GROUP Vr Ns Provisioned (Prov)

Properties	Provisioned
Description	This contains the global *NetSentry* control flags.
Mib	NetSentry

ATTRIBUTE Vr Ns dropConditions

Access	Read and write
Description	This attribute controls under what circumstances *NetSentry* drops packets. It is possible for *NetSentry* to drop packets when: There is no memory to contain statistics for this packet (statsNoMem), it is for whatever reason impossible to clone, copy, or log a copy of the packet via the clone_to copy_to or log_to actions respectively (cantCloneTo, cantCopyTo and cantLogTo), and if the packet encounters a filter which is provisioned at a filter point within a protocol component, but not

	defined in any of the files defined by *File* components within *NetSentry* (this is a Null filter).
Mib	NetSentry
Set of	statsNoMem cantCloneTo cantLogTo cantCopyTo cantMacCloneTo nullFilter
Default	No default

GROUP Vr Ns Statistics (Stats)

Properties	Operational
Description	This contains the global *NetSentry* (in particular, non-protocol specific) statistics.
Mib	NetSentry

ATTRIBUTE Vr Ns packetsProcessed (packets)

Access	Read only
Description	This attribute counts the total number of packets processed through *NetSentry*. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns packetsFailed (failed)

Access	Read only
Description	This attribute counts the total number of packets processed through *NetSentry* which ended with a fail disposition. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.

Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns statsNoMem (mem)

Access	Read only
Description	This attribute counts the total number of packets processed through *NetSentry* for which statistic should have been gathered, but for which statistics were not gathered due to a failure to allocate memory. Such packets may or may not be dropped according to the values provisioned in *dropConditions* under the *NetSentry* component. If this attribute is being incremented, the system is suffering from memory shortfalls, and some operator action is advised. Perhaps memory allocations should be re-provisioned, *NetSentry* statistics gathering should be reduced, or *NetSentry* statistics tables should be cleared to temporarily free memory. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns hsaOkayFailed (hsaokfailed)

Access	Read only
Description	This attribute counts the total number of packets processed through *NetSentry* which encountered, and did not match, an hsa_okay pattern. Such packets are likely to be generated from misconfigured hosts. Some operator action to track down these hosts is advised. This counter will wrap around to zero should it ever exceed its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns depthExceeded (depth)

Access	Read only
Description	This attribute counts the total number of times a *NetSentry* filter was executed which referenced too many layers of indirect filters. If this count is non-zero, the filter definitions the unit is using are incorrect, and some operator action to track down the erroneous filter definitions is advised. Filters will not be behaving correctly if this counter is increasing, and security could be compromised. This count should always be zero, and it will wrap around to zero should it ever exceed its maximum value of 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns droppedStatsNoMem (dropSNM)

Access	Read only
Description	This counts the total number of packets that were actually dropped due to an inability to allocate memory to hold statistics for the packet. Such a packet must have had a *NetSentry* statistics gathering action applied to it, in order for the attempt to gather statistics to be made, and the *dropConditions* attribute must include the ***statsNoMem*** value.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns droppedCantCloneTo (dropCCloneT)

Access	Read only
Description	This counts the total number of packets that were dropped due to the failure of a clone_to action applied to the packet. This counter will only increment if the *dropConditions* attribute includes the ***cantCloneTo*** value.
Mib	NetSentry

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns droppedCantLogTo (dropCLogT)

Access	Read only
Description	This counts the total number of packets that were dropped due to the failure of a log_to action applied to the packet. This counter will only increment if the *dropConditions* attribute includes the ***cantLogTo*** value.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns droppedCantCopyTo (dropCCopyT)

Access	Read only
Description	This counts the total number of packets that were dropped due to the failure of a copy_to action applied to the packet. This counter will only increment if the *dropConditions* attribute includes the ***cantCopyTo*** value.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns droppedNullFilter (dropNF)

Access	Read only
Description	This counts the total number of packets that were dropped because the packet passed through a filter point into which was provisioned a filter which was never defined in a file loaded into *NetSentry.* Such filter points have atached to the the so-call Null Filter, which will either succeed or fail all packets

	passing through it, depending on whether or not the *dropConditions* attribute includes the ***nullFilter*** value.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ns File

Instance	String (1..64, ASCII)
Groups	"GROUP Vr Ns File Operational (Oper)"
Scope	Application
Description	*Vr/<string> NetSentry File/<filename>* This component's instance value is a single filename to be compiled. The file must reside in /provisioning/netsentry/prov in order to be compiled at provisioning activate time, but in /provisioning/netsentry/oper to be recompiled with the *ReLoad* verb. This is to provide the same sort of protections that the provisioning system gives with its activate-confirm-commit sequence.
Mib	NetSentry
Common Verbs	Help List Display Add DELete

VERB RELoad Vr Ns File

Impact	Configuration
Description	*RELoad VR/<string> NS File/<filename>* This verb compiles the file to which the *File* component the verb applies to refers, searching for the named file in the /provisioning /netsentry/oper subdirectory. This is in contrast to the provisioning-time load, which searches the /provisioning/netsentry/prov subdirectory. This provides some measure of safety in the event of misconfigured filters, since rebooting the unit will cause *NetSentry* to fall back to the filters defined in files in the prov subdirectory. Presently, the operator must manually 'commit' a file of filter definitions by moving or copying it from the oper subdirectory to the prov subdirectory. This verb will return either success or failure, with a detailed error message both returned in the failure, and set in the *File* component itself.

GROUP Vr Ns File Operational (Oper)

Properties	Operational
Description	This holds hold a single compiler error message.
Mib	NetSentry

ATTRIBUTE Vr Ns File compilerErrorMsg

Access	Read only
Description	This attribute contains a single string holding the compiler error which caused the compile to fail. In the event that the file is recompiled (using the *RELoad* verb), the value of this will change, to reflect the new error, if any was encountered, or no error, if the compile was successful.
Mib	NetSentry
Values	String (1..80, ASCII)
Default	"No Error"

COMPONENT Vr Ns Engine

Instance	Decimal (0..15)
Scope	Application
Description	*Vr/<string> NetSentry Engine/n* The existence of this component represents the presence of NetSentry on a particular Logical Processor. Each *Engine* component must correspond to a matching *Lp* component. If *NetSentry* filtering is needed on some *Lp*, a corresponding *Engine* must be provisioned.
Mib	NetSentry
Common Verbs	Help List Display Add DELete

COMPONENT Vr Ns IPStatistics (IPStats)

Scope	Application
Description	*Vr/<string> NetSentry IPStats* This component holds all the statistics gathered for the IP protocol. If *IPStatistics* is provisioned, *NetSentry* statistics gathering actions will gather statistics for all IP packets to which they apply.
Mib	NetSentry
Dyn. Subcomp.	"COMPONENT Vr Ns IPStats AddressStatistic (AddrStat)"
Common Verbs	Help List Display Add DELete

VERB CLEAR Vr Ns IPStats

Impact	System_admin
Description	*CLEAR Vr/<string> Ns IPStats* This clears statistics gathered for IP, deleting all the allocated resources, and discarding gathered data.

COMPONENT Vr Ns IPStats AddressStatistic (AddrStat)

Instance	sourceAddress (sa) [String (1..32, ASCII)] destinationAddress (da) [String (1..32, ASCII)]
Groups	"GROUP Vr Ns IPStats AddrStat Statistics (Stats)"
Scope	Application
Description	*Vr/<string> NetSentry IPStats AddrStat/128.12.3.7,-* This component holds statistics for a source address, a destination address, or a source address/destination address pair. This component may reside in one of a variety of by-protocol tables, each with a double index for rows. One index is the source address, one is the destination address. One of the indices may be a “-”, which indicates that the other index is the relevent one. That is, a statistic referred to with source address “128.12.3.7” and destination address “-” is a statistic for packets originating from 128.12.3.7 alone.
Mib	NetSentry
Common Verbs	Help List Display

GROUP Vr Ns IPStats AddrStat Statistics (Stats)

Properties	Operational
Description	This is the basic statistic used throughout *NetSentry* by-protocol statistics gathering. It contains counters for total packets, total octets in packets, and two user counters, counter_1 and counter_2.
Mib	NetSentry

ATTRIBUTE Vr Ns IPStats AddrStat packetCount

Access	Read only
Description	This is the number of packets which caused the enclosing *Statistics* group to to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns IPStats AddrStat byteCount

Access	Read only
Description	This is the number of bytes in all the packets which caused the enclosing *Statistics* group to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns IPStats AddrStat counter1

Access	Read only
Description	This is the number of times a packet caused a counter_1 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns IPStats AddrStat counter2

Access	Read only

Description	This is the number of times a packet caused a counter_2 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ns IPXStatistics (IPXStats)

Scope	Application
Description	*Vr/<string> NetSentry IPXStats* This component holds all the statistics gathered for the IPX protocol. If *IPXStatistics* is provisioned, *NetSentry* statistics gathering actions will gather statistics for all IPX packets to which they apply.
Mib	NetSentry
Dyn. Subcomp.	"COMPONENT Vr Ns IPXStats AddressStatistic (AddrStat)"
Common Verbs	Help List Display Add DELete

VERB CLEAR Vr Ns IPXStats

Impact	System_admin
Description	*CLEAR Vr/<string> Ns IPXStats* This clears statistics gathered for IPX, deleting all the allocated resources, and discarding gathered data.

COMPONENT Vr Ns IPXStats AddressStatistic (AddrStat)

Instance	sourceAddress (sa) [String (1..32, ASCII)] destinationAddress (da) [String (1..32, ASCII)]
Groups	"GROUP Vr Ns IPXStats AddrStat Statistics (Stats)"

Scope	Application
Description	*Vr/<string> NetSentry IPStats AddrStat/128.12.3.7,-* This component holds statistics for a source address, a destination address, or a source address/destination address pair. This component may reside in one of a variety of by-protocol tables, each with a double index for rows. One index is the source address, one is the destination address. One of the indices may be a "-", which indicates that the other index is the relevent one. That is, a statistic referred to with source address "128.12.3.7" and destination address "-" is a statistic for packets originating from 128.12.3.7 alone.
Mib	NetSentry
Common Verbs	Help List Display

GROUP Vr Ns IPXStats AddrStat Statistics (Stats)

Properties	Operational
Description	This is the basic statistic used throughout *NetSentry* by-protocol statistics gathering. It contains counters for total packets, total octets in packets, and two user counters, counter_1 and counter_2.
Mib	NetSentry

ATTRIBUTE Vr Ns IPXStats AddrStat packetCount

Access	Read only
Description	This is the number of packets which caused the enclosing *Statistics* group to to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns IPXStats AddrStat byteCount

Access	Read only
Description	This is the number of bytes in all the packets which caused the enclosing *Statistics* group to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns IPXStats AddrStat counter1

Access	Read only
Description	This is the number of times a packet caused a counter_1 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns IPXStats AddrStat counter2

Access	Read only
Description	This is the number of times a packet caused a counter_2 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ns AppletalkStatistics (ATStats)

Scope	Application

Description	*Vr/<string> NetSentry ATStats* This component holds all the statistics gathered for the AppleTalk protocol. If *AppleTalkStatistics* is provisioned, *NetSentry* statistics gathering actions will gather statistics for AppleTalk packets to which they apply.
Mib	NetSentry
Dyn. Subcomp.	"COMPONENT Vr Ns ATStats AddressStatistic (AddrStat)"
Common Verbs	Help List Display Add DELete

VERB CLEAR Vr Ns ATStats

Impact	System_admin
Description	*CLEAR Vr/<string> Ns ATStats* This clears statistics gathered for Appletalk, deleting all the allocated resources, and discarding gathered data.

COMPONENT Vr Ns ATStats AddressStatistic (AddrStat)

Instance	sourceAddress (sa) [String (1..32, ASCII)] destinationAddress (da) [String (1..32, ASCII)]
Groups	"GROUP Vr Ns ATStats AddrStat Statistics (Stats)"
Scope	Application
Description	*Vr/<string> NetSentry IPStats AddrStat/128.12.3.7,-* This component holds statistics for a source address, a destination address, or a source address/destination address pair. This component may reside in one of a variety of by-protocol tables, each with a double index for rows. One index is the source address, one is the destination address. One of the indices may be a “-”, which indicates that the other index is the relevent one. That is, a statistic referred to with source address “128.12.3.7”

	and destination address “-” is a statistic for packets originating from 128.12.3.7 alone.
Mib	NetSentry
Common Verbs	Help List Display

GROUP Vr Ns ATStats AddrStat Statistics (Stats)

Properties	Operational
Description	This is the basic statistic used throughout *NetSentry* by-protocol statistics gathering. It contains counters for total packets, total octets in packets, and two user counters, counter_1 and counter_2.
Mib	NetSentry

ATTRIBUTE Vr Ns ATStats AddrStat packetCount

Access	Read only
Description	This is the number of packets which caused the enclosing *Statistics* group to to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns ATStats AddrStat byteCount

Access	Read only
Description	This is the number of bytes in all the packets which caused the enclosing *Statistics* group to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Vr Ns ATStats AddrStat counter1

Access	Read only
Description	This is the number of times a packet caused a counter_1 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns ATStats AddrStat counter2

Access	Read only
Description	This is the number of times a packet caused a counter_2 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ns DECnetStatistics (DNStats)

Scope	Application
Description	*Vr/<string> NetSentry DNStats* This component holds all the statistics gathered for the DECnet protocol. If *DECnetStatistics* is provisioned, *NetSentry* statistics

gathering actions will gather statistics for DECnet packets to which they apply.

Mib	NetSentry
Dyn. Subcomp.	"COMPONENT Vr Ns DNStats AddressStatistic (AddrStat)"
Common Verbs	Help List Display Add DELete

VERB CLEAR Vr Ns DNStats

Impact	System_admin
Description	*CLEAR Vr/<string> Ns DNStats* This clears statistics gathered for DECnet, deleting all the allocated resources, and discarding gathered data.

COMPONENT Vr Ns DNStats AddressStatistic (AddrStat)

Instance	sourceAddress (sa) [String (1..32, ASCII)] destinationAddress (da) [String (1..32, ASCII)]
Groups	"GROUP Vr Ns DNStats AddrStat Statistics (Stats)"
Scope	Application
Description	*Vr/<string> NetSentry IPStats AddrStat/128.12.3.7,-* This component holds statistics for a source address, a destination address, or a source address/destination address pair. This component may reside in one of a variety of by-protocol tables, each with a double index for rows. One index is the source address, one is the destination address. One of the indices may be a “-”, which indicates that the other index is the relevent one. That is, a statistic referred to with source address “128.12.3.7”

and destination address “-” is a statistic for packets originating from 128.12.3.7 alone.

Mib NetSentry

Common Verbs
Help
List
Display

GROUP Vr Ns DNStats AddrStat Statistics (Stats)

Properties Operational

Description This is the basic statistic used throughout *NetSentry* by-protocol statistics gathering. It contains counters for total packets, total octets in packets, and two user counters, counter_1 and counter_2.

Mib NetSentry

ATTRIBUTE Vr Ns DNStats AddrStat packetCount

Access Read only

Description This is the number of packets which caused the enclosing *Statistics* group to to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.

Mib NetSentry

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Vr Ns DNStats AddrStat byteCount

Access Read only

Description This is the number of bytes in all the packets which caused the enclosing *Statistics* group to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.

Mib NetSentry

Values Decimal (0..4294967295)

Default	0

ATTRIBUTE Vr Ns DNStats AddrStat counter1

Access	Read only
Description	This is the number of times a packet caused a counter_1 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns DNStats AddrStat counter2

Access	Read only
Description	This is the number of times a packet caused a counter_2 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ns BridgingStatistics (BrStats)

Scope	Application
Description	*Vr/<string> NetSentry BrStats* This component holds all the statistics gathered for Bridged packets. If *BridgingStatistics* is provisioned, *NetSentry* statistics

gathering actions will gather statistics for Bridged packets to which they apply.

Mib	NetSentry
Dyn. Subcomp.	"COMPONENT Vr Ns BrStats AddressStatistic (AddrStat)"
Common Verbs	Help List Display Add DELete

VERB CLEAR Vr Ns BrStats

Impact	System_admin
Description	*CLEAR Vr/<string> Ns BrStats* This clears statistics gathered for Bridging, deleting all the allocated resources, and discarding gathered data.

COMPONENT Vr Ns BrStats AddressStatistic (AddrStat)

Instance	sourceAddress (sa) [String (1..32, ASCII)] destinationAddress (da) [String (1..32, ASCII)]
Groups	"GROUP Vr Ns BrStats AddrStat Statistics (Stats)"
Scope	Application
Description	*Vr/<string> NetSentry IPStats AddrStat/128.12.3.7,-* This component holds statistics for a source address, a destination address, or a source address/destination address pair. This component may reside in one of a variety of by-protocol tables, each with a double index for rows. One index is the source address, one is the destination address. One of the indices may be a “-”, which indicates that the other index is the relevent one. That is, a statistic referred to with source address “128.12.3.7”

and destination address “-” is a statistic for packets originating from 128.12.3.7 alone.

Mib NetSentry

Common Verbs
Help
List
Display

GROUP Vr Ns BrStats AddrStat Statistics (Stats)

Properties Operational

Description This is the basic statistic used throughout *NetSentry* by-protocol statistics gathering. It contains counters for total packets, total octets in packets, and two user counters, counter_1 and counter_2.

Mib NetSentry

ATTRIBUTE Vr Ns BrStats AddrStat packetCount

Access Read only

Description This is the number of packets which caused the enclosing *Statistics* group to to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.

Mib NetSentry

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE Vr Ns BrStats AddrStat byteCount

Access Read only

Description This is the number of bytes in all the packets which caused the enclosing *Statistics* group to be incremented. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.

Mib NetSentry

Values Decimal (0..4294967295)

Default	0

ATTRIBUTE Vr Ns BrStats AddrStat counter1

Access	Read only
Description	This is the number of times a packet caused a counter_1 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns BrStats AddrStat counter2

Access	Read only
Description	This is the number of times a packet caused a counter_2 action to be applied with reference to the enclosing *Statistics* group. This counter will wrap around to zero when it exceeds its maximum value, 4294967295.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ns Filter

Instance	name [String (1..32, ASCII)] kind [filter pafSet compartment aesoData nleso aeso accreditTable setData metaFilter]
Groups	"GROUP Vr Ns Filter Statistics (Stats)"

Scope	Application
Description	*Vr/<string> NetSentry Filter/not_tcp,Filter* Each instance of this component names a single *NetSentry* Filter or other *NetSentry* data object.
Mib	NetSentry
Common Verbs	Help List Display

GROUP Vr Ns Filter Statistics (Stats)

Properties	Operational
Description	This group contains the various counters associated with a particular filter definition. A packet being processed through a *NetSentry* filter will encounter zero or more dispositions according to which elements of the filter have patterns which match the packet. This group counts, for the enclosing *Filter*, how many packets encountered each sort of disposition while being processed through the filter.
Mib	NetSentry

ATTRIBUTE Vr Ns Filter packetsSucceeded

Access	Read only
Description	This counter contains the number of packets which passed through *NetSentry*, which happen to have been matched against an element of the enclosing *Filter* component which had a succeed disposition.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns Filter bytesSucceeded

Access	Read only

Description	This counter counts the number of bytes in the packets counted in the *packetsSucceeded*.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns Filter packetsFailed

Access	Read only
Description	This counter contains the number of packets which passed through *NetSentry*, which happen to have been matched against an element of the enclosing *Filter* which had a fail disposition.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns Filter bytesFailed

Access	Read only
Description	This counter counts the number of bytes in the packets counted in the *packetsFailed* counter.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns Filter packetsBreaked

Access	Read only
Description	This counter contains the number of packets which passed through *NetSentry*, which happen to have been matched against an element of the enclosing *Filter* which had a break disposition.
Mib	NetSentry
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Vr Ns Filter bytesBreaked

Access	Read only
Description	This counter counts the number of bytes in the packets counted in the *packetsBreaked* counter.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns Filter packetsContinued

Access	Read only
Description	This counter contains the number of packets which passed through *NetSentry*, which happen to have been matched against at least one element of the enclosing *Filter* which had a continue disposition. Such a packet may also have been counted in one of the *packetsSucceeded packetsFailed* or *packetsBreaked* counters, since a continue disposition does not exit a *NetSentry* filter unless it is the disposition in the last element of the filter.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ns Filter bytesContinued

Access	Read only
Description	This counter counts the number of bytes in the packets counted in the *packetsContinued* counter.
Mib	NetSentry
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Bridge (Br)

Groups	"GROUP Vr Br AdministrativeControl (AdminControl)" "GROUP Vr Br OsiState (State)" "GROUP Vr Br OperationalStatus (OperStatus)" "GROUP Vr Br Operational (Oper)"
Scope	Application
Description	*Vr/<string> Bridge* This component represents the bridge logic, and all the associated attribute groups. All the various functions provided by bridging are encompassed by this component.
Mib	Bridge
Opt. Subcomp.	"COMPONENT Vr Br NetSentry (Ns)" "COMPONENT Vr Br TransparentBridge (Tb)" "COMPONENT Vr Br SourceRouteBridge (Srb)"
Dyn. Subcomp.	"COMPONENT Vr Br PortTableEntry (Pte)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Br AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Bridge

ATTRIBUTE Vr Br adminStatus (as)

Access	Read and write

Description	This attribute defines the current administrative status for this component. ***enabled*** indicates that the component is available for operation. ***disabled*** indicates the component is unavailable for operation. The application preserves all previously received provisioning data, all writable operational data and all counters. Please note that all learnt data are lost. The bridge application is not available for operation while in this state.
Mib	Bridge
Values	up down
Default	up

GROUP Vr Br OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bridge

ATTRIBUTE Vr Br adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Bridge

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Br operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Bridge

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Br usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Bridge

Values:
idle
active (activ)
busy

Default: idle

GROUP Vr Br OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: Bridge

ATTRIBUTE Vr Br snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: Bridge

Values:
up
down
testing

Default: up

GROUP Vr Br Operational (Oper)

Properties: Operational

Description	This group contains all the operational attributes applicable to bridging, those components that are global in nature and are not port specific.
Mib	Bridge

ATTRIBUTE Vr Br bridgeAddress (ba)

Access	Read only
Description	This attribute represents the Mac address for the bridge. This address is used when this bridge must be referred to in a unique manner. It is used to form the bridge identifier, used by the spanning tree protocol, by concatenating it with the attribute bridgePriority under the component *SpanningTreeProtocol*.
Mib	Bridge
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br numPorts (np)

Access	Read only
Description	This attribute represents the number of the ports this bridge controls. In other words, it is a count of the number of bridge ports provisioned.
Mib	Bridge
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vr Br type

Access	Read only
Description	This attribute indicates the capability of this bridge unit in terms of types of bridging it can handle.
Mib	Bridge
Values	unknown transparentOnly

sourceRouteOnly
srt

Default No default

COMPONENT Vr Br PortTableEntry (Pte)

Instance domainNum [Decimal (1..4294967293)]
portName [String (0..29, ASCII)]
mode [tb
sr
srt]

Groups "GROUP Vr Br Pte Operational (Oper)"

Scope Application

Description *Vr/<string> Bridge PortTableEntry/<Decimal>,<string>,mode*
This component is one of a group of similar components that forms a table. This table contains all the bridge ports provisioned and the corresponding domains they belong to. This table can be used as a central place to access all the information about bridge ports and the domains associated with these bridge ports. There can exist only sixteen domains when a spanning tree is desired specific to each domain. When there is only a single spanning tree spanning all the domains the maximum number of domains possible are 4294967293.

Mib Bridge

Common Verbs
Help
List
Display

GROUP Vr Br Pte Operational (Oper)

Properties Operational

Description This group contains all the operational attributes belonging to the *PortTableEntry* component.

Mib Bridge

ATTRIBUTE Vr Br Pte macType

Access	Read only
Description	This attribute indicates the Mac type of the bridge port is associated with.
Mib	Bridge
Values	ethernet tokenRing fddiBridgePort tokenBus lecEthernet fddiEncapsulating vns frameRelay ppp smds vcp x25 atmMpe srEncapSr srEncapTb sourceGateSr sourceGateTb srtb tbsr clusterSr clusterTb snaDlr unknown
Default	No default

ATTRIBUTE Vr Br Pte stpState

Access	Read only
Description	This attribute indicates the stp state of the bridge port.
Mib	Bridge
Values	disabled blocking listening

	learning forwarding broken
Default	disabled

ATTRIBUTE Vr Br Pte stpType

Access	Read only
Description	This attribute indicates the type of the spanning tree protocol this bridge port is participating in.
Mib	Bridge
Values	unknown dec ieee_8021
Default	ieee_8021

ATTRIBUTE Vr Br Pte portPointsTo

Access	Read only
Description	This attribute indicates the fact if this bridge port leads to the root bridge of the spanning tree topology or if it leads to the designated bridge of the lan segment the bridge port is attached to.
Mib	Bridge
Values	none rootBridge designatedBridge
Default	none

COMPONENT Vr Br NetSentry (Ns)

Groups	"GROUP Vr Br Ns Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Bridge NetSentry* This component represents the net sentry facility as applicable to

	bridging. It serves to allow the user to provision filter names that are applicable at the first, the last filter, the localIn and the localOut points and also the filter apply table.
Mib	Bridge
Opt. Subcomp.	"COMPONENT Vr Br Ns ApplyTableEntry (Ate)"
Common Verbs	Help List Display Add DELete

GROUP Vr Br Ns Provisioned (Prov)

Properties	Provisioned
Description	This group houses all the provisionable attributes applicable to the packet control facility. These attributes are global attributes and are not port specific.
Mib	Bridge

ATTRIBUTE Vr Br Ns firstFilter (ff)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied at the first filter point.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Br Ns lastFilter (lf)

Access	Read and write
Description	This attribute specifies the name of the filter that is to be applied at the last filter point.
Mib	Bridge

Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Br Ns ApplyTableEntry (Ate)

Instance	Decimal (0..255)
Groups	"GROUP Vr Br Ns Ate Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Bridge NetSentry ApplyTableEntry/<Decimal>* This component, represents an entry in the filter apply table. The filter apply table is used to specifically filter frames, based on a frame's origin, its destination, and the domain associated with the frame. A filter name is specified in the entry, which is applied to a frame if the match criteria is satisfied. When the attribute *direction* has the value ***to***, a match in the filter table requires the *firstMACAddress* anded with the *firstMACAddressMask* to match the source MAC address in the frame, the *secondMACAddress* anded with the *secondMACAddressMask to* match the destination MAC address in the frame, and the *domainNum* to match the domain number associated with the frame. When the *direction* has the value ***from***, a match in the filter table requires the *firstMACAddress* anded with the *firstMACAddressMask* to match the destination MAC address in the frame, the *secondMACAddress* anded with the *secondMACAddressMask to* match the source MAC address in the frame, and the *domainNum* to match the domain number associated with the frame. When the *direction* has the value ***toFrom***, a match in the filter table requires the *firstMACAddress* anded with the *firstMACAddressMask* to match the source/destination MAC address in the frame, the *secondMACAddress* anded with the *secondMACAddressMask to* match the destination/source MAC

address in the frame, and the *domainNum* to match the domain number associated with the frame.

Mib: Bridge

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Br Ns Ate Provisioned (Prov)

Properties: Provisioned

Description: This group houses all the attributes that together form an apply table entry. These fields of an apply table entry are used as match criteria, which when satisfied results in the application of the named filter to the frame.

Mib: Bridge

ATTRIBUTE Vr Br Ns Ate domainNum (dn)

Access: Read and write

Description: This attribute specifies the domain number associated with a frame, that would qualify it partly, for a match in the apply table. The domain number provisioned will form a part of the match criteria only if it is not provisioned with a wild card value of ***0.*** If the wild card character is specified, any domain number will satisfy the match criteria, in effect loosing domain number as a qualifier in the match criteria.

Mib: Bridge

Values: Decimal (0..4294967293)

Default: 0

ATTRIBUTE Vr Br Ns Ate firstMacAddress (fma)

Access: Read and write

Description	This attribute specifies the MAC address to be anded with the *firstMACAddressMask*, and the result compared with- a) The source MAC address in a frame when the attribute *direction* has a value of ***to***, b) The destination MAC address in a frame when the attribute *direction* has a value of ***from***, c) Source / Destination address in a frame when the attribute *direction* has a value of ***toFrom***, as a part of finding a match in the bridge filter apply table.
Mib	Bridge
Values	String (6, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Vr Br Ns Ate firstMacAddressMask (fmam)

Access	Read and write
Description	This attribute specifies the mask which is anded with the attribute *firstMACAddress*. The result is then compared with- a) The source MAC address in a frame when the attribute *direction* has a value of ***to***, b) The destination MAC address in a frame when the attribute *direction* has a value of ***from***, c) Source / Destination address in a frame when the attribute *direction* has a value of ***toFrom***, as a part of finding a match in the bridge filter apply table.
Mib	Bridge
Values	String (6, Dashed Hex)
Default	ff-ff-ff-ff-ff-ff

ATTRIBUTE Vr Br Ns Ate secondMacAddress (sma)

Access	Read and write
Description	This attribute specifies the MAC address to be anded with the *secondMACAddressMask*, and the result compared with- a) The destination MAC address in a frame when the attribute *direction* has a value of ***to***, b) The source MAC address in a frame when the attribute

direction has a value of ***from***,
c) Destination/Source address in a frame when the attribute *direction* has a value of ***toFrom***, as a part of finding a match in the bridge filter apply table.

Mib: Bridge

Values: String (6, Dashed Hex)

Default: 00-00-00-00-00-00

ATTRIBUTE Vr Br Ns Ate secondMacAddressMask (smam)

Access: Read and write

Description: This attribute specifies the mask which is anded with the attribute *secondMACAddress.* The result is then compared with-
a) The destination MAC address in a frame when the attribute *direction* has a value of ***to***,
b) The source MAC address in a frame when the attribute *direction* has a value of ***from***,
c) Destination/Source address in a frame when the attribute *direction* has a value of ***toFrom***, as a part of finding a match in the bridge filter apply table.

Mib: Bridge

Values: String (6, Dashed Hex)

Default: ff-ff-ff-ff-ff-ff

ATTRIBUTE Vr Br Ns Ate direction (dir)

Access: Read and write

Description: This attribute specifies the direction of frame flow. It is used to appropriately compare the result of logically anding MAC address, MACAddressMask pairs, with the source /destination MAC address fields in a frame, as a part of the match finding process.
When this attribute has value of ***to***, the *firstMACAddress* is logically anded with the *firstMACAddressMask* and the result compared with the source MAC address in a frame and the *secondMACAddress* logically anded with the *secondMACAddressMask* and compared with the destination

	MAC address. When this attribute has a value of ***from***, the *firstMACAddress* is logically anded with the *firstMACAddressMask* and the result compared with the destinationMAC address in a frame and the *secondMACAddress* logically anded with the *secondMACAddressMask* and compared with the sourceMAC addressin the frame, as a part of finding a match in the bridge filter apply table entry.
Mib	Bridge
Values	to from toFrom
Default	toFrom

ATTRIBUTE Vr Br Ns Ate filterName (fn)

Access	Read and write
Description	This attribute specifies the name of the filter to be applied to the frame, if it satisfies the match criteria mentioned in the bridge filter apply table entry.
Mib	Bridge
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Br TransparentBridge (Tb)

Groups	"GROUP Vr Br Tb Provisioned (Prov)" "GROUP Vr Br Tb Statistics (Stats)"
Scope	Application

Description	*Vr/<string> Bridge TransparentBridge* This component contains all the global bridge attribute groups necessary for the operation of a transparent bridge.
Mib	Bridge
Opt. Subcomp.	"COMPONENT Vr Br Tb SpanningTreeProtocol (Stp)" "COMPONENT Vr Br Tb StaticTableEntry (Ste)"
Dyn. Subcomp.	"COMPONENT Vr Br Tb ForwardTableEntry (Fte)" "COMPONENT Vr Br Tb NcForwardTableEntry (NcFte)"
Common Verbs	Help List Display Add DELete

GROUP Vr Br Tb Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes applicable to a transparent bridge, those attributes that are global and are not port specific.
Mib	Bridge

ATTRIBUTE Vr Br Tb fwdTableNumEntries (ftNe)

Access	Read and write
Description	This attribute specifies the number of entries that can exist in the transparent bridge forwarding table. This attribute provides a way to control the resources allocated to forwarding table. This attribute will prove to be very useful while attempting to fine tune the resource allocated to suit the network configuration. Please understand that this attribute *tbFwdTableNumEntries* is influenced by the memory management scheme provided by the *VirtualRouter* and is by no means independent of the same. It is important to understand the network configuration in terms of number and types of bridge ports provisioned before attempting to fine tune this attribute.The following attributes can be used as

	feedback to fine tune this attribute: a) attribute *totalForwardingTableEntries* under the *TransparentBridge component,* *b) attribute numFtEntriesFree under the TransparentBridge component,* *c) attribute numFtEntriesDenied under the TransparentBridge component*
Mib	Bridge
Values	Decimal (0..65535)
Default	500

ATTRIBUTE Vr Br Tb agingTime (at)

Access	Read and write
Description	This attribute specifies the time period used in seconds, to age out dynamically learned entries in the forwarding table. The aging time can change, triggered by a spanning tree topology change. The operational value of the aging time is reflected in the attribute *agingTimeOper* under the *SpanningTreeProtocol* component.
Mib	Bridge
Values	Decimal (10..1000000)
Units	seconds
Default	300

GROUP Vr Br Tb Statistics (Stats)

Properties	Operational
Description	This group contains all the statistical attributes for a transparent bridge, those attributes that are global in nature and are not port specific.
Mib	Bridge

ATTRIBUTE Vr Br Tb learnedEntryDiscards (led)

Access	Read only

Description	This attribute represents the number of dynamic entries that might have been learned but have been discarded due to a static entry already installed by provisioning in the forwarding table. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Br Tb totalForwardingTableEntries (tFtE)

Access	Read only
Description	This attribute indicates the total number of transparent bridge forwarding table entries. This includes static forwarding table entries and dynamic forwarding table entries. This attribute is influenced by the attribute *tbFwdTableNumEntries*, which is a provisionable attribute. If the value is consistently approaching the value of the attribute *tbFwdTableNumEntries*, it is advisable to increase the value provisioned for *tbFwdTableNumEntries*. It indicates a potential shortage of forwarding table entries in the future. This attribute is inversely proportional in value to the attribute *numFtEntriesFree.* This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Br Tb numFtEntriesFree (nFteF)

Access	Read only
Description	This attribute indicates the number of free transparent bridge forwarding table entries. These entries could be used by static entries or by dynamic entries. This counter wraps around its maximum value of 4294967295. A consistently high value for this attribute indicates that there is a resource surplus here, in terms of the memory requirements of the forwarding table. This surplus could be utilized elsewhere if

need be. The value of this attributes directly influenced by the value of the attribute *tbFwdTableNumEntries.*

Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Br Tb numFtEntriesDenied (nFteD)

Access	Read only
Description	This attribute indicates the number of instances wherein transparent bridge table entry was unavailable. These entries could have been denied for static entries or for dynamic entries. This counter wraps around its maximum value of 4294967295. If this counter consistently shows a high value, it is indicative of a resource shortage in terms of memory required to support the increase in the number of forwarding table entries. To rectify this resource shortage, increase the number of forwarding table entries through the provisioned attribute *tbFwdTableEntries* under the *Bridge* component. This counter should ideally be as low as possible.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Br Tb SpanningTreeProtocol (Stp)

Instance	Decimal (1..4294967293)
Groups	"GROUP Vr Br Tb Stp Provisioned (Prov)" "GROUP Vr Br Tb Stp Operational (Oper)"
Scope	Application
Description	*Vr/<string> Br Tb Stp/<Decimal>* This component represents the Spanning Tree Protocol for the bridge. Bridges use the Spanning Tree Protocol to provide a loop free, fault tolerant network topology.

Individual spanning tree instances are indexed using the domain number.
Only 16 instances of this component are allowed including the backbone spanning tree instance.
The instance identifier of the *SpanningTreeProtocol* component is significant as it indicates the domain that the spanning tree instance governs.

Mib: Bridge

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Br Tb Stp Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the provisionable attributes that are applicable to the spanning tree protocol. These are global attributes and not port specific attributes. These attributes have a direct impact on the way this bridge participates in the stp.

Mib: Bridge

ATTRIBUTE Vr Br Tb Stp stpMode

Access: Read and write

Description: This attribute determines if this stp instance is to act as the stp instance for the backbone or an stp instance for a non-backbone media configuration. There can exist only one Backbone stp instance per virtual router. Please note that it is not permissible to assign the instance identifier of this stp instance as domain number of any access bridge port. In case of stp instances that are non-Backbone, the instance identifier is indicating the domain number the stp is operational in.

Mib: Bridge

Values:
access
backbone

Default	access

ATTRIBUTE Vr Br Tb Stp protocolSpec (pS)

Access	Read and write
Description	This attribute specifies the type of the spanning tree protocols that are in operation in the bridge. This means that this bridge participates in the types of stp indicated by this attribute.
Mib	Bridge
Values	both dec ieee8021d
Default	ieee8021d

ATTRIBUTE Vr Br Tb Stp priority

Access	Read and write
Description	This attribute is used to construct the *bridgeId*. It forms the first two octets of the *bridgeId* and the remaining 6 octets are made up of the *bridgeMACAddress*. The *priority* also determines the root bridge of the spanning tree topology. Manipulating this attribute might lead to a change in the spanning tree topology.
Mib	Bridge
Values	Decimal (0..65535)
Default	32768

ATTRIBUTE Vr Br Tb Stp bridgeMaxAge (bma)

Access	Read and write
Description	This attribute specifies the maximum age of the stp information learned from the network on any bridge port before it is discarded. This value is used by this bridge and all the other bridges when this bridge is the root bridge of the spanning tree topology. The following relationships are enforced as required by the IEEE 802.1d standards document. 2 *(*bridgeForwardDelay* -1.0seconds) >= *bridgeMaxAge*, *bridgeMaxAge* >= 2 * *bridgeHelloTime* + 1.0 seconds.

Mib	Bridge
Values	Decimal (600..4000)
Units	centiseconds
Default	2000

ATTRIBUTE Vr Br Tb Stp bridgeHelloTime (bht)

Access	Read and write
Description	This attribute specifies the time interval between the transmission of configuration BPDUs on any bridge port when this bridge becomes the root bridge. This attribute value is also used by all the other bridges in the Spanning Tree while this bridge is the root. The following relationship is enforced as required by the IEEE 802.1d standards document. *bridgeMaxAge* >= 2 * *bridgeHelloTime* + 1.0 seconds.
Mib	Bridge
Values	Decimal (100..1000)
Units	centiseconds
Default	200

ATTRIBUTE Vr Br Tb Stp bridgeForwardDelay (bfd)

Access	Read and write
Description	This attribute specifies how fast a bridge port changes its STP state while progressing towards the forwarding state. It is also used as *agingTime* to age dynamic entries in the forwarding table once a topology change is detected. This attribute is used by all the bridges participating in the stp when this bridge is the root bridge. The following relationship is enforced as required by the IEEE 802.1d standards document. 2 *(*bridgeForwardDelay* -1.0sconds) >= *bridgeMaxAge*.
Mib	Bridge
Values	Decimal (400..3000)

Units	centiseconds
Default	1500

GROUP Vr Br Tb Stp Operational (Oper)

Properties	Operational
Description	This group contains all the operational, stp attributes. These attributes are applicable in a global manner and are not specific to a bridge port.
Mib	Bridge

ATTRIBUTE Vr Br Tb Stp bridgeId (bid)

Access	Read only
Description	This attribute indicates the identifier value of this bridge, which serves to uniquely represent this bridge in the spanning tree topology. Thus, a *bridgeId* is unique only in the spanning tree instance the bridge is participating in. If multiple domain spanning trees exist then the same *bridgeId* can be re-used across these spanning tree instances.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br Tb Stp rootPortName (rpn)

Access	Read only
Description	This attribute indicates the name of the bridge port that offers the lowest cost route to the root bridge of the spanning tree topology.The attribute *rootPortName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/MyPort* would have a name ***TBP-MyPort.*** If multiple instances of spanning tree are operational then there will exist a *rootPortName* value for each instance of the running stp and is applicable to that instance alone.

Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Br Tb Stp timeSinceTopologyChange (tstc)

Access	Read only
Description	This attribute indicates the time since a spanning tree topology change was detected by this bridge.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	centiseconds
Default	0

ATTRIBUTE Vr Br Tb Stp topologyChangeDetect (tcd)

Access	Read only
Description	This attribute indicates whether or not a topology change was detected. This flag is set when a bpdu with the topology detect flag set is received from the root bridge. If this bridge is the root bridge this flag is set on receipt of a topology change notification bpdu. It is reset after a fixed length of time.
Mib	Bridge
Values	false true
Default	false

ATTRIBUTE Vr Br Tb Stp topologyChanges (tc)

Access	Read only
Description	This attribute indicates the number of the topology change events detected by this bridge since the last bridge reset. This counter wraps around its maximum value of 4294967295.
Mib	Bridge

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Br Tb Stp designatedRoot (dr)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this bridge treats as the root of the spanning tree topology. The root of the spanning tree topology is chosen through exchange.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br Tb Stp rootCost (rc)

Access	Read only
Description	This attribute indicates the cost of the path to the root as seen by this bridge.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Br Tb Stp maxAge (mAg)

Access	Read only
Description	This attribute indicates the maximum age of the stp info learnt from a port before it is discarded.
Mib	Bridge
Values	Decimal (600..4000)
Units	centiseconds
Default	2000

ATTRIBUTE Vr Br Tb Stp agingTimeOper (ato)

Access	Read only

Description	This attribute indicates the time period in seconds used to age out dynamically learned entries in the forwarding table. The aging time is specific to a running stp instance. A value for the aging time of the current instance of the stp can be provisioned through the attribute *agingTime* under the *InwBrTb* component. The *agingTimeOper* attribute assumes the value of the *bridgeForwardDelay* while a topology change is in progress. This is done to facilitate a quick aging out of the learned entries that might have become obsolete due to a spanning tree topology change.
Mib	Bridge
Values	Decimal (10..1000000)
Units	seconds
Default	300

ATTRIBUTE Vr Br Tb Stp helloTime (heT)

Access	Read only
Description	This attribute indicates the time interval between the transmission of the configuration BPDUs. This value is obtained from the root bridge of the spanning tree topology through bridge protocol data units. This value should be the value assigned to the attribute *bridgeHelloTime* of the root bridge.
Mib	Bridge
Values	Decimal (100..1000)
Units	centiseconds
Default	200

ATTRIBUTE Vr Br Tb Stp holdTime (hoT)

Access	Read only
Description	This attribute indicates the minimum interval of time between the transmission of two BPDUs.
Mib	Bridge

Values	Decimal (100)
Units	centiseconds
Default	100

ATTRIBUTE Vr Br Tb Stp fwdDelay (fd)

Access	Read only
Description	This attribute indicates how much time a port spends in any state while progressing towards the ***forwarding*** state. It is also used to age out learned entries while a topology change is in progress.This value should be the value assigned to the attribute *bridgeFwdDelay* of the root bridge.
Mib	Bridge
Values	Decimal (400..3000)
Units	centiseconds
Default	1500

COMPONENT Vr Br Tb StaticTableEntry (Ste)

Instance	address [String (6, Dashed Hex)] receivePort [String (1..29, ASCII)]
Groups	"GROUP Vr Br Tb Ste Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Br Tb StaticTableEntry/address, receivePort* This component represents an entry in the transparent bridge forwarding table. A collection of such entries form the static forwarding table. Entries in the static table indicate the output ports a frame is allowed to go out of if it was received on

receivePort and if its destination MAC address field matched *address.*

Mib: Bridge

Common Verbs:
Help
List
Display
Add
DELete

GROUP Vr Br Tb Ste Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the fields of a static table entry. All these attributes can be provisioned by the user. Multiple such static table entries together form the static forwarding table.

Mib: Bridge

ATTRIBUTE Vr Br Tb Ste status

Access: Read and write

Description: This attribute specifies the longevity of an entry in the static table. Please note that currently only a value of ***permanent*** is supported.

Mib: Bridge

Values: permanent

Default: permanent

ATTRIBUTE Vr Br Tb Ste allowedToGoTo (atgt)

Access: Read and write

Description: This port map specifies the out bridge ports a MAC frame with *address* in its destination MAC address field, originating from *receivePort*, can go out of.
The *allowedToGoTo* attribute is a set of strings. Each string is of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding transparent bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is

provisioned under. Multiple strings can be specified on the same *set* command. Each string in the list is space separated. An **"*"** in place of the ***i*** indicates that regardless of the protocol port instance, all bridge ports with name ***BridgePortName*** should be included in the *allowedToGoTo*.

Mib	Bridge
List of	String (4..29, ASCII)
List Size	255
Default	No default

COMPONENT Vr Br Tb ForwardTableEntry (Fte)

Instance	address [String (6, Dashed Hex)] domainNum [Decimal (1..4294967293)]
Groups	"GROUP Vr Br Tb Fte Operational (Oper)"
Scope	Application
Description	*Vr/<string> Br Tb FowardTableEntry/address, domainNum* This component represents an entry in the transparent bridge forwarding table. Entries in this table serve to map a destination MAC address to a port in the bridge. Essentially, entries are learned and aged in this table. This means that entries that are not frequently used, are purged. The *agingTime* is a provisionable attribute under the *TransparentBridge* component. Other fields in this table are informative in nature. A collection of such entries constitutes a transparent bridge forwarding table.
Mib	Bridge
Common Verbs	Help List Display

GROUP Vr Br Tb Fte Operational (Oper)

Properties	Operational

Description	This group contains all the attributes that form the fields of a forwarding table entry. These attributes reflect the state of the transparent bridge forwarding table.
Mib	Bridge

ATTRIBUTE Vr Br Tb Fte port

Access	Read only
Description	This attribute is the port name through which the *address* was learned. This implies that the frames that are destined for a station whose MAC address is the same as the *address*, will be forwarded through the bridge port indicated by the attribute *port*. The attribute *port* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort*, the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/MyPort* would have a name ***TBP-MyPort.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Br Tb Fte ageOfEntry (aoe)

Access	Read only
Description	This attribute indicates the age of the forwarding table entry. This is used to purge entries that have not been used for a certain period of time. This feature is to ensure that only the recently used entries are kept in the forwarding table. The time period for aging entries can be provisioned through the attribute *agingTime* under the component *TransparentBridge*.
Mib	Bridge
Values	Decimal (0..1000000)
Units	seconds
Default	No default

ATTRIBUTE Vr Br Tb Fte peerAddressInfo (pai)

Access	Read only
Description	This attribute indicates the learned peer address information. This address is used to essentially tunnel frames to a peer bridge unit across a network or a backbone. The tunneled frame is then appropriately processed by the peer bridge unit. Encapsulated bridging using a backbone bridge port is an example where this attribute *peerAddressInfo* is used.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br Tb Fte status

Access	Read only
Description	This attribute indicates the status of the forwarding table entry. A value of ***learned*** indicates that the entry was learned and cached from the network. Please note that only a value of ***learned*** is currently supported.
Mib	Bridge
Values	learned
Default	learned

COMPONENT Vr Br Tb NcForwardTableEntry (NcFte)

Instance	address [String (6, Dashed Hex)] domainNum [Decimal (1..4294967293)]
Groups	"GROUP Vr Br Tb NcFte Operational (Oper)"
Scope	Application
Description	*Vr/<string> Br Tb NcFowardTableEntry/address, domainNum* This component represents an entry in the transparent bridge forwarding table. This component is identical to

ForwardTableEntry except the MAC address portion of the index of this component is in non-canonical form.

Mib: Bridge

Common Verbs:
Help
List
Display

GROUP Vr Br Tb NcFte Operational (Oper)

Properties: Operational

Description: This group contains all the attributes that form the fields of a forwarding table entry. These attributes reflect the state of the transparent bridge forwarding table.

Mib: Bridge

ATTRIBUTE Vr Br Tb NcFte port

Access: Read only

Description: This attribute is the port name through which the *address* was learned. This implies that the frames that are destined for a station whose MAC address is the same as the *address,* will be forwarded through the bridge port indicated by the attribute *port*. The attribute *port* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort*, the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/MyPort* would have a name ***TBP-MyPort.***

Mib: Bridge

Values: String (4..29, ASCII)

Default: No default

ATTRIBUTE Vr Br Tb NcFte ageOfEntry (aoe)

Access: Read only

Description	This attribute indicates the age of the forwarding table entry. This is used to purge entries that have not been used for a certain period of time. This feature is to ensure that only the recently used entries are kept in the forwarding table. The time period for aging entries can be provisioned through the attribute *agingTime* under the component *TransparentBridge*.
Mib	Bridge
Values	Decimal (0..1000000)
Units	seconds
Default	No default

ATTRIBUTE Vr Br Tb NcFte peerAddressInfo (pai)

Access	Read only
Description	This attribute indicates the learned peer address information. This address is used to essentially tunnel frames to a peer bridge unit across a network or a backbone. The tunneled frame is then appropriately processed by the peer bridge unit. Encapsulated bridging using a backbone bridge port is an example where this attribute *peerAddressInfo* is used.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br Tb NcFte status

Access	Read only
Description	This attribute indicates the status of the forwarding table entry. A value of ***learned*** indicates that the entry was learned and cached from the network. Please note that only a value of ***learned*** is currently supported.
Mib	Bridge
Values	learned
Default	learned

COMPONENT Vr Br SourceRouteBridge (Srb)

Groups	"GROUP Vr Br Srb Provisioned (Prov)" "GROUP Vr Br Srb Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Br SourceRouteBridge* This component represents the source route bridging scheme described in various IEEE documents. Source routing is a scheme whereby most of the routing decisions are made by the originating host. The bridge merely forwards frames based upon the route descriptor fields found in the individual frames. Source route bridges also process explorer frames traversing the network. The spanning tree protocol is (optionally) used to prevent loops and the duplication of explorer frames.
Mib	Bridge
Opt. Subcomp.	"COMPONENT Vr Br Srb SpanningTreeProtocol (Stp)"
Dyn. Subcomp.	"COMPONENT Vr Br Srb LanIdTableEntry (Lte)"
Common Verbs	Help List Display Add DELete

GROUP Vr Br Srb Provisioned (Prov)

Properties	Provisioned
Description	This group contains all provisionable attributes associated with source route bridging. These attributes are global in nature as opposed to port specific.
Mib	Bridge

ATTRIBUTE Vr Br Srb lanIdTableNumEntries (lanIdtNe)

Access	Read and write

Description	This attribute specifies the maximum number of entries in the LAN ID table. This attribute provides a way to control the resources allocated to the LAN ID table. The *lanIdTableNumEntries* value depends upon the *VirtualRouter* attribute *bridgingMaxHeapSpace* and the number of source route bridge ports provisioned for this *SourceRouteBridge*. Consider the following attributes of the *SourceRouteBridge* component when adjusting this number: - *totalLanIdTableEntries* - *numLanIdTEntriesFree* - *numLanIdTEntriesDenied*
Mib	Bridge
Values	Decimal (500..65535)
Default	500

ATTRIBUTE Vr Br Srb agingTime (at)

Access	Read and write
Description	This attribute specifies the time period used in seconds, to age out dynamically learned entries in the forwarding table. The aging time can change, triggered by a spanning tree topology change. The operational value of the aging time is reflected in the attribute *agingTimeOper* under the *SpanningTreeProtocol* component.
Mib	Bridge
Values	Decimal (10..1000000)
Units	seconds
Default	300

ATTRIBUTE Vr Br Srb bridgeLfMode (blfMode)

Access	Read only
Description	This attribute indicates whether the bridge operates using the older 3-bit length negotiation field or the newer 6-bit length field

	in the routing information field. Only the 3-bit field is supported at this time.
Mib	Bridge
Values	mode3 mode6
Default	mode3

GROUP Vr Br Srb Statistics (Stats)

Properties	Operational
Description	This group contains all statistical attributes associated with the *SourceRouteBridge*. These attributes are global in nature as opposed to port specific.
Mib	Bridge

ATTRIBUTE Vr Br Srb totalLanIdTableEntries (tLIdTe)

Access	Read only
Description	This attribute specifies the total number of LAN ID Table entries. The total includes both static and dynamic entries. The value is limited by the attribute *lanIdTableNumEntries*, a provisionable attribute. If the value is consistently approaching the value of *lanIdTableNumEntries* it is advisable to increase the value provisioned for *lanIdTableNumEntries*.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Br Srb numLanIdtEntriesFree (nLIdTeF)

Access	Read only
Description	This attribute specifies the number of *LanIdTable* entries that are available for use. A consistently high value indicates a resource surplus in terms of memory requirements for the bridge. This surplus could be utilized elsewhere if need be. The value of this

attribute is directly influenced by the value of the *lanIdTableNumEntries*.

Mib: Bridge

Values: Decimal (0..4294967295)

Default: 0

ATTRIBUTE Vr Br Srb numLanIdtEntriesDenied (nLIdTeD)

Access: Read only

Description: This attribute indicates the number of instances where an entry was not placed in the *LanIdTable* due to the lack of free entries. A rapid increase indicates a shortage of free entries. To reduce the shortage increase the provisioned *lanIdTableNumEntries* value.

Mib: Bridge

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Vr Br Srb SpanningTreeProtocol (Stp)

Instance: Decimal (1..4294967295)

Groups: "GROUP Vr Br Srb Stp Provisioned (Prov)"
"GROUP Vr Br Srb Stp Operational (Oper)"

Scope: Application

Description: *Vr/<string> Br Tb Stp/<Decimal>*
This component represents the Spanning Tree Protocol for the bridge. Bridges use the Spanning Tree Protocol to provide a loop free, fault tolerant network topology.
Individual spanning tree instances are indexed using the domain number.
Only 16 instances of this component are allowed including the backbone spanning tree instance.
The instance identifier of the *SpanningTreeProtocol* component

is significant as it indicates the domain that the spanning tree instance governs.

Mib: Bridge

Common Verbs:
Help
List
Display
Add
DELete

GROUP Vr Br Srb Stp Provisioned (Prov)

Properties: Provisioned

Description: This group contains all the provisionable attributes that are applicable to the spanning tree protocol. These are global attributes and not port specific attributes. These attributes have a direct impact on the way this bridge participates in the stp.

Mib: Bridge

ATTRIBUTE Vr Br Srb Stp stpMode

Access: Read and write

Description: This attribute determines if this stp instance is to act as the stp instance for the backbone or an stp instance for a non-backbone media configuration. There can exist only one Backbone stp instance per virtual router. Please note that it is not permissible to assign the instance identifier of this stp instance as domain number of any access bridge port. In case of stp instances that are non-Backbone, the instance identifier is indicating the domain number the stp is operational in.

Mib: Bridge

Values:
access
backbone

Default: access

ATTRIBUTE Vr Br Srb Stp protocolSpec (pS)

Access: Read and write

Description	This attribute specifies the type of the spanning tree protocols that are in operation in the bridge. This means that this bridge participates in the types of stp indicated by this attribute.
Mib	Bridge
Values	both dec ieee8021d
Default	ieee8021d

ATTRIBUTE Vr Br Srb Stp priority

Access	Read and write
Description	This attribute is used to construct the *bridgeId*. It forms the first two octets of the *bridgeId* and the remaining 6 octets are made up of the *bridgeMACAddress*. The *priority* also determines the root bridge of the spanning tree topology. Manipulating this attribute might lead to a change in the spanning tree topology.
Mib	Bridge
Values	Decimal (0..65535)
Default	32768

ATTRIBUTE Vr Br Srb Stp bridgeMaxAge (bma)

Access	Read and write
Description	This attribute specifies the maximum age of the stp information learned from the network on any bridge port before it is discarded. This value is used by this bridge and all the other bridges when this bridge is the root bridge of the spanning tree topology. The following relationships are enforced as required by the IEEE 802.1d standards document. 2 *(*bridgeForwardDelay* -1.0seconds) >= *bridgeMaxAge*, *bridgeMaxAge* >= 2 * *bridgeHelloTime* + 1.0 seconds.
Mib	Bridge
Values	Decimal (600..4000)
Units	centiseconds

Default	2000

ATTRIBUTE Vr Br Srb Stp bridgeHelloTime (bht)

Access	Read and write
Description	This attribute specifies the time interval between the transmission of configuration BPDUs on any bridge port when this bridge becomes the root bridge. This attribute value is also used by all the other bridges in the Spanning Tree while this bridge is the root. The following relationship is enforced as required by the IEEE 802.1d standards document. *bridgeMaxAge* >= 2 * *bridgeHelloTime* + 1.0 seconds.
Mib	Bridge
Values	Decimal (100..1000)
Units	centiseconds
Default	200

ATTRIBUTE Vr Br Srb Stp bridgeForwardDelay (bfd)

Access	Read and write
Description	This attribute specifies how fast a bridge port changes its STP state while progressing towards the forwarding state. It is also used as *agingTime* to age dynamic entries in the forwarding table once a topology change is detected. This attribute is used by all the bridges participating in the stp when this bridge is the root bridge. The following relationship is enforced as required by the IEEE 802.1d standards document. 2 *(*bridgeForwardDelay* -1.0sconds) >= *bridgeMaxAge*.
Mib	Bridge
Values	Decimal (400..3000)
Units	centiseconds
Default	1500

GROUP Vr Br Srb Stp Operational (Oper)

Properties	Operational
Description	This group contains all the operational, stp attributes. These attributes are applicable in a global manner and are not specific to a bridge port.
Mib	Bridge

ATTRIBUTE Vr Br Srb Stp bridgeId (bid)

Access	Read only
Description	This attribute indicates the identifier value of this bridge, which serves to uniquely represent this bridge in the spanning tree topology. Thus, a *bridgeId* is unique only in the spanning tree instance the bridge is participating in. If multiple domain spanning trees exist then the same *bridgeId* can be re-used across these spanning tree instances.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br Srb Stp rootPortName (rpn)

Access	Read only
Description	This attribute indicates the name of the bridge port that offers the lowest cost route to the root bridge of the spanning tree topology.The attribute *rootPortName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *TransparentBridgePort* provisioned under *ProtocolPort/MyPort* would have a name ***TBP-MyPort.*** If multiple instances of spanning tree are operational then there will exist a *rootPortName* value for each instance of the running stp and is applicable to that instance alone.
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Br Srb Stp timeSinceTopologyChange (tstc)

Access	Read only
Description	This attribute indicates the time since a spanning tree topology change was detected by this bridge.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	centiseconds
Default	0

ATTRIBUTE Vr Br Srb Stp topologyChangeDetect (tcd)

Access	Read only
Description	This attribute indicates whether or not a topology change was detected. This flag is set when a bpdu with the topology detect flag set is received from the root bridge. If this bridge is the root bridge this flag is set on receipt of a topology change notification bpdu. It is reset after a fixed length of time.
Mib	Bridge
Values	false true
Default	false

ATTRIBUTE Vr Br Srb Stp topologyChanges (tc)

Access	Read only
Description	This attribute indicates the number of the topology change events detected by this bridge since the last bridge reset. This counter wraps around its maximum value of 4294967295.
Mib	Bridge
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Br Srb Stp designatedRoot (dr)

Access	Read only
Description	This attribute indicates the identifier of the bridge that this bridge treats as the root of the spanning tree topology. The root of the spanning tree topology is chosen through exchange.
Mib	Bridge
Values	String (8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br Srb Stp rootCost (rc)

Access	Read only
Description	This attribute indicates the cost of the path to the root as seen by this bridge.
Mib	Bridge
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Br Srb Stp maxAge (mAg)

Access	Read only
Description	This attribute indicates the maximum age of the stp info learnt from a port before it is discarded.
Mib	Bridge
Values	Decimal (600..4000)
Units	centiseconds
Default	2000

ATTRIBUTE Vr Br Srb Stp agingTimeOper (ato)

Access	Read only
Description	This attribute indicates the time period in seconds used to age out dynamically learned entries in the forwarding table. The aging time is specific to a running stp instance. A value for the aging time of the current instance of the stp can be provisioned through

	the attribute *agingTime* under the *InwBrTb* component. The *agingTimeOper* attribute assumes the value of the *bridgeForwardDelay* while a topology change is in progress. This is done to facilitate a quick aging out of the learned entries that might have become obsolete due to a spanning tree topology change.
Mib	Bridge
Values	Decimal (10..1000000)
Units	seconds
Default	300

ATTRIBUTE Vr Br Srb Stp helloTime (heT)

Access	Read only
Description	This attribute indicates the time interval between the transmission of the configuration BPDUs. This value is obtained from the root bridge of the spanning tree topology through bridge protocol data units. This value should be the value assigned to the attribute *bridgeHelloTime* of the root bridge.
Mib	Bridge
Values	Decimal (100..1000)
Units	centiseconds
Default	200

ATTRIBUTE Vr Br Srb Stp holdTime (hoT)

Access	Read only
Description	This attribute indicates the minimum interval of time between the transmission of two BPDUs.
Mib	Bridge
Values	Decimal (100)
Units	centiseconds
Default	100

ATTRIBUTE Vr Br Srb Stp fwdDelay (fd)

Access	Read only
Description	This attribute indicates how much time a port spends in any state while progressing towards the ***forwarding*** state. It is also used to age out learned entries while a topology change is in progress.This value should be the value assigned to the attribute *bridgeFwdDelay* of the root bridge.
Mib	Bridge
Values	Decimal (400..3000)
Units	centiseconds
Default	1500

COMPONENT Vr Br Srb LanIdTableEntry (Lte)

Instance	lanId [Decimal (0..4095; 65535)] domainNum (dn) [Decimal (1..4294967295)]
Groups	"GROUP Vr Br Srb Lte Operational (Oper)"
Scope	Application
Description	*Vr/<string> Br Srb LanIdTableEntry/lanId, domainNum* This component represents an entry in the LAN ID Table. The LAN ID Table is used by the *SourceRouteBridge* logic to associate a particular bridge port with a LAN ID found in the route descriptor field of a source route frame. Static entries reference bridge ports local to the bridge.
Mib	Bridge
Common Verbs	Help List Display

GROUP Vr Br Srb Lte Operational (Oper)

Properties	Operational
Description	This group contains all the fields of a LAN ID Table entry.

Mib	Bridge

ATTRIBUTE Vr Br Srb Lte portName (pn)

Access	Read only
Description	This attribute specifies the name of the bridge port the frame should be forwarded through to reach the desired Lan. In the case where the desired Lan is across a TB/SRT cloud, this entry would have the name of the *SrSeBridgePort.* The attribute *portName* is a string of the form ***"BridgePortName-i",*** where ***BridgePortName*** is the abbreviation of the corresponding bridge port and ***i*** is the instance identifier of the *ProtocolPort* the bridge port is provisioned under. For example a *SourceRouteBridgePort* provisioned under *ProtocolPort/MyPort* would have a name ***SrBP-MyPort.*** Please note that the attribute *portName* cannot have a value of ***TBP, FddiETb, Tbse, Tbcl, Tbsr, Srsg, Tbsg.***
Mib	Bridge
Values	String (4..29, ASCII)
Default	No default

ATTRIBUTE Vr Br Srb Lte ageOfEntry (aoe)

Access	Read only
Description	This attribute specifies the age of this entry in seconds.
Mib	Bridge
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Br Srb Lte peerMACAddress (pma)

Access	Read only
Description	This attribute specifies the MAC address of a bridge unit found across an transparent bridge/source route transparent network whose LAN ID is referenced by the attribute *lanId.* The *peerMACAddress* for static entries will be all zeroes.

Mib	Bridge
Values	String (6, Dashed Hex)
Default	No default

ATTRIBUTE Vr Br Srb Lte typeOfEntry (toe)

Access	Read only
Description	This attribute specifies the type of the LAN ID table entry. LAN ID table entries may be either static or dynamic. Dynamic entries imply that to reach the desired LAN source route frames need to be tunneled through a TB/SRT network, to another bridge unit which is attached to the LAN. These entries have a *peerMACAddress* associated with them and may be removed through the aging mechanism of the LAN ID table. Static entries on the other hand contain information about LANs that may be reached directly through bridge ports attached to the bridge. They are not aged and do not have a *peerMACAddress* associated with them.
Mib	Bridge
Values	static dynamic
Default	No default

COMPONENT Vr Ip

Groups	"GROUP Vr Ip Provisioned (Prov)" "GROUP Vr Ip Statistics (Stats)" "GROUP Vr Ip AdministrativeControl (AdminControl)" "GROUP Vr Ip OsiState (State)" "GROUP Vr Ip OperationalStatus (OperStatus)" "GROUP Vr Ip AcctProvisioned (AcctProv)"
Scope	Application

Description	*Vr/<string> Ip* This component represents the IP protocol running on this virtual router.
Mib	Ip
Subcomponents	"COMPONENT Vr Ip Arp" "COMPONENT Vr Ip Icmp" "COMPONENT Vr Ip RelayBC" "COMPONENT Vr Ip Udp" "COMPONENT Vr Ip Tcp"
Opt. Subcomp.	"COMPONENT Vr Ip Isis (Isis)" "COMPONENT Vr Ip PolicerProfile (Policer)" "COMPONENT Vr Ip DiffServProfile (DiffServProf)" "COMPONENT Vr Ip ControlPlaneProtection (Cpp)" "COMPONENT Vr Ip ExteriorGatewayProtocol (Egp)" "COMPONENT Vr Ip Ospf (Ospf)" "COMPONENT Vr Ip RoutingInformationProtocol (Rip)" "COMPONENT Vr Ip Static" "COMPONENT Vr Ip NetSentry (Ns)" "COMPONENT Vr Ip BootpRelayAgent (Bootp)" "COMPONENT Vr Ip Tunnel" "COMPONENT Vr Ip NextHopResolutionProtocol (Nhrp)" "COMPONENT Vr Ip CosPolicyGroup (Pg)" "COMPONENT Vr Ip BorderGatewayProtocol (Bgp)" "COMPONENT Vr Ip SecurityPolicyDatabase (Spd)" "COMPONENT Vr Ip Filter (Filt)" "COMPONENT Vr Ip Multicast (Mcast)" "COMPONENT Vr Ip MBgpRouteDistributionClient (MBgp)" "COMPONENT Vr Ip Vrrp" "COMPONENT Vr Ip Rtd"
Dyn. Subcomp.	"COMPONENT Vr Ip ForwardTable (Fwd)" "COMPONENT Vr Ip RouteDataBaseEntry (Rdb)" "COMPONENT Vr Ip IpInterfaceEntry (If)" "COMPONENT Vr Ip Cache"
Common Verbs	Help List Display Add

DELete
LOCK
Unlock

GROUP Vr Ip Provisioned (Prov)

Properties	Provisioned
Description	This group contains global attributes for IP.
Mib	Ip

ATTRIBUTE Vr Ip forwarding

Access	Read and write
Description	This attribute indicates whether this VR is acting as an IP gateway in respect to the forwarding of datagrams received by, but not addressed to, this VR.
Mib	Ip
Values	gateway
Default	gateway

ATTRIBUTE Vr Ip defaultTtl

Access	Read and write
Description	This attribute is the default value inserted into the Time-To-Live field of the IP header of datagrams originated at this entity, whenever a Time-To-Live value is not supplied by the transport layer protocol. The value of this attribute deviates from the MIB requirement that it will always have a value of 255.
Mib	Ip
Values	Decimal (255..255)
Default	255

ATTRIBUTE Vr Ip cosPolicyAssignment (cospolicy)

Access	Read and write
Description	This attribute specifies the *CosPolicyGroup* that each *IpPort* on the *VirtualRouter* uses if the *cosPolicyAssignment* attribute of the *IpPort* is not set. The assigned *CosPolicyGroup* controls the forwarding behavior of IP packets recieved and transmitted at each *IpPort* that use it. See the description of *Vr Ip CosPolicyGroup* for more information. If the *VirtualRouter* has a *DifferentiatedServicesDomain* subcomponent, then this attribute cannot be set. The assigned *CosPolicyGroup* must be a subcomponent of the same *Virtual Router.*
Mib	Ip
Values	Link (Service, linkToPolicyUsers)
Default	No default

ATTRIBUTE Vr Ip sourceRoute

Access	Read and write
Description	This attribute indicates whether or not this VR allows processing of datagrams which have a source route IP option.
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip filterAssignment (filtAss)

Access	Read and write
Description	This attribute specifies the *Filter* that each *IpPort* on the *VirtualRouter* uses if the *filterAssignment* attribute of the *IpPort*

is not set.

The filtering of IP packets is controlled by the *filterAssignment* attribute of the *Ip* and *IpPort*. If no *Filter* is used, then all packets are permitted.

If the *linkToMedia* attribute of the parent *ProtocolPort* of an *IpPort* is linked to *Vr Ip Tunnel Sep* or *Vr Ip Tunnel Msep*, then the *IpPort* operates as if no *Filter* is used. All packets are permitted.

The assigned *Filter* must be a subcomponent of the same *Virtual Router.*

Mib: Ip

Values: Link (Service, linkToFilterUsers)

Default: No default

ATTRIBUTE Vr Ip preConfigFwdPath (pcfp)

Access: Read and write

Description: This attribute specifies IP forwarding behavior for the virtual router. When *preConfigFwdPath* is set to ***enabled***, all routes present in the *ForwardTable* are fully installed in hardware on the FPs, eliminating the potential outage due to packet software exceptions for the initial IP flow using an uninstalled route. When this attribute is set to ***disabled***, initial packets using a given route are forwarded via software until the route is installed in hardware. The ***disabled*** setting results in the most efficient use of forwarding hardware resources since these resources are only used for actual IP flows. Thus the attribute respresents a tradeoff between forwarding performance and scalability of hardware resources.

Mib: Ip

Values: enabled
disabled

Default: disabled

ATTRIBUTE Vr Ip lcmCacheMissTrace

Access	Read and write
Description	This attribute indicates whether lcmCacheMissTrace is enabled or disabled
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip cacheTableSize (cts)

Access	Read and write
Description	This attribute specifies the maximum number of entries that can exist in the IP local cache table on each LP. This attribute provides a way to control the resources allocated to the IP cache tables. The default cache table size is *3000* for an FP and *100* for a CP, is used if this attribute is not specified explicitly. The attribute value must be multiple of 100.
Mib	Ip
Vector of	Decimal (100..8000)
Index	Decimal (0..15)
Default	([1] 100, [15] 3000)

GROUP Vr Ip Statistics (Stats)

Properties	Operational
Description	This is the GROUP holding the struct which contains statistical attributes for IP.
Mib	Ip

ATTRIBUTE Vr Ip inReceives

Access	Read only

Description	This is the number of input datagrams received from the interfaces, including those received in error. *inReceives* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip inHdrErrors

Access	Read only
Description	The number of input datagrams discarded due to errors in their IP headers, including bad checksums, version number mismatch, other format errors, time-to-live exceeded, errors discovered in processing their IP options, etc. *inHdrErrors* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip inAddrErrors

Access	Read only
Description	The number of input datagrams discarded due to errors such as invalid address, unsupported address class. *inAddrErrors* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip forwDatagrams

Access	Read only
Description	The number of input datagrams for which this router was not their final IP destination, as a result of which an attempt was made to find a route to forward them to that final destination.

	forwDatagrams wraps to zero if reaches it's maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip inUnknownProtos

Access	Read only
Description	The number of locally-addressed datagrams received successfully but discarded because of an unknown or unsupported protocol *inUnknownProtos* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip inDiscards

Access	Read only
Description	The number of input datagrams for which no problems were encountered to prevent their continued processing, but which were discarded due to the lack of buffers. This does not include any datagram discarded while awaiting for re-assembly. *inDiscards* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip inDelivers

Access	Read only
Description	The number of input datagrams successfully delivered to IP user-protocols (including ICMP). *inDelivers* wraps to zero if reaches its maximum defined value.

Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip outRequests

Access	Read only
Description	The number of datagrams which local IP user-protocols (including ICMP) supplied to IP in requests for transmission. This sum does not include datagrams counted in *ForwDatagrams*. *outRequests* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip outDiscards

Access	Read only
Description	The number of outbound datagrams that were discarded due to the lack of buffers. This sum also includes datagrams counted in *forwDatagrams* if any such packets met the discard criterion. *outDiscards* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip outNoRoutes

Access	Read only
Description	The number of outbound datagrams discarded because no route could be found to transmit them to their destination. This counter includes any datagrams counted in *forwDatagrams*. *outNoRoutes* wraps to zero if reaches its maximum defined value.
Mib	Ip

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip reasmTimeOut

Access	Read only
Description	The maximum number of seconds, which received fragments are held while they are awaiting reassembly at this gateway.
Mib	Ip
Values	Decimal (0..5)
Units	seconds
Default	5

ATTRIBUTE Vr Ip reasmReqds

Access	Read only
Description	The number of the IP fragments received by this gateway which needed to be reassembled. *reasmReqds* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip reasmOks

Access	Read only
Description	The number of IP fragments successfully reassembled by this gateway. *reasmOks* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip reasmFails

Access	Read only
Description	The number of times this gateway is unabled to assemble IP-fragments for whatever reasons. *reasmFails* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip fragOks

Access	Read only
Description	The number of IP datagrams that have been successfully fragmented by this gateway. *fragOks* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip fragFails

Access	Read only
Description	The number of IP-fragments that have been discarded because they needed to be fragmented but could not be. For example, their Don’t Fragment flag was set. *fragFails* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip fragCreates

Access	Read only

Description	This number of IP fragments that have been generated as a result of fragmentation by this gateway. *fragCreates* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip routingDiscards

Access	Read only
Description	The number of routing entries which were chosen to be discarded even though they are valid. One possible reason for discarding such an entry could be to free -up buffer space for other routing entries. In this implementation, this number is always zero because IP never deletes a valid routing entry.
Mib	Ip
Values	Decimal (0..0)
Default	0

ATTRIBUTE Vr Ip inSrcRouteDiscards

Access	Read only
Description	The number of input datagrams which had a source route IP option and were discarded because this functionality is not allowed for this Routing Component. *srcRouteDiscards* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Ip AdministrativeControl (AdminControl)

Properties	Provisioned

Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ip

ATTRIBUTE Vr Ip snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

GROUP Vr Ip OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively

prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ip

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Ip operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ip

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Ip snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip

Values	up down testing
Default	up

GROUP Vr Ip AcctProvisioned (AcctProv)

Properties	Provisioned
Description	This group contains the provisionable attributes for IP accounting.
Mib	Ip

ATTRIBUTE Vr Ip accountCollection (acl)

Access	Read: All Write: All
Description	This attribute specifies the reason(s) for which accounting data is collected: ***billing***, ***test***, ***study***, ***audit*** or ***force***. If the set of reasons is not empty then accounting records will be generated by this interface in the following situations: - on a TODA (time of day accounting) changeover, if TODA is enabled - every 12 hours per *ProtocolPort* if TODA is disabled If none of the above reasons are present IP accounting will be disabled on the VR. Accounting can be disabled on individual *ProtocolPort*s by disabling the attribute *accountingControl* in *Vr ProtocolPort*. The reason for collection is recorded in the accounting records, in the attribute *collectReason*.
Mib	Ip
Set of	bill test study audit force

Default	No default

COMPONENT Vr Ip Isis (Isis)

Groups	"GROUP Vr Ip Isis Provisioned (Prov)" "GROUP Vr Ip Isis OsiState (State)" "GROUP Vr Ip Isis ErrorStatistics (Errors)" "GROUP Vr Ip Isis OperationalStatus (OperStatus)"
Scope	Application
Description	*Router/<id> Isis* This component is configured to control the Intermediate System to Intermediate System (ISIS) routing protocol. This component requires at least one *Net* subcomponent and no more than 3 *Net* subcomponents to be provisioned. This component requires at least one *Level* subcomponent to be provisioned. For ISIS routes to be entered into the routing table, at least one active *IsisIf* component must be provisioned.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Isis NetworkEntityTitle (Net)" "COMPONENT Vr Ip Isis IsisLevel (Level)"
Dyn. Subcomp.	"COMPONENT Vr Ip Isis NeighborEntry (Nbr)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Isis Provisioned (Prov)

Properties	Provisioned

Description	This group of attributes is used to configure the *Isis* component.
Mib	Ip

ATTRIBUTE Vr Ip Isis snmpAdminStatus (admin)

Access	Read: All Write: All
Description	This attribute specifies the administrative status of the *Isis* component in this *Router.*
Mib	Ip
Values	up down testing
Default	up

ATTRIBUTE Vr Ip Isis intermediateSystemType (isType)

Access	Read: All Write: All
Description	This attribute specifies the ISIS level functionality of this *Router* as defined in ISO specification 10589. In this release only level1 ISIS support exists and therefore the value ***level1*** is the only value supported by this attribute.
Mib	Ip
Values	level1
Default	level1

ATTRIBUTE Vr Ip Isis overloadBitControl

Access	Read: All Write: All
Description	This attribute specifies how the value of the overload bit in the *Router's* Link State PDU (LSP) should be derived. A value of ***on*** specifies that the overload bit is forced on in the LSP.

A value of ***auto*** specifies that the overload bit value is fully controlled by system software. This means that system software, based on current operating conditions, may choose to set the overload bit as appropriate.

Any other value specifies, in seconds, the time period after a software restart that the overload bit will be forced on.

Mib: Ip

Values: Decimal (60..1800)
on
auto

Default: auto

ATTRIBUTE Vr Ip Isis ignoreLspErrors

Access: Read: All
Write: All

Description: This attribute specifies how the system behaves on receipt of a corrupted Link State PDU (LSP).

If the attribute value is ***ignore***, the system will discard a corrupted LSP.

If the attribute value is ***purge***, the system will purge the LSP.

Mib: Ip

Values: purge
ignore

Default: purge

ATTRIBUTE Vr Ip Isis lspMaxLifetime

Access: Read: All
Write: All

Description: This attribute specifies the time, in seconds, that an LSP generated by this *Router* may exist before being considered to be stale and therefore should be purged by other nodes in the

network.

A *Check Prov* error occurs if this attribute specifies a value less than or equeal to the value specified for the *lspRefreshInterval* attribute. A *Check Prov* warning is produced if the value of this attribute is not at least 300 seconds greater than the value of the *lspRefreshInterval* attribute.

Mib	Ip
Values	Decimal (350..65535)
Units	seconds
Default	1200

ATTRIBUTE Vr Ip Isis lspRefreshInterval

Access	Read: All Write: All
Description	This attribute specifies the time, in seconds, between successive retransmissions of this *Router's* LSP. A *Check Prov* error occurs if this attribute specifies a value greater than the value specified for the *lspMaxLifetime* attribute. A *Check Prov* warning is produced if the value of this attribute is not at least 300 seconds less than the value of the *lspMaxLifetime* attribute.
Mib	Ip
Values	Decimal (1..65535)
Units	seconds
Default	900

ATTRIBUTE Vr Ip Isis spfDelay

Access	Read: All Write: All

Description	This attribute specifies, in milliseconds, the delay between the detection of a network topology change and the execution of the ISIS Shortest Path First (SPF) route calculation algorithm.
Mib	Ip
Values	Decimal (1..10000)
Units	msec
Default	2000

ATTRIBUTE Vr Ip Isis alarmGeneration

Access	Read and write
Description	This attribute specifies the level of alarm generation for this *Isis* instance. A value of ***all*** specifies that all ISIS alarms are made visible. A value of ***none*** specifies that no ISIS alarms are made visible.
Mib	Ip
Values	none all
Default	all

GROUP Vr Ip Isis OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Isis adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Isis operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Isis usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Isis ErrorStatistics (Errors)

Properties	Operational
Description	The attributes in this group are essentially statistics or counters. Each attribute counts each particular, abnormal event that has occurred since the *Isis* component was last enabled or unlocked.
Mib	Ip

ATTRIBUTE Vr Ip Isis rxCorruptedLsps

Access	Read: All Write: Illegal

Description	This attribute indicates the number of corrupted LSPs received on all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Isis lsdbOverloads

Access	Read: All Write: Illegal
Description	This attribute indicates the number of occurrences of link state database overloads for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Isis attemptsToExceedMaxSeqNum

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that the maximum LSP sequence number has be reached for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Isis seqNumSkips

Access	Read: All Write: Illegal

Description	This attribute indicates the number of times that LSPs have been received where sequence numbers are nonsequential with respect to the previously received LSP. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Isis ownLspPurges

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that this *Router* has purged its own LSP. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Isis idFieldLenMismatches

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that this *Router* has received PDUs with ID Field lengths that do not match those used by this *Router*. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Isis maxAreaAddrMismatches

Access	Read: All Write: Illegal
Description	This attribute indicates the number of times that this *Router* has received a PDU with the “maximum number of supported area addresses” field set to a value greater than the maximum number of area addresses supported by this *Router*. This attribute counts this event for all ports for all levels since the last time the *Isis* component became enabled and/or was unlocked.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

GROUP Vr Ip Isis OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Ip Isis snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

COMPONENT Vr Ip Isis NetworkEntityTitle (Net)

Instance	String (1..46, ASCII)

Scope	Application
Description	*Rtr/id Isis NetworkEntityTitle/<net>* This component represents the *Router's* Network Entity Title (NET). A NET is an ISO address that uniquely identifies an ISIS router. The NET format is specified in ISO 8348. The *Net* instance ID must be formatted as follows: AA.aaaa.SSSS.SSSS.SSSS.NN where; "AA" represents the ISIS area number and is a two hex digit string. "aaaa" represents the ISIS area number and is a string of 0 to 24 hex digits and there must be an even number of digits in this field. "SSSS.SSSS.SSSS" represents this *Router's* ISIS system ID. The system ID is made up of 12 hex digits, grouped in 3 groups of 4 hex digits, separated by the "." character. Note that when more than one *Net* component is provisioned, all *Net* components must have the same system ID portion of the *Net* instance ID. "NN" represents the NSEL portion of the *Net* instance ID. This must always be "00" (zero zero). The sections of the *Net* instance ID are separated by the "." character.
Mib	Ip
Common Verbs	Help List Display Add DELete

COMPONENT Vr Ip Isis IsisLevel (Level)

Instance	Decimal (1..1)
Groups	"GROUP Vr Ip Isis Level Provisioned (Prov)"

Scope	Application
Description	*Rtr/<s> Isis IsisLevel/<1..2>* The ISIS routing protocol supports a two-level routing hierarchy. This component represents those ISIS routing aspects that are specific to each level. In this release, only *Level/1* is supported.
Mib	Ip
Dyn. Subcomp.	"COMPONENT Vr Ip Isis Level LsDbEntry (Lsdb)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Isis Level Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes is used to configure each ISIS routing level.
Mib	Ip

ATTRIBUTE Vr Ip Isis Level preference

Access	Read: All Write: All
Description	This attribute specifies the routing preference assigned to ISIS routes for this level. A lower value indicates a “more preferred” route.
Mib	Ip
Values	Decimal (1..255)
Default	32

COMPONENT Vr Ip Isis Level LsDbEntry (Lsdb)

Instance	sysId [String (1..14, ASCII)] psnid [Decimal (0..65536)] fragid [Decimal (0..65535)]
Groups	"GROUP Vr Ip Isis Level Lsdb Operational"
Scope	Application
Description	Rtr/<id> Isis Level/n LsDbEntry/SysId,PSNId,FragId This component describes an entry in the ISIS LSP Database.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Isis Level Lsdb Operational

Properties	Operational
Description	This group contains the set of operational attributes of the *LsDbEntry* component.
Mib	Ip

ATTRIBUTE Vr Ip Isis Level Lsdb seqNumber

Access	Read: All Write: Illegal
Description	This attribute indicates the sequence number of the LSP.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Isis Level Lsdb remainingLifetime

Access	Read: All Write: Illegal

Description	This attribute indicates, in seconds, the remaining lifetime of the LSP.
Mib	Ip
Values	Decimal (0..65535)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Isis Level Lsdb attachment (att)

Access	Read: All Write: Illegal
Description	This attribute indicates whether the default attachment bit is set in this LSP.
Mib	Ip
Values	notAttached attached
Default	No default

ATTRIBUTE Vr Ip Isis Level Lsdb partitionRepair

Access	Read: All Write: Illegal
Description	This attribute indicates whether the partition repair bit is set in this LSP.
Mib	Ip
Values	off on
Default	No default

ATTRIBUTE Vr Ip Isis Level Lsdb overloadBit

Access	Read: All Write: Illegal
Description	This attribute indicates whether the overload bit is set in this LSP.

Mib	Ip
Values	off on
Default	No default

ATTRIBUTE Vr Ip Isis Level Lsdb isType

Access	Read: All Write: Illegal
Description	This attribute indicates which system type bits are set in this LSP.
Mib	Ip
Values	none level1 level2 both
Default	No default

ATTRIBUTE Vr Ip Isis Level Lsdb lspBody

Access	Read: All Write: Illegal
Description	This attribute indicates the content of this LSP's body.
Mib	Ip
Values	String (1..1500, Hex)
Default	No default

COMPONENT Vr Ip Isis NeighborEntry (Nbr)

Instance	sysId [String (1..14, ASCII)] level [Decimal (1..2)]
Groups	"GROUP Vr Ip Isis Nbr Operational (Oper)"
Scope	Application

Description	*Rtr/<id> Isis Nbr/SysId,Level* This component represents the list of ISIS adjacencies formed with the specified ISIS router at the specified level.
Mib	Ip
Dyn. Subcomp.	"COMPONENT Vr Ip Isis Nbr Adjacency (Adj)"
Common Verbs	Help List Display

GROUP Vr Ip Isis Nbr Operational (Oper)

Properties	Operational
Description	This group contains only one operational attribute, which represents the number of adjacencies formed with the router identified by the instance ID of the parent *NeighborEntry* component. This instance ID specifies the System ID of the neighbor router.
Mib	Ip

ATTRIBUTE Vr Ip Isis Nbr adjacencies

Access	Read: All Write: Illegal
Description	This attribute indicates the number of adjacencies between this *Router* and the specified neighbor router at the specified ISIS level. The neighbor's system ID and the level at which the adjacency was formed is specified by the instance ID of the *NeighborEntry* component.
Mib	Ip
Values	Decimal (0..65535)
Default	No default

COMPONENT Vr Ip Isis Nbr Adjacency (Adj)

Instance	Decimal (1..65535)

Groups	"GROUP Vr Ip Isis Nbr Adj Operational (Oper)"
Scope	Application
Description	*Rtr/<id> Isis Nbr/SysId,Level Adjacency/n* This component represents the collection information available regarding an adjacency formed with another ISIS router.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Isis Nbr Adj Operational (Oper)

Properties	Operational
Description	This group contains a set of attributes that indicate the characteristics of the adjacency.
Mib	Ip

ATTRIBUTE Vr Ip Isis Nbr Adj neighborLinkLayerAddress (nbrLLAddr)

Access	Read: All Write: Illegal
Description	This attribute indicates the neighbor's link layer address for the link on which the adjacency was formed. In ISO ISIS terminology, this is referred to as the subnetwork point of attachment (SNPA).
Mib	Ip
Values	String (0..11, ASCII)
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj interface

Access	Read: All Write: Illegal
Description	This attribute indicates the *Interface* component on which this adjacency was formed. The format will be:

	Rtr/<s> Interface/<IP Address>
Mib	Ip
Values	The name of the component
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj state

Access	Read: All Write: Illegal
Description	This attribute indicates the operating state of the *adjacency.*
Mib	Ip
Values	null initializing up fail
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj holdTime

Access	Read: All Write: Illegal
Description	This attribute indicates, in seconds, the maximum time that may elapse without receiving a hello message before the adjacency is considered down.
Mib	Ip
Values	Decimal (1..600)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj priority

Access	Read: All Write: Illegal

Description	This attribute indicates the DIS priority of the neighbor associated with this *adjacency.*
Mib	Ip
Values	Decimal (0..127)
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj protocols

Access	Read: All Write: Illegal
Description	This attribute indicates the list of protocols supported by the neighbor on this *adjacency.*
Mib	Ip
Values	none osi_only ip_only osi_and_ip
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj areaAddresses

Access	Read: All Write: Illegal
Description	This attribute indicates the list of area addresses used by the neighbor associated with this *adjacency.*
Mib	Ip
Values	String (0..85, ASCII)
Default	No default

ATTRIBUTE Vr Ip Isis Nbr Adj age

Access	Read: All Write: Illegal
Description	This attribute indicates the elapsed time, in seconds, since this *adjacency* was established.

Mib	Ip
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

COMPONENT Vr Ip PolicerProfile (Policer)

Instance	String (1..20, ASCII)
Groups	"GROUP Vr Ip Policer Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip PolicerProfile/<string>* *Rtr/<string> Vrf/<string> PolicerProfile/<string>* This component and its subcomponents represent traffic conditioning rules for metering and policing IP packets received or transmitted at an interface. The rules specify various conditioning actions to be applied to individual packets after they are determined to be in-profile or out-of-profile with respect to various traffic rates and burst sizes. A *PolicerProfile* component is used to condition inbound or outbound IP traffiic at a *VirtualRouter IpPort* or *VpnRouteForwarder Interface* by setting the *linkToPolicerProfile* attribute of the *IngressServices* or *EgressServices* subcomponent, respectively. At ingress interfaces the conditioning rules are applied to drop or re-mark the DSCP field of IP packets received at the interface after ingress classification and DSCP marking (if any), prior to VPN encapsulation (if any), and prior to selection of forwarding treatments. At egress interfaces the conditioning rules are applied to drop or re-mark the DSCP field of IP packets transmitted at the interface, after VPN decapsulation (if any), and prior to the selection of forwarding treatments. Egress classification and DSCP marking with a *DiffServProfile* component is not allowed when a

PolicerProfile component is used to condition outbound traffic.

See the description of the *DifferentiatedServicesDomain* component and its subcomponents for a explanation of how an IP packet is treated based on the value of the DSCP field in the IP packet header.

Each *PolicerProfile* component must have at least one *Meter* subcomponent.

The *Vr Ip* component cannot have a *PolicerProfile* subcomponent unless the *Vr* has a *DiffServDomain* subcomponent and the *Vr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the *LogicalProcessorType* linked to the *LogicalProcessor* includes ***ipPolicing***.

The *Vrf* component cannot have *PolicerProfile* subcomponents unless the *Rtr* or *Vrf* has a *DiffServDomain* subcomponent and the *Rtr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the *LogicalProcessorType* linked to the *LogicalProcessor* includes ***ipPolicing***.

Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Policer Meter"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Policer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *PolicerProfile* component.

Mib	Ip

ATTRIBUTE Vr Ip Policer linkToPolicerUsers (users)

Access	Read and write
Description	This attribute specifies the components that are linked to the *PolicerProfile*. Only *IngressServices* or *EgressServices* subcomponents of the same *VirtualRouter* or *VirtualRouteForwarder* can be linked to the *PolicerProfile*.
Mib	Ip
List of	Link (Service, linkToPolicerProfile)
List Size	256
Default	No default

COMPONENT Vr Ip Policer Meter

Instance	String (1..20, ASCII)
Groups	"GROUP Vr Ip Policer Meter Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Policer/<string> Meter<string> Rtr/<string> Vrf<string> Policer/<string> Meter<string>* This component represents properties of a traffic which will be enforced for the selected traffic stream on an Ip interface. The traffic stream is selected by the packet Per Hop Behavior (PHB) and is specified by the *PolicedPhb* subcomponents of the *Meter.*
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Policer Meter PolicedPhb (Phb)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Policer Meter Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *Meter* component.
Mib	Ip

ATTRIBUTE Vr Ip Policer Meter committedInformationRate (cir)

Access	Read and write
Description	This attribute specifies the committed information rate (cir) in bits per second (bits/s). This is the maximum rate at which the network agrees to transfer information under normal conditions. The rate is measured over a time interval that is calculated internally based on the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values (t=*bc/cir*). The *commitedInformationRate(cir)* attribute must be zero if the *commitedBurstSize(bc)* attribute is zero.
Mib	Ip
Values	Decimal (0..50000000)
Units	bit/s
Default	64000

ATTRIBUTE Vr Ip Policer Meter committedBurstSize (bc)

Access	Read and write
Description	This attribute specifies the committed burst size in bits. This is the maximum burst size that the network agrees to transfer under normal conditions. The burst size is measured over a time interval that is calculated internally based on the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values (t=*bc/cir*). The *commitedBurstSize(bc)* attribute must be zero if the *commitedInformationRate(cir)* attribute is zero.
Mib	Ip

Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE Vr Ip Policer Meter excessBurstSize (be)

Access	Read and write
Description	This attribute specifies the excess burst size in bits. This is the amount of uncommitted data that the network will attempt to deliver over a specified time interval. The time interval is calculated internally based on the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values (t=*bc/cir*); however, if the *commitedInformationRate(cir)* and *commitedBurstSize(bc)* attribute values are zero, then the time interval is specified by the *measurementInterval* (*t*) attribute. If the *be* attribute is set to ***0***, then packets that exceed the committed information rate are discarded.
Mib	Ip
Values	Decimal (0..50000000)
Units	bits
Default	64000

ATTRIBUTE Vr Ip Policer Meter measurementInterval (t)

Access	Read and write
Description	This attribute specifies the time interval (in milliseconds) over which traffic rates and burst sizes are measured. This attribute value must be non-zero if *cir* and *bc* attribute values are zero. If the *cir* and *bc* attributes are non-zero then the *measurmentInterval* attribute is ignored.
Mib	Ip
Values	Decimal (0..25500)
Units	msec
Default	0

COMPONENT Vr Ip Policer Meter PolicedPhb (Phb)

Instance	0
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df
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af11
af12
af13
af21
af22
af23
af31
af32

af33
af41
af42
af43
cs0
cs1
cs2
cs3
cs4
cs5
cs6
cs7

Groups "GROUP Vr Ip Policer Meter Phb Provisioned (Prov)"

Scope Application

Description *Vr/<string> Ip Policer/<string> Meter<string> PolicedPhb/<phb>*
Rtr/<string> Vrf<string> Policer/<string> Meter<string> PolicedPhb/<phb>
This component is used to identify the traffic that is conditioned by the *Meter.*

An IP packet is assigned a PHB according to the value of DSCP field in the IP packet header and the set of existing *DiffServDomain PerHopBehavior* components. If the PHB assigned to the IP packet matches the *PolicedPhb* subcomponent instance, then the packet is conditioned by a policing mechanism that is established at the ingress or egress interface according to the *Meter* component provisioning.

The instance of this component must match a *PerHopBehavior* subcomponent of the *DiffServDomain* component used by the *Vr* or *Vrf*.

Each *Meter* component must have at least one *PolicedPhb* subcomponent.

Two *Meter* subcomponents of one *PolicerProfile* component

cannot have *PolicedPhb* subcomponents with equal component instance values.

Mib: Ip

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Ip Policer Meter Phb Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioned attributes of the *PolicedPhb* component.

Mib: Ip

ATTRIBUTE Vr Ip Policer Meter Phb initialBucket

Access: Read and write

Description: This attribute specifies whether or not traffic entering the *Meter* with this PHB contributes to the committed information rate.

If this attribute is set to ***committed*** then IP traffic entering the meter with this PHB is directed to the bucket tracking the committed information rate. The traffic is policed in a dual rate mode where both committed and excess information rates are enforced.

If this attribute is set to ***excess*** then IP traffic entering the meter with this PHB is directed to bucket the tracking the excess information rate. The traffic is policed in a single rate mode where only the excess information rate is enforced.

Mib: Ip

Values:
- committed
- excess

Default: excess

ATTRIBUTE Vr Ip Policer Meter Phb outOfProfilePhb

Access	Read and write
Description	This attribute specifies a new PHB that is assigned to any packet that has exceeded the committed information rate. This attribute will have effect only if the *initialBucket* attribute is set to ***committed***. The DSCP field of an IP packet that exceeds the committed information rate will be modifed to match this attribute value. The value of this attribute must match a *PerHopBehavior* subcomponent of the *DiffServDomain* component used by the *Vr* or *Vrf*. The default value of this attribute is equal to the *PolicedPhb* component instance for all PHBs except ***AF41***, ***AF42***, ***AF31***, ***AF32***, ***AF21***, ***AF22***, ***AF11***, ***AF12*** where the default value is ***AF42***, ***AF43***, ***AF32***, ***AF33***, ***AF22***, ***AF23***, ***AF12***, ***AF13***, respectively. The traffic class associated with the new PHB assigned to the packet must be equal to the traffic class associated with the original PHB assigned to the packet prior to policing. The traffic class associated with a PHB is identified by the *DiffServDomain PerHopBehavior trafficClass* attribute. Normally the drop precedence associated with the new PHB assigned to the packet is greater than the drop precedence associated with the original PHB assigned to the packet prior to policing. If value of the *outOfProfilePhb* attribute is equal to the *PolicedPhb* component instance and the packet has exceeded the committed information rate at an egress interface that uses a *PolicerProfile* component, then the packet is assigned high drop precedence without modifing the packet's PHB or DSCP values. This direct means of drop precedence modification does not occur at any ingress interface that uses a *PolicerProfile*.

Mib	Ip
Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Default	No default

COMPONENT Vr Ip DiffServProfile (DiffServProf)

Instance	String (1..20, ASCII)
Groups	"GROUP Vr Ip DiffServProf Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string>* *Rtr/<string> Vrf/<string> DiffServProfile/<string>* This component and its subcomponents represent mapping rules for classifying and marking IP packets received or transmitted at an interface.

At ingress interfaces the mapping rules are applied to mark the DSCP field of IP packets received at the interface, prior to policing (if any), prior to VPN encapsulation (if any), and prior to selection of forwarding treatments.

At egress interfaces the mapping rules are applied to mark the DSCP field of IP packets transmitted at the interface, after VPN decapsulation (if any) and after selection of forwarding treatments. Egress traffic conditioning with a *PolicerProfile* component is not allowed when a *DiffServProfile* component is used to classify and mark outbound traffic.

See the description of the *DifferentiatedServicesDomain* component and its subcomponents for a explanation of how an IP packet is treated based on the value of the DSCP field in the IP packet header.

A *DiffServProfile* component is used to mark the DSCP field of inbound or outbound IP traffiic at a *VirtualRouter IpPort* or *VpnRouteForwarder Interface* by setting the *linkToDiffServProfile* attribute of the *IngressServices* or *EgressServices* subcomponent, respectively.

Each *DiffServProfile* component used at an ingress interface must have a *DscpMap* subcomponent, or a *LinkMap* subcomponent, or at least one *MfMap* subcomponent. The *LinkMap* subcomponent and *DscpMap* subcomponent are not allowed to co-exist. The *LinkMap* subcomponent and *MfMap* subcomponents are not allowed to co-exist.

Multifield classification at an ingress interface using *MfMap* subcomponents overrides DSCP classification using the *DscpMap* subcomponent. This means that DSCP classification, which is controlled by *the DscpMap* component, is performed only if the packet does not match any *MfMap IpAddrLayer4Flow* component. If *MfMap* subcomponents are used without the *DscpMap* subcomponent and the packet does not match any *MfMap IpAddrLayer4Flow* component, then the packet is marked with DSCP 0.

Each *DiffServProfile* component used at an egress interface must

have a *DscpMap* subcomponent. It cannot have a *LinkMap* subcomponent nor a *MfMap* subcomponent.

The *Vr Ip* component cannot have *DiffServProfile* subcomponents if the *Vr vpnMode* attribute is set to ***carrier***.

The *Vr Ip* component cannot have *DiffServProfile* subcomponents if the *Vr* has does not have a *DiffServDomain* subcomponent.

The *Vr Ip* component cannot have *DiffServProfile* subcomponents unless the *Vr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the *LogicalProcessorType* linked to the *LogicalProcessor* includes ***ipDiffServ***.

The *Vrf* component cannot have *PolicerProfile* subcomponents if neither the *Rtr* nor *Vrf* has a *DiffServDomain* subcomponent.

The *Vrf* component cannot have *PolicerProfile* subcomponents if the *Rtr virtualRouterProcessor* attribute is set to *Lp/0* or to a *LogicalProcessor* component instance where the *featureList* attribute of the *LogicalProcessorType* linked to the *LogicalProcessor* includes ***ipDiffServ***.

Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip DiffServProf MfMap (Mf)" "COMPONENT Vr Ip DiffServProf LinkMap (LinkMap)" "COMPONENT Vr Ip DiffServProf DscpMap (DscpMap)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip DiffServProf Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisioned attributes of the *DiffServProfile* component.
Mib	Ip

ATTRIBUTE Vr Ip DiffServProf linkToDiffServUsers (users)

Access	Read and write
Description	This attribute specifies the components that are linked to the *DiffServProfile* component. Only *IngressServices* or *EgressServices* subcomponents of the same *VirtualRouter* or *VpnRouteForwarder* can be linked to the *DiffServProfile* component.
Mib	Ip
List of	Link (Service, linkToDiffServProfile)
List Size	256
Default	No default

COMPONENT Vr Ip DiffServProf MfMap (Mf)

Instance	String (1..20, ASCII)
Groups	"GROUP Vr Ip DiffServProf Mf Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string> MultiFieldMap/ <string>* *Rtr/<string> Vrf/<string> DiffServProfile/<string> MultiFieldMap/<string>* This component provides a mapping of multi-field (MF) Layer 3 and Layer 4 criteria to a DSCP value for classifying and marking IP packets received at an interface. This classification and marking method is used at an ingress interface when the DSCP value of some or all incomming IP packets cannot be trusted and must be marked with various DSCP values according to Layer 3 and Layer 4 header information.

The component instance is an arbitrary text string to allow the operator to assign a meaningful name for easy reference.

The *MfMap* component must have at least one *IpAddrLayer4Flow* subcomponent.

See the description of the *DifferentiatedServicesDomain* and *DiffServProfile* components for more information.

Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip DiffServProf Mf IpAddrLayer4Flow"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip DiffServProf Mf Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *MfMap* component.
Mib	Ip

ATTRIBUTE Vr Ip DiffServProf Mf assignedPhb (phb)

Access	Read and write
Description	This attribute indicates the Per Hop Behavior (PHB) assigned to a packet when the *MultiFieldMap* applies. The DSCP field of the IP packet is marked accordingly. Each *MfMap* subcomponent of the *DiffServProfile* must have an *assignedPhb* attribute value that corresponds to a unique DSCP value according to *DifferentiatedServicesDomain PerHopBehavior* component provisioning.
Mib	Ip

Values	Decimal (0..63) df ef af11 af12 af13 af21 af22 af23 af31 af32 af33 af41 af42 af43 cs0 cs1 cs2 cs3 cs4 cs5 cs6 cs7
Default	df

COMPONENT Vr Ip DiffServProf Mf IpAddrLayer4Flow

Instance	Decimal (0..1023)
Groups	"GROUP Vr Ip DiffServProf Mf IpAddrLayer4Flow Provisioned (Prov)" "GROUP Vr Ip DiffServProf Mf IpAddrLayer4Flow ProtoProvisioned" "GROUP Vr Ip DiffServProf Mf IpAddrLayer4Flow Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string> MultiFieldMap/ <string> IpAddrLayer4Flow/<string>* *Rtr/<string> Vrf/<string> DiffServProfile/<string>*

MultiFieldMap/<string> IpAddrLayer4Flow/<string>

The *IpAddrLayer4Flow* component is used to specify multi-field (MF) Layer 3 and Layer 4 criteria.

The IP packet is checked to see if it matches the criteria specified by each *IpAddrLayer4Flow* component, if any, under the *DiffServProfile* component. The PHB assigned to the packet is the value of the *assignedPhb* attribute on the parent *MultiFieldMap* component of the *IpAddrLayer4Flow* whose criteria best match the packet. The DSCP field of the IP packet is marked accordingly.

For example, to assign PHB value ***AF41*** to FTP packets destined to subnet 123.123.123.0, an *IpAddrLayer4Flow* subcomponent is added to the *MultiFieldMap* component where the *assignedPhb* attribute is set to ***AF41***. The *prefix*, *prefixLength*, *protocol*, and *portNumberRange* attributes of the *IpAddrLayer4Flow* component are set to ***123.123.123.0***, ***24***, ***tcp***, and ***20***, ***21***, respectively. This criteria also applies to each FTP packet that originates from subnet 123.123.123.0, but only if the source address and port number of the packet do not match any *IpAddrLayer4Flow* subcomponents of the *DiffServProfile.*

The packet matching algorithm for MF classification is explained in more detail as follows.

A match can be found only if the IP header protocol field is one of ICMP, TCP, or UDP. The *prefix*, *prefixLength*, and *portNumberRange* attributes are checked only if the protocol field in the header is TCP or UDP.

The destination IP address and destination port number information from the packet is first compared against the *prefix* attribute in conjunction with the *prefixLength* and *portNumberRange* attributes. If the *prefixLength* is ***0*** and the *prefix* is ***0.0.0.0***, then any value in the packet's IP destination address fields is a match. If *portNumberRange* is ***0***, then any value in the packet's destination port number fields is a match.

If more than one *IpAddrLayer4Flow* component matches a packet

(for instance one component specifies a range of IP addresses and a second specifies a single IP address in the range), then the component with the more precise match is used (the one which specifies the single address in this case). Precedence is always given to the IP address over the port number. For example, if one *IpAddrLayer4Flow* component specifies an range of IP addresses that includes the IP address from the packet and any port number, while a second *IpAddrLayer4Flow* component specifies an exact port number but a wider range of addresses, the first *IpAddrLayer4Flow* component is used.

If no match is found using the packet's destination IP address and destination port number information, then a second search is performed using the packet's source IP address and source port number information. This means that an *IpAddrLayer4Flow* component where the *protocol* is ***udp*** or ***tcp***, the *prefixLength* is ***0*** and the *portNumberRange* is ***0***, always matches some destination address and port number. This prevents the source address and port number check from being performed.

An ICMP packet matches any *IpAddrLayer4Flow* component whose *protocol* attribute is set to ***icmp***.

No attempt is made to match any packets where the options or fragment bits are set.

The *DiffServProfile* is not allowed to have more than 100 *IpAddressLayer4Flow* subcomponents.

See the description of the *DiffServProfile* component for more information.

Mib: Ip

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Ip DiffServProf Mf IpAddrLayer4Flow Provisioned (Prov)

Properties	Provisioned
Description	This group contains the *prefix* and *prefixLength* provisioned attributes of the *IpAddrLayer4Flow* component.
Mib	Ip

ATTRIBUTE Vr Ip DiffServProf Mf IpAddrLayer4Flow prefix

Access	Read and write
Description	This attribute specifies the IP address prefix for selecting IP packets. Matching an IP address to the prefix is done in conjunction with the *prefixLength* attribute. If the value is ***0.0.0.0***, then the *prefixLength* attribute must be ***0***. See the description of the *IpAddrLayer4Flow* component for more information.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip DiffServProf Mf IpAddrLayer4Flow prefixLength (len)

Access	Read and write
Description	This attribute specifies the number of most significant bits of an IP address to be matched with the *prefix* for selecting IP packets. The *prefixLength* value ***0*** indicates any IP address. See the description of the *IpAddrLayer4Flow* component for more information.
Mib	Ip
Values	Decimal (0..32)
Default	0

GROUP Vr Ip DiffServProf Mf IpAddrLayer4Flow ProtoProvisioned

Properties	Provisioned
Description	This group contains the *protocol* and *portNumberRange* provisioned attributes of the *IpAddrLayer4Flow* component.
Mib	Ip

ATTRIBUTE Vr Ip DiffServProf Mf IpAddrLayer4Flow protocol (proto)

Access	Read and write
Description	This attribute specifies the layer 4 (transport) protocol for selecting IP packets. If the value is ***icmp***, then the *prefixLength* attribute must be ***0***, and the *portNumberRange* attribute must not be set. See the description of the *IpAddrLayer4Flow* component for more information.
Mib	Ip
Values	icmp tcp udp
Default	tcp

ATTRIBUTE Vr Ip DiffServProf Mf IpAddrLayer4Flow portNumberRange

Access	Read and write
Description	This attribute specifies the TCP or UDP port numbers for selecting IP packets. A single value specifies a single port number. Two values specifies a range of port numbers. The order of the two values is irrelevant. See the description of the *IpAddrLayer4Flow* component for more information.

Mib	Ip
List of	Decimal (0..65535)
List Size	2
Default	No default

GROUP Vr Ip DiffServProf Mf IpAddrLayer4Flow Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *TosMap* and the *IpAddrLayer4Flow* components.
Mib	Ip

ATTRIBUTE Vr Ip DiffServProf Mf IpAddrLayer4Flow COS

Access	Read only
Description	This attribute indicates the Class of Service (CoS) assigned to a packet when the *Policy* applies. The value of this attribute is equal to the *assignedCos* attribute of the *Policy* component.
Mib	Ip
Values	Decimal (0..3)
Default	No default

COMPONENT Vr Ip DiffServProf LinkMap (LinkMap)

Groups	"GROUP Vr Ip DiffServProf LinkMap Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string> LinkMap* *Rtr/<string> Vrf/<string> DiffServProfile/<string> LinkMap* This component provides a mapping of Layer 2 connection class values to PHB values for classifying IP packets received at an interface. The DSCP field of the IP packet is marked accordingly. This classification and marking method is used at an ingress interface when the DSCP value of some or all incomming IP packets cannot be trusted and the DSCP field of all IP packets

arriving at each Layer 2 connection is to be marked with exactly one of four different values.

For *AtmMpe*, the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte*, the connection class is specified by the *ipCoS* attribute of the *StaticDlci* or *DynamicDlciDef* subcomponent. For *IpDlciGroup*, the connection class is specified by the *ipCos* attribute of the *FrConnection* subcomponent. For all other media, the connection class is specified by the *ipCoS* attribute of the *IpPort*.

See the description of the *DifferentiatedServicesDomain* and *DiffServProfile* components for more information.

Mib: Ip

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Ip DiffServProf LinkMap Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes of the *LinkMap* component

Mib: Ip

ATTRIBUTE Vr Ip DiffServProf LinkMap assignedPhb (phb)

Access: Read and write

Description: This attribute specifies a mapping of Layer 2 connection class values to PHB values for classifying IP packets received at an interface. The DSCP field of the IP packet is marked accordingly.

The value on the right hand side of each element contained by this vector attribute should be a DSCP value that matches an existing *PerHopBehavior* subcomponent instance under the

DifferentiatedServicesDomain component; otherwise, the packet will be treated according the *PerHopBehavior* subcomponent whose instance is associated with DSCP 0.

See the description of the *LinkMap* component for more information.

Mib	Ip
Vector of	Decimal (0..63)
Index	Decimal (0..3)
Default	([1] 0, [3] 0)

COMPONENT Vr Ip DiffServProf DscpMap (DscpMap)

Groups	"GROUP Vr Ip DiffServProf DscpMap Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip DiffServProfile/<string> DscpMap* *Rtr/<string> Vrf/<string> DiffServProfile/<string> DscpMap*

This component provides a mapping of DSCP values to PHB values for classifying IP packets received and transmitted at an interface. The DSCP field of the IP packet is marked accordingly.

This classification an marking method is used at an ingress interface when the DSCP value of all incomming IP packets can be trusted, but require full or partial translation to new values for correct forwarding treatment.

This classification an marking method can be used at an egress interface when the DSCP value of all outgoing IP packets require full or partial translation to new values for correct forwarding treatment at the next hop.

See the description of the *DifferentiatedServicesDomain* and

DiffServProfile components for more information.

Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip DiffServProf DscpMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *DscpMap* component
Mib	Ip

ATTRIBUTE Vr Ip DiffServProf DscpMap assignedPhb (phb)

Access	Read and write
Description	This attribute specifies a mapping of DSCP values to PHB values for classifying IP packets received and transmitted at an interface. The DSCP field of the IP packet is marked accordingly. If the *DscpMap* component is used at an ingress interface, the value on the right hand side of each element contained by this vector attribute should be a DSCP value that matches an existing *PerHopBehavior* subcomponent instance under the *DifferentiatedServicesDomain* component; otherwise, the packet will be treated according the *PerHopBehavior* subcomponent whose instance is associated with DSCP 0. See the description of the *DscpMap* component for more information.
Mib	Ip
Vector of	Decimal (0..63)
Index	Decimal (0..63)

Default ([1] 0, [63] 0)

COMPONENT Vr Ip ControlPlaneProtection (Cpp)

Groups "GROUP Vr Ip Cpp Provisioned (Prov)"
"GROUP Vr Ip Cpp Operational (Oper)"
"GROUP Vr Ip Cpp OsiState (State)"

"COLLECTED STATS VirtualRouter Ip ControlPlaneProtection"

Scope Application

Description *Vr/<string> Ip ControlPlaneProtection*
Rtr/<string> ControlPlaneProtection
Rtr/<string> Vrf/<string> ControlPlaneProtection

This component represents the IP Control Plane Protection mechanism. The *CPP* helps prevent control traffic from the current Virtural Router, Router, or vrForwarder (VR/VRF) receiving excessive traffic from adversely affecting the control processing of others. If the rate of packets received by the local-destined address is greater than the provisioned value, CPP is notified.
This component does not protect locally destined IP traffic including IP options, IPv6, TTL of 0 or 1 which includes OSPF, and unsupported protocols (in hardware) such as ISIS.

Mib Ip

Dyn. Subcomp. "COMPONENT Vr Ip Cpp IsolatedDa"

Common Verbs
Help
List
Display
Add
DELete
LOCK
Unlock

VERB Clear Vr Ip Cpp

Impact	Service
Description	clear Vr/<string> Ip Cpp clear Rtr/<string> Cpp clear Rtr/<string> Vrf/<string> Cpp This command is intended for manually clearing all isolated addresses from the current *Cpp* component, and resume traffic to the locally destined addresses on all the FPs.

GROUP Vr Ip Cpp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Cpp* component.
Mib	Ip

ATTRIBUTE Vr Ip Cpp packetsPerSecond (pps)

Access	Read and write
Description	This attribute specifies the maximum number of packets per second a locally destined address on the VR/VRF can receive before being monitored by the *CPP* feature.
Mib	Ip
Values	Decimal (100; 200; 300; 400; 500; 600; 700; 800; 900; 1000; 1100; 1200)
Default	1200

ATTRIBUTE Vr Ip Cpp isolationTime (isolation)

Access	Read and write
Description	This attribute specifies the amount of time a locally destined address will remain in isolation after exceeding the *packetsPerSecond* rate. If *gracePeriod* is non-zero, isolation will not occur until the conclusion of the grace period.

A value of 0 indicates that a locally destined address which is isolated can only be cleared using the *CLEAR* command.

If the traffic to the address is still excessive after the isolationTime expires, this locally destined address will remain in isolation for *IsolationTime* * 2 period. If the traffic to the address is still excessive after 3 times of the above step, the address will be permanently isolated until it is cleared by the *CLEAR* verb.

The minimum value of *IsolationTime* other than zero is 30.

Mib	Ip
Values	Decimal (0; 30..3600)
Units	seconds
Default	30

ATTRIBUTE Vr Ip Cpp gracePeriod (grace)

Access	Read and write
Description	This attribute specifies period of time used to sample the flow rate before the packets are discarded. The intent of the grace period is to measure the average flow rate during this period to ensure that the exceeded traffic flow rate was not due to bursty traffic. If *mode* is ***study***, a list of static record are generated every 15 minutes including a list of locally-destined addresses having excessive flow and its avarage flow rates during the gracePeriod. If *gracePeriod* is non-zero, isolation will not occur until the conclusion of the grace period. A value of 0 of this attribute when *mode* is ***protected*** indicates that no monitoring of the address will be performed after an excessive flow is detected and isolation occurs immediately. It is an error to have *mode* set to ***study*** and *gracePeriod* set to zero.
Mib	Ip

Values	Decimal (0..300)
Units	seconds
Default	5

ATTRIBUTE Vr Ip Cpp mode

Access	Read and write
Description	This attribute specifies whether we are simply monitoring excessive traffic (***study***), or will ***protect*** the VR by discarding traffic during excessive traffic flows, or the feature is ***disabled***. It is an error to have *mode* set to ***study*** and *gracePeriod* set to zero.
Mib	Ip
Values	study protect disabled
Default	disabled

GROUP Vr Ip Cpp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Cpp* component.
Mib	Ip

ATTRIBUTE Vr Ip Cpp operationalStatus

Access	Read only
Description	This attribute indicates the current operational state of the *Cpp* component on this VR The following states are the valid states of the *Cpp* component: ***inactive***: there are currently no addresses on the VR/VRF being monitored or isolated. ***disabled***: the *Cpp* feature is currently disabled on the VR/VRF. ***monitoring***: there are currently addresses on the VR/VRF being monitored, but none are currently isolated. If the *mode* is set to

	study, this state indicates there are currently addresses on the VR/VRF having excessive traffic. ***isolating***: there are currently addresses being isolated for this VR/VRF.
Mib	Ip
Values	inactive disabled monitoring isolating
Default	No default

ATTRIBUTE Vr Ip Cpp isolatedDaCount

Access	Read only
Description	This attritute counts the total number of addresses currently being isolated for this VR.
Mib	Ip
Values	Decimal (0..4096)
Default	No default

GROUP Vr Ip Cpp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Cpp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ip

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Ip Cpp operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ip

Values: enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE Vr Ip Cpp usageState (osiUsage)

Access Read only

Description This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib Ip

Values idle
active (activ)
busy

Default idle

COLLECTED STATS VirtualRouter Ip ControlPlaneProtection

Description The statistics record generated by the VirtualRouter Ip ControlPlaneProtection component.

ATTRIBUTE Vr Ip Cpp isolatedDa

Description This attribute indicates the ip address of the isolated locally destined DA.

Values IP address

ATTRIBUTE Vr Ip Cpp isolatedLp

Description This attribute indicates the LP number on which the locally destined address is being isolated.

Values Decimal (0..15)

ATTRIBUTE Vr Ip Cpp isolatedCounts

Description	This attribute indicates the number of counts that the isolated DA encountered during the last 15 minutes.
Values	Decimal (0..65535)

ATTRIBUTE Vr Ip Cpp averageFlowRate

Description	This attribute indicates the average flow rate of the isolated DA during the isolation period.
Values	Decimal (0..65535)

COMPONENT Vr Ip Cpp IsolatedDa

Instance	address [IP address] lp [Decimal (0..15)]
Groups	"GROUP Vr Ip Cpp IsolatedDa Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Cpp IsolatedLocalAddress/<ipAddress>,<lp>* *Rtr/<string> Cpp IsolatedLocalAddress/<ipAddress>,<lp>* *Rtr/<string> Vrf/<string> Cpp IsolatedLocalAddress/ <ipAddress>,<lp>* Each entry of this component represents a locally destined address being isolated. There is one instance of this component per isolated address per lp.
Mib	Ip
Common Verbs	Help List Display

VERB Clear Vr Ip Cpp IsolatedDa

Impact	Service
Description	*Clear Vr/<string> Ip Cpp* IsolatedDa/< ipAddress> *Clear Rtr/<string> Cpp* IsolatedDa/<ipAddress> *Clear Rtr/<string> Vrf/<string> Cpp* IsolatedDa/<ipAddress> This command is intended for manually clearing the isolated address and resume traffic to the local address for all FPs.

GROUP Vr Ip Cpp IsolatedDa Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *IsolatedLocalAddress* component.
Mib	Ip

ATTRIBUTE Vr Ip Cpp IsolatedDa averageFlowRate

Access	Read only
Description	This attribute indicates the average flow rate calculated over the grace period.
Mib	Ip
Values	Decimal (0..65535)
Default	No default

COMPONENT Vr Ip ForwardTable (Fwd)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] typeOfService (tos) [Decimal (0..31)] gateway (gateway) [IP address]
Groups	"GROUP Vr Ip Fwd Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address>* *Rtr/<string> ForwardTable/<Ip Address>,<Ip*

Address>,<Decimal>,<IP Address
Rtr/<string> Vrf/<string> ForwardTable/<Ip Address>,<Ip Address>,<Decimal>,<IP Address
This component contains the information to forward data.This table holds the best route information sent from Routing table.

Mib: Ip

Common Verbs:
- Help
- List
- Display

GROUP Vr Ip Fwd Operational (Oper)

Properties: Operational

Description: Identifies a group of operational attributes associated with each entry in the Forward Table.

Mib: Ip

ATTRIBUTE Vr Ip Fwd ifIndex

Access: Read only

Description: This attribute specifies the SNMP index associated with the protocol port or interface represented by the attribute *protocolPortName* or *interfaceName,* which identifies the local interface through which the next hop of this route should be reached.

Mib: Ip

Values: Decimal (1..65535)

Default: No default

ATTRIBUTE Vr Ip Fwd type

Access: Read only

Description: This attribute specifies the type of route. Note that ***localInterface*** refers to a route for which the next hop is the final destination; ***remoteDestination*** refers to a route for which the next hop is not the final destination.

Mib	Ip
Values	notDefined invalid localInterface remoteDestination
Default	No default

ATTRIBUTE Vr Ip Fwd protocol

Access	Read only
Description	This Attribute identifies the routing mechanism by which this route was learned.
Mib	Ip
Values	other local netmgmt icmp egp ggp hello rip isIs esIs ciscoIgrp bbnSpfIgp ospf bgp idpr mpls mbgp bgpMplsInternal ebgpLabel
Default	No default

ATTRIBUTE Vr Ip Fwd age

Access	Read only

Description	This attribute specifies the number of seconds since this route was last updated or otherwise determined to be correct.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Fwd protocolPortName (pPName)

Access	Read only
Description	For a *Vr*, this attribute indicates the name of the protocol port by which the next hop of this route should be reached.
Mib	Ip
Values	The name of the component
Default	No default

ATTRIBUTE Vr Ip Fwd nextHopAs

Access	Read only
Description	This attribute specifies the Autonomous System number of the Next Hop. If unknown or not relevant to the protocol indicated by the attribute *protocol*, the value should be zero.
Mib	Ip
Values	Decimal (0..429467295)
Default	No default

ATTRIBUTE Vr Ip Fwd metric

Access	Read only
Description	This attribute specifies the primary routing metric for this route. The semantics of this metric are determined by the routing protocol specified by the value of the attribute *protocol*. If this metric is not used, its value should be set to -1.
Mib	Ip

Values	Signed (-1..65535)
Default	-1

ATTRIBUTE Vr Ip Fwd interfaceName

Access	Read only
Description	For a *Rtr* or *Rtr Vrf*, this attribute indicates the name of the interface by which the next hop of this route should be reached.
Mib	Ip
Values	The name of the component
Default	No default

COMPONENT Vr Ip RouteDataBaseEntry (Rdb)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] protocol (proto) [bogus local remote special ospf ospfExternal ospfType3Discard ospfType7Discard rip ripDiscard egp bgpExternal bgpInternal bgpAggrDiscard redistrib mpls mbgp bgpMplsInternal isis ebgpLabel] gateway [IP address]
Groups	"GROUP Vr Ip Rdb Operational (Oper)"

Scope	Application
Description	*Vr/<string> Ip RouteDataBaseEntry/ <destAddress>,<destMask>,<protocol>* *Rtr/<string> RouteDatabaseEntry/ <destAddress>,<destMask>,<protocol>* *Rtr/<string> Vrf/<string> RouteDatabaseEntry/ <destAddress>,<destMask>,<protocol>* This component is used to display the information in the Ip routing database. *destAddress* and *destMask* indicates the address and mask of the route in the RoutingDatabase. *protocol* indicates the protocol this entry is learned from. *gateway* indicates the nextHop address for remote routes. The value of *gateway* for the localInterface routes will be the same value as the *destAddress*.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Rdb Operational (Oper)

Properties	Operational
Description	Identifies a group of operational attributes associated with each entry in the routing database.
Mib	Ip

ATTRIBUTE Vr Ip Rdb metric

Access	Read only
Description	This attribute specifies the primary routing metric for this route. The semantics of this metric are determined by the routing protocol specified by the value of the index to this entry *protocol*. If this metric is not used, its value should be set to -1.
Mib	Ip
Values	Signed (-1..65535)
Default	-1

ATTRIBUTE Vr Ip Rdb preference (pref)

Access	Read only
Description	This attribute specifies the the preference value of this particular entry. The value of this attribute affects the way the routeEntries in this database are selected for installing it in the *ForwardTable*. The lower the preference value of this entry, the higher are the chances that this entry will be selected to install in the *ForwardTable*.
Mib	Ip
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vr Ip Rdb age

Access	Read only
Description	This attribute specifies the number of seconds since this route was last updated or otherwise determined to be correct.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Ip IpInterfaceEntry (If)

Instance	IP address
Groups	"GROUP Vr Ip If Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip InterfaceEntry/<IpAddr>*

This component contains information about all the provisioned *logicalIf* entries under all *ipPort* components.

Mib: Ip

Common Verbs: Help, List, Display

GROUP Vr Ip If Operational (Oper)

Properties: Operational

Description: Identifies a group of operational attributes associated with each entry in the Ip interface table.

Mib: Ip

ATTRIBUTE Vr Ip If interfaceMask (mask)

Access: Read only

Description: This attribute indicates the mask for this interface entry.

Mib: Ip

Values: IP address

Default: No default

ATTRIBUTE Vr Ip If status

Access: Read only

Description: This attribute specifies the status of the provisioned Ip logicalInterface entry. A value of ***disabled*** is used when the parent components *Vr*, *Ip* or *ipPort* is in a disabled state. A value of ***up*** is used when the interface is in an operational state. A state of ***down*** is used if the media associated with this interface is not ready or disabled.

Mib: Ip

Values	up down disabled
Default	No default

ATTRIBUTE Vr Ip If pPName

Access	Read only
Description	Indicates the name of the protocol port this logicalIfEntry belongs to.
Mib	Ip
Values	String (1..23, ASCII)
Default	No default

ATTRIBUTE Vr Ip If mediaType (type)

Access	Read only
Description	This attribute indicates the media type of interface. When the interface is down, a value of none indicates the media stays down from the beginning. When the interface is down, a value of some valid media type indicates the media is brought down after it was up. Otherwise, when the interface is up or disabled, this attribute should reflect the proper media type of the interface.
Mib	Ip
Values	none tokenRing ethernet fddi x25 frameRelay ppp bnx clusterBridge virtualLink vcpEther vcpToken smds

atmMpeVcEncap
atmMpeLlcEncap
lecEther
lecToken
tunnel
virtual
localMedia

Default: No default

ATTRIBUTE Vr Ip If hardwareAddress

Access: Read only

Description: This attribute specifies the hardware address of the media in canonical form if applicable. The non-canonical version of this address is indicated in *ncHardwareAddress*.

Mib: Ip

Values: String (0..8, Dashed Hex)

Default: No default

ATTRIBUTE Vr Ip If mtu

Access: Read only

Description: This attribute specifies the maximum transmission unit applicable for this *logicalInterface*. A value of ***0*** is used for the interfaces where all the necessary information is not available to compute the mtu applicable for this interface.

Mib: Ip

Values: Decimal (0..0; 80..18944)

Default: No default

ATTRIBUTE Vr Ip If broadcastAddress

Access: Read only

Description: This attribute indicates the destination IP address to be used by any application which needs to broadcast on this interface. The

	value is determined by the corresponding *LogicalIf* component's *broadcastAddress* attribute.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip If ncHardwareAddress

Access	Read only
Description	This attribute is the non-canonical version of *hardwareAddress*. This attribute is not displayed for interfaces on non-LAN media.
Mib	Ip
Values	String (0..8, Dashed Hex)
Default	No default

COMPONENT Vr Ip ExteriorGatewayProtocol (Egp)

Groups	"GROUP Vr Ip Egp Provisioned (Prov)" "GROUP Vr Ip Egp Statistics (Stats)" "GROUP Vr Ip Egp OsiState (State)" "GROUP Vr Ip Egp AdministrativeControl (AdminControl)" "GROUP Vr Ip Egp OperationalStatus (OperStatus)"
Scope	Application

Description	*Vr/<string> Ip Egp* This is used to run the Exterior Gateway Protocol for IP.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Egp NeighborEntry (Nbr)" "COMPONENT Vr Ip Egp Import" "COMPONENT Vr Ip Egp Export"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Egp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the EGP component
Mib	Ip

ATTRIBUTE Vr Ip Egp asId (as)

Access	Read and write
Description	The autonomous system identifier for this EGP entity. The value of this *asId* can not be equal to the value of *EgpNeighborEntry asId.*
Mib	Ip
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Ip Egp defaultHelloInterval (hello)

Access	Read and write

Description	This attribute is used to configure the default hello interval for each neighbor. This attribute's value is used by the application for each *EgpNeighbor* whose *helloInterval* has not been set.
Mib	Ip
Values	Decimal (30..900)
Units	seconds
Default	30

ATTRIBUTE Vr Ip Egp defaultPollInterval (poll)

Access	Read and write
Description	This attribute is used to configure the default polling interval for the EGP Neighbor. This attribute's value is used by the application for each *EgpNeighbor* whose *pollInterval* has not been set.
Mib	Ip
Values	Decimal (120..3600)
Units	seconds
Default	120

ATTRIBUTE Vr Ip Egp maxNatNets (maxNets)

Access	Read and write
Description	This attribute is used to configure the maximum number of external natural networks this virtual router will be advertising via EGP.
Mib	Ip
Values	Decimal (1..65535)
Default	500

ATTRIBUTE Vr Ip Egp maxBufferSize (maxBuf)

Access	Read and write

Description	This attribute specifies the maximum buffer size (in 1024 byte memory blocks) to be used for an EGP update to be sent.
Mib	Ip
Values	Decimal (2..16)
Units	Kbyte
Default	4

GROUP Vr Ip Egp Statistics (Stats)

Properties	Operational
Description	These set of attributes identifies the statistics for the EGP component.
Mib	Ip

ATTRIBUTE Vr Ip Egp inMsgs

Access	Read only
Description	Identifies the number of EGP messages received without error. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp inErrorMsgs

Access	Read only
Description	Identifies the sum of EGP error messages from all the neighbors. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp outErrorMsgs

Access	Read only
Description	Indicates the sum of EGP error messages sent to all the neighbors. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp inErrors

Access	Read only
Description	Identifies the number of EGP messages that proved to be in error. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp outMsgs

Access	Read only
Description	The total number of locally generated EGP messages. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp outErrors

Access	Read only

Description	The number of EGP messages that were locally generated but were not sent out due to resource limitations within an EGP entity.This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

GROUP Vr Ip Egp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Egp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Egp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Egp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Ip

Values:
idle
active (activ)
busy

Default: idle

GROUP Vr Ip Egp AdministrativeControl (AdminControl)

Properties: Provisioned

Description: This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.

Mib: Ip

ATTRIBUTE Vr Ip Egp snmpAdminStatus

Access: Read and write

Description: The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.

Mib: Ip

Values:
up
down
testing

Default: up

GROUP Vr Ip Egp OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib	Ip

ATTRIBUTE Vr Ip Egp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

COMPONENT Vr Ip Egp NeighborEntry (Nbr)

Instance	IP address
Groups	"GROUP Vr Ip Egp Nbr Provisioned (Prov)" "GROUP Vr Ip Egp Nbr Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Egp NeighborEntry/<Ip Address>* This component identifies the properties of each EGP neighbor. The index value of this entry should belong to one of the subnets provisioned as *logicalIfEntry* under one of the *IpPort.*
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Egp Nbr Provisioned (Prov)

Properties	Provisioned

Description	This group of attributes identify the provisionable attributes for this EGP neighbor.
Mib	Ip

ATTRIBUTE Vr Ip Egp Nbr asId (as)

Access	Read and write
Description	The autonomous system identifier of this EGP peer. The value of this neighbor's *asId* should not be equal to the *asId* value of *Egp* entity
Mib	Ip
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr mode

Access	Read and write
Description	This attribute will indicate whether this neighbor is being configured as an active or passive neighbor.
Mib	Ip
Values	active passive
Default	active

ATTRIBUTE Vr Ip Egp Nbr generateDefaultRoute (default)

Access	Read and write
Description	This attribute distinguishes whether or not the default route should be generated. This route is put in the EGP update along with the normal EGP update routes when updates are sent to this EGP neighbor
Mib	Ip
Values	yes no
Default	no

ATTRIBUTE Vr Ip Egp Nbr defaultRouteMetric

Access	Read and write
Description	This attribute identifies the Metric to be used for propagating the "Default Route". The value of *defaultRouteMetric* is used only in the case where the value of the attribute *generateDefaultRoute* is set to ***yes***.
Mib	Ip
Values	Decimal (0..255)
Default	128

ATTRIBUTE Vr Ip Egp Nbr defaultMetric (metric)

Access	Read and write
Description	This attribute identifies the default metric value for routes that are exported to this *EgpNeighbor*. This value is used when exporting routes to this neighbor and no *Export* policy applies a different metric.
Mib	Ip
Values	Decimal (0..255)
Default	128

ATTRIBUTE Vr Ip Egp Nbr helloInterval (helloInt)

Access	Read and write
Description	This attribute identifies the interval in seconds, between EGP hello command retransmissions. This is the P1 timer in the RFC904. This value may change in operation due to negotiations.
Mib	Ip
Values	Decimal (30..120)
Units	seconds
Default	30

ATTRIBUTE Vr Ip Egp Nbr pollInterval (pollInt)

Access	Read and write
Description	This attribute identifies the interval in seconds, between EGP poll command retransmissions. This is the P2 timer in the RFC904. This value may change in operation due to negotiations.
Mib	Ip
Values	Decimal (120..480)
Units	seconds
Default	120

GROUP Vr Ip Egp Nbr Operational (Oper)

Properties	Operational
Description	This group of attributes identifies the operational set of attributes for the *NeighborEntry* component.
Mib	Ip

ATTRIBUTE Vr Ip Egp Nbr state

Access	Read only
Description	This attribute describes the state of the local system with respect to this entry's EGP Neighbor.
Mib	Ip
Values	idle acquisition down up cease
Default	No default

ATTRIBUTE Vr Ip Egp Nbr inMsgs

Access	Read only
Description	The number of EGP messages received without error from the EGP peer. This counter will wraparound once the value reaches the maximum value.

Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr inErrors

Access	Read only
Description	The number of messages received from this EGP peer that proved to be in error. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr outMsgs

Access	Read only
Description	The number of locally generated EGP messages for this EGP peer. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr outErrors

Access	Read only
Description	The number of locally generated EGP messages not sent to this EGP peer due to resource limitations within an EGP entity.This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr inErrorMsgs

Access	Read only
Description	The number of EGP-defined error messages received from this EGP peer.This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr outErrorMsgs

Access	Read only
Description	The number of EGP-defined error messages sent to this EGP peer.This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr stateUps

Access	Read only
Description	The number of EGP state transitions to the UP state with this EGP peer. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr stateDowns

Access	Read only

Description	The number of EGP state transitions from the UP state to any other state with this EGP peer. This counter will wraparound once the value reaches the maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Egp Nbr eventTrigger

Access	Read only
Description	This attribute is used to control the state of the Neighbor. It is not allowed to change. This attribute from SNMP perspective deviates from MIB that it is made READONLY.
Mib	Ip
Values	start stop
Default	start

COMPONENT Vr Ip Egp Import

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Egp Import Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Egp Import/n* This component controls the functionality of route leaking. In

other words, this component will determine what routes are used by EGP.

Mib: Ip

Opt. Subcomp.: "COMPONENT Vr Ip Egp Import Network (Net)"

Common Verbs:
Help
List
Display
Add
DELete

GROUP Vr Ip Egp Import Provisioned (Prov)

Properties: Provisioned

Description: These set of attributes describe the provisionable attributes for the import component.

Mib: Ip

ATTRIBUTE Vr Ip Egp Import usageFlag (usage)

Access: Read and write

Description: This flag will determine whether or not EGP will use or ignore information in updates received. If the attribute *nbrAsId* is not specified or any of the *NetworkList* components are not added, then this attribute when set to ***ignore*** will ignore all incoming information.

Mib: Ip

Values:
use
ignore

Default: use

ATTRIBUTE Vr Ip Egp Import importMetric (metric)

Access: Read and write

Description: This attribute specifies the metric value to be included in the routing table for any routes sent because this particular import

instance was it's "best match" policy.

However this attribute is not a selection key. It should not ***use*** or ***ignore*** a particular metric value. If the value for this attribute is not specified, then the metric value received in an EGP update is used.

Note:

When setting this value, caution should be taken to set the metric value in all relevant *Import* components to make sure that all matching policies for a given route have the same metric set. This will insure that there are no situations where a specific metric was desired, but doesn't get used in the update because the "best match" policy for that situation did not set the metric parameter.

If the attribute *usageFlag* for this import policy is set to ***ignore***, then the *importMetric* value will be ignored by the application. The *importMetric* value is not used to select which routes to use or ignore but is used to set the metric value for the routes being imported. A value of zero specifies that the metric received in the update is to be used.

Mib	Ip
Values	Decimal (0..255)
Default	0

ATTRIBUTE Vr Ip Egp Import nbrAsId (nbrAs)

Access	Read and write
Description	The autonomous system Id this import policy will apply to. Note: The Valid value of an *asId* is from 1 to 65,535. This attribute's value when set to 0 will be ignored.
Mib	Ip
Values	Decimal (0..65535)
Default	No default

COMPONENT Vr Ip Egp Import Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Egp Import Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Egp Import/<Decimal> NetworkList/<Decimal>* This is an optional subcomponent of Import and identifies a set of networks that this import policy will apply to.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Egp Import Net Provisioned (Prov)

Properties	Provisioned
Description	This group identifies attributes for the NetworkList component for which the import policy will be applied to
Mib	Ip

ATTRIBUTE Vr Ip Egp Import Net ipAddress (addr)

Access	Read and write
Description	This attribute identifies the IP address that needs to be matched against in this network list for the Import policy to be applied to.
Mib	Ip
Values	IP address
Default	No default

COMPONENT Vr Ip Egp Export

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Egp Export Provisioned (Prov)"

Scope	Application
Description	*Vr/<string> Ip Egp Export/n* Each instance of this component specifies an EGP export policy. An EGP export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as EGP routes onto one or all attached EGP autonomous systems of the virtual router. The Nortel Networks Multiservice Switch IP EGP by default advertises all local routes to all attached EGP autonomous systems using the metric 128.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Egp Export Network (Net)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Egp Export Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisioned attributes for the *Export* component.
Mib	Ip

ATTRIBUTE Vr Ip Egp Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	Ip
Values	send block
Default	send

ATTRIBUTE Vr Ip Egp Export exportMetric (metric)

Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *exportMetric* is ignored. The *exportMetric* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. A value of 0 indicates that the metric associated with the route in the forwarding table is used.
Mib	Ip
Values	Decimal (0..255)
Default	0

ATTRIBUTE Vr Ip Egp Export protocol

Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If it is set to ***all***, this export policy applies to all routes in the forwarding table.
Mib	Ip
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote
Default	all

ATTRIBUTE Vr Ip Egp Export ripInterface (ripIf)

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the

	routes are learned. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same virtual router; otherwise the value of this attribute must match the interface address of a *LogicalIf* that has a *RipIf* on the same virtual router.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Egp Export ripNeighbor (ripNbr)

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP neighbor of which the routes are learned from. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP neighbor.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Egp Export inEgpAsId (inAs)

Access	Read and write
Description	This attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from. This attribute can only be non zero when *protocol* is set to ***egp***. The value of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	Ip
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Egp Export ospfTag (tag)

Access	Read and write
Description	This attribute specifies the OSPF learned external routes to which this export policy applies, based on the learned OSPF tag of the routes. This attribute can only be set to a non default value when *protocol* is set to ***ospfExternal***. The value of 4294967295 implies any tag.
Mib	Ip
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Vr Ip Egp Export outAutonomousSystem (outAs)

Access	Read and write
Description	This attribute specifies the EGP autonomous system to which routes are exported to as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *outAutonomousSystem* is ignored. The *outAutonomousSystem* value is not used to select which routes to block or send but where to export the routes. A value of 0 indicates that the routes are exported to all EGP autonomous systems of which the virtual router is a neighbor. Otherwise, the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	Ip
Values	Decimal (0..65535)
Default	0

COMPONENT Vr Ip Egp Export Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Egp Export Net Provisioned (Prov)"
Scope	Application

Description	*Vr/<string> Ip Egp Export/<Decimal> NetworkList/<Decimal>* This component identifies a set of attributes when matched determines the export policy applied.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Egp Export Net Provisioned (Prov)

Properties	Provisioned
Description	This group identifies the set of provisionable attributes for the *ExportNetworkList* component.
Mib	Ip

ATTRIBUTE Vr Ip Egp Export Net ipAddress (addr)

Access	Read and write
Description	This attribute identifies the 32 bit IP address to match against.
Mib	Ip
Values	IP address
Default	No default

COMPONENT Vr Ip Ospf (Ospf)

Groups	"GROUP Vr Ip Ospf Provisioned (Prov)" "GROUP Vr Ip Ospf Operational (Oper)" "GROUP Vr Ip Ospf OsiState (State)" "GROUP Vr Ip Ospf OperationalStatus (OperStatus)"
Scope	Application
Description	*Vr/<string> Ip Ospf* *Rtr/<string> Ospf* *Rtr/<string> Vrf/<string> Ospf*

	This component is configured to control the Open Shortest Path First IP routing protocol.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Ospf AreaEntry (Area)" "COMPONENT Vr Ip Ospf StubAreaEntry (Stub)" "COMPONENT Vr Ip Ospf AreaAggregateEntry (Aggregate)" "COMPONENT Vr Ip Ospf HostEntry (Host)" "COMPONENT Vr Ip Ospf VirtIfEntry (VirtIf)" "COMPONENT Vr Ip Ospf Export"
Dyn. Subcomp.	"COMPONENT Vr Ip Ospf VirtNbrEntry (VirtNbr)" "COMPONENT Vr Ip Ospf NeighborEntry (Nbr)" "COMPONENT Vr Ip Ospf LsdbEntry (Lsdb)" "COMPONENT Vr Ip Ospf ExtLsdbEntry (ExtLsdb)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Ospf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes are used to configure the OSPF component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf routerId (id)

Access	Read and write
Description	This attribute is an Ip Address that uniquely identifies the router in the autonomous system.
Mib	Ip
Values	IP address

Default	No default

ATTRIBUTE Vr Ip Ospf snmpAdminStatus

Access	Read and write
Description	The administrative status of the OSPF Component in this routing component (*Vr*, *Rtr* or *Vrf*).
Mib	Ip
Values	up down testing
Default	up

ATTRIBUTE Vr Ip Ospf asBdrRtrStatus (asBr)

Access	Read and write
Description	This attribute is a flag to note whether this router is an autonomous system border router. If this router is configured to export any routes learned from other than OSPF-internal protocol, this attribute should be configured as autonomous system border router.
Mib	Ip
Values	true false
Default	false

ATTRIBUTE Vr Ip Ospf tosSupport

Access	Read and write
Description	The router's support for type-of-service routing. Only one value will be allowed. This is a deviation from supporting the MIB.
Mib	Ip
Values	false
Default	false

ATTRIBUTE Vr Ip Ospf multicastForward

Access	Read and write
Description	A bit mask indicating the limits on Network Layer Multicast (class D) forwarding. It is represented as a sum of the following: if intra-Area forwarding is permitted, 1; else 0 if inter-Area forwarding is permitted 2; else 0 if inter-AS forwarding is permitted, 4; else 0 Only the value of 0 is being supported and this is a MIB deviation.
Mib	Ip
Values	Decimal (0..0)
Default	0

ATTRIBUTE Vr Ip Ospf migrateRip

Access	Read and write
Description	This Attribute sets the preference level of OSPF-internal routes to be less preferred than RIP. This attribute should only be used when starting a migration of a network from RIP to OSPF. When ready to cut over to OSPF, set this attribute to a value of ***disabled*** and run under normal preferences. All OSPF routers in the Autonomous System should be running with the *migrateRip* attribute set to a value of ***enabled*** or with *migrateRip* ***disabled*** to prevent routing loops. It is important that the changeover period from RIP to OSPF be performed quickly on all OSPF routers so that no routing loops are formed. These routing loops could be caused by conflicts in the internal RIP and OSPF databases.
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Ospf generateDefaultRouteMetric (genDefaultMetric)

Access	Read and write
Description	If this router is configured as an autonomous system border router, then this attribute causes the default route to be generated with a metric value equal to *generateDefaultRouteMetric* value. This route is put in the OSPF update along with the normal update routes when updates are sent to the neighbors. No default route will be generated if the value is 0.
Mib	Ip
Values	Signed (-1..65535)
Default	0

ATTRIBUTE Vr Ip Ospf redistributeIbgp (ribgp)

Access	Read and write
Description	This attribute specifies whether the export policies of this *Ospf* instance can match routes learned from internal BGP (IBGP) peers when their *protocol* attribute value is ***all***. If *redistributeIbgp* is ***true***, a *protocol* value of ***all*** allows routes learned from IBGP peers to be included in the matching routes. If *redistributeIbgp* is ***false***, routes learned from IBGP peers are excluded when the *protocol* value is ***all***. To cause IBGP routes to be considered in this case, the *protocol* value must be set to ***bgpInternal***.
Mib	Ip
Values	true false
Default	false

ATTRIBUTE Vr Ip Ospf estimatedNumberOfInternalOSPFRoutes

Access	Read and write
Description	This attribute specifies the average estimated number of routes in the autonomous system that this OSPF instance will have to keep track of. If this value is provisioned too low it will cause increased CPU utilization due to dynamic memory allocation. If this value is provisioned too high the result is wasted memory.

Mib	Ip
Values	Decimal (0..65535)
Default	500

ATTRIBUTE Vr Ip Ospf estimatedNumberOfExternalOSPFRoutes

Access	Read and write
Description	This attribute specifies the average estimated number of routes external to the autonomous system that this OSPF instance will have to keep track of. If this value is provisioned too low it will cause increased CPU utilization due to dynamic memory allocation. If this value is provisioned too high the result is wasted memory.
Mib	Ip
Values	Decimal (0..65535)
Default	500

ATTRIBUTE Vr Ip Ospf estimatedNumberOfAreas

Access	Read and write
Description	This attribute specifies the average estimated number of areas in the autonomous system that this OSPF instance will have to keep track of.
Mib	Ip
Values	Decimal (0..65535)
Default	2

ATTRIBUTE Vr Ip Ospf estimatedNumberOfInterfacesPerArea

Access	Read and write
Description	This attribute specifies the average estimated number of interfaces in a given area that this OSPF instance will have to keep track of.
Mib	Ip

Values	Decimal (0..65535)
Default	10

ATTRIBUTE Vr Ip Ospf estimatedNumberOfNeighborsPerInterface

Access	Read and write
Description	This attribute specifies the average estimated number of neighbors that a given interface will have on it in this OSPF interface.
Mib	Ip
Values	Decimal (0..65535)
Default	3

ATTRIBUTE Vr Ip Ospf defaultOspfIntRtePreference (ospfIntPref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF internal routes. A lower value indicates a more preferred route.
Mib	Ip
Values	Decimal (1..254)
Default	30

ATTRIBUTE Vr Ip Ospf defaultOspfExt1RtePreference (ospfExt1Pref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF external type 1 routes. A lower value indicates a more preferred route.
Mib	Ip
Values	Decimal (1..254)
Default	80

ATTRIBUTE Vr Ip Ospf defaultOspfExt2RtePreference (ospfExt2Pref)

Access	Read and write
Description	This attribute specifies this *OSPF* component instance's default routing preference assigned to the OSPF external type 2 routes. A lower value indicates a more preferred route.
Mib	Ip
Values	Decimal (1..254)
Default	120

ATTRIBUTE Vr Ip Ospf opaqueCapability (opcap)

Access	Read and write
Description	This attribute specifies whether the OSPF instance is allowed to participate in flooding Opaque LSAs. Such LSAs are also stored in the InwOspfLsdbEntry. Applications, such as MPLS Traffic Engineering, use this mechanism to flood their information throughout a network. Of the three Opaque LSA types (9,10,11), only type 10 LSAs (area scope) are supported.The OSPF instance remains fully inter-operable with non-opaque-capable neighbors. Opaque capability is not fully supported. When the ***mplsTeEmulation*** feature is provisioned, setting this attribute to ***true*** activates hooks to emulate TE capability by flooding hard-coded type 10 TE LSAs to opaque-capable neighbors. This emulated TE functionality is not standards compliant and is strictly provided for MPLS RSVP-TE inter-operability with vendors that are dependent on MPLS TE to establish LSPs.
Mib	Ip
Values	true false
Default	false

ATTRIBUTE Vr Ip Ospf spareInstance (spInst)

Access	Read and write
Description	This attribute specifies whether to maintain a copy of the link state database on the standby card. When this attribute is set to ***disable***, OSPF does not maintain a copy of the link state

database.

If the *virtualRouterProcessor* attribute of this *VirtualRouter* is set to ***Lp/0***, then the following conditions must both be true for a copy of the link-state database to be maintained on the standby CP:

- This attribute must be set to ***enable***, and

- The *Shelf cpEquipmentProtection* attribute must be set to ***hot***.

Mib: Ip

Values: enable
disable

Default: disable

ATTRIBUTE Vr Ip Ospf spfHoldTime (spfTime)

Access: Read and write

Description: This attribute specifies the minimum time interval between SPF calculations. If a link state change in the autonomous system is detected and the time since the last SPF calculation is greater than *spfHoldTime*, then the SPF calculation starts immediately. Otherwise, the SPF calculation waits until a time of at least *spfHoldTime* has elapsed since the previous SPF calculation.

Setting this attribute to a lower value decreases convergence time in the OSPF autonomous system, but uses more CPU resource more frequently. Setting this attribute to a higher value increases convergence time but provides for a more scalable node configuration, especially if there are many *Ospf* components configured on the node.

Mib: Ip

Values: Decimal (1..60)

Units: seconds

Default: 1

ATTRIBUTE Vr Ip Ospf alarmGeneration (alarms)

Access	Read and write
Description	This attribute specifies the level of alarm generation for this *Ospf* instance. A value of ***all*** specifies that all OSPF alarms are made visible. A value of ***normal*** specifies that all existing OSPF alarms are made visible, except *Ospf NeighborEntry* state change alarms. A value of ***none*** specifies that no OSPF alarms are made visible. It is recommended that *VirtualRouter* components with the *vpnMode* attribute set to ***carrier*** should have the *alarmGeneration* attribute set to ***all***. *VirtualRouter* components with the *vpnMode* attribute set to ***customer*** should have the *alarmGeneration* attribute set to either ***normal*** or ***none***, for scalability reasons. Similarly, the *alarmGeneration* attribute should be set to ***all*** for *Router*. The *alarmGeneration* attribute should be set to either ***normal*** or ***none*** for *Vrf* for scalability reasons.
Mib	Ip
Values	none normal all
Default	all

ATTRIBUTE Vr Ip Ospf ecmpStatus

Access	Read and write
Description	This attribute specifies whether the Equal Cost Multi-Path (ECMP) functionality is enabled or not in the network meaning that the number of next hops for one route learned through OSPF depend on the value of *ecmpStatus*. If *ecmpStatus* is ***enabled,*** a maximum of three next hops are kept for one route. If it is ***disabled***, one next hop is kept for that route.
Mib	Ip

Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Ip Ospf attachAsTag (asTag)

Access	Read and write
Description	This attribute specifies the treatment of the OSPF tag when routes are redistributed between BGP and OSPF. If this attribute is set to ***enabled***, an AS number is encoded as OSPF tag when routes are redistributed from BGP into OSPF. When routes are redistributed from OSPF into BGP, the OSPF tag is checked against the AS number to avoid routing loops. If this attribute is set to ***disabled***, an AS number is not encoded as OSPF tag when routes are redistributed from BGP into OSPF. When routes are redistributed from OSPF into BGP, the OSPF tag is not checked against the AS number.
Mib	Ip
Values	disabled enabled
Default	enabled

GROUP Vr Ip Ospf Operational (Oper)

Properties	Operational
Description	These group of attributes identifies the operational attributes for this OSPF Component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf versionNumber (ver)

Access	Read only
Description	The Current Version number of the OSPF Protocol. (2).
Mib	Ip

Values	Decimal (2..2)
Default	2

ATTRIBUTE Vr Ip Ospf areaBdrRtrStatus

Access	Read only
Description	This attribute is used to specify whether this router is configured as an area border router.
Mib	Ip
Values	true false
Default	No default

ATTRIBUTE Vr Ip Ospf externLsaCount

Access	Read only
Description	The number of external (LS type 5) link-state advertisements in the link-state database.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Ospf externLsaChecksumSum

Access	Read only
Description	The 32-bit unsigned sum of the LS checksums of the external link-state database. This sum can be used to determine if there has been a change in a router's link state database, and to compare the link-state database of two routers.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf originateNewLsas

Access	Read only
Description	The number of new link-state advertisements that have been originated. This number is incremented each time the router originates a new LSA.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf rxNewLsas

Access	Read only
Description	The number of link-state advertisements received determined to be new instantiations. This number does not include newer instantiations of self-originated link-state advertisements.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

GROUP Vr Ip Ospf OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Ospf adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ip

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Ip Ospf operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ip

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip Ospf usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Ospf OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip

Values	up down testing
Default	up

COMPONENT Vr Ip Ospf AreaEntry (Area)

Instance	IP address
Groups	"GROUP Vr Ip Ospf Area Provisioned (Prov)" "GROUP Vr Ip Ospf Area Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf AreaEntry/<Ip Address>* *Rtr/<string> Ospf AreaEntry/<Ip Address>* *Rtr/<string> Vrf/<string> Ospf AreaEntry/<Ip Address>* This component contains the information about various areas that the router is connected to.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ospf Area Provisioned (Prov)

Properties	Provisioned
Description	This group describes the set of provisionable attributes for the AreaEntry Component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf Area authType

Access	Read and write
Description	The authentication type specified for this area.
Mib	Ip

Values	none simplePassword md5
Default	none

ATTRIBUTE Vr Ip Ospf Area importAsExtern

Access	Read and write
Description	The area's support for importing AS external link-state advertisements. For backbone area (that is, areaId 0.0.0.0), this attribute must be set to ***importExternal***.
Mib	Ip
Values	importExternal (external) importNoExternal (noExternal) importNssa (nssa)
Default	importExternal

ATTRIBUTE Vr Ip Ospf Area areaSummary

Access	Read and write
Description	This variable controls the import of summary LSAs into stub areas. If it is ***noAreaSummary***, the router will neither originate nor propagate summary LSAs into the stub areas. It will rely entirely on its default route. If it is ***sendAreaSummary***, the router will both summarize and propagate summary LSAs.
Mib	Ip
Values	noAreaSummary sendAreaSummary
Default	noAreaSummary

GROUP Vr Ip Ospf Area Operational (Oper)

Properties	Operational
Description	This group of attributes describes the Operational set of attributes for the AreaEntry component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf Area spfRuns

Access	Read only
Description	The number of times that the intra-area route table has been calculated using this area's link-state database since the protocol became operational.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Area areaBdrRtrCount

Access	Read only
Description	The total number of area border routers reachable within this area. This is initially zero, and is calculated in each Shortest Path First Pass.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Area asBdrRtrCount

Access	Read only
Description	The total number of Autonomous System border routers reachable within this area. This is initially zero, and is calculated in each Shortest Path First Pass.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Area lsaCount

Access	Read only
Description	The total number of link-state advertisements in this area's link-state database, excluding AS External LSAs.

Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Area areaLsaCksumSum

Access	Read only
Description	The 32-bit unsigned sum of the link-state advertisement's LS checksums contained in this area's link-state database. This sum excludes external (LS type 5) link-state advertisements. The sum can be used to determine if there has been a change in a router's link state database, and to compare the link-state database of two routers.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Ip Ospf StubAreaEntry (Stub)

Instance	areaId [IP address] tos [Decimal (0..0)]
Groups	"GROUP Vr Ip Ospf Stub Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Ospf StubAreaEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf StubAreaEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf StubAreaEntry/<Ip Address>,<Decimal>*

	This component describes metrics that a default area border router will advertise into a stub area.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ospf Stub Provisioned (Prov)

Properties	Provisioned
Description	These set of attributes explain the provisionable group for the *StubAreaEntry.*
Mib	Ip

ATTRIBUTE Vr Ip Ospf Stub metric (metric)

Access	Read and write
Description	The metric value applied at the indicated type of service.
Mib	Ip
Values	Decimal (1..4294967295)
Default	1

ATTRIBUTE Vr Ip Ospf Stub metricType

Access	Read and write
Description	This type of the metric advertised as a default route.
Mib	Ip
Values	ospfMetric comparableCost nonComparable
Default	ospfMetric

ATTRIBUTE Vr Ip Ospf Stub advertiseDefault

Access	Read and write
Description	This attribute determines whether or not the default routing information will be advertised, depending on other criterion. Setting this value to ***no*** can prevent advertising default routing information. If the value of the attribute is set to ***yes***, then the value of the attribute *importAsExtern* for that particular *AreaEntry* should be set to ***importNssa***.
Mib	Ip
Values	yes no
Default	yes

COMPONENT Vr Ip Ospf AreaAggregateEntry (Aggregate)

Instance	areaId [IP address] lsdbType [summaryLink nssaExternalLink] aggregateNet [IP address] aggregateMask [IP address]
Groups	"GROUP Vr Ip Ospf Aggregate Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Ospf AreaAggregateEntry/<Ip Address>,<enum>,* *<Ip Address>,<Ip Address>* *Rtr/<string> Ospf AreaAggregateEntry/<Ip Address>,<enum>,* *<Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf AreaAggregateEntry/<Ip Address>,<enum>,<Ip Address>,<Ip Address>*

This table entry replaces the Area Summary table from RFC1253 and is used as an extension for CIDR support.

Mib: Ip

Common Verbs:
Help
List
Display
Add
DELete

GROUP Vr Ip Ospf Aggregate Provisioned (Prov)

Properties: Provisioned

Description: Identifies a group of provisionable attributes.

Mib: Ip

ATTRIBUTE Vr Ip Ospf Aggregate effect

Access: Read and write

Description: This attribute determines whether or not the routing information will be advertised, depending on other criterion. Setting this value to ***doNotAdvertiseMatching*** can prevent advertising routing information for the address and mask values specified as the indices for this entry.

Mib: Ip

Values:
advertiseMatching
doNotAdvertiseMatching
invalid

Default: advertiseMatching

COMPONENT Vr Ip Ospf HostEntry (Host)

Instance:
address [IP address]
tos [Decimal (0..0)]

Groups: "GROUP Vr Ip Ospf Host Provisioned (Prov)"

Scope: Application

Description	*Vr/<string> Ip Ospf HostEntry/<Ip Address>,<Decimal>* *Rtr/<string> Ospf HostEntry/<Ip Address>,<Decimal>* *Rtr/<string> Vrf/<string> Ospf HostEntry/<Ip Address>,<Decimal>* This component indicates what hosts are directly attached to the router, and what metrics and types of service should be advertised for them. This component is an optional subcomponent of Ospf.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ospf Host Provisioned (Prov)

Properties	Provisioned
Description	Provisionable set of attributes for the Host entry.
Mib	Ip

ATTRIBUTE Vr Ip Ospf Host areaId

Access	Read and write
Description	This is an Ip address for the Host Entry that indicates the area it belongs to.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ospf Host metric

Access	Read and write
Description	The metric to be advertised.
Mib	Ip
Values	Decimal (1..65535)

Default	1

COMPONENT Vr Ip Ospf VirtIfEntry (VirtIf)

Instance	areaId [IP address] nbrRouterId [IP address]
Groups	"GROUP Vr Ip Ospf VirtIf Provisioned (Prov)" "GROUP Vr Ip Ospf VirtIf Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>* This component describes all the virtual links configured for this OSPF Router.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Ospf VirtIf Md5KeyId (KeyId)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ospf VirtIf Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes provide provisioning data for the *VirtIfEntry.*
Mib	Ip

ATTRIBUTE Vr Ip Ospf VirtIf transitDelay (transDelay)

Access	Read and write
Description	The estimated number of seconds it takes to transmit a link-state update packet over this interface.

Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	1

ATTRIBUTE Vr Ip Ospf VirtIf retransInterval (retransInt)

Access	Read and write
Description	The number of seconds between link-state advertisement retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets. This value would be well over the expected round-trip time.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	5

ATTRIBUTE Vr Ip Ospf VirtIf helloInterval (helloInt)

Access	Read and write
Description	The length of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for the virtual neighbor.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	10

ATTRIBUTE Vr Ip Ospf VirtIf rtrDeadInterval (rtrDeadInt)

Access	Read and write
Description	The number of seconds that a router's Hello packets have not been seen before its neighbors declare the router down. This

	should be some multiple of the Hello interval. This value must be the same for the virtual neighbor.
Mib	Ip
Values	Decimal (1..3600)
Units	seconds
Default	60

ATTRIBUTE Vr Ip Ospf VirtIf authKey

Access	Write only
Description	If authentication type is simple password, the password for this virtual circuit. If the value of the attribute is not set, then this attribute is ignored by the application. If the value of this attribute is set, then the value of the attribute *authType* under this particular *Area* should be set to ***simplePassword***, otherwise the application will ignore this authentication key.
Mib	Ip
Values	String (1..8, Hex)
Default	0000000000000000

ATTRIBUTE Vr Ip Ospf VirtIf authType

Access	Read and write
Description	The authentication type specified for this *VirtIf*.
Mib	Ip
Values	none simplePassword md5 SameAsArea
Default	SameAsArea

GROUP Vr Ip Ospf VirtIf Operational (Oper)

Properties	Operational

Description	Represents a group of operational attributes for the *VirtIfEntry* component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf VirtIf state (state)

Access	Read only
Description	The state of the OSPF virtual interface.
Mib	Ip
Values	down pointToPoint
Default	No default

ATTRIBUTE Vr Ip Ospf VirtIf events (events)

Access	Read only
Description	The number of state changes or error events on the virtual link.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Ip Ospf VirtIf Md5KeyId (KeyId)

Instance	Decimal (1..255)
Groups	"GROUP Vr Ip Ospf VirtIf KeyId Provisioned (Prov)" "GROUP Vr Ip Ospf VirtIf KeyId Operational (Oper)"
Scope	Application
Description	*Vr/<string> Pp/<string> IpPort logicalIf/<Ip Address> ospfIf KeyId/<ID>* *Rtr/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Rtr/<string> Vrf/<string> Interface/<Ip Address> OspfIf KeyId/<ID>* *Vr/<string> Ip Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>* *Rtr/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address>*

KeyId/<ID>
Rtr/<string> Vrf/<string> Ospf VirtIfEntry/<Ip Address>,<Ip Address> KeyId/<ID>
This component contains the information about various MD5 Authentication keys.

Mib: Ip

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Ip Ospf VirtIf KeyId Provisioned (Prov)

Properties: Provisioned

Description: This group describes the set of provisional attributes for the *KeyId* component.

Mib: Ip

ATTRIBUTE Vr Ip Ospf VirtIf KeyId md5Key (Key)

Access: Write only

Description: The MD5 authentication key for the *KeyId* component.

Mib: Ip

Values: String (0..16, ASCII)

Default: ""

GROUP Vr Ip Ospf VirtIf KeyId Operational (Oper)

Properties: Operational

Description: This group describes the set of operational attributes for the *KeyId* component.

Mib: Ip

ATTRIBUTE Vr Ip Ospf VirtIf KeyId inUseForGeneration (inUse)

Access: Read only

Description	This attribute indicates whether the *Key* is currently in use or not. If this attribute is equal to ***true***, it indicates the *Key* is active.
Mib	Ip
Values	true false
Default	false

COMPONENT Vr Ip Ospf Export

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Ospf Export Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Ospf Export/n* *Rtr/<string> Ospf Export/n* *Rtr/<string> Vrf/<string> Ospf Export/n* Each instance of this component specifies an OSPF export policy. An OSPF export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as OSPF external routes onto attached OSPF areas of the routing component (*Vr*, *Rtr* or *Vrf*). The *Ospf* component by default advertises all OSPF external routes based on the metric and tag in the IP forwarding table.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Ospf Export NetworkList (NetList)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ospf Export Provisioned (Prov)

Properties	Provisioned

Description	This Group contains all the Provisioned attributes for the Export Component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	Ip
Values	send block
Default	send

ATTRIBUTE Vr Ip Ospf Export metric (metric)

Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *metric* is ignored. The *metric* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. A value of -1 indicates that the metric associated with the route in the forwarding table is used.
Mib	Ip
Values	Signed (-1..16777215)
Default	-1

ATTRIBUTE Vr Ip Ospf Export protocol

Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If the value is ***all***, the policy applies to all routes in the forwarding table, with the following exceptions: external BGP routes are always excluded and internal BGP routes are excluded

if the parent *Ospf* component's *reDistributeIBGP* attribute has the value ***false***.

Mib: Ip

Values:
all
egp
rip
staticLocal
staticRemote
bgpInternal
bgpExternal
mbgp
bgpMplsInternal

Default: all

ATTRIBUTE Vr Ip Ospf Export ripInterface (ripIf)

Access: Read and write

Description: This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the routes are learned.
This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of an *Interface* or a *LogicalIf* that has a *RipIf* on the same routing component.

Mib: Ip

Values: IP address

Default: 0.0.0.0

ATTRIBUTE Vr Ip Ospf Export ripNeighbor (ripNbr)

Access: Read and write

Description: This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP neighbor of which the routes are learned from.
This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP neighbor.

Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Ospf Export egpAsId (egpAs)

Access	Read and write
Description	This attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from. This attribute can only be non zero when *protocol* is set to ***egp***. The value of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	Ip
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Ospf Export tag

Access	Read and write
Description	This attribute specifies the OSPF tag to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *tag* is ignored. The *tag* value is not used to select which routes to block or send, but rather the tag value advertised for the routes. A value of 4294967295 indicates that the tag associated with the route in the forwarding table is used.
Mib	Ip
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Vr Ip Ospf Export extLsaMetricType

Access	Read and write

Description	This attribute specifies the metric type in the OSPF external link state advertisement of the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *extLsaMetricType* is ignored. The *extLsaMetricType* value is not used to select which routes to block or send, but rather the metric value advertised for the routes. The value ***useProtocolDefault*** indicates the metric type is automatically chosen based on the routing protocol which the route was learned from.
Mib	Ip
Values	useProtocolDefault type1 type2
Default	useProtocolDefault

ATTRIBUTE Vr Ip Ospf Export bgpAsId (bgpAs)

Access	Read and write
Description	This attribute specifies the BGP AS from which a BGP route is learned from. This key is used only if the *protocol* is ***bgpExternal***. *bgpAsId* of value ***0*** matches all ASs.
Mib	Ip
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Ospf Export bgpPeerIp (peerIp)

Access	Read and write
Description	This attribute specifies the BGP peer where the routes were learned from. *bgpPeerIp* of ***0*** matches all BGP peers. This attribute is used as a key when *protocol* is set to ***bgpInternal*** or ***bgpExternal***.
Mib	Ip
Values	IP address

Default	0.0.0.0

ATTRIBUTE Vr Ip Ospf Export description (desc)

Access	Read and write
Description	This attribute describes the policy. For example, ‘to export OSPF routes to MCI’.
Mib	Ip
Values	String (0..255, ASCII)
Default	No default

COMPONENT Vr Ip Ospf Export NetworkList (NetList)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Ospf Export NetList Provisioned (Prov)"
Scope	Application
Description	This component identifies a set of attributes when matched determines the export policy applied.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Ospf Export NetList Provisioned (Prov)

Properties	Provisioned
Description	This group identifies the set of provisionable attributes for the *ExportNetworkList* component.
Mib	Ip

ATTRIBUTE Vr Ip Ospf Export NetList ipAddress

Access	Read and write

Description	This attribute identifies the 32 bit IP address to match against.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ospf Export NetList ipMask (mask)

Access	Read and write
Description	This attribute is the IP Mask to be used with the IP Address to match against.
Mib	Ip
Values	IP address
Default	No default

COMPONENT Vr Ip Ospf VirtNbrEntry (VirtNbr)

Instance	areaId [IP address] nbrRouterId [IP address]
Groups	"GROUP Vr Ip Ospf VirtNbr Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* *Rtr/<string> Vrf/<string> Ospf VirtNbrEntry/<Ip Address>,<Ip Address>* This component describes all of OSPF's Virtual Neighbors.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Ospf VirtNbr Operational (Oper)

Properties	Operational

Description	This group identifies a set of operational attributes.
Mib	Ip

ATTRIBUTE Vr Ip Ospf VirtNbr nbrIpAddress (addr)

Access	Read only
Description	Indicates the Ip address this interface this virtual neighbor is using.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ospf VirtNbr options

Access	Read only
Description	A bit mask corresponding to the neighbor's options field. Bit 1, if set indicates that the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	Ip
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vr Ip Ospf VirtNbr state

Access	Read only
Description	The state of the virtual neighbor relationship.
Mib	Ip
Values	down attempt init twoWay exchange

	exchangeStatrt loading full
Default	No default

ATTRIBUTE Vr Ip Ospf VirtNbr events

Access	Read only
Description	The number of times this virtual link has changed its state, or an error has occurred.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf VirtNbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf VirtNbr exchangeStatus

Access	Read only
Description	Indicates the exchange status of the entry in this table.
Mib	Ip
Values	master slave
Default	No default

COMPONENT Vr Ip Ospf NeighborEntry (Nbr)

Instance	address [IP address] addressLessIndex [Decimal (0)]

Groups	"GROUP Vr Ip Ospf Nbr Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf NbrEntry/<Ip Address>,<Decimal> Rtr/<string> Ospf NbrEntry/<Ip Address>,<Decimal> Rtr/<string> Vrf/<string> Ospf NbrEntry/<Ip Address>,<Decimal>* This component is a dynamic subcomponent of OSPF that describes all the OSPF Neighbors.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Ospf Nbr Operational (Oper)

Properties	Operational
Description	This group identifies the operational set of attributes for the *NeighborEntry.*
Mib	Ip

ATTRIBUTE Vr Ip Ospf Nbr rtrId

Access	Read only
Description	An Ip Address that uniquely identifies the neighboring router in the autonomous system.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ospf Nbr options

Access	Read only
Description	A bit mask corresponding to the neighbor's options field. Bit 0, if set, indicates that the area accepts and operates on external information, if zero, it is a stub area. Bit 1, if set, indicates that

	the system will operate on Type of Service metrics other than TOS 0. If zero, the neighbor will ignore all metrics except the TOS 0 metric. Bit 2, if set, indicates that the system is Network Multicast capable; i.e., that it implements OSPF Multicast Routing.
Mib	Ip
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vr Ip Ospf Nbr priority

Access	Read only
Description	The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network.
Mib	Ip
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vr Ip Ospf Nbr state

Access	Read only
Description	The state of the relationship with this neighbor.
Mib	Ip
Values	down attempt init twoWay exchangeStart exchange loading full
Default	No default

ATTRIBUTE Vr Ip Ospf Nbr events

Access	Read only
Description	The number of times this neighbor relationship has changed state, or an error has occurred.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Nbr lsRetransQlen

Access	Read only
Description	The current length of the Retransmission queue.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Nbr nbmaNbrStatus

Access	Read only
Description	This attribute describes the status of the entry.
Mib	Ip
Values	valid invalid
Default	No default

ATTRIBUTE Vr Ip Ospf Nbr exchangeStatus

Access	Read only
Description	Indicates the exchange status for a neighbor entry.
Mib	Ip
Values	master slave
Default	No default

ATTRIBUTE Vr Ip Ospf Nbr permanence

Access	Read only
Description	This attribute displays how the neighbor became an entry.
Mib	Ip
Values	dynamic permanent
Default	dynamic

ATTRIBUTE Vr Ip Ospf Nbr opaqueCapability (opcap)

Access	Read only
Description	This attribute displays the Opaque capability of this neighbor.
Mib	Ip
Values	true false
Default	No default

COMPONENT Vr Ip Ospf LsdbEntry (Lsdb)

Instance	areaId [IP address] lsdbType [Decimal (1..10)] lsId [IP address] routerId [IP address]
Groups	"GROUP Vr Ip Ospf Lsdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Vrf/<string> Ospf LsdbEntry/<Ip Address>,<Decimal>, <Ip Address>, <Ip Address>* This dynamic component contains the Link State Advertisements (LSA) from all areas the device is connected to. The supported

	types are: router-LSA (1), network-LSA (2), network-summary-LSA (3), ASBR-summary-LSA (4), AS-external-LSA (5) Group-membership-LSA (6) NSSA-LSA (7) and opaqueArea-LSA (10).
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Ospf Lsdb Operational (Oper)

Properties	Operational
Description	This group describes the Operational set of attributes for the *LsdbEntry.*
Mib	Ip

ATTRIBUTE Vr Ip Ospf Lsdb sequence

Access	Read only
Description	A signed 32-bit integer, used to detect old and duplicate LSAs. The space of sequence numbers is linearly ordered. The larger the sequence number, the more recent the advertisement.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Lsdb age

Access	Read only
Description	The age of the Link State Advertisement in seconds.
Mib	Ip
Values	Decimal (0..3600)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Ospf Lsdb checksum

Access	Read only
Description	The checksum of the complete contents of the advertisement, excepting the age field. The checksum used is the Fletcher checksum.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf Lsdb advertisement

Access	Read only
Description	The entire LSA including its header.
Mib	Ip
Values	String (1..65535, Hex)
Default	No default

COMPONENT Vr Ip Ospf ExtLsdbEntry (ExtLsdb)

Instance	lsdbType [Decimal (1..7)] lsId [IP address] routerId [IP address]
Groups	"GROUP Vr Ip Ospf ExtLsdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* *Rtr/<string> Vrf/<string> Ospf ExtLsdbEntry/<Decimal>, <Ip Address>, <Ip Address>* This dynamic component contains the Link State Divertimentos (LSA) from other Autonomous systems. It is identical in format to the *Lsdb*. The purpose is to allow all external LSAs to be displayed together rather than distributed over the different non-

stub areas. These types are: AS-external-LSA (5) and NSSA-LSA (7).

Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Ospf ExtLsdb Operational (Oper)

Properties	Operational
Description	This group describes the operational set of attributes for the *ExtLsdbEntry.*
Mib	Ip

ATTRIBUTE Vr Ip Ospf ExtLsdb sequence

Access	Read only
Description	A signed 32-bit integer, used to detect old and duplicate LSAs. The space of sequence numbers is linearly ordered. The larger the sequence number, the more recent the advertisement.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf ExtLsdb age

Access	Read only
Description	The age of the Link State Advertisement in seconds.
Mib	Ip
Values	Decimal (0..3600)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Ospf ExtLsdb checksum

Access	Read only
Description	The checksum of the complete contents of the advertisement, excepting the age field. The checksum used is the Fletcher checksum.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Ospf ExtLsdb advertisement

Access	Read only
Description	The entire LSA including its header.
Mib	Ip
Values	String (1..36, Hex)
Default	No default

COMPONENT Vr Ip RoutingInformationProtocol (Rip)

Groups	"GROUP Vr Ip Rip Provisioned (Prov)" "GROUP Vr Ip Rip OsiState (State)" "GROUP Vr Ip Rip AdministrativeControl (AdminControl)" "GROUP Vr Ip Rip OperationalStatus (OperStatus)" "GROUP Vr Ip Rip Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Rip* *Rtr/<string> Rip* *Rtr/<string> Vrf/<string> Rip* This component represents the Routing Information Protocol for the IP.

There should be at least one *RipInterface* provisioned below an *Interface* or below a *LogicalIf* under an *IpPort*.

Mib: Ip

Opt. Subcomp.: "COMPONENT Vr Ip Rip Import (Import)"
"COMPONENT Vr Ip Rip Export"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Vr Ip Rip Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the RIP component

Mib: Ip

ATTRIBUTE Vr Ip Rip migrateRip

Access: Read and write

Description: This attribute sets the preference level of OSPF-internal routes to be less preferred than RIP.
Note:
This parameter should only be used when starting migration of network from RIP to OSPF. When ready to cut over to OSPF, set this attribute value to ***disabled*** and run under normal preferences. All OSPF routers in the Autonomous System should be running with *migrateRip* ***enabled*** or with *migrateRip* ***disabled*** to prevent routing loops. It is important that the changeover period from RIP to OSPF be performed quickly on all OSPF routers so that no routing loops are formed. These routing loops could be caused by conflicts in the internal RIP and OSPF databases.

Mib: Ip

Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Rip rfc1058MetricUsage (rfc1058)

Access	Read and write
Description	This attribute determines the metric usage for this RIP instance. This flag is used to determine the way metrics are incremented. RFC 1058 way: Sending Update: This is to use the metric for the route from the routing table as the advertised metric to be sent for that route. Nothing is ever added to this value from the sending side. The only special case handling is that if the route being advertised is the network route of a directly connected network, the metric in the routing table will be zero. Then the RipIf interface metric for the interface being advertised is used as the advertise metric. If the interface being advertised is not a Rip interface, then metric value of 1 is used. Receiving Update: Add receiving interface's RIP metric to the metric for the route in the received advertisement and install the result in the receiver's routing table as the metric for that route. Older way: Sending Updates: Add the out going interfaces rip metric to the metric for a route in the routing table to form the metric to be advertised for that route. Receiving Updates: The metric received in the advertisement for a route is put directly in the routing table as the metric for that route. Note: It is recommended that, all the routers in this autonomous system should be following the rfc1058 metric system. Setting this flag to ***disabled*** will have the effect of running the RIP with old metric incrementing system.
Mib	Ip
Values	enabled disabled

Default	enabled

ATTRIBUTE Vr Ip Rip generateDiscardRoute (discard)

Access	Read and write
Description	This attribute specifies whether network discard routes should be added to the routing and forwarding table for the subnetted interfaces that are running RIP.
Mib	Ip
Values	yes no
Default	yes

ATTRIBUTE Vr Ip Rip redistributeIbgp (ribgp)

Access	Read and write
Description	This attribute specifies whether the export policies of this *Rip* instance can match routes learned from internal BGP (IBGP) peers when their *protocol* attribute value is ***all.*** If *redistributeIbgp* is ***true***, a *protocol* value of ***all*** allows routes learned from IBGP peers to be included in the matching routes. If *redistributeIbgp* is ***false,*** routes learned from IBGP peers are excluded when the *protocol* value is ***all***. To cause IBGP routes to be considered in this case, the *protocol* value must be set to ***bgpInternal***.
Mib	Ip
Values	true false
Default	false

ATTRIBUTE Vr Ip Rip defaultRipRtePreference (ripPref)

Access	Read and write
Description	This attribute specifies this RIP component instance's default routing preference assigned to the RIP routes. A lower value indicates a more preferred route.
Mib	Ip

Values	Decimal (1..254)
Default	82

GROUP Vr Ip Rip OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Rip adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)

Default	unlocked

ATTRIBUTE Vr Ip Rip operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Rip usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip

Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Rip AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ip

ATTRIBUTE Vr Ip Rip snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

GROUP Vr Ip Rip OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Ip Rip snmpOperStatus

Access	Read only

Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

GROUP Vr Ip Rip Operational (Oper)

Properties	Operational
Description	This group defines a set of operational attributes belonging to the *RIP* component. It corresponds to the rip2Globals table in the RIP-2 standard MIB.
Mib	Ip

ATTRIBUTE Vr Ip Rip routeChangesMade

Access	Read only
Description	This attribute counts the route changes made to the IP Route Database by Rip. This does not include the refresh of the route's age.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Rip queryResponses

Access	Read only
Description	This attribute counts the responses sent to RIP queries from other systems.
Mib	Ip

Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ip Rip Import (Import)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Rip Import Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Rip Import/<Decimal>* *Rtr/<string> Rip Import/<Decimal>* *Rtr/<string> Vrf/<string> Rip Import/<Decimal>* This component controls the functionality of Route Leaking. In other words, this component will determine what routes are used by RIP.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Rip Import Network (Net)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Rip Import Provisioned (Prov)

Properties	Provisioned
Description	This is the group of provisionable attributes for the *Import* Subcomponent.
Mib	Ip

ATTRIBUTE Vr Ip Rip Import usageFlag (usage)

Access	Read and write
Description	This flag when set to ***ignore*** indicates the routes that are not used and if set to ***use***, indicates the routes which are used.
Mib	Ip

Values	use ignore
Default	use

ATTRIBUTE Vr Ip Rip Import importMetric (metric)

Access	Read and write
Description	This attribute is used to override the default import metric for the RIP protocol. This value is not used to select which routes to use or ignore, rather it is the metric to be used in the routing table for the routes imported for this import policy. A value of zero indicates that the metric received in the update will be used.
Mib	Ip
Values	Decimal (0..16)
Default	0

ATTRIBUTE Vr Ip Rip Import neighbor (nbr)

Access	Read and write
Description	This attribute indicates the IP Address of the neighbor this policy will apply to.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Rip Import interface (if)

Access	Read and write
Description	This attribute specifies the RIP interface to which this import policy applies. The value of 0.0.0.0 implies any RIP interface on the routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	Ip

Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Rip Import description (desc)

Access	Read and write
Description	This attribute describes the policy. For example, ‘to import RIP routes from MCI’.
Mib	Ip
Values	String (0..255, ASCII)
Default	No default

COMPONENT Vr Ip Rip Import Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Rip Import Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Rip Import/<Decimal> NetworkList/<Decimal> Rtr/<string> Rip Import/<Decimal> NetworkList/<Decimal> Rtr/<string> Vrf/<string> Rip Import/<Decimal> NetworkList/ <Decimal>* This component identifies a set of networks that this Import policy will apply to.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Rip Import Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains attributes for the *Import NetworkList* component for the Import Policy to be applied to.

Mib	Ip

ATTRIBUTE Vr Ip Rip Import Net ipAddress (addr)

Access	Read and write
Description	This attribute specifies the IP address that needs to be matched against in this network list for the Import Policy to be applied to.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Rip Import Net ipMask (mask)

Access	Read and write
Description	This attribute specifies the IP mask for the attribute *ipAddress*.
Mib	Ip
Values	IP address
Default	No default

COMPONENT Vr Ip Rip Export

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Rip Export Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Rip Export/<Decimal>* *Rtr/<string> Rip Export/<Decimal>* *Rtr/<string> Vrf/<string> Rip Export/<Decimal>* Each instance of this component specifies a RIP export policy. A RIP export policy is used to decide if a route in the IP forwarding table should be blocked or advertised as a RIP route on one or all RIP interfaces of the routing component (*Vr*, *Rtr* or *Vrf*). The *Rip* component by default advertises all local routes and all

	RIP learned routes to all RIP interfaces based on the metric in the IP forwarding table.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Rip Export Network (Net)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Rip Export Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisioned attributes for the *Export* component.
Mib	Ip

ATTRIBUTE Vr Ip Rip Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies if the routes that match this export policy are advertised (***send***) or not advertised (***block***).
Mib	Ip
Values	send block
Default	send

ATTRIBUTE Vr Ip Rip Export exportMetric (metric)

Access	Read and write
Description	This attribute specifies the metric to be used on the routes being exported as a result of matching this export policy. If the attribute *advertiseStatus* is set to ***block***, then the value of *exportMetric* is ignored. The *exportMetric* value is not used to select which routes to block or send, but rather the metric value

advertised for the routes.
A value of 0 indicates that the exported routes will be advertised with their original metric. When exporting routes from other protocols into RIP, an *exportMetric* value of 0 will distribute these routes with the metric of the original protocol. If the metric of the original protocol exceeds 15, the exported routes will be considered as unreachable by RIP. If an *exportMetric* value of 16 is specified, the exported routes will be advertised into RIP as unreachable.

Mib	Ip
Values	Decimal (0..16)
Default	0

ATTRIBUTE Vr Ip Rip Export protocol

Access	Read and write
Description	This attribute specifies the routes to which this export policy applies based on the routing protocol of how the routes are learned. If the value is ***all***, the policy applies to all routes in the forwarding table, with the following exceptions: external BGP routes are always excluded and internal BGP routes are excluded if the parent *Rip* component's *reDistributeIBGP* attribute has the value ***false***.
Mib	Ip
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal mbgp bgpMplsInternal
Default	all

ATTRIBUTE Vr Ip Rip Export ripInterface (ripIf)

Access	Read and write
Description	This attribute specifies the RIP learned routes to which this export policy applies, based on the RIP interface from which the routes are learned. This attribute can only be non zero when the *protocol* is set to ***rip***. The value of 0.0.0.0 implies any RIP interface on the same routing component (*Vr*, *Rtr* or *Vrf*); otherwise the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Rip Export egpAsId (egpAs)

Access	Read and write
Description	Under the *Rtr* and *Rtr Vrf*, this attribute has no effect. Under the *Vr*, this attribute specifies the EGP learned routes to which this export policy applies, based on the EGP autonomous system identifier of which the routes are learned from. This attribute can only be non zero when *protocol* is set to ***egp***. The value of 0 implies any EGP autonomous system; otherwise the value of this attribute must match the *asId* of an EGP neighbor on the same virtual router.
Mib	Ip
Values	Decimal (0..65536)
Default	0

ATTRIBUTE Vr Ip Rip Export ospfTag (tag)

Access	Read and write
Description	This attribute specifies the OSPF learned external routes to which this export policy applies, based on the learned OSPF tag of the routes.

This attribute can only be set to a non default value when *protocol* is set to ***ospfExternal***. The default value of 4294967295 implies any tag.

Mib: Ip

Values: Decimal (0..4294967295)

Default: 4294967295

ATTRIBUTE Vr Ip Rip Export outInterface (outIf)

Access: Read and write

Description: This attribute specifies the RIP interface on the virtual router which routes are exported onto as a result of matching this export policy.
If the attribute *advertiseStatus* is set to ***block***, then the value of *outInterface* is ignored. The *outInterface* value is not used to select which routes to block or send, but rather where to export the routes.
A value of 0.0.0.0 indicates that the routes are exported to all RIP interfaces on the routing component (*Vr*, *Rtr* or *Vrf*). Otherwise, the value of this attribute must match the interface address of a *LogicalIf* or *Interface* that has a *RipIf* on the same routing component.

Mib: Ip

Values: IP address

Default: 0.0.0.0

ATTRIBUTE Vr Ip Rip Export bgpAsId (bgpAs)

Access: Read and write

Description: This key attribute specifies the BGP AS from which the routes are learned. This key will be used only when the *protocol* is set to ***bgpExternal***. *bgpAsId* of ***0*** matches all BGP ASs.

Mib: Ip

Values: Decimal (0..65535)

Default: 0

ATTRIBUTE Vr Ip Rip Export description (desc)

Access	Read and write
Description	The attribute describes the policy. For example, ‘to export RIP routes to AS 1’.
Mib	Ip
Values	String (0..255, ASCII)
Default	No default

COMPONENT Vr Ip Rip Export Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Rip Export Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Rip Export/<Decimal> NetworkList/<Decimal> Rtr/<string> Rip Export/<Decimal> NetworkList/<Decimal> Rtr/<string> Vrf/<string> Rip Export/<Decimal> NetworkList/ <Decimal>* This component identifies a set of attributes when matched determines the export policy applied.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Rip Export Net Provisioned (Prov)

Properties	Provisioned
Description	This group identifies the set of Provisionable attributes for the *ExportNetworkList* component.
Mib	Ip

ATTRIBUTE Vr Ip Rip Export Net ipAddress (addr)

Access	Read and write
Description	This attribute identifies the 32 bit IP address to match against.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Rip Export Net ipMask (mask)

Access	Read and write
Description	This attribute is the IP Mask to be used with the IP Address to match against.
Mib	Ip
Values	IP address
Default	No default

COMPONENT Vr Ip Static

Groups	"GROUP Vr Ip Static OsiState (State)" "GROUP Vr Ip Static Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Static* *Rtr/<string> Static* *Rtr/<string> Vrf/<string> Static*

The *Static* component is used to configure addition, deletion and modification of static routing information.

Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Static RouteEntry (Route)" "COMPONENT Vr Ip Static DiscardRouteEntry (Discard)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Static OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Static adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users

only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ip

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Ip Static operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ip

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip Static usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in

use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Static Provisioned (Prov)

Properties	Provisioned
Description	This group of attributes are used to configure the Static component.
Mib	Ip

ATTRIBUTE Vr Ip Static defaultStaticRemoteRtePreference (pref)

Access	Read and write
Description	This attribute specifies this *Static* component instance's default routing preference assigned to the remote routes. A lower value indicates a more preferred route. Assigning a non-zero value to the *staticRemoteRtePreference* attribute in *RouteEntry* will override this default.
Mib	Ip
Values	Decimal (1..253)
Default	72

ATTRIBUTE Vr Ip Static defaultStaticDiscardRtePreference (discpref)

Access	Read and write

Description	This attribute specifies this *Static* component instance's default routing preference assigned to the discard routes. A lower value indicates a more preferred route. Assigning a non-zero value to the *staticDiscardRtePreference* attribute in *DiscardRouteEntry* will override this default.
Mib	Ip
Values	Decimal (0..253)
Default	0

ATTRIBUTE Vr Ip Static maxEcmpNextHops

Access	Read and write
Description	This attribute specifies the maximum number of Equal Cost Multi-Path (ECMP) *NextHop*s that are supported for *Static RouteEntry*s. If *maxEcmpNextHops* is ***1*** then only a single available *NextHop* is used, even if multiple *NextHops* are provisioned with the same *metric* value under a given *Static RouteEntry.* In other words ECMP is disabled for static routes. If *maxEcmpNextHops* is ***3*** the traffic will be loadshared over the available *NextHops* that have the same value set for the *metric* attribute under a given *Static RouteEntry.* When *protected Static RouteEntry*s are provisioned, *maxEcmpNextHops* must be ***1***.
Mib	Ip
Values	1 3
Default	3

COMPONENT Vr Ip Static RouteEntry (Route)

Instance	destAddress (addr) [IP address] destMask (mask) [IP address] typeOfService (tos) [Decimal (0..0)]
Groups	"GROUP Vr Ip Static Route Provisioned (Prov)" "GROUP Vr Ip Static Route Operational (Oper)" "GROUP Vr Ip Static Route OsiState (State)"

Scope	Application
Description	*Vr/<string> Ip Static RouteEntry*/<Ip Address>, <Ip Address>, <Decimal> *Rtr/<string> Static RouteEntry*/<Ip Address>, <Ip Address>, <Decimal> *Rtr/<string> Vrf/<string> Static RouteEntry*/<Ip Address>, <Ip Address>, <Decimal> This component describes the IP static routes. For a *RouteEntry* to be valid, there should be at least one *NextHop* provisioned. Up to three *NextHops* can be provisioned for each instance of a *RouteEntry.* The value of index *destMask* should be contiguous. Only the value zero is supported. Zero will be substituted for any value that is entered.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Static Route NextHop (Nh)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Static Route Provisioned (Prov)

Properties	Provisioned
Description	This group contains a provisionable set of attributes for the static route entry component.
Mib	Ip

ATTRIBUTE Vr Ip Static Route staticRemoteRtePreference (pref)

Access	Read and write
Criticality	Component

Description	This attribute specifies the route preference of the static remote route. A lower preference value means the route is more preferred. If ***sameAsStatic*** is specified, the value of *defaultStaticRemoteRtePreference* in the *Static* component is used.
Mib	Ip
Values	Decimal (1..253) sameAsStatic
Default	sameAsStatic

ATTRIBUTE Vr Ip Static Route protected

Access	Read and write
Description	This attribute specifies whether this route is protected or not. Note that *Vr Ip Static maxEcmpNextHops* must be ***1*** and *Vr Ip Ospf ecmpStatus* must be ***disabled*** when there is a *protected* static route under the *Vr*.
Mib	Ip
Values	yes no
Default	no

ATTRIBUTE Vr Ip Static Route protectedFailureBehavior (protFlrB)

Access	Read and write
Description	This attribute specifies the behavior when all *NextHops* of a *protected* static route fail. If ***discard*** is specified, the static route will not be removed, it will continue to be used to discard traffic.
Mib	Ip
Values	discard
Default	discard

GROUP Vr Ip Static Route Operational (Oper)

Properties	Operational

Description	This group contains a set of operational attributes for the static route entry component.
Mib	Ip

ATTRIBUTE Vr Ip Static Route protectionLevel (protL)

Access	Read only
Description	This attribute indicates the current protection level for a *Static RouteEntry*. A value of ***portProtected*** indicates that the only alternative enabled *NextHop*(s) for this protected route are on the same card as the active *NextHop*. When the value is ***cardProtected***, one or more alternative enabled ***NextHop***s exist on a different card than the active ***NextHop***. If the value is ***unprotected***, no alternative enabled *NextHop*s exist or this is an unprotected static route (that is, *protected* = ***no*** for this *Static RouteEntry*).
Mib	Ip
Values	portProtected cardProtected unprotected notApplicable
Default	No default

GROUP Vr Ip Static Route OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Static Route adminState (osiAdmin)

Access	Read only

Description

This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib

Ip

Values

locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default

unlocked

ATTRIBUTE Vr Ip Static Route operationalState (osiOper)

Access

Read only

Description

This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib

Ip

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Static Route usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

COMPONENT Vr Ip Static Route NextHop (Nh)

Instance	IP address
Groups	"GROUP Vr Ip Static Route Nh Provisioned (Prov)" "GROUP Vr Ip Static Route Nh OsiState (State)" "GROUP Vr Ip Static Route Nh Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>* *Rtr/<string> Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>* *Rtr/<string> Vrf/<string> Static Route/<Ip Address>,<Ip Address>,<Decimal> NextHop/<Ip Address>* This component provides the destination Ip address of the

NextHop (some times referred to as the Gateway).

For a *RouteEntry* to be valid, there should be at least one *NextHop* provisioned. Up to three *NextHops* can be provisioned for each instance of a *RouteEntry.*

Each provisioned *NextHop* address should belong to a valid subnet.
A valid subnet for this IP entity can be provisioned as a *logicalIf* Entry under an *IpPort.*

Mib: Ip

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Ip Static Route Nh Provisioned (Prov)

Properties: Provisioned

Description: This group contains a provisionable set of attributes for the *Static RouteEntry NextHop* component.

Mib: Ip

ATTRIBUTE Vr Ip Static Route Nh metric (metric)

Access: Read and write

Description: This attribute specifies the primary routing metric for this *NextHop*.

Mib: Ip

Values: Signed (-1..65535)

Default: 1

GROUP Vr Ip Static Route Nh OsiState (State)

Properties: Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Static Route Nh adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Static Route Nh operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ip

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip Static Route Nh usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Ip

Values: idle
active (activ)
busy

Default: idle

GROUP Vr Ip Static Route Nh Operational (Oper)

Properties: Operational

Description:

Mib: Ip

ATTRIBUTE Vr Ip Static Route Nh heartbeatState (hbS)

Access	Read only
Description	This attribute indicates the state of the heartbeat mechanism with this *NextHop*'s next hop Router. The value will be ***disabled*** if the *heartbeatDeadInterval* is disabled for all *Static Route*s that share this *NextHop*. The value may be ***undetermined*** briefly upon initialization, before the heartbeat mechanism has completed an assessment. The value will be ***down*** if the *NextHop* Router has not responded to ICMP heartbeat requests nor ARP heartbeat requests. The value will be ***icmpDegraded*** if the *NextHop* Router has only responded to ARP heartbeat requests. The value will be ***up*** if the *NextHop* Router has responded to ICMP heartbeat requests.
Mib	Ip
Values	undetermined disabled down icmpDegraded up
Default	No default

COMPONENT Vr Ip Static DiscardRouteEntry (Discard)

Instance	destAddress (addr) [IP address] destMask [IP address]
Scope	Application
Description	*Vr/<string> Ip Static DiscardRouteEntry/<Ip Address>,<Ip Address>* *Router/<string> Static DiscardRouteEntry/<Ip Address>,<Ip Address>* *Router/<string> Vrf/<string> Static DiscardRouteEntry/<Ip Address>,<Ip Address>* This table identifies invalid martian networks. Forwarding of

packets to the network address indicated by this entry will be discarded.

Mib: Ip

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT Vr Ip NetSentry (Ns)

Groups: "GROUP Vr Ip Ns Provisioned (Prov)"

Scope: Application

Description: *Vr/<string Ip NetSentry*
NetSentry defines a set of filters which are compiled by the *NetSentry* process to be applied to all IP packets. IP packets can be filtered based on IP address and netmask combinations.

Mib: Ip

Opt. Subcomp.: "COMPONENT Vr Ip Ns ApplyEntry (Apply)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Ip Ns Provisioned (Prov)

Properties: Provisioned

Description: This group contains provisionable attributes for the *NetSentry* component.

Mib: Ip

ATTRIBUTE Vr Ip Ns firstFilter

Access	Read and write
Description	The *firstFilter* is the first filter point which affects all IP packets before they have been examined in any way for their origin and destination. The most common use of a *firstFilter* point is to collect statistis for all packets arriving at the route on any interface, before any subsequent filter processing changes their direction or disposition.
Mib	Ip
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ip Ns localInFilter

Access	Read and write
Description	The *localInFilter* is the second filter point which uses by network administrator to perform a common action on all IP packets that physically arrive over a specific logical interface, regardless of the packet's stated source or destination. Typical uses for a *localInFilter* include verifying that known Ethernet media source addresses match known IP addresses, or confirming that the IP packet source addresses of received IP packet fall within a narrow range.
Mib	Ip
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ip Ns localOutFilter

Access	Read and write
Description	The *localOutFilter* is the third filter point which applies to any IP packet that will be transmitted from the router to the medium associated with the interface, regardless of its source, destination, or what type of decision was made to cause the datagram to be transmitted on this interface. *localOutFilter* generally used to ensure that certain paterns of traffic do not enter the network or reach a second IP router on that network. For example,

	localOutFilter can be used as the exclusion of all IP packets above a certain security classification, or collecting statistics on the amount of IP fragments performed on an outgoing interface.
Mib	Ip
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ip Ns lastFilter

Access	Read and write
Description	*lastFilter* is the fourth and last filter point to be excecuted after all other routing and filtering decisions have been made on the IP packet, and transmission of the information is imminent. *lastFilter* is generally used to collect statistics on traffic after all previous control and routing decisions have been made.
Mib	Ip
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Ip Ns ApplyEntry (Apply)

Instance	Decimal (1..65535)
Groups	"GROUP Vr Ip Ns Apply Provisioned (NetSentryEntry)"
Scope	Application
Description	*Vr/<string> Ip NetSentry ApplyEntry/<Decimal>* This component contains a list of *NetSentry* filters that can be

applied to IP packets and information pertaining to each application of such *NetSentry* filters.

Mib: Ip

Common Verbs:
Help
List
Display
Add
DELete

GROUP Vr Ip Ns Apply Provisioned (NetSentryEntry)

Properties: Provisioned

Description: The instance of provisioned information relating to a filter application to IP packet.

Mib: Ip

ATTRIBUTE Vr Ip Ns Apply filter

Access: Read and write

Description: The name of the *filter* to be applied to packet matching the conditions in this entry.

Mib: Ip

Values: String (0..32, ASCII)

Default: No default

ATTRIBUTE Vr Ip Ns Apply ipAddress1

Access: Read and write

Description: The first IP address used to compare.

Mib: Ip

Values: IP address

Default: No default

ATTRIBUTE Vr Ip Ns Apply ipMask1

Access	Read and write
Description	The first netmask associated with *ipAddress1* used to compare.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ns Apply ipAddress2

Access	Read and write
Description	This second IP address used to compare.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ns Apply ipMask2

Access	Read and write
Description	This second netmask associated with *ipAddress2* used to compare.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Ns Apply direction

Access	Read and write
Description	Indicates the direction a packet must be moving between the first and second apply list entries in order for the entries to match. First “to” second, first “from” second, or first “tofrom” second (either direction).
Mib	Ip

Values	to from tofrom
Default	tofrom

COMPONENT Vr Ip Arp

Groups	"GROUP Vr Ip Arp Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Arp* *Rtr/<string> Arp* *Rtr/<string> Vrf/<string> Arp* The component specifies the Address Resolution Protocol.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Arp HostEntry (Host)"
Dyn. Subcomp.	"COMPONENT Vr Ip Arp DynHostEntry (DynHost)"
Common Verbs	Help List Display

VERB Clear Vr Ip Arp

Impact	Passive
Description	*Clear [-logicalIf(Ip Address)] [-includeInverse] Vr/<string> Ip Arp* *Clear [-logicalIf(Ip Address)] [-includeInverse] Rtr/<string> Arp* The *Clear* verb is intended for manually flushing dynamically learned ARP entries. Without any options, *Clear* will flush all non-inverse dynamic ARP entries. The *Clear* verb does not affect static ARP host entries, that is, entries which correspond to *HostEntry* subcomponents of this component. These entries can be removed by deleting the corresponding provisioned *HostEntry* component.

The *-logicalIf* or *-interface* option is used to flush dynamic ARP entries which were learned on a particular *IpPort LogicalInterface* or *Interface*. The option must specify the IP address of an existing *IpPort LogicalInterface* (which may be under any *ProtocolPort) or Interface*.

The *-includeInverse* option is used to force the deletion of inverse ARP entries. Inverse ARP entries which are learned through inverse ARP (*FrDte*) and inverse ATM ARP (*AtmMpe*) are important and should not be cleared by the users accidentally. If the option is not present, inverse ARP entries are not cleared.

GROUP Vr Ip Arp Provisioned (Prov)

Properties	Provisioned
Description	The ARP refresh feature allows the router to periodically verify ARP table entries. Whenever the router updates an ARP entry, or creates a new entry, a timeout value is assigned to the entry. When the timeout for an entry expires, the router will send a unicast ARP request to the currently-known physical address. If an ARP response comes back, the entry will be assigned a new timeout. If, however, the host has gone away or been assigned a new physical address, the host will not respond to the unicast ARP, and the entry will be removed from the ARP table. The new physical address will be discovered through the normal ARP mechanism when the next communication is attempted to the host.
Mib	Ip

ATTRIBUTE Vr Ip Arp autoRefresh

Access	Read and write
Description	This attribute is used to enable or disable the ARP refresh feature.
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Arp autoRefreshTimeout

Access	Read and write
Description	This attribute defines the timeout value, in minutes, which is assigned to updated ARP entries, or newly created ARP entries. The range for the timeout is 1 minute to 1440 minutes (24 hours).
Mib	Ip
Values	Decimal (1..1440)
Units	minutes
Default	5

ATTRIBUTE Vr Ip Arp retryTimes

Access	Read and write
Description	This attribute defines the number of times that an ARP request will be sent to a remote host if there is no reply received. This value is assigned when ARP entries are updated or created. The range of the value can be from 0 to 127.
Mib	Ip
Values	Decimal (0..127)
Units	times
Default	127

COMPONENT Vr Ip Arp DynHostEntry (DynHost)

Instance	hostAddress (addr) [IP address] cos [0 1 2 3 notApplicable (na)]
Groups	"GROUP Vr Ip Arp DynHost Operational (Oper)"
Scope	Application

Description

Vr/<string> Ip Arp DynHostEntry/<Ip Address>
Router/<string> Arp DynHostEntry/<Ip Address>
Router/<string> Vrf/<string> DynHostEntry/<Ip Address>
This component is a table that contains all Arp host entries (both static and dynamic). Each IP ARP entry in the table is uniquely defined by its IP address and connection class (cos) value.

For *Vr*, when associated *mediaType* under *IpPort* is ***frameRelay***, ***atmMpeLlcEncap,*** and ***atmMpeVcEncap***, the connection class value of the arp entry is ***0, 1, 2,*** or ***3*** . For all other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

For *Router* or *Vrf*, when the media associated with the interface is *atmMpe* or *IpoDlci*, the connection class value of the arp entry is ***0, 1, 2,*** or ***3***. For all other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

An IP packet that has been assigned a particular connection class value will be forwarded using the arp entry which corresponds to the next hop gateway IP address and matching connection class value where the next hop gateway IP address is determined via a forwarding table look up on the packet's destination IP address. When there are arp entries that match the next hop gateway IP address, but not the packet's connection class, then the packet will be forwarded using the arp entry that has the next lowest connection class value; failing this, the packet will be forwarded using the arp entry that has the next highest connection class value.

Mib

Ip

Common Verbs

Help
List
Display

VERB Clear Vr Ip Arp DynHost

Impact	Passive
Description	*Clear [-inverse] Vr/<string> Ip Arp DynHostEntry/<Ip Address>* *Clear [-inverse] Router/<string> Arp DynHostEntry/<Ip Address>* *Clear [-inverse] Router/<string> Vrf/<string> Arp DynHostEntry/<Ip Address>* The *Clear* verb is used to delete the single dynamically learned ARP entry that is represented by this component. The *Clear* command does not affect static ARP host entries, that is, entries whose *type* attribute has the value ***static***. These entries can be removed by deleting the corresponding provisioned *HostEntry* component under *Arp*. The *-inverse* option deletes the ARP entry even if it was an inverse ARP entry. Inverse ARP entries are learned through inverse ARP (*FrDte* or *IpoDlci*) and inverse ATM ARP (*AtmMpe*), and should not be removed by the users accidentally. If the option is not present, an inverse ARP entry is not cleared.

GROUP Vr Ip Arp DynHost Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *DynHostEntry* component.
Mib	Ip

ATTRIBUTE Vr Ip Arp DynHost physAddress

Access	Read only
Description	This attribute indicates the physical address of the host in canonical form.
Mib	Ip
Values	String (0..8, Dashed Hex)

Default	No default

ATTRIBUTE Vr Ip Arp DynHost maxTxUnit (mtu)

Access	Read only
Description	This attribute indicates the maximum MTU size that can be accepted by the host.
Mib	Ip
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Vr Ip Arp DynHost encapsulationType (encap)

Access	Read only
Description	This attribute indicates the encapsulation type of the host.
Mib	Ip
Values	ieee8023 ethernet notApplicable
Default	No default

ATTRIBUTE Vr Ip Arp DynHost permanentVirtualCircuitNumber (pvcNo)

Access	Read only
Description	This attribute indicates the permanent virtual circuit number to the remote host.
Mib	Ip
Values	Decimal (0..4095)
Default	No default

ATTRIBUTE Vr Ip Arp DynHost ifIndex

Access	Read only
Description	This attribute indicates the *ifIndex* of the protocol port that is associated with this entry.

Mib	Ip
Values	Decimal (1..65535)
Default	1

ATTRIBUTE Vr Ip Arp DynHost type

Access	Read only
Description	This attribute indicates how this entry was learned.
Mib	Ip
Values	pending invalid dynamic static
Default	No default

ATTRIBUTE Vr Ip Arp DynHost ncPhysAddress

Access	Read only
Description	This attribute indicates the physical address of the host in non-canonical form. This attribute is not displayed for hosts on non-LAN media.
Mib	Ip
Values	String (0..8, Dashed Hex)
Default	No default

ATTRIBUTE Vr Ip Arp DynHost tunnelDestinationAddress (tda)

Access	Read only
Description	This attribute indicates the IP address of a remote IP tunnel endpoint in the shared domain. A value of 0.0.0.0 is used when the entry is not referring to an IP tunnel.
Mib	Ip
Values	IP address

Default 0.0.0.0

COMPONENT Vr Ip Arp HostEntry (Host)

Instance
hostAddress (addr) [IP address]
cos [0
1
2
3
notApplicable (na)]

Groups
"GROUP Vr Ip Arp Host Provisioned (Prov)"
"GROUP Vr Ip Arp Host Operational (Oper)"

Scope
Application

Description
Vr/<string> Ip Arp HostEntry/<Ip Address>,<cos>
Rtr/<string> Arp HostEntry/<Ip Address>,<cos>
Rtr/<string> Vrf/<string> Arp HostEntry/<Ip Address>,<cos>
This component defines a static host entry in the ARP table.

For *Vr*, a connection class (cos) value of ***0, 1, 2,*** or ***3*** is used when the associated *mediaType* under *IpPort* is ***frameRelay***, ***atmMpeLlcEncap***, or ***atmMpeVcEncap***. For other media types, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

For *Router* and *Vrf*, a connection class (cos) value of ***0, 1, 2,*** or ***3*** is used when the media associated with the interface is *AtmMpe* or *IpoDlci*. For other media, the connection class value is ***notApplicable*** (not specified on a per virtual circuit basis).

Mib
Ip

Common Verbs
Help
List
Display
Add
DELete

GROUP Vr Ip Arp Host Provisioned (Prov)

Properties
Provisioned

Description	This group contains the provisionable attributes of the *HostEntry* component.
Mib	Ip

ATTRIBUTE Vr Ip Arp Host physAddress

Access	Read and write
Description	This attribute identifies the physical address of the host being defined. The value for this attribute should only be specified for media types supporting physical addresses (e.g. ethernet, fddi, tokenRing etc.)
Mib	Ip
Values	String (0..8, Dashed Hex)
Default	00-00-00-00-00-00

ATTRIBUTE Vr Ip Arp Host maxTxUnit (mtu)

Access	Read and write
Description	Specify the maximum transmit unit (MTU) size that can be accepted by the host. If this value is not specified, the value for the media interface is used. The specified MTU must be less than or equal to the interface's MTU size.
Mib	Ip
Values	Decimal (0..0; 80..18944)
Default	0

ATTRIBUTE Vr Ip Arp Host permanentVirtualCircuitNumber (pvcNo)

Access	Read and write
Description	This attribute specifies the number of the PVC for the static host entry. It is the instance number of the X.25 media, Frame Relay media, and of the *AtmConnection* component on the ATM MPE interface..
Mib	Ip

Values	Decimal (0..4095)
Default	0

ATTRIBUTE Vr Ip Arp Host tunnelDestinationAddress (tda)

Access	Read and write
Description	This attribute specifies the IP address of a remote IP tunnel endpoint in the shared domain. A value of 0.0.0.0 is used when the entry is not referring to an IP tunnel.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Arp Host encap

Access	Read and write
Description	This attribute specifies the encapsulation type for the host. The value for this attribute should only be specified for the hosts on the ethernet media. If a value of ***auto*** is specified, the application based on the media will determine the proper applicable encapsulation type.
Mib	Ip
Values	ieee8023 ethernet auto
Default	auto

GROUP Vr Ip Arp Host Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *HostEntry* component.
Mib	Ip

ATTRIBUTE Vr Ip Arp Host operMaxTxUnit (operMtu)

Access	Read only
Description	This attribute indicates the operational value of the maximum transmission unit.
Mib	Ip
Values	Decimal (0..0; 80..18944)
Default	No default

ATTRIBUTE Vr Ip Arp Host operEncap

Access	Read only
Description	This attribute indicates the operational encapsulation type. if the value of the attribute *encap* is set to ***auto***, then the application will determine the encapsulation type based on the media being used and assigns the appropriate value.
Mib	Ip
Values	ieee8023 ethernet notApplicable
Default	No default

COMPONENT Vr Ip Icmp

Groups	"GROUP Vr Ip Icmp Statistics (Stats)"
Scope	Application
Description	Vr/<string> Ip Icmp Rtr/<string> Icmp Rtr/<string> Vrf/<string> Icmp

The Icmp component controls all ICMP related attributes available to this router.

Mib: Ip

Common Verbs:
- Help
- List
- Display

VERB Ping Vr Ip Icmp

Impact: Passive

Description:

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)] [-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)] [-traceRoute] [-continuous] [-dontFragment] [-cos(0..3)][-dscp(0..63)][-tos(0..FF)][-stop] Vr/<string> Ip Icmp

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)] [-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)] [-traceRoute] [-continuous] [-dontFragment] [-dscp(0..63)][-tos(0..FF)][-stop] Rtr/<string> Icmp

Ping -ipAddr(Ip Address) [-srcAddr(Ip Address)] [-netmask(Ip Address)] [-size(30..20000)] [-retry(0..9)] [-traceRoute] [-continuous] [-dontFragment] [-dscp(0..63)][-tos(0..FF)][-stop] Rtr/<string> Vrf/<string> Icmp

The *Ping* verb is intended for testing network connections at the IP level. The verb invokes ICMP to issue an echo request to the host specified by the *ipAddr* option and waits for its echo response.

If the *Ping* is successful, it outputs the following information:
- number of bytes received
- IP address of the responding host
- ICMP sequence number of the received packet
- elaspsed time from sending of the *Ping* to receiving of the response

The following options are supported:

-*srcAddr* is used to define the source IP address of the IP ICMP echo request packet. When not specified or specified as 0.0.0.0, the outgoing IP *Interface* or *LogicalIf* address is used as the source address.

-*netmask* when specified is used to define a range of IP host addresses to which echo requests are sent to (ping sweep). The netmask given must be contiguous. The -*retry* option is ignored if used together with this option. By default, the value is set to 255.255.255.255.

-*size* is used to define the size of the IP packet to be echoed including the IP and ICMP header. The default is 64 bytes. The maximum size is 4096.

-*retry* is used to define the number of times an echo request is resent if no echo reply is received. Default is 0.

-*traceRoute* is used to find the route the node would use to reach a particular destination IP address at the moment when the *Ping* command is executed with this option. The -*netmask*, -*size*, -*retry* and -*continuous* option are ignored if used together with this option. By default, the *traceRoute* option is not used.

-*continuous* causes ICMP to issue echo requests once per second to the host or hosts specified by the -*ipAddr* and the -*netmask* option. For every echo response ICMP receives, one line of output is printed. No output is produced if there is no response. The -*stop* option is used to stop ICMP from sending the echo requests. By default, the -*continuous* option is not used.

-*dontFragment* causes ICMP to set the Don’t Fragment flag of the IP packet that carries the echo request. This is useful in determining path MTU. By default, the *dontFragment* option is not used.

-*cos* causes the echo request packet to be forwarded with the given Class Of Service. Default is 0. This option is not supported

on a *Router* component, a *VpnRouteForwarder* component, nor on a *VirtualRouter* component that has a *DifferentiatedServicesDomain* subcomponent.

-*dscp* causes the six most significant bits of Type Of Service (TOS) byte of the echo request packet to be set to the given value. These six bits are know as the Differentiated Services Code Point (DSCP). Default is 0. This option cannot be used together with the -*tos* option.

-*tos* causes the Type Of Service (TOS) byte of the echo request packet to be set to the given value. Default is 0. This option cannot be used together with the -*dscp* option.

-*stop* is used to stop ICMP from sending echo requests due to a previously issued *Ping* command with the -*continuous* and/or -*netmask* option. Under any other situation, the *Ping* command with the -*stop* option has no effect.

Note: Only one *Ping* command per *VirtualRouter* or *Router* or *Router Vrf* is allowed to be in progress at any one time. Any in progress *Ping* command must be stopped before a new *Ping* command can be issued.

GROUP Vr Ip Icmp Statistics (Stats)

Properties	Operational
Description	This group holds statistics for ICMP.
Mib	Ip

ATTRIBUTE Vr Ip Icmp inMsgs

Access	Read only
Description	This attribute counts the ICMP messages received by this gateway. This number includes *inErrors*. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Vr Ip Icmp inErrors

Access	Read only
Description	This attribute counts the ICMP messages received by this gateway but determined as having ICMP specific errors such as bad ICMP checksum or bad length. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inDestUnreachs

Access	Read only
Description	This attribute counts the ICMP destination unreachable messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inTimeExcds

Access	Read only
Description	This attribute counts the ICMP time exceeded messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inParmProbs

Access	Read only
Description	This attribute counts the ICMP parameter problem messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inSrcQuenchs

Access	Read only
Description	This attribute counts the ICMP source quench messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Icmp inRedirects

Access	Read only
Description	This attribute counts the ICMP redirect messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inEchos

Access	Read only
Description	This attribute counts the ICMP echo request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inEchoReps

Access	Read only
Description	This attribute counts the ICMP echo reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inTimestamps

Access	Read only
Description	This attribute counts the ICMP timestamp request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inTimestampReps

Access	Read only

Description	This attribute counts the ICMP timestamp reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inAddrMasks

Access	Read only
Description	This attribute counts the ICMP address mask request messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inAddrMaskReps

Access	Read only
Description	This attribute counts the ICMP address mask reply messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outMsgs

Access	Read only
Description	This attribute counts the ICMP messages that this gateway attempted to send. This number includes *outErrors*.

	The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outErrors

Access	Read only
Description	This attribute counts the ICMP messages that this gateway did not send due to problems discovered within ICMP such as a lack of buffers. *outErrors* does not include errors discovered outside the ICMP layer such as the inability of IP to route the resultant datagram. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outDestUnreachs

Access	Read only
Description	This attribute counts the ICMP destination unreachable messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outTimeExcds

Access	Read only

Description	This attribute counts the ICMP time exceeded messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outParmProbs

Access	Read only
Description	This attribute counts the ICMP parameter problem messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outSrcQuenchs

Access	Read only
Description	This attribute counts the ICMP source quench messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outRedirects

Access	Read only
Description	This attribute counts the ICMP redirect messages sent by this gateway.

	The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outEchos

Access	Read only
Description	This attribute counts the ICMP echo request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outEchoReps

Access	Read only
Description	This attribute counts the ICMP echo reply messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outTimestamps

Access	Read only
Description	This attribute counts the ICMP timestamp request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.

Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outTimestampReps

Access	Read only
Description	This attribute counts the ICMP timestamp reply messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outAddrMasks

Access	Read only
Description	This attribute counts the ICMP address mask request messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outAddrMaskReps

Access	Read only
Description	This attribute counts the ICMP address mask reply message sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inRtrAdvs

Access	Read only
Description	This attribute counts the ICMP router advertisement messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp inRtrSolicits

Access	Read only
Description	This attribute counts the ICMP router solicitation messages received by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Icmp outRtrAdvs

Access	Read only
Description	This attribute counts the ICMP router advertisement messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Vr Ip Icmp outRtrSolicits

Access	Read only
Description	This attribute counts the ICMP router solicitation messages sent by this gateway. The counter wraps to zero when it exceeds its maximum value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ip RelayBC

Groups	"GROUP Vr Ip RelayBC Provisioned (Prov)" "GROUP Vr Ip RelayBC Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip RelayBC* *Rtr/<string> RelayBC* *Rtr/<string> Vrf/<string> RelayBC* The *InwRelayBroadcast* component controls the dissemination of IP broadcast packets received as Link-Layer broadcast.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip RelayBC PortEntry (Port)"
Common Verbs	Help List Display

GROUP Vr Ip RelayBC Provisioned (Prov)

Properties	Provisioned
Description	This group contains global configuration attributes for the Relay Broadcast component.

Mib	Ip

ATTRIBUTE Vr Ip RelayBC relayStatus

Access	Read and write
Description	Specifies whether or not IP will forward IP broadcast packets that were received as Link-Layer broadcasts.
Mib	Ip
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip RelayBC relayNdStatus

Access	Read and write
Description	Specifies whether or not IP will forward broadcast packets whose protocol is Sun ND.
Mib	Ip
Values	enabled disabled
Default	disabled

GROUP Vr Ip RelayBC Operational (Oper)

Properties	Operational
Description	This group contains RelayBroadcast component statistics.
Mib	Ip

ATTRIBUTE Vr Ip RelayBC relayNdCount

Access	Read only
Description	Indicates the number of Sun ND packets received by this router which were forwarded. *relayNdCount* wraps to zero if reached its maximum.
Mib	Ip

Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ip RelayBC PortEntry (Port)

Instance	Decimal (0..4294967295)
Groups	"GROUP Vr Ip RelayBC Port Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip RelayBC PortEntry/<Decimal>* *Rtr/<string> RelayBC PortEntry/<Decimal>* This component is a table of destination UDP port numbers. In order for a packet to be forwarded by Relay Broadcast, the packet's destination UDP port number must be listed in this table.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip RelayBC Port Operational (Oper)

Properties	Operational
Description	This group contains statistics related to *InwPortEntry.*
Mib	Ip

ATTRIBUTE Vr Ip RelayBC Port relayBcUdpCount

Access	Read only
Description	Indicates the number of forwarded packets with this destination UDP port number. *relayBcUdpCount* wraps to zero if reached its maximum.
Mib	Ip
Values	Decimal (0..4294967295)

Default	0

COMPONENT Vr Ip Udp

Groups	"GROUP Vr Ip Udp Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Ip Udp* *Rtr/<string> Udp* *Rtr/<string> Vrf/<string> Udp* *Udp* component controls all UDP related attributes supported by this router.
Mib	Ip
Dyn. Subcomp.	"COMPONENT Vr Ip Udp ListenEntry"
Common Verbs	Help List Display

GROUP Vr Ip Udp Statistics (Stats)

Properties	Operational
Description	This group holds statictics for UDP.
Mib	Ip

ATTRIBUTE Vr Ip Udp inDatagrams

Access	Read only
Description	The number of UDP datagrams delivered to UDP users. *inDatagrams* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Udp noPorts

Access	Read only

Description	The number of UDP datagrams received for which there was no application at the destination port. *noPorts* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Udp inErrors

Access	Read only
Description	The number of received UDP datagrams that could not be delivered for reasons other than the lack of an application at the destination port. *inErrors* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Udp outDatagrams

Access	Read only
Description	The number of UDP datagrams sent from this gateway. *outDatagrams* wraps to zero if reaches its maximum defined value.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Ip Udp ListenEntry

Instance	localAddress [IP address] localPort [Decimal (0..65535)]
Scope	Application

Description	The table contains UDP listener information.
Mib	Ip
Common Verbs	Help List Display LOCK Unlock

COMPONENT Vr Ip Tcp

Groups	"GROUP Vr Ip Tcp Statistics (Stats)"
Scope	Application
Description	The *Tcp* component contains all attributes related to TCP.
Mib	Ip
Dyn. Subcomp.	"COMPONENT Vr Ip Tcp TcpEntry (TcpEntry)"
Common Verbs	Help List Display

GROUP Vr Ip Tcp Statistics (Stats)

Properties	Operational
Description	This group contains statistics for TCP.
Mib	Ip

ATTRIBUTE Vr Ip Tcp rToAlgorithm

Access	Read only
Description	Indicate which algorithm was used to calculate the timeout value used for retransmitting unackowledged octet.
Mib	Ip
Values	other constant

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Default	No default

ATTRIBUTE Vr Ip Tcp rToMin

Access	Read only
Description	Indicate the minimum value, measured in milliseconds, allowed for retransmission timeout.
Mib	Ip
Values	Decimal (0..4294967295)
Units	msec
Default	0

ATTRIBUTE Vr Ip Tcp rToMax

Access	Read only
Description	Indicates the maximun value, measured in milliseconds, allowed for retransmission timeout.
Mib	Ip
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Vr Ip Tcp maxConn

Access	Read only
Description	Limit on number of connections the TCP can support. The value is always -1 which indicates that the number of connections supported is dynamic (limited by memory in the system).
Mib	Ip
Values	Signed (-1)
Default	-1

ATTRIBUTE Vr Ip Tcp activeOpens

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***synSent*** state from the ***closed*** state.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp passiveOpens

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***synRcvd*** state from the ***listen*** state.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp attemptFails

Access	Read only
Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***synSent*** state or the ***synRcvd*** state, plus the number of times TCP connections have made a direct transition to the ***listen*** state from the ***synRcvd*** state.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp estabResets

Access	Read only

Description	The number of times TCP connections have made a direct transition to the ***closed*** state from either the ***established*** state or the ***closedWait*** state.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp currEstab

Access	Read only
Description	The number of TCP connections for which the current state is either ***established*** or ***closedWait***.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp inSegs

Access	Read only
Description	The number of segments received, including those received in error. This count includes segments received on currently established connections.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp outSegs

Access	Read only
Description	The number of segments sent, including those on current connections but excluding those containing only retransmitted octets.
Mib	Ip

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp retransSegs

Access	Read only
Description	The number of segments retransmitted that is, the number of TCP segments transmitted containing one or more previously transmitted octets.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp inErrs

Access	Read only
Description	Total number of segments received in error, for example bad TCP checksum.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Tcp outRsts

Access	Read only
Description	Number of TCP segments sent containing the RST flag.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Ip Tcp TcpEntry (TcpEntry)

Instance	localAddress [IP address] localPort [Decimal (0..65535)] remoteAddress [IP address] remotePort [Decimal (0..65535)]
Groups	"GROUP Vr Ip Tcp TcpEntry Operational (Oper)"
Scope	Application
Description	The component defines an entry in the TCP connection table. Each entry corresponds to TCP end-point identified by 4-tuples, *LocalAddress*, *LocalPort*, *RemoteAddress*, and *RemotePort*.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Tcp TcpEntry Operational (Oper)

Properties	Operational
Description	This group contains columnar entries for each end-point on the TCP.
Mib	Ip

ATTRIBUTE Vr Ip Tcp TcpEntry state

Access	Read and write
Description	This attribute reflects the current state of this Tcp connection.
Mib	Ip
Values	closed listen synSent synReceived established closeWait

finWait1
closing
lastAck
finWait2
timeWait
delete

Default: No default

COMPONENT Vr Ip BootpRelayAgent (Bootp)

Groups: "GROUP Vr Ip Bootp AdministrativeControl (AdminControl)"
"GROUP Vr Ip Bootp Provisioned (Prov)"
"GROUP Vr Ip Bootp OsiState (State)"
"GROUP Vr Ip Bootp OperationalStatus (OperStatus)"

Scope: Application

Description: *Vr/<string> Ip BootpRelayAgent*
Rtr/<string> BootpRelayAgent
Rtr/<string> Vrf<string> BootpRelayAgent
The *BootpRelayAgent* component contains all the necessary attributes and components to provision a BOOTP relay agent. The BOOTP relay agent functionality conforms to that described in RFCs 951 and 1542.

The purpose of the BOOTP relay agent is to forward BOOTP request packets from a client to a server, and also to deliver server BOOTP replies back to the client. When a BOOTP request is received on a port, the request will be sent to a provisioned list of

IP addresses for that port. In addition, the request will be broadcast out all other BOOTP ports which allow it.

Mib: Ip

Dyn. Subcomp.: "COMPONENT Vr Ip Bootp BootpPortEntry (PpE)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Vr Ip Bootp AdministrativeControl (AdminControl)

Properties: Provisioned

Description: This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.

Mib: Ip

ATTRIBUTE Vr Ip Bootp snmpAdminStatus

Access: Read and write

Description: The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.

Mib: Ip

Values:
- up
- down
- testing

Default: up

GROUP Vr Ip Bootp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes for the *BootpRelayAgent* component.
Mib	Ip

ATTRIBUTE Vr Ip Bootp hopDiscardThreshold (hops)

Access	Read and write
Description	BOOTP packets contain a ‘hops’ field which is used to limit the number of relay agents that can process the packet (each relay agent increments the ‘hops’ field by one). This attribute is used by the relay agent to determine when to discard a BOOTP packet. If the ‘hops’ field exceeds the *hopDiscardThreshold* the BOOTP packet will be discarded.
Mib	Ip
Values	Decimal (2..16)
Default	4

GROUP Vr Ip Bootp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Bootp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component.

The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Bootp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Bootp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Bootp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Ip

ATTRIBUTE Vr Ip Bootp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Ip

Values	up down testing
Default	up

COMPONENT Vr Ip Bootp BootpPortEntry (PpE)

Instance	String (1..20, ASCII)
Groups	"GROUP Vr Ip Bootp PpE Operational (Oper)" "GROUP Vr Ip Bootp PpE Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Ip BootpRelayAgent BootpPortEntry/<string> Rtr/<string> BootpRelayAgent BootpPortEntry/<string> Rtr/<string> Vrf/<string> BootpRelayAgent BootpPortEntry/ <string>* The *BootpPortEntry* component contains information about the provisioned *BootpPort*. This component is indexed by a string which represents a *VirtualRouter ProtocolPort* or *Rtr Interface* or *Rtr Vrf Interface* component name.
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Bootp PpE Operational (Oper)

Properties	Operational
Description	This group contains *BootpPortEntry* component operational data.
Mib	Ip

ATTRIBUTE Vr Ip Bootp PpE status

Access	Read only
Description	This attribute indicates the status of the provisioned *BootpPortEntry* component. A value of ***disabled*** is used when the parent

components
is in a disabled state. A value of ***up***
is used when the *BootpPortEntry* is in an operational state. A state of
down is used if the media associated with the *BootpPortEntry* is not
ready or disabled.

Mib	Ip
Values	up down disabled
Default	No default

GROUP Vr Ip Bootp PpE Statistics (Stats)

Properties	Operational
Description	This group contains *BootpPortEntry* component statistics.
Mib	Ip

ATTRIBUTE Vr Ip Bootp PpE inRequests

Access	Read only
Description	This attribute counts the total number of BOOTP Request messages received on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bootp PpE inReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages received on this port.
Mib	Ip
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Vr Ip Bootp PpE outRequests

Access	Read only
Description	This attribute counts total the number of BOOTP Request messages broadcast out on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bootp PpE outReplies

Access	Read only
Description	This attribute counts the total number of BOOTP Reply messages sent out on this port.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bootp PpE inRequestErrors

Access	Read only
Description	This attribute counts the number of BOOTP Request messages received on this port but not forwarded due to an error. An error occurs if the BOOTP hop limit has been exceeded.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bootp PpE inReplyErrors

Access	Read only
Description	This attribute counts the number of BOOTP Reply messages received on this port but not forwarded due to an error. An error

occurs if the giaddr field in the BOOTP reply does not match an IP address assigned to this *VirtualRouter* or *Rtr* or *Rtr Vrf*, or if the output *IpPort* or *Interface* for the BOOTP reply is not provisioned for BOOTP.

Mib: Ip

Values: Decimal (0..4294967295)

Default: 0

COMPONENT Vr Ip Cache

Instance: Decimal (0..15)

Groups: "GROUP Vr Ip Cache OsiState (State)"
"GROUP Vr Ip Cache Operational (Oper)"

Scope: Application

Description: *Vr/<string> Ip Cache/n*
Rtr/<string> Cache/n
Rtr/<string> Vrf/<string> Cache/n
This component represents the IP cache table on LP *n*.

Mib: Ip

Common Verbs:
- Help
- List
- Display

VERB Clear Vr Ip Cache

Impact: Service

Description: *Clear Vr/<string> Ip Cache/n*
Clear Router/<string> Cache/n
Clear Router/<string> Vrf/<string> Cache/n
This verb clears all entries in the cache table on LP *n*. This command deletes all the *Entry* subcomponents of *Cache/n*.

GROUP Vr Ip Cache OsiState (State)

Properties: Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Cache adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Cache operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ip

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip Cache usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Ip

Values: idle
active (activ)
busy

Default: idle

GROUP Vr Ip Cache Operational (Oper)

Properties: Operational

Description	This group houses all the operational attributes of an *Ip* cache table.
Mib	Ip

ATTRIBUTE Vr Ip Cache entriesFree (ef)

Access	Read only
Description	This attribute is indicative of the number of free *Ip* cache table entries. A consistently high value for this attribute indicates that there is a resource surplus of the memory requirements for cache table. This surplus could be utilized elsewhere if needed by adjusting the appropriate *cacheTableMaxEntries* attribute. For *Vr*, *cacheTableMaxEntries* is under the *Ip* component; for *Rtr* and *Vrf*, it is under the respective components.
Mib	Ip
Values	Decimal (0..8000)
Default	No default

ATTRIBUTE Vr Ip Cache totalLookups (tl)

Access	Read only
Description	This attribute indicates the total number of local cache lookups. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Cache lookupMisses (lm)

Access	Read only
Description	This attribute indicates the total number of local cache lookup misses. It wraps around to zero when it exceeds its maximum value of 4294967295.

Mib	Ip
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Cache cacheTableMaxEntries (ctme)

Access	Read only
Description	This attribute indicates the current maximum number of entries that can exist in the IP local cache table on each LP.
Mib	Ip
Values	Decimal (0..8000)
Default	No default

COMPONENT Vr Ip Tunnel

Groups	"GROUP Vr Ip Tunnel OsiState (State)" "GROUP Vr Ip Tunnel Operational (Oper)" "GROUP Vr Ip Tunnel Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Tunnel* The *Tunnel* component is used to add, delete and modify tunnel end points.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip Tunnel StaticEndPoint (Sep)" "COMPONENT Vr Ip Tunnel MultipointStaticEndPoint (Msep)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Tunnel OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Tunnel operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Tunnel usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Tunnel Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Tunnel* component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel optimizationStatus (opts)

Access	Read only
Description	This attribute indicates the tunnel optimization status of this *Tunnel* instance. ***optimized***: The IP tunnels represented by the *Msep* subcomponents of this *Tunnel* instance have been optimized. ***ineligible***: The conditions necessary for tunnel optimization are not met. None of the IP tunnels represented by the *Msep* subcomponents of this *Tunnel* instance have been optimized. ***eligible***: All of the conditions necessary for tunnel optimization are met, but the *optimization* attribute has been set to ***disabled***. None of the IP tunnels represented by the *Msep* subcomponents of this *Tunnel* instance have been optimized. ***optimizationOnHold***: All of the conditions necessary for tunnel optimization are met, but since the tunnel was in the ineligible state with the *optimization* attribute set to ***enabled***, it does not go into the ***optimized*** state. Instead, the tunnel goes into the ***optimizationOnHold*** state. To proceed with optimization, disable and re-enable optimization.
Mib	Ip
Values	optimized ineligible eligible optimizationOnHold
Default	No default

GROUP Vr Ip Tunnel Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Tunnel* component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel optimization (opt)

Access	Read and write
Description	This attribute specifies whether tunnel optimization is enabled for the *Msep* subcomponents of this *Tunnel* instance. Tunnel optimization is not performed for any of the *Msep* subcomponents if either of the following is true: - The *VirtualRouter* has *ProtocolPort* components that are linked to components representing physical media on more than one access card. This includes the case when one of the cards is a standby card, or when the physical media is linked to a SONET or SDH port which is protected by inter-card APS. This also includes if *AtmMultiprotocolEncapsulation SpvcTerminationPoint* is used and the *AtmConnection* components resides on more than one access card. - The *VirtualMedia Interface* component corresponding to any of the *Msep* subcomponent of this *Tunnel* instance has its *mode* attribute set to a value other than ***alwaysUpSummaryInterface***. This attribute must be set to ***disabled*** if the *VirtualRouter* has a *ProtocolPort* which is linked to an *AtmMpe* component whose *encapType* attribute is set to ***llcBridgeEncap***.
Mib	Ip
Values	disabled enabled
Default	disabled

COMPONENT Vr Ip Tunnel StaticEndPoint (Sep)

Instance	Decimal (0..63)
Groups	"GROUP Vr Ip Tunnel Sep IfEntryProv (IfEntry)" "GROUP Vr Ip Tunnel Sep MediaProv (Mp)" "GROUP Vr Ip Tunnel Sep Provisioned (Prov)" "GROUP Vr Ip Tunnel Sep Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Tunnel StaticEndPoint/n* An IP tunnel allows two geographically separated networks to be connected over a shared IP network (for example the Internet), either because the networks at the end points are using private IP address or they are not running IP as the network protocol. This component represents a static IP Tunnel End Point. It is static in the sense that both the tunnel source and destination IP addresses are static configured. For proper operation of the tunnel, the exact source and destination IP addresses (in reverse order) must be used to provision the Tunnel End Point on the far end router. Two types of IP tunnel encapsulation are supported: IP in IP as specified in RFC 2003 and Generic Routing Encapsulation as specified in RFC 1701. Note: IP in IP tunnel encapsulation is not compliant with RFC 2003 when using an ATM IP FP as a backbone FP.
Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Tunnel Sep IfEntryProv (IfEntry)

Properties	Provisioned

Description	This group contains the provisionable attributes for the ifEntry.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Sep ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

ATTRIBUTE Vr Ip Tunnel Sep ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Ip
Values	Decimal (1..65535)
Default	No default

GROUP Vr Ip Tunnel Sep MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the media base component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Sep linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *ProtocolPort* to which this interface is linked to. The protocol port is the logical interface to the network. The protocol port component describes the logical characteristics of this interface.
Mib	Ip
Values	Link (Service, linkToMedia)
Default	No default

GROUP Vr Ip Tunnel Sep Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *StaticEndPoint* component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Sep encapType

Access	Read and write
Criticality	Component
Description	There are two types of encapsulation techniques for IP tunnel, IP in IP (RFC 2003) and GRE over IP (RFC 1701). This attributes specifies the encapsulation type of the IP tunnel. ***ipInIp***: As defined in RFC 2003, it can be used to encapsulated IP and IP payload only. If IP is the only type of payload to be encapsulated by the tunnel, this type of encapsulation is recommended as it requires less processing and uses less bandwidth. Note: IP in IP tunnel encapsulation is not compliant with RFC 2003 when using an ATM IP FP as a backbone FP. ***greIp***: As defined in RFC 1701, it can be used to encapsulate IP or IPX payload. To encapsulate IPX payload, this encapsulation type must be used.
Mib	Ip

Values	ipInIp greIp
Default	ipInIp

ATTRIBUTE Vr Ip Tunnel Sep sourceAddress (src)

Access	Read and write
Criticality	Component
Description	This attribute specifies the IP address of the local end of the tunnel. The source address must be an address in the shared domain, and it must equal to an interface address on its own Virtual Router (under *Vr/<string> Pp/<string> IpPort LogicalIf/ <IpAddress>*). However, it must not be the interface address of the linked protocol port's *IpPort* component. The *sourceAddress* of *StaticEndPoint* or *MultipointStaticEndPoint* components within the same *sharedDomainVirtualRouter* must be unique.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Tunnel Sep destinationAddress (dst)

Access	Read and write
Criticality	Component
Description	This attribute specifies the IP address of the far end of the tunnel. It must not match any of the IP interface addresses on this Virtual Router.
Mib	Ip
Values	IP address
Default	0.0.0.0

GROUP Vr Ip Tunnel Sep Operational (Oper)

Properties	Operational

Description	This group contains the operational status attributes of the *StaticEndPoint* component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Sep discoveredPathMtu (dmtu)

Access	Read only
Description	This attribute indicates the latest learned Path MTU of the tunnel. An MTU is the maximum transmission unit of an arbitrary internet path. When a large amount of IP datagrams are to be transmitted, it is usually preferable that the datagrams be of the largest size that does not require fragmentation anywhere along the path from the source to the destination. This datagram size is referred to as the Path MTU (PMTU). It is equal to the minimum of the MTUs of each hop in the path.
Mib	Ip
Values	Decimal (0; 100..18944)
Default	0

COMPONENT Vr Ip Tunnel MultipointStaticEndPoint (Msep)

Instance	Decimal (0..1)
Groups	"GROUP Vr Ip Tunnel Msep IfEntryProv (IfEntry)" "GROUP Vr Ip Tunnel Msep MediaProv (Mp)" "GROUP Vr Ip Tunnel Msep Provisioned (Prov)" "GROUP Vr Ip Tunnel Msep Operational (Oper)" "GROUP Vr Ip Tunnel Msep DestinationDiscovery (DstDisovery)"
Scope	Application
Description	*Vr/<string> Ip Tunnel MultipointStaticEndPoint/n* An IP tunnel allows more than one geographically separated networks to be connected over a shared IP network (for example the Internet) because the networks at the end points are using private IP address. This component represents a static IP Tunnel End Point of a

point-to-multipoint IP Tunneling configuration. It is static in the sense that both the tunnel source address and the list of destination IP addresses are statically configured.

Only one type of IP tunnel encapsulation is supported: IP in IP as specified in RFC 2003. Note: IP in IP tunnel encapsulation is not compliant with RFC 2003 when using an ATM IP FP as a backbone FP.

Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Tunnel Msep IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Msep ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ip
Values	up down testing
Default	up

ATTRIBUTE Vr Ip Tunnel Msep ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Ip
Values	Decimal (1..65535)
Default	No default

GROUP Vr Ip Tunnel Msep MediaProv (Mp)

Properties	Provisioned
Description	This group contains the base provisioning data for the media base component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Msep linkToProtocolPort (pp)

Access	Read and write
Criticality	Component
Description	This attribute specifies the *ProtocolPort* to which this interface is linked to. The protocol port is the logical interface to the network. The protocol port component describes the logical characteristics of this interface.
Mib	Ip
Values	Link (Service, linkToMedia)
Default	No default

GROUP Vr Ip Tunnel Msep Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *MultipointStaticEndPoint* component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Msep pathMtu (mtu)

Access	Read and write
Description	This attribute specifies the Path Maximum Transmission Unit (PMTU) of the IP Tunnel. If this attribute is set to discovered, the lowest PMTU value for all tunnel endpoints will be discovered and used to forward IP datagrams. Otherwise, if this attribute is set to an actual value, the value must be less or equal to the PMTU of all tunnel endpoints. IP fragmentation will occur for IP datagrams larger than PMTU.
Mib	Ip
Values	Decimal (100..18944) discovered
Default	9180

ATTRIBUTE Vr Ip Tunnel Msep encapType

Access	Read and write
Description	This component only supports one type of encapsulation technique for IP tunnel: IP in IP (RFC 2003). ***ipInIp***: As defined in RFC 2003, it can be used to encapsulated IP and IP payload only. Note: IP in IP tunnel encapsulation is not compliant with RFC 2003 when using an ATM IP FP as a backbone FP.
Mib	Ip
Values	ipInIp
Default	ipInIp

ATTRIBUTE Vr Ip Tunnel Msep sharedDomainVirtualRouter (sdvr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the virtual router at the source endpoint of the IP tunnel. The value must specify a *VirtualRouter* component whose *vpnMode* attribute is set to ***carrier***.

Mib	Ip
Values	The name of the component
Default	No default

ATTRIBUTE Vr Ip Tunnel Msep sourceAddress (src)

Access	Read and write
Criticality	Component
Description	This attribute specifies the IP address of the local end of the IP tunnel in the shared domain. There must be a logical interface with this IP address under the virtual router instance specified in the *sharedDomainVirtualRouter* attribute. This interface IP address cannot be an IP address defined under this IP tunnel protocol port. The *sourceAddress* of *StaticEndPoint* or *MultipointStaticEndPoint* components within the same *sharedDomainVirtualRouter* must be unique.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Tunnel Msep autoDiscovery (disc)

Access	Read and write
Description	This attribute specifies whether the IP VPN auto discovery feature is enabled or disabled on this MSEP instance. If the value is ***enabled*** the MSEP instance exchanges the tunnel source and destination addresses with the BGP-4 instance configured on the same customer VR.
Mib	Ip

Values	disabled enabled
Default	disabled

ATTRIBUTE Vr Ip Tunnel Msep destinationAddresses (dst)

Access	Read and write
Description	This attribute specifies the list of IP addresses mapping to each of the far end IP tunnel endpoints in the private domain. It must not match any of the IP interface addresses on the Virtual Router pointed to by the *sharedDomainVirtualRouter* attribute.
Mib	Ip
List of	IP address
Default	No default

GROUP Vr Ip Tunnel Msep Operational (Oper)

Properties	Operational
Description	This group contains the operational status attributes of the *StaticEndPoint* component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Msep discoveredPathMtu (dmtu)

Access	Read only
Description	This attribute indicates the latest learned Path MTU of the tunnel. An MTU is the maximum transmission unit of an arbitrary internet path. When a large amount of IP datagrams are to be transmitted, it is usually preferable that the datagrams be of the largest size that does not require fragmentation anywhere along the path from the source to the destination. This datagram size is referred to as the Path MTU (PMTU). It is equal to the minimum of the MTUs of each hop in the path.
Mib	Ip
Values	Decimal (0; 100..18944)

Default	0

GROUP Vr Ip Tunnel Msep DestinationDiscovery (DstDisovery)

Properties	Operational
Description	This group contains the operational status attributes of the *MultipointStaticEndPoint* component.
Mib	Ip

ATTRIBUTE Vr Ip Tunnel Msep discoveredDestinationAddresses (ddst)

Access	Read only
Description	This attribute shows the list of IP addresses mapping to each of the remote IP tunnel endpoints in the private domain. The endpoints are learned by BGP-4 when this MSEP instance is configured to run auto discovery.
Mib	Ip
List of	IP address
Default	No default

COMPONENT Vr Ip NextHopResolutionProtocol (Nhrp)

Groups	"GROUP Vr Ip Nhrp AdministrativeControl (AdminControl)" "GROUP Vr Ip Nhrp Provisioned (Prov)" "GROUP Vr Ip Nhrp OsiState (State)" "GROUP Vr Ip Nhrp OperationalStatus (OperStatus)" "GROUP Vr Ip Nhrp Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip NextHopResolutionProtocol* This component represents a co-located NHRP Client and Server as specified in RFC2332. NHRP provides a method for a station connected to a Non-Broadcast Multiple Access (NBMA) subnetwork to determine the inter-networking layer address and NBMA subnetwork address of the “next hop” towards a destination station. NHRP reduces or eliminates the extra hops

	required by the existing logically independent IP subnet (LIS) model.
Mib	IpNhrp
Subcomponents	"COMPONENT Vr Ip Nhrp NextHopServer (Nhs)" "COMPONENT Vr Ip Nhrp NextHopClient (Nhc)"
Dyn. Subcomp.	"COMPONENT Vr Ip Nhrp ResCacheEntry (Rce)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Nhrp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	IpNhrp
Values	up down testing

Default	up

GROUP Vr Ip Nhrp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Nhrp* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp maxResCacheEntries

Access	Read and write
Description	This attribute specifies the maximum number of *ResCacheEntry* components which may exist under the *Nhrp* component at any one time. Reducing the value of this attribute will not clear existing entries.
Mib	IpNhrp
Values	Decimal (32..1024)
Default	512

ATTRIBUTE Vr Ip Nhrp fwdTransitRecord (ftr)

Access	Read and write
Description	This attribute specifies whether to attach a forward transit record extension to NHRP packets (Resolution and Purge requests) that originate from this node. This extension along with NHRP debug tracing set to “verbose” can be used in tracing the path the NHRP packet takes from source to destination.
Mib	IpNhrp
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Nhrp revTransitRecord (rtr)

Access	Read and write

Description	This attribute specifies whether to attach a reverse transit record extension to Resolution Request packets that originate from this node. This extension along with NHRP debug tracing set to “verbose” can be used in tracing the path the NHRP packet takes from destination to source.
Mib	IpNhrp
Values	enabled disabled
Default	disabled

GROUP Vr Ip Nhrp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is

administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: IpNhrp

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Ip Nhrp operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: IpNhrp

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip Nhrp usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

	The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	IpNhrp
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Nhrp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	IpNhrp
Values	up down testing
Default	up

GROUP Vr Ip Nhrp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Nhrp* component.

Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp currResCacheEntries

Access	Read only
Description	This attribute indicates the current number of entries in the NHRP resolution cache table.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp peakResCacheEntries

Access	Read only
Description	This attribute indicates the peak value of *currResCacheEntries* since the *Nhrp snmpOperStatus* attribute last became ***up***.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

COMPONENT Vr Ip Nhrp NextHopServer (Nhs)

Groups	"GROUP Vr Ip Nhrp Nhs Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Ip Nhrp NextHopServer* This component represents the NHRP server. The server performs the NHRP service within the NBMA cloud.
Mib	IpNhrp
Opt. Subcomp.	"COMPONENT Vr Ip Nhrp Nhs EgressPolicy (Ep)"
Common Verbs	Help List Display

GROUP Vr Ip Nhrp Nhs Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attributes of the *Nhs* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp Nhs rxResolveReq

Access	Read only
Description	This attribute counts the NHRP Resolution Requests received by this server. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txResolveReplyAck

Access	Read only
Description	This attribute counts the positively acknowledged NHRP Resolution Replies transmitted by this server. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txResolveReplyNakProhibited

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies transmitted by this server with the code ‘Administratively Prohibited’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)

Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txResolveReplyNakInsufResources

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies transmitted by this server with the code ‘Insufficient Resources’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txResolveReplyNakNoBinding

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies transmitted by this server with the code ‘No Inter-networking Layer Address to NBMA Address Binding Exists’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txResolveReplyNakNotUnique

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies transmitted by this server with the code ‘Binding Exists But Is Not Unique’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxRegisterReq

Access	Read only
Description	This attribute counts the NHRP Registration Requests received by this server. Registration is not supported, therefore all NHRP Registration Requests are silently dropped. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxPurgeReq

Access	Read only
Description	This attribute counts the NHRP Purge Requests received by this server. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txPurgeReq

Access	Read only
Description	This attribute counts the NHRP Purge Requests transmitted by this server. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxPurgeReply

Access	Read only
Description	This attribute counts the NHRP Purge Replies received by this server. This counter wraps to zero when the maximum value is exceeded.

Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txPurgeReply

Access	Read only
Description	This attribute counts the NHRP Purge Replies transmitted by this server. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrUnrecognizedExtension

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Unrecognized Extension’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrLoopDetected

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘NHRP Loop Detected’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrProtoAddrUnreachable

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Protocol Address Unreachable’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrProtoError

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Protocol Error’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrSduSizeExceeded

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘NHRP SDU Size Exceeded’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrInvalidExtension

Access	Read only

Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Invalid Extension’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrInvalidResReplyReceived

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Invalid Resolution Reply Received’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrAuthenticationFailure

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Authentication Failure’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs rxErrHopCountExceeded

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this server with the error code ‘Hop Count Exceeded’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp

Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrUnrecognizedExtension

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘Unrecognized Extension’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrLoopDetected

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘NHRP Loop Detected’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrProtoAddrUnreachable

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘Protocol Address Unreachable’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrProtoError

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘Protocol Error’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrSduSizeExceeded

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘NHRP SDU Size Exceeded’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrInvalidExtension

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘Invalid Extension’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrAuthenticationFailure

Access	Read only

Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘Authentication Failure’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs txErrHopCountExceeded

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this server with the error code ‘Hop Count Exceeded’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs fwdResolveReq

Access	Read only
Description	This attribute counts the NHRP Resolution Requests forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs fwdResolveReply

Access	Read only
Description	This attribute counts the NHRP Resolution Replies forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.

Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs fwdRegisterReq

Access	Read only
Description	This attribute counts the NHRP Registration Requests forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs fwdRegisterReply

Access	Read only
Description	This attribute counts the NHRP Registration Replies forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs fwdPurgeReq

Access	Read only
Description	This attribute counts the NHRP Purge Requests forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs fwdPurgeReply

Access	Read only
Description	This attribute counts the NHRP Purge Replies forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhs fwdErrorIndication

Access	Read only
Description	This attribute counts the NHRP Error Indication packets forwarded by this server acting as a transit NHS. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

COMPONENT Vr Ip Nhrp Nhs EgressPolicy (Ep)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Nhrp Nhs Ep Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Nhrp Nhs EgressPolicy/n* This component represents an egress policy on this server. The server has the following default egress policies which may be overridden by any provisioned egress policies: 1. NAK resolution request for any remotely attached destination regardless of

	source, 2. ACK resolution request for any locally attached destination regardless of source.
Mib	IpNhrp
Subcomponents	"COMPONENT Vr Ip Nhrp Nhs Ep NetworkAddress (NetAddr)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Nhrp Nhs Ep Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *EgressPolicy* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp Nhs Ep action

Access	Read and write
Description	This attribute specifies how the server should handle the NHRP Resolution Request if it matches this policy. The possible actions are: ***ack*** - Send a positive acknowledgement (ACK Reply) for the request. ***nak*** - Send a negative acknowledgement (NAK Reply) for the request.
Mib	IpNhrp
Values	ack nak
Default	nak

ATTRIBUTE Vr Ip Nhrp Nhs Ep protocol

Access	Read and write

Description	This attribute species the reachability type (that is, protocol) of the destination in the NHRP Resolution Request. The possible protocols: ***default*** - This value is a 'wildcard' and matches any protocol. A policy with a 'wildcard' protocol is less preferred than a policy with a protocol which matches exactly. ***staticLocal*** - The destination is on a locally attached network.
Mib	IpNhrp
Values	default staticLocal
Default	default

COMPONENT Vr Ip Nhrp Nhs Ep NetworkAddress (NetAddr)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Nhrp Nhs Ep NetAddr Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Nhrp Nhs Ep/n NetworkAddress/n* This component represents the source and destination address pairs for an NHRP egress policy.
Mib	IpNhrp
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Nhrp Nhs Ep NetAddr Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *NetworkAddress* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp Nhs Ep NetAddr sourceAddress (srcAddr)

Access	Read and write
Description	This attribute specifies the internetwork address of the source. This is used to match a source internetwork address in an NHRP Resolution Request.
Mib	IpNhrp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Nhrp Nhs Ep NetAddr sourceMask (srcMask)

Access	Read and write
Description	This attribute specifies the netmask for the source internetwork address.
Mib	IpNhrp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Nhrp Nhs Ep NetAddr destinationAddress (dstAddr)

Access	Read and write
Description	This attribute specifies the internetwork address of the destination. This is used to match a destination internetwork address in an NHRP Resolution Request.
Mib	IpNhrp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Nhrp Nhs Ep NetAddr destinationMask (dstMask)

Access	Read and write
Description	This attribute specifies the netmask for the destination internetwork address.
Mib	IpNhrp

Values	IP address
Default	0.0.0.0

COMPONENT Vr Ip Nhrp NextHopClient (Nhc)

Groups	"GROUP Vr Ip Nhrp Nhc Provisioned (Prov)" "GROUP Vr Ip Nhrp Nhc Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Ip Nhrp NextHopClient* This component represents the NHRP client. The client initiates NHRP requests of various types in order to obtain access to the NHRP service.
Mib	IpNhrp
Common Verbs	Help List Display

GROUP Vr Ip Nhrp Nhc Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Nhc* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp Nhc flowDetectPacketCount (fdpc)

Access	Read and write
Description	This attribute, along with *flowDetectTimePeriod*, specifies the IP traffic flow detection threshold; If the number of IP packets sent to a particular destination within the time interval specified by *flowDetectTimePeriod* exceeds the value specified by *flowDetectPacketCount*, then an NHRP Resolution Request will be triggered. If successful, a shortcut will be set up.
Mib	IpNhrp
Values	Decimal (1..4292967295)

Default	600

ATTRIBUTE Vr Ip Nhrp Nhc flowDetectTimePeriod (fdtp)

Access	Read and write
Description	This attribute, along with *flowDetectPacketCount*, specifies the IP traffic flow detection threshold; If the number of IP packets sent to a particular destination within the time interval specified by *flowDetectTimePeriod* exceeds the value specified by *flowDetectPacketCount*, then an NHRP Resolution Request will be triggered. If successful, a shortcut will be set up.
Mib	IpNhrp
Values	Decimal (10; 20; 30; 40; 50; 60)
Units	seconds
Default	60

ATTRIBUTE Vr Ip Nhrp Nhc idleDetectPacketCount (idpc)

Access	Read and write
Description	This attribute, along with *idleDetectTimePeriod*, specifies the idle shortcut threshold; If the number of frames transmitted over an outgoing shortcut, or received over an incoming shortcut, within the time interval specified by *idleDetectTimePeriod* falls below the value specified by *idleDetectPacketCount*, then the shortcut connection will be released.
Mib	IpNhrp
Values	Decimal (1..4292967295)
Default	900

ATTRIBUTE Vr Ip Nhrp Nhc idleDetectTimePeriod (idtp)

Access	Read and write
Description	This attribute, along with *idleDetectPacketCount*, specifies the idle shortcut threshold; If the number of frames transmitted over an outgoing shortcut, or received over an incoming shortcut, within the time interval specified by *idleDetectTimePeriod* falls

	below the value specified by *idleDetectPacketCount*, then the shortcut connection will be released.
Mib	IpNhrp
Values	Decimal (1..30)
Units	minutes
Default	3

ATTRIBUTE Vr Ip Nhrp Nhc atmFlowDetection (afd)

Access	Read and write
Description	This attribute specifies whether flow detection should be performed for IP traffic received on ATM cards. This attribute does not apply to IP traffic received on LAN or non-ATM WAN cards.
Mib	IpNhrp
Values	enabled disabled
Default	disabled

GROUP Vr Ip Nhrp Nhc Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attributes of the *Nhc* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp Nhc txResolveReq

Access	Read only
Description	This attribute counts the NHRP Resolution Requests transmitted by this client. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)

Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxResolveReplyAck

Access	Read only
Description	This attribute counts the positively acknowledged NHRP Resolution Replies received by this client. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxResolveReplyNakProhibited

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies received by this client that contained the code indicating ‘Administratively Prohibited’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxResolveReplyNakInsufResources

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies received by this client that contained the code indicating ‘Insufficient Resources’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxResolveReplyNakNoBinding

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies received by this client that contained the code indicating ‘No Inter-networking Layer Address to NBMA Address Binding Exists’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxResolveReplyNakNotUnique

Access	Read only
Description	This attribute counts the NAK NHRP Resolution Replies received by this client that contained the code indicating ‘Binding Exists But Is Not Unique’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxPurgeReq

Access	Read only
Description	This attribute counts the NHRP Purge Requests received by this client. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc txPurgeReq

Access	Read only

Description	This attribute counts the NHRP Purge Requests transmitted by this client. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxPurgeReply

Access	Read only
Description	This attribute counts the NHRP Purge Replies received by this client. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc txPurgeReply

Access	Read only
Description	This attribute counts the NHRP Purge Replies transmitted by this client. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc txErrIndication

Access	Read only
Description	This attribute counts the NHRP Error Indication packets transmitted by this client. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp

Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrUnrecognizedExtension

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code ‘Unrecognized Extension’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrLoopDetected

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code ‘NHRP Loop Detected’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrProtoAddrUnreachable

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code ‘Protocol Address Unreachable’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrProtoError

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code ‘Protocol Error’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrSduSizeExceeded

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code ‘NHRP SDU Size Exceeded’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrInvalidExtension

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code ‘Invalid Extension’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrAuthenticationFailure

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code ‘Authentication Failure’. This counter wraps to zero when the maximum value is exceeded.

Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Nhrp Nhc rxErrHopCountExceeded

Access	Read only
Description	This attribute counts the NHRP Error Indication packets received by this client with the error code ‘Hop Count Exceeded’. This counter wraps to zero when the maximum value is exceeded.
Mib	IpNhrp
Values	Decimal (0..4292967295)
Default	No default

COMPONENT Vr Ip Nhrp ResCacheEntry (Rce)

Instance	destAddr (addr) [IP address] destMask (mask) [IP address]
Groups	"GROUP Vr Ip Nhrp Rce Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Nhrp ResCacheEntry/<ipAddress>,<mask>* This component represents an entry in the NHRP resolution cache table.
Mib	IpNhrp
Common Verbs	Help List Display

VERB Clear Vr Ip Nhrp Rce

Impact	Service
Description	*Clear Vr/x Ip Nhrp ResCacheEntry/<ipAddress>,<mask>* This command clears the resolution cache entry specified by *ipAddress* and *mask*.

GROUP Vr Ip Nhrp Rce Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *ResCacheEntry* component.
Mib	IpNhrp

ATTRIBUTE Vr Ip Nhrp Rce nbmaAddress

Access	Read only
Description	This attribute indicates the NBMA subnetwork address of the next hop.
Mib	IpNhrp
Values	String (0..20, Hex)
Default	No default

ATTRIBUTE Vr Ip Nhrp Rce entryState

Access	Read only
Description	This attribute indicates the state of this resolution cache entry. The possible states are: ***incomplete*** - The client sent the resolution request and is waiting for a reply. ***ackReply*** - The client sent the resolution request and received an ACK reply. ***nakReply*** - The client sent the resolution request and received a NAK reply. This entry remains in the cache for 20 minutes thereby preventing subsequent requests during that time period. ***noReply*** - The client sent the resolution request but did not receive a reply. This entry remains in the cache for 20 minutes thereby preventing subsequent requests during that time period. ***localReply*** - The client sent the resolution request and received an ACK reply from a locally-attached responder. This entry remains in the cache for 20 minutes thereby preventing subsequent requests during that time period.
Mib	IpNhrp

Values	incomplete ackReply nakReply noReply localReply
Default	No default

ATTRIBUTE Vr Ip Nhrp Rce holdingTime

Access	Read only
Description	This attribute indicates the number of seconds that this entry will remain in the resolution cache table. If the entry has not been refreshed before this time it will be removed from the cache.
Mib	IpNhrp
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Nhrp Rce shortcut

Access	Read only
Description	This attribute indicates the component name of the shortcut connection associated with this resolution cache entry. If the component name is empty then no shortcut currently exists.
Mib	IpNhrp
Values	The name of the component
Default	No default

COMPONENT Vr Ip CosPolicyGroup (Pg)

Instance	String (1..20, ASCII)
Groups	"GROUP Vr Ip Pg Provisioned (Prov)"
Scope	Application

Description

Vr/<string> Ip CosPolicyGroup/<string>

This component and its subcomponents specify the IP Class of Service (CoS) capabilities of an *IpPort*. Up to four different forwarding and packet marking behaviors can be configured. For a greater range of forwarding and packet marking behaviors, the Differentiated Services capabilities of the *Vr DifferentiatedServicesDomain* and *Vr Ip DiffServProfile* components is used. See the descriptions of those components for more information.

A *CosPolicyGroup* component is used by all *IpPort* subcomponents of a *VirtualRouter* by setting the *cosPolicyAssignment* attribute of the *Ip* component. It is used by one or more *IpPort* subcomponents directly by setting the *cosPolicyAssignment* attribute of the *IpPort*. The direct assignment to the *IpPort* completely overrides the assignment to the *Ip*.

Processing of IP packets with *CosPolicyGroup* components is based on a Class Of Service (CoS) value assigned to each IP packet as it processed by the *VirtualRouter*. CoS values vary over the range from 0 to 3 and have local significance only.

There are six logical stages in CoS processing on the *VirtualRouter*. These six stages are presented below, along with the behavior of locally generated packets, and the behavior of any *IpPort* that does not use a *CosPolicyGroup*, and exceptions for MS3 cards.

1. INGRESS CLASSIFICATION AND CoS ASSIGNMENT

The Class Of Service (CoS) value assigned to an IP packet is initialized to be equal to the connection class value associated with the ingress Layer 2 connection where the packet was received.

For *AtmMpe*, the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte*, the connection class is specified by the *ipCoS* attribute of the *StaticDlci* or *DynamicDlciDef* subcomponent. For *IpDlciGroup*,

the connection class is specified by the *ipCos* attribute of the *FrConnection* subcomponent. For all other media, the connection class is specified by the *ipCoS* attribute of the *IpPort*.

After classification is performed as described above, if one or more *TosMap* components exist under a *Policy* subcomponent of the *CosPolicyGroup* used by the *IpPort* where the packet was received, then the Class Of Service (CoS) assigned to the packet is updated according to these components if there is a match. A match occurs if selected bits of the Differentiated Services (DS) field, also known at the Type of Service (ToS) field, are equal to the same selected bits of one of the values specified by the *tos* attribute of a *TosMap* subcomponent of the *CosPolicyGroup* used by the *IpPort* where the packet was received. If a match occurs, then the CoS value assigned to the packet is set equal to the value of the *assignedCos* attribute of the parent *Policy* of the *TosMap* where the match occurred.

If one or more *IpAddrLayer4Flow* subcomponents exist under a *Policy* subcomponent of the *CosPolicyGroup* used by the *IpPort* where the packet was received, then the Class Of Service (CoS) assigned to the packet is updated according to these components if there is a match. This overrides any prior CoS assignment.

2. DROP PRECEDENCE ASSIGNMENT

The packet is assigned a logical drop precedence value according to the *IngressCosTreatment* subcomponents of the *CosPolicyGroup* used by the *IpPort* where the packet was received. The drop precedence is obtained from *discardPriority* attribute of the *IngressCosTreatment* component whose instance value matches the Class Of Service (CoS) value currently assigned to the packet. If the selected *IngressCosTreatment discardPriority* attribute specifies ***low***, ***medium***, or ***high***, then a drop precedence is assigned accordingly. If the selected *IngressCosTreatment* specifies ***unchanged***, then the drop precedence assigned to the packet is not modified.

A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed

into the same queue, as explained in Step 6.

Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

3. SCHEDULING CLASS ASSIGNMENT

The packet is assigned a scheduling class value for eight, four, three, and two queues in the range from 0 to 7, 0 to 3, 0 to 2, and 0 to 1, respectively. These values are derived from the *emissionPriority* attribute of the *EgressCosTreatment* subcomponents of the *CosPolicyGroup* used by the *IpPort* where the packet is transmitted. The *emissionPriority* attribute of the *EgressCosTreatment* subcomponent whose instance value matches the Class Of Service (CoS) value assigned to the packet is used.

The *emissionPriority* attribute of the *EgressCosTreatment* component is mapped to scheduling classes according to the following table:

Emission Priority	Scheduling Class 8 Queues	4Queues	3Queues	2 Queues
1	5	3	2	1
2	4	2	1	0
3	2	1	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0

Scheduling classes are assigned to a packet to control its

scheduling behavior relative to other packets at the egress interface where the packets are transmitted, as explained in Step 6.

Generally, a numerically higher value of scheduling class (lower value of emission priority) indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value of scheduling class (higher value of emission priority) indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism and number of queues at the egress interface.

4. EGRESS DSCP MARKING

The DSCP field of the packet is marked according to the *EgressCosTreatment* subcomponents of the *CosPolicyGroup* used by the *IpPort* where the packet is transmitted. The DSCP value is obtained from *tos* attribute of the *EgressCosTreatment* component whose instance value matches the Class Of Service (CoS) value currently assigned to the packet. The new value of the DSCP field does not influence the forwarding behavior of the packet as it continues to be processed by the *VirtualRouter*, but it may have significance at the next hop.

5. MULTI-CONNECTION CONGESTION CONTROL

The CoS assigned to the packet is used to select one of up to four Layer 2 connections at the *IpPort* where the packet is transmitted. Per-packet selection of egress connections is supported only if these conditions are all true:

i) the egress media is *FrDte*, *AtmMpe*, *IpDlciGroup*, and
ii) more than one Layer 2 connection is configured to the next hop IP router, and
iii) each connection is provisioned with a different connection class.

Normally the packet is transmitted on the connection whose

connection class is equal to the CoS assigned to the packet. If that connection does not exist, then the connection having the next lower connection class is used. If that connection does not exist also, then the connection having the next higher connection class is used.

For *AtmMpe* the connection class is specified by the *ipCos* attribute of the *AtmConnection* subcomponent. For *FrDte* the connection class is specified by the *ipCoS* attribute of the *StaticDlci* and *DynamicDlciDef* subcomponents. For *IpDlciGroup* the connection class is specified by the *ipCos* attribute of the *FrConnection* subcomponent.

If each Layer 2 connection is configured to provide different policing and scheduling characteristics, then the forwarding behaviors of IP packets are differentiated as they transit through the Layer 2 network. In general, the scheduling characteristics of the connections should be configured to be better for numerically greater connection class values. For example, if four *AtmConnection* components are associated with *AtmIf* components configured for ATM service classes ***UBR***, ***nrtVBR***, ***rtVBR***, and ***CBR***, then the *ipCos* attributes of the *AtmConnection* components should be either ***0***, ***1***, ***2*** and ***3***, respectively, or ***0***, ***1***, ***3*** and ***2*** respectively.

6. SINGLE-CONNECTION CONGESTION CONTROL

The drop precedence and scheduling classes assigned to the packet are used by the egress interface where the packet is transmitted, but only if the egress interface supports these parameters on a per-connection basis.

Multiple drop precedences are supported on GQM cards at *AtmMpe* interfaces. On FQM interfaces they are supported at Gigabit Ethernet interfaces. On PQC cards with AQM they are supported at *AtmMpe*, *FrDte*, *IpDlciGroup*, and Ethernet interfaces. On PQC cards with APC the drop precedence of a packet is controlled by the outgoing ATM CLP or Frame Relay DE bit which is determined by by the drop precedence of the PHB and the Layer 2 configuration. On CQC cards multiple drop

precedences are supported at *AtmMpe* interfaces. On SBIC cards they are supported at PPP and *FrDte* interfaces.

Eight queues per connection are supported on FQM cards at Gigabit ethernet interfaces. Four queues per connection are supported on PQC cards at PPP interfaces, at *FrDte* interfaces provisioned with *DirectConnection*, and at *IpDlciGroup* and *IpoDlci* interfaces where FRF.12 is disabled on the DLCI. Two queues per connection are supported on SBIC cards at PPP and *FrDte* interfaces.

Only one queue per connection is supported on ATM interfaces. This implies that multi-connection congestion control must be used to provide sheduling differentiation at ATM interfaces.

LOCALLY GENERATED PACKETS

Ingress classification is not performed on packets generated locally at the *VirtualRouter*. For a locally generated packet that used for network control the assigned Class Of Service (CoS) value and the assigned drop precedence, is initialized to ***3*** and ***low*** respectively. For any other locally generated packet, these values are initialized to ***0*** and ***medium*** respectively.

For a locally generated ICMP echo request packet, the assigned CoS is overridden by the *-cos* option of the *Ping* command. For a locally generated ICMP echo reply packet, the assigned CoS is set equal to the assigned CoS of the received request packet.

The DSCP field of locally generated packets that used for network control is always initialized to 48. The DSCP field of other packets is always initialized to 0. For a locally generated ICMP echo request packet, the initial value of the DSCP field is overridden by the *-tos* or *-dscp* option of the *Ping* command. For a locally generated ICMP echo reply packet, the DSCP field is set to the value contained in the IP header of the received request packet.

Locally generated IP multicast and IP broadcast packets are not subject to Multi-Connection Congestion Control as described

above. Each of these packets is copied and transmitted individually on each of the available connections.

DEFAULT BEHAVIOR

The IP CoS behavior of any *IpPort* that does not use a *CosPolicyGroup* (by setting the *cosPolicyAssignment* attribute of the *Ip* or *IpPort* as explained above) is identical to an *IpPort* that uses the *CosPolicyGroup* described here: There are no *Policy* subcomponents. There are four *IngressCosTreatment* subcomponents with instance values ***0***, ***1***, ***2***, ***3*** where the *discardPriority* attribute of each instance is set to ***unchanged***. There are four *EgressCosTreatment* subcomponents with instance values ***0***, ***1***, ***2***, ***3*** where the *emissionPriority*, *setTosByte*, *tos*, and *tosMask* attributes of each instance are set to ***4***, ***no***, ***0***, and hexadecimal ***FC***, respectively.

EXCEPTIONS FOR GQM-BASED and FQM_BASED CARDS

The use of the *CosPolicyGroup* component at interfaces on a *VirtualRouter* that does not have a *DifferentiatedServicesDomain* subcomponent also applies as described above to Gigabit Ethernet on FQM-based cards and *AtmMpe* interfaces on GQM-based cards, with the following six exceptions:
1) The *TosMap* and *IpAddrLayer4Flow* components are always ignored at an ingress interface on one of these cards.
2) An IP packet received on a Gigabit Ethernet interface is always assigned ***high*** drop precedence.
3) An IP packet received on a ATM interface on one of these cards is always assigned ***unchanged*** drop precedence.
4) An IP packet received at an ingress interface on one of these cards is always assigned scheduling class 0.
5) An IP packet transmitted at egress Gigabit Ethernet interface is always assigned scheduling class ***0***.
6) An IP packet received at an ingress interface on one of these

cards is is not eligible for egress DSCP marking at any interface.

Mib	IpCos
Opt. Subcomp.	"COMPONENT Vr Ip Pg Policy" "COMPONENT Vr Ip Pg IngressCosTreatment (Ict)" "COMPONENT Vr Ip Pg EgressCosTreatment (Ect)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Pg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *CosPolicyGroup* component.
Mib	IpCos

ATTRIBUTE Vr Ip Pg linkToPolicyUsers (users)

Access	Read and write
Description	This attribute specifies components that are linked to *CosPolicyGroup*. Only *Ip* and *IpPort* subcomponents of the same *VirtualRouter* can be linked. A *CosPolicyGroup* component is used by all *IpPort* subcomponents of a *VirtualRouter* by setting the *cosPolicyAssignment* attribute of the *Ip* component. It is used by one or more *IpPort* subcomponents directly by setting the *cosPolicyAssignment* attribute of the *IpPort*. The direct assignment to the *IpPort* completely overrides the assignment to the *Ip*.

Mib	IpCos
List of	Link (Service, cosPolicyAssignment)
List Size	256
Default	No default

COMPONENT Vr Ip Pg Policy

Instance	String (1..20, ASCII)
Groups	"GROUP Vr Ip Pg Policy Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Pg/<string> Policy/<string>* The *Policy* component defines IP packet classification rules that are applied when the *CosPolicyGroup* is used by an *IpPort*. The classification rules are defined by two sets of parameters: 1. The criteria to select IP packets. These criteria are defined by the *TosMap* and *IpAddrLayer4Flow* subcomponents. 2. The IP Class of Service (CoS) assigned to a packet when the policy is applied. The CoS is specified by the *assignedCos* attribute. The component instance is an arbitrary text string to allow the operator to assign a meaningful name for easy reference.
Mib	IpCos
Opt. Subcomp.	"COMPONENT Vr Ip Pg Policy TosMap" "COMPONENT Vr Ip Pg Policy IpAddrLayer4Flow"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Pg Policy Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes of the *Policy* component.
Mib	IpCos

ATTRIBUTE Vr Ip Pg Policy assignedCos (cos)

Access	Read and write
Description	This attribute specifies the Class of Service (CoS) assigned to an IP packet if the *Policy* applies. The assigned CoS controls the forwarding behavior and egress DSCP marking of the packet. See the description of the *CosPolicyGroup* component for more information.
Mib	IpCos
Values	Decimal (0..3)
Default	0

COMPONENT Vr Ip Pg Policy TosMap

Groups	"GROUP Vr Ip Pg Policy TosMap Provisioned (Prov)" "GROUP Vr Ip Pg Policy TosMap Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Pg/<string> Policy/<string> TosMap* This component is used to specify Behavior Aggregate (BA) criteria for assigning Class of Service (CoS) values to IP packets. An IP packet matches the criteria specified by this component if the Differentiated Services (DS) field in the packet header (also known as the ToS field) and any element in the list of values specified by the *tos* attribute of this component satisfies the following equation: (DS field & *tosMask*) = (element & *tosMask*) This formula states that the two values must be identical after each one is individually bit-wise ANDed with the value of

tosMask attribute of the *EgressCosTreatment* component. In other words, the two values must be identical but only those bits that are set to 1 in the *tosMask* are inspected.

For example, to assign Class of Service (CoS) value 3 to IP packets that have the DSCP field marked for Expedited Forwarding (EF) when the *tosMask* is set to ***FC***, a *TosMap* subcomponent is added to the *Policy* component whose *assignedCos* attribute is set to ***3***, and the *tos* attribute of the *TosMap* is set to include hexadecimal value ***B8***.

See the description of the *CosPolicyGroup* component for more information.

Mib	IpCos
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Pg Policy TosMap Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *TosMap* component.
Mib	IpCos

ATTRIBUTE Vr Ip Pg Policy TosMap tos

Access	Read and write
Description	This attribute specifies the list of byte values to be compared against the Differentiated Services (DS) field in the packet header (also known as the ToS field) for selecting IP packets. See the description of the *TosMap* component for more information. This attribute must contain at least one value.

Mib	IpCos
List of	Hex (H.0..H.ff)
List Size	256
Default	No default

GROUP Vr Ip Pg Policy TosMap Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *TosMap* and the *IpAddrLayer4Flow* components.
Mib	IpCos

ATTRIBUTE Vr Ip Pg Policy TosMap COS

Access	Read only
Description	This attribute indicates the Class of Service (CoS) assigned to a packet when the *Policy* applies. The value of this attribute is equal to the *assignedCos* attribute of the *Policy* component.
Mib	IpCos
Values	Decimal (0..3)
Default	No default

COMPONENT Vr Ip Pg Policy IpAddrLayer4Flow

Instance	Decimal (0..1023)
Groups	"GROUP Vr Ip Pg Policy IpAddrLayer4Flow Provisioned (Prov)" "GROUP Vr Ip Pg Policy IpAddrLayer4Flow ProtoProvisioned" "GROUP Vr Ip Pg Policy IpAddrLayer4Flow Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Pg/<string> Policy/<string> IpAddrLayer4Flow/n* The *IpAddrLayer4Flow* component is used to specify Multifield (MF) criteria for assigning Class of Service (CoS) values to IP packets.

The IP packet is checked to see if it matches the criteria specified by each *IpAddrLayer4Flow* component, if any, under the *CosPolicyGroup* component. The CoS assigned to the packet is the value of the *assignedCos* attribute on the parent *Policy* component of the *IpAddrLayer4Flow* whose criteria best match the packet.

For example, to assign Class of Service (CoS) value 1 to FTP packets destined to subnet 123.123.123.0, an *IpAddrLayer4Flow* subcomponent is added to the *Policy* component where the *assignedCos* attribute is set to ***1***. The *prefix*, *prefixLength*, *protocol*, and *portNumberRange* attributes of the *IpAddrLayer4Flow* component are set to ***123.123.123.0***, ***24***, ***tcp***, and ***20***, ***21***, respectively. This criteria also applies to each FTP packet that originates from subnet 123.123.123.0, but only if the source address and port number of the packet do not match any *IpAddrLayer4Flow* subcomponents of the *CosPolicyGroup*.

Multifield classification overrides Behavior Aggregate (BA) classification. This means that BA classification, which is controlled by *TosMap* components, is performed only if the packet does not match any *IpAddrLayer4Flow* component.

The packet matching algorithm for MF classification is explained in more detail as follows.

A match can be found only if the IP header protocol field is one of ICMP, TCP, or UDP. The *prefix*, *prefixLength*, and *portNumberRange* attributes are checked only if the protocol field in the header is TCP or UDP.

The destination IP address and destination port number information from the packet is first compared against the *prefix* attribute in conjunction with the *prefixLength* and *portNumberRange* attributes. If the *prefixLength* is ***0*** and the *prefix* is ***0.0.0.0***, then any value in the packet's IP destination address fields is a match. If *portNumberRange* is ***0***, then any value in the packet's destination port number fields is a match.

If more than one *IpAddrLayer4Flow* component matches a packet

(for instance one component specifies a range of IP addresses and a second specifies a single IP address in the range), then the component with the more precise match is used (the one which specifies the single address in this case). Precedence is always given to the IP address over the port number. For example, if one *IpAddrLayer4Flow* component specifies an range of IP addresses that includes the IP address from the packet and any port number, while a second *IpAddrLayer4Flow* component specifies an exact port number but a wider range of addresses, the first *IpAddrLayer4Flow* component is used.

If no match is found using the packet's destination IP address and destination port number information, then a second search is performed using the packet's source IP address and source port number information. This means that an *IpAddrLayer4Flow* component where the *protocol* is ***udp*** or ***tcp***, the *prefixLength* is ***0*** and the *portNumberRange* is ***0***, always matches some destination address and port number. This prevents the source address and port number check from being performed.

An ICMP packet matches any *IpAddrLayer4Flow* component whose *protocol* attribute is set to ***icmp***.

No attempt is made to match any packets where the options or fragment bits are set.

See the description of the *CosPolicyGroup* component for more information.

Mib	IpCos
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Pg Policy IpAddrLayer4Flow Provisioned (Prov)

Properties	Provisioned

Description	This group contains the *prefix* and *prefixLength* provisioned attributes of the *IpAddrLayer4Flow* component.
Mib	IpCos

ATTRIBUTE Vr Ip Pg Policy IpAddrLayer4Flow prefix

Access	Read and write
Description	This attribute specifies the IP address prefix for selecting IP packets. Matching an IP address to the prefix is done in conjunction with the *prefixLength* attribute. If the value is ***0.0.0.0***, then the *prefixLength* attribute must be ***0***. See the description of the *IpAddrLayer4Flow* component for more information.
Mib	IpCos
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Pg Policy IpAddrLayer4Flow prefixLength (len)

Access	Read and write
Description	This attribute specifies the number of most significant bits of an IP address to be matched with the *prefix* for selecting IP packets. The *prefixLength* value ***0*** indicates any IP address. See the description of the *IpAddrLayer4Flow* component for more information.
Mib	IpCos
Values	Decimal (0..32)
Default	0

GROUP Vr Ip Pg Policy IpAddrLayer4Flow ProtoProvisioned

Properties	Provisioned
Description	This group contains the *protocol* and *portNumberRange* provisioned attributes of the *IpAddrLayer4Flow* component.
Mib	IpCos

ATTRIBUTE Vr Ip Pg Policy IpAddrLayer4Flow protocol (proto)

Access	Read and write
Description	This attribute specifies the layer 4 (transport) protocol for selecting IP packets. If the value is ***icmp***, then the *prefixLength* attribute must be ***0***, and the *portNumberRange* attribute must not be set. See the description of the *IpAddrLayer4Flow* component for more information.
Mib	IpCos
Values	icmp tcp udp
Default	tcp

ATTRIBUTE Vr Ip Pg Policy IpAddrLayer4Flow portNumberRange

Access	Read and write
Description	This attribute specifies the TCP or UDP port numbers for selecting IP packets. A single value specifies a single port number. Two values specifies a range of port numbers. The order of the two values is irrelevant. See the description of the *IpAddrLayer4Flow* component for more information.

Mib	IpCos
List of	Decimal (0..65535)
List Size	2
Default	No default

GROUP Vr Ip Pg Policy IpAddrLayer4Flow Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *TosMap* and the *IpAddrLayer4Flow* components.
Mib	IpCos

ATTRIBUTE Vr Ip Pg Policy IpAddrLayer4Flow COS

Access	Read only
Description	This attribute indicates the Class of Service (CoS) assigned to a packet when the *Policy* applies. The value of this attribute is equal to the *assignedCos* attribute of the *Policy* component.
Mib	IpCos
Values	Decimal (0..3)
Default	No default

COMPONENT Vr Ip Pg IngressCosTreatment (Ict)

Instance	Decimal (0..3)
Groups	"GROUP Vr Ip Pg Ict Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Pg/<string> IngressCosTreatment/n* A set of *IngressCosTreatment* components specifies a mapping between Class of Service (CoS) values and drop precedence values for controlling forwarding behaviors. This mapping is applied to packets received at any *IpPort* that uses the *CosPolicyGroup*. See the description of the *CosPolicyGroup* for more information.

Four instances of this component, with instance values *0*, *1*, *2*, and *3*, are created automatically when the *CosPolicyGroup* component is added.

Mib IpCos

Common Verbs
- Help
- List
- Display
- Add

GROUP Vr Ip Pg Ict Provisioned (Prov)

Properties Provisioned

Description This group contains the provisioned attributes of the *IngressCosTreatment* component.

Mib IpCos

ATTRIBUTE Vr Ip Pg Ict discardPriority (dp)

Access Read and write

Description This attribute specifies the drop precedence assigned to an IP packet when the Class of Service (CoS) assigned to the packet is equal to the instance value of the *IngressCosTreatment* component.

Attribute values ***low***, ***medium***, and ***high*** indicate the packet is assigned drop precedence accordingly. A value of ***unchanged*** indicates the drop precedence assigned to the packet is not modified. It remains at the value provided by the ingress connection.

A drop precedence is assigned to a packet to control its loss sensitivity relative to other packets when the packets are placed into the same queue. Generally, the ***low*** value indicates the packet is less likely to be discarded when the queue is congested. This traffic has a higher probability of being forwarded. The ***high*** value indicates the packet is more likely to be discarded when the queue is congested. This traffic has a lower probability of being

forwarded. The actual loss sensitivity of packets depends on the discarding mechanism at the queue.

A warning is issued if the *discardPriority* attribute of one or more, but not all, of the *IngressCosTreatment* subcomponents the *CosPolicyGroup* is set to ***unchanged***.

Another warning is issued if the *discardPriority* attribute of two *IngressCosTreatment* subcomponents with the same instance value under any two *CosPolicyGroup* subcomponents of the *Vr Ip* are not equal. This applies only to those *IngressCosTreatment* subcomponents where the *discardPriority* attribute is not set to ***unchanged***. If this rule is violated, then the Class of Service (CoS) to drop precedence mapping will not be consistent at all *IpPorts* on the *Vr*.

See the description of the *CosPolicyGroup* for more information.

Mib	IpCos
Values	unchanged low medium high
Default	unchanged

COMPONENT Vr Ip Pg EgressCosTreatment (Ect)

Instance	Decimal (0..3)
Groups	"GROUP Vr Ip Pg Ect Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Pg/<string> EgressCosTreatment/n*

A set of *EgressCosTreatment* components specifies two mappings. One is a mapping between Class of Service (CoS) values and logical scheduling class values for controlling forwarding behaviors. The other is a mapping between Class of Service (CoS) values and Differentiated Services Code Point (DSCP) values for egress marking. These mappings are applied to

packets transmitted at any *IpPort* that uses the parent *CosPolicyGroup*. See the description of the *CosPolicyGroup* for more information.

Four instances of this component, with instance values *0*, *1*, *2*, and *3*, are created automatically when the *CosPolicyGroup* component is added.

Mib: IpCos

Common Verbs:
- Help
- List
- Display
- Add

GROUP Vr Ip Pg Ect Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisioned attributes of the *EgressCosTreatment* component.

Mib: IpCos

ATTRIBUTE Vr Ip Pg Ect setTosByte

Access: Read and write

Description: This attribute specifies whether the DSCP field of the packet should be marked at egress. If this attribute is set to ***yes*** and then the DSCP field is marked according to the values of the *tos* and *tosMask* attributes of the *EgressCosTreatment* component whose instance value is equal to the Class of Service (CoS) assigned to the packet.

A warning is issued if not all *EgressCosTreatment* subcomponents of the *CosPolicyGroup* have this attribute set to the same value.

Mib: IpCos

Values:
- no
- yes

Default no

ATTRIBUTE Vr Ip Pg Ect tos

Access Read and write

Description This attribute specifies the value used to mark the DSCP field of an IP packet at egress. This marking occurs only if the Class of Service (CoS) assigned to the packet is equal to the instance value of the *EgressCosTreatment* component and the *setTosByte* attribute is set to ***yes***.

Selected bits of the Differentiated Services (DS) field in IP packet header (also known as the ToS field) are updated according to the values of the *tos* and *tosMask* attributes using the following formula:

New value = (Original value & ~*tosMask*) | (*tos* & *tosMask*)

This formula states that the bits of the DS field which are modified are only those which are set to 1 in the *tosMask* attribute value. Of those bits, the bits that are set to 1 are only those which are set to 1 in the *tos* attribute value; the others being modified are set to 0.

For example, to mark the DSCP field for Expedited Forwarding (EF):

original value: hex A0 (binary 10100000) CS5
tos attribute: hex B8 (binary 10111000)
tosMask attribute: hex FC (binary 11111100)
new value: hex B8 (binary 10111000) EF

Mib IpCos

Values Hex (H.0..H.ff)

Default H.0

ATTRIBUTE Vr Ip Pg Ect tosMask

Access Read and write

Description

This attribute specifies the bit mask used to mark the DSCP field of an IP packet. This marking occurs only if the Class of Service (CoS) assigned to the packet is equal to the instance value of the *EgressCosTreatment* component and the *setTosByte* attribute is set to ***yes***. This attribute also specifies which bits are examined when *TosMap* components are used for IP packet classification.

By default, this attribute is set to the value of hex ***FC*** to correspond to the six bits of the Differentiated Services Code Point (DSCP) field.

The *tosMask* attribute in all *EgressCosTreatment* components under the same *CosPolicyGroup* must be set to the same value.

A warning is issued if *tosMask* is set to any value other than ***0xFC.*** On PQC cards, any other value is ignored; in other words, any setting is treated as ***0xFC*** to match the six bits of DSCP field in the IP header. On SBIC cards, including the ILS forwarder, ToS field mapping and marking of IP packets will not exactly match the six bits of the DSCP field.

See the description of the *tos* attribute of the *EgressCosTreatment* component for more information.

Mib

IpCos

Values

Hex (H.1..H.ff)

Default

H.fc

ATTRIBUTE Vr Ip Pg Ect emissionPriority (ep)

Access

Read and write

Description

This attribute specifies the logical scheduling classes to be assigned to an IP packet when the Class of Service (CoS) assigned to the packet is equal to the instance value of the *IngressCosTreatment* component.

The *emissionPriority* attribute is mapped to scheduling classes according to the following table:

Emission Priority	Logical Scheduling Class 8 Queues	4Queues 3	2 Queues
1	5	3	1
2	4	2	0
3	2	1	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0

Scheduling classes are assigned to a packet to control its scheduling behavior relative to other packets at the egress interface where the packets are transmitted.

Generally, a numerically higher value of scheduling class (lower value of emission priority) indicates the packet is less likely to be delayed. This traffic is considered more urgent and less delay tolerant. A numerically lower value of scheduling class (higher value of emission priority) indicates the packet is more likely to be delayed. This traffic is considered less urgent and more delay tolerant. The actual scheduling behavior of packets depends on the scheduling mechanism and number of queues at the egress interface.

A warning is issued if the *emissionPriority* attribute of two *EgressCosTreatment* subcomponents with the same instance value under any two *CosPolicyGroup* subcomponents of the *Vr Ip* are not equal. If this rule is violated, then the Class of Service (CoS) to *emissionPriority* mapping will not be consistent at all *IpPorts* on the *Vr.*

See the description of the *CosPolicyGroup* for more information.

Mib	IpCos
Values	Decimal (1..8)
Default	No default

COMPONENT Vr Ip BorderGatewayProtocol (Bgp)

Groups	"GROUP Vr Ip Bgp Provisioned (Prov)" "GROUP Vr Ip Bgp Operational (Oper)" "GROUP Vr Ip Bgp OsiState (State)" "GROUP Vr Ip Bgp AdministrativeControl (AdminControl)" "GROUP Vr Ip Bgp OperationalStatus (OperStatus)"
Scope	Application
Description	*Vr/<string> Ip BorderGatewayProtocol* *Rtr/<string> BorderGatewayProtocol* *Rtr/<string> Vrf/<string> BorderGatewayProtocol* This component is used to run the Border Gateway Protocol for IP.
Mib	Bgp
Opt. Subcomp.	"COMPONENT Vr Ip Bgp ImportPolicy (Import)" "COMPONENT Vr Ip Bgp ExportPolicy (Export)" "COMPONENT Vr Ip Bgp As" "COMPONENT Vr Ip Bgp AggregatePolicy (Aggregate)"
Dyn. Subcomp.	"COMPONENT Vr Ip Bgp IndbEntry (Indb)" "COMPONENT Vr Ip Bgp LocaldbEntry (Localdb)" "COMPONENT Vr Ip Bgp OutdbEntry (Outdb)" "COMPONENT Vr Ip Bgp LocalVpn" "COMPONENT Vr Ip Bgp MBgpRibEntry (MBgpRib)" "COMPONENT Vr Ip Bgp MplsVpnRibEntry (MvRib)" "COMPONENT Vr Ip Bgp Ipv4LabelRibEntry (LRib)"
Dyn. Subcomp.	"COMPONENT Vr Ip Bgp Peer"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Bgp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Bgp* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp bgpIdentifier

Access	Read and write
Criticality	Component
Description	This attribute specifies the *Bgp* Identifier of this *Bgp* component instance. It is picked from the IP address space, and should follow the same rule as choosing an unique IP address for *IpPort* or *Interface*.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp localAs

Access	Read and write
Criticality	Component
Description	This attribute specifies the autonomous system identifier for this *Bgp* component instance.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp defaultLocalPreference (locPrf)

Access	Read and write
Criticality	Component

Description	This attribute specifies this *Bgp* component instance's default degree of preference for routes. It can be overridden by the *localPreference* provisioned in *ImportPolicy.* A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	144

ATTRIBUTE Vr Ip Bgp defaultMultiExitDisc (med)

Access	Read and write
Criticality	Component
Description	This attribute specifies this *Bgp* component instance's default metric to discriminate between multiple exit points to the same adjacent autonomous system. It can be overridden by the s*endMultiExitDiscToEbgp* provisioned in *ExportPolicy.* A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	4294967294

ATTRIBUTE Vr Ip Bgp routeThrottleLimit (rtl)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum number of routes in the IP forwarding table this *Bgp* component instance will process at one time to decide if a route in the IP forwarding table should be exported to a peer. This limit is used because the throttling requirements are different under different network configurations.
Mib	Bgp
Values	Decimal (1..1000)
Default	250

ATTRIBUTE Vr Ip Bgp routeThrottleInter (rti)

Access	Read and write
Criticality	Component
Description	This attribute specifies the interval between the processing of the routes in the IP forwarding table to decide if a route in the IP forwarding table should be exported to a peer. This interval is used because the throttling requirements is different under different network configurations.
Mib	Bgp
Values	Decimal (1..30)
Units	seconds
Default	5

ATTRIBUTE Vr Ip Bgp routeReflector (rr)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this *Bgp* instance is a Route Reflector. If the value of this attribute is ***true***, *Bgp* redistributes routes it learns from an IBGP speaker to other IBGP speakers in the AS. The rule of redistribution depends on the peer type: 1) When a route is learned from a non-client peer, it is redistributed to all the client peers within the cluster. 2) When a route is learned from a client peer, it is redistributed to all the non-client peers and also to the client peers. If the value of this attribute is ***false***, *Bgp* does not redistribute routes it learns from one IBGP speaker to other IBGP speakers in the AS.
Mib	Bgp
Values	true false
Default	false

ATTRIBUTE Vr Ip Bgp routeReflectorCluster (rrCluster)

Access	Read and write
Criticality	Component
Description	This attribute identifies the cluster consisting of the Route Reflector and its peer clients. When *routeReflector* of *Bgp* is ***true***, value of 0.0.0.0 or 255.255.255.255 is invalid; the default value of this attribute is same as *bgpIdentifier*. For redundancy, a cluster may have more than one Route Reflector; in this case, the value of this attribute of all the Route Reflectors in the same cluster should be same. The value of this attribute is ignored when *routeReflector* of *Bgp* is ***false***
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp redistributeIgpToIbgp (rigp)

Access	Read and write
Criticality	Component
Description	This attribute specifies whether this *Bgp* instance allows exporting of IGP routes to internal Bgp peers. IGP routes include the routes learned from OSPF, RIP, local routes and static routes. If the value of this attribute is ***true***, and if *ExportPolicy* is specified to distribute, then *Bgp* allows IGP route to be distributed to internal Bgp peers. If the value of this attribute is ***false***, *Bgp* does not allow IGP routes to be distributed to internal *Bgp* peer, even if *ExportPolicy* is specified to distribute. This attribute is set to true if and only this Bgp is part of the Carrier Manage Service, otherwise, a routing loop may result.
Mib	Bgp
Values	true false
Default	false

ATTRIBUTE Vr Ip Bgp defaultIbgpRtePreference (ibgpPref)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's default routing preference for IBGP routes. It can be overridden by the *IbgpRtePreference* provisioned in *ImportPolicy.* A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (1..253)
Default	122

ATTRIBUTE Vr Ip Bgp defaultEbgpRtePreference (ebgpPrf)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's default routing preference for EBGP routes. It can be overridden by the *ebgpRtePreference* provisioned in *ImportPolicy.* A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (1..253)
Default	70

ATTRIBUTE Vr Ip Bgp vpnPeeringTopology (topology)

Access	Read and write
Description	Under the *Vr* component, this attribute specifies the peering mode that determines if a dynamic IBGP peer is to be instantiated between this *BGP* instance and a discovered IP Tunnel endpoint on the remote customer VR. This mode controls the distribution of IP routing information among VPN sites through dynamic BGP sessions after auto-discovery has taken place. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value.

In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.

Under the *Rtr* or *Rtr Vrf* component, this attribute is not used.

Mib: Bgp

Values:
none
hub
spoke

Default: No default

ATTRIBUTE Vr Ip Bgp alarmGeneration (alarms)

Access: Read and write

Description: This attribute specifies the level of alarm generation for this *Bgp* instance.

A value of ***all*** specifies that all BGP alarms are made visible.

A value of ***normal*** specifies that all BGP alarms are made visible, except for the following:
- *Bgp Peer* listening failure alarms,
- *Bgp Peer* connect failure alarms, and
- *Bgp* notification alarms.

Any listening failure or connect failure alarms which were previously set for a *Peer* component under this *Bgp* instance are cleared.

A value of ***none*** specifies that no BGP alarms are made visible. Any listening failure, connect failure, or “no auto discovery” alarms which were previously set for a *Peer* component under this *Bgp* instance are cleared.

Note that, because the listening failure, connect failure, and “no auto discovery” alarms are triggered by state changes in the *Peer*

component, they are not automatically regenerated when previously disabled alarm generation is enabled. For example, consider the following:
- If the *Bgp alarmGeneration* attribute is set to ***all*** and a *Peer* enters a listening failure state, a listening failure alarm is set against that *Peer* subcomponent.
- If the *Bgp alarmGeneration* attribute is then set to ***normal*** or ***none***, the above listening failure alarm is cleared.
- If the *Bgp alarmGeneration* attribute is then set back to ***all***, no alarm is generated because the *Peer* subcomponent has not changed state.
- If the *Peer* then exits the listening failure state, a listening failure alarm clear is generated for the *Peer*, even though there is no alarm set for that component.

When the scope of alarm generation has been increased for a *Bgp* instance, previously existing alarms which had been suppressed can be regenerated by locking and unlocking the *Bgp Peer* subcomponents.

For a *VirtualRouter* with *vpnMode* attribute be set to ***carrier***, it is recommended that the *alarmGeneration* attribute be set to ***all***. For a *VirtualRouter* with the *vpnMode* attribute set to ***customer***, it is recommended that the *alarmGeneration* attribute be set to either ***normal*** or ***none***, for scalability reasons.

Similarly, for a *Router* component, it is recommended that the *alarmGeneration* attribute be set to ***all***. For a *Router Vrf* component, it is recommended that the *alarmGeneration* attribute be set to either ***normal*** or ***none***, for scalability reasons.

Mib: Bgp

Values:
none
normal
all

Default: all

ATTRIBUTE Vr Ip Bgp keyTransitionDelay (keyDelay)

Access: Read and write

Description	This attribute specifies a default delay period associated with a change of *md5Key* value event for the *Bgp* component. The *md5Key* is set under the *Bgp Peer Descriptor* component. This is the time that can elapse before the local router transitions to using the new key for transmission for all the Bgp Peer sessions' under this *Bgp* component. This time is not used to control when to accept the new key for reception, and the new key is immediately accepted for reception. This delay equates to the amount of time the operator has to provision both the local and remote ends with the new key, without losing service. This can be overridden by the *keyTransitionDelay* provisioned under the *Bgp Peer Descriptor* component.
Mib	Bgp
Values	Decimal (1..20160)
Units	minutes
Default	10

ATTRIBUTE Vr Ip Bgp bgpImportRouteLimit (birl)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the maximum number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated. The default value of zero implies no protection. This limit is set based on the requirements of the network configuration and is critical to BGP.
Mib	Bgp
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Vr Ip Bgp bgpImportRouteDiscardLimit (bird)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated and subsequent routes are discarded. The default value of zero signifies no protection. This limit is set based on the requirements of the network configuration and is critical to BGP.
Mib	Bgp
Values	Decimal (0..4000000000)
Default	0

GROUP Vr Ip Bgp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *Bgp* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp tableVersion

Access	Read only
Description	This attribute indicates the version of the BGP routing table. It is incremented every time the BGP routing table changes. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp inMsgs

Access	Read only
Description	This attribute counts the total number of BGP messages received without error. This counter will wrap to zero once the value exceeds the maximum value.

Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp inErrors

Access	Read only
Description	This attribute counts the total number of BGP messages received from all peers that proved to be in error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp inErrorMsgs

Access	Read only
Description	This attribute counts the total number of BGP NOTIFICATION messages from all the peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp outMsgs

Access	Read only
Description	This attribute counts the total number of BGP messages sent to peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp outDiscards

Access	Read only
Description	This attribute counts the number of BGP messages that were locally generated but were not sent out due to resource limitations within a *Bgp* instance. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp outErrorMsgs

Access	Read only
Description	This attribute counts the BGP NOTIFICATION messages sent to the peers. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp indbSize

Access	Read only
Description	This attribute indicates the number of *Bgp* indb entries under this *Bgp* component instance.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Ip Bgp OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bgp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Bgp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Bgp

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip Bgp usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Bgp

Values: idle
active (activ)
busy

Default: idle

GROUP Vr Ip Bgp AdministrativeControl (AdminControl)

Properties: Provisioned

Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Bgp
Values	up down testing
Default	up

GROUP Vr Ip Bgp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Bgp

Values	up down testing
Default	up

COMPONENT Vr Ip Bgp Peer

Instance	IP address
Groups	"GROUP Vr Ip Bgp Peer OsiState (State)" "GROUP Vr Ip Bgp Peer Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp Peer/<Ip Address>* *Rtr/<string> Bgp Peer/<Ip Address>* *Rtr/<string> Vrf/<string> Bgp Peer/<Ip Address>* This component identifies the properties of a BGP peer. The index value of this entry identifies the IP address of that peer. This component is required for BGP to set up a peer session with a remote peer. Peers with discovered IP address are dynamic peers, where the provisioned ones are static peers.
Mib	Bgp
Opt. Subcomp.	"COMPONENT Vr Ip Bgp Peer Descriptor (Desc)"
Dyn. Subcomp.	"COMPONENT Vr Ip Bgp Peer Vpn"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Bgp Peer OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Peer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Bgp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Bgp Peer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Bgp

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip Bgp Peer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Bgp

Values: idle
active (activ)
busy

Default: idle

GROUP Vr Ip Bgp Peer Operational (Oper)

Properties: Operational

Description	This group contains the operational attributes for the *Peer* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Peer connectionState

Access	Read only
Description	This attribute indicates the current state of this BGP peer connection. The meaning of each state is as follows: ***idle*** - it is the initial state of the BGP peer connection. Error events will also cause BGP peer connection to transit to the idle state. ***connect*** - BGP has initiated a TCP connection request to this peer, and waiting for reply from that peer. ***active*** - BGP is not initiating a TCP connection request to this peer, because TCP connection failed and is waiting for connection retry time-out. ***openSent*** - a TCP connection to this peer has been established, but the OPEN message has not been successfully exchanged. ***openConfirm*** - OPEN message has been successfully exchanged with this peer, but the first KEEPALIVE message has not been received from that peer. ***established*** - the first KEEPALIVE message has been received from this peer, which means this BGP peer connection has been established. See RFC 1771 for a detailed description of BGP state transitions.
Mib	Bgp
Values	idle connect active openSent openConfirm established
Default	idle

ATTRIBUTE Vr Ip Bgp Peer bgpIdentifier (bgpId)

Access	Read only

Description	This attribute indicates the BGP Identifier of this *Bgp Peer* component. It is learned from the peer through the OPEN message.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Peer versionNegotiated (vn)

Access	Read only
Description	This attribute indicates the BGP version number negotiated with this peer through the OPEN message. Currently, only BGP version 4 is supported. BGP will reject the peer connection if our peer proposes a BGP version other than 4.
Mib	Bgp
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer holdTimeNegotiated (htn)

Access	Read only
Description	This attribute indicates the maximum time in seconds, that may elapse without receiving a KEEPALIVE or UPDATE message before the connection is considered down. This is the negotiated value with peer through the OPEN message. The hold time must be either zero or at least three seconds. If the negotiated hold time is zero, then periodic KEEPALIVE messages are not expected from the peer.
Mib	Bgp
Values	Decimal (0; 3..65535)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Bgp Peer keepAliveNegotiated (kan)

Access	Read only
Description	This attribute indicates the interval in seconds, between BGP KEEPALIVE message retransmissions. This keepalive interval will have the same ratio to the hold time negotiated with the peer as that of the locally configured keepalive and hold time. This attribute will be zero if the *holdTimeNegotiated* attribute is zero, which means periodic KEEPALIVE messages will not be sent.
Mib	Bgp
Values	Decimal (0..21845)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Bgp Peer localAddressUsed (lau)

Access	Read only
Description	This attribute indicates the local IP address used for this BGP peer connection. If the *localAddressConfigured* attribute is non-zero, its value will be used. Otherwise, the local address will be assigned by TCP based on the remote IP address of this peer connection and the IP forwarding table.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Peer localPort

Access	Read only
Description	This attribute indicates the local TCP port for the connection between the BGP peers.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer remotePort

Access	Read only
Description	This attribute indicates the remote TCP port for the connection between the BGP peers.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer lastError

Access	Read only
Description	This attribute indicates the last error code and subcode seen by this *Bgp* component instance on this peer connection. The first byte of this two byte OCTET STRING contains the error code, and the second byte contains the subcode. A value of zero means that no error has occurred. Check RFC 1771 for mappings of error codes and error subcodes.
Mib	Bgp
Values	String (2, Hex)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer connectionEstablishedTime (ceTime)

Access	Read only
Description	This attribute indicates how long since this *Peer* component's last transition to or from the ***established*** state. It is set to zero when the *Peer* component is activated.
Mib	Bgp
Values	Decimal (0..4294967295)
Units	seconds
Default	0

ATTRIBUTE Vr Ip Bgp Peer connectionEstablishedTransitions (ceTrans)

Access	Read only

Description	This attribute counts the total number of times the BGP connection state transitioned into the ***established*** state.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer inUpdateElapsedTime (iuet)

Access	Read only
Description	This attribute indicates the elapsed time in seconds since the last BGP UPDATE message was received from the peer. Each time *inUpdates* attribute is incremented, the value of this attribute is set to zero.
Mib	Bgp
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Bgp Peer inMsgs

Access	Read only
Description	This attribute counts the number of BGP messages received without error from the BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer inUpdates

Access	Read only
Description	This attribute counts the number of BGP UPDATE messages received on this peer connection. This counter will wrap to zero once the value exceeds the maximum value.

Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer inErrors

Access	Read only
Description	This attribute counts the number of messages received from this BGP peer that proved to be in error. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer inErrorMsgs

Access	Read only
Description	This attribute counts the number of BGP NOTIFICATION messages received from this BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer outMsgs

Access	Read only
Description	This attribute counts the number of locally generated BGP messages sent to this BGP peer. It does not include discarded messages. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer outUpdates

Access	Read only
Description	This attribute counts the number of BGP UPDATE messages sent to this peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer outDiscards

Access	Read only
Description	This attribute counts the number of locally generated BGP messages not sent to this BGP peer due to resource limitations within a BGP entity. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer outErrorMsgs

Access	Read only
Description	This attribute counts the number of BGP NOTIFICATION messages sent to this BGP peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer inRoutes

Access	Read only

Description	This attribute indicates the number of routes received from this BGP peer.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Peer peerType

Access	Read only
Description	This attribute indicates the way this peer is created. Peer is **static,** if created through provisioning or **dynamic,** if created through IP VPN auto discovery. For *Router* and *Vrf*, all peers are statically created. So, this value will always be ***static***.
Mib	Bgp
Values	static dynamic
Default	No default

ATTRIBUTE Vr Ip Bgp Peer authenticationType

Access	Read only
Description	This attribute indicates the authentication type of this BGP peer. If the *md5Key* attribute under the *Bgp Peer Desc* component is set to a null string, this peer's authentication type is ***none***; otherwise, if the *md5Key* attribute is set to a valid non-null string, this peer's authentication type is ***md5***. If this BGP peer's *peerType* is ***dynamic***, its authentication type is always ***none***.
Mib	Bgp
Values	none md5
Default	No default

ATTRIBUTE Vr Ip Bgp Peer noAuthenticationPkts

Access	Read only
Description	This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which do not contain the MD5 authentication information, but MD5 authentication is provisioned on the local BGP peer. This type of authentication failure occurs when the *md5Key* attribute under the local *Bgp Peer Desc* component is set to a valid non-null string, but the remote BGP peer does not use MD5 authentication, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer badAuthenticationPkts

Access	Read only
Description	This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which fail the MD5 authentication. This type of authentication failure occurs when the *md5Key* attribute set under the local *Bgp Peer Desc* component does not match the MD5 key used by the remote BGP peer, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer unexpectedAuthenticationPkts

Access	Read only
Description	This attribute indicates the number of packets received on this BGP peer session's underlying TCP connection, which contain

the MD5 authentication information, but MD5 authentication is not provisioned on the local BGP peer. This type of authentication failure occurs when the *md5Key* attribute under the local *Bgp Peer Desc* component is set to a null string, but the remote BGP peer uses MD5 authentication, or when a hacker is spoofing packets from a legitimate peer. This counter will wrap to zero once the value exceeds the maximum value.

Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer addressFamilyNegotiated (afn)

Access	Read only
Description	The attribute indicates the list of multi-protocol extensions negotiated on this peer session. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). To perform IP VPN auto discovery in a VPN, the value of ***ipv4Vpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances. To perform IP VPN multi-protocol BGP route distribution in a VPN, the value of ***mbgpVpn*** and ***ipv4Vpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances. To perform RFC 2547 VPN route distribution in a VPN using multi-protocol BGP extensions, the value of ***ipv4MplsVpn*** must be in the *addressFamilyNegotiated* list of all the VCGs' peer instances. To distribute IPv4 Unicast routes with labels, using multi-protocol BGP extensions, the value of ***ipv4Label*** must be in the *addressFamilyNegotated* list of the peer instance. ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***ipv4Vpn*** represents AFI = 1 and SAFI = 140 (not for RFC 2547) ***mbgpVpn*** represents AFI = 1 and SAFI = 141 (not for RFC

	2547) ***ipv4MplsVpn*** represents AFI = 1 and SAFI = 128 ***ipv4Label*** represents AFI = 1 and SAFI = 4
Mib	Bgp
List of	ipv4Unicast ipv4Vpn mbgpVpn ipv4MplsVpn ipv4Label
Default	No default

ATTRIBUTE Vr Ip Bgp Peer capabilityNegotiated (cn)

Access	Read only
Description	The attribute indicates the list of capabilities negotiated on this peer session.
Mib	Bgp
List of	mpExtensions routeRefresh cooperativeRouteFiltering
Default	No default

COMPONENT Vr Ip Bgp Peer Descriptor (Desc)

Groups	"GROUP Vr Ip Bgp Peer Desc Provisioned (Prov)"
Scope	Network
Description	*Vr/<string> Ip Bgp Peer/<Ip Address> Desc* *Rtr/<string> Bgp Peer/<Ip Address> Desc* *Rtr/<string> Vrf/<string> Bgp Peer/<Ip Address> Desc* This component contains provisioned attributes for BGP peers.

Provisioned attributes are only used when the peer is a statically provisioned peer.

Mib: Bgp

Common Verbs:
- Help
- List
- Display
- Add
- DELete
- LOCK
- Unlock

GROUP Vr Ip Bgp Peer Desc Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisional attributes for this BGP *Peer* component

Mib: Bgp

ATTRIBUTE Vr Ip Bgp Peer Desc peerAs

Access: Read and write

Description: This attribute specifies the autonomous system identifier of this BGP *Peer* component. It is used to verify the autonomous system identifier learned from the peer through the OPEN message. The peer connection is rejected and a NOTIFICATION message is sent to the peer if these two numbers don't match.

Mib: Bgp

Values: Decimal (0..65535)

Default: 0

ATTRIBUTE Vr Ip Bgp Peer Desc localAddressConfigured (lac)

Access: Read and write

Description: This attribute specifies the local IP address configured for this *Bgp Peer* connection. If this attribute is 0.0.0.0, TCP chooses a local IP interface based on the remote IP address of this peer connection and the IP forwarding table. The value chosen is

	stored in the *localAddressUsed* attribute under the same *Peer* component.
Mib	Bgp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Bgp Peer Desc keepAliveConfigured (kac)

Access	Read and write
Description	This attribute specifies the configured interval between BGP KEEPALIVE message retransmissions. It is used to establish the ratio between keepalive interval and hold time. If this attribute is zero, then the *holdTimeConfigured* attribute must be zero, which means that periodic KEEPALIVE messages will not be sent.
Mib	Bgp
Values	Decimal (0..21845)
Units	seconds
Default	30

ATTRIBUTE Vr Ip Bgp Peer Desc holdTimeConfigured (htc)

Access	Read and write
Description	This attribute specifies the maximum time that may elapse without receiving a KEEPALIVE or UPDATE message before the connection is considered down. The hold time must be either zero or at least three seconds. If this attribute is zero, then the *keepAliveConfigured* attribute should also be zero, which means that periodic KEEPALIVE messages will not be sent.
Mib	Bgp
Values	Decimal (0; 3..65535)
Units	seconds
Default	90

ATTRIBUTE Vr Ip Bgp Peer Desc connectRetryTime (connectRetry)

Access	Read and write
Description	This attribute specifies the time interval for the ConnectRetry timer. It is the minimum amount of time that must elapse between successive TCP connection retries for establishing BGP peer connection.
Mib	Bgp
Values	Decimal (1..65535)
Units	seconds
Default	120

ATTRIBUTE Vr Ip Bgp Peer Desc minAsOrigTime (minAsOrig)

Access	Read and write
Description	This attribute specifies the time interval for the MinAsOriginationInterval timer. It is the minimum amount of time that must elapse between updates that advertise a change to a route within the local autonomous system to neighboring autonomous systems.
Mib	Bgp
Values	Decimal (1..65535)
Units	seconds
Default	15

ATTRIBUTE Vr Ip Bgp Peer Desc minRouteAdvTime (minRouteAdv)

Access	Read and write
Description	This attribute specifies the time interval for the MinRouteAdvertisementInterval timer. Feasible routes received from peers in other autonomous systems may only be re-advertised to peers in other autonomous systems at a rate no greater than MinRouteAdvertisementInterval.
Mib	Bgp
Values	Decimal (1..65535)

Units	seconds
Default	30

ATTRIBUTE Vr Ip Bgp Peer Desc defaultInAggMed (diaMed)

Access	Read and write
Description	This attribute specifies this *Bgp Peer* component instance's metric for generating a dynamic default route whenever this external BGP peer got established. It is used to prioritize between the dynamic default routes generated by BGP speakers. If this attribute is not set, BGP does not generate a dynamic default route. When this attribute is set, BGP automatically generates a dynamic default route when the connection established.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	4294967295

ATTRIBUTE Vr Ip Bgp Peer Desc isRouteReflectorClient (isRrClient)

Access	Read and write
Description	This attribute specifies whether the peer is a client peer or non-client peer of this *Bgp* instance. The attribute is ignored unless the value of the '*routeReflector*' attribute of the '*Bgp*' component is set to ***true***.
Mib	Bgp
Values	true false
Default	false

ATTRIBUTE Vr Ip Bgp Peer Desc removePrivateAs (remPrivate)

Access	Read and write
Description	This attribute specifies the treatment of the AS_PATH path attribute in routes sent to the peer. If this attribute is enabled, then BGP will remove private AS numbers from the AS_PATH. This attribute is meaningful only for external peers.

Mib	Bgp
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Bgp Peer Desc nextHopSelf (nhs)

Access	Read and write
Description	This attribute controls the setting of the NEXT_HOP path attribute in routes advertised to the peer. If this attribute is enabled, BGP will advertise itself as the NEXT_HOP. This is useful when routes are propagated from an EBGP peer to an IBGP peer: the IBGP peer does not need to have a route to the EBGP peer.
Mib	Bgp
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Bgp Peer Desc md5Key

Access	Write only
Description	This attribute specifies this *Bgp Peer* component instance's MD5 key value that is used by the MD5 authentication on this BGP Peer session's underlying TCP connection. A null string indicates that the MD5 authentication is not to be used on the TCP connection to this Bgp Peer session.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Desc keyTransitionDelay (keyDelay)

Access	Read and write

Description	This attribute specifies a delay period associated with a change of *md5Key* value event of the *Peer* component. This is the time that can elapse before the local router transitions to using the new key for transmission for this Bgp Peer session.This time is not used to control when to accept the new key for reception, and the new key is immediately accepted for reception. This delay equates to the amount of time the operator has to provision both the local and remote ends with the new key, without losing service. If ***sameAsBgp*** is specified, the value of *keyTransitionDelay* set under the parent *Bgp* component is used. Otherwise the value of this attribute will be used**.** The default is to use ***sameAsBgp***.
Mib	Bgp
Values	Decimal (1..20160) sameAsBgp
Units	minutes
Default	sameAsBgp

ATTRIBUTE Vr Ip Bgp Peer Desc multiHopEbgp (mhEbgp)

Access	Read and write
Description	This attribute specifies whether MultiHop EBGP (External BGP) route distribution is supported on this EBGP peer. MultiHop EBGP allows routes to be distributed between EBGP peers that are not directly connected and can span multiple hops
Mib	Bgp
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Bgp Peer Desc asPathCheck

Access	Read and write

Description	This attribute specifies the treatment of the AS_PATH loop detection mechanism in routes received from the peer. If this attribute is set to ***disabled***, AS_PATH loop is not detected. If this attribute is set to ***enabled***, AS_PATH loop is detected.
Mib	Bgp
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Ip Bgp Peer Desc attachSiteOfOrigin (attachSoo)

Access	Read and write
Description	This attribute specifies the site of origin identifier to attach for this BGP Peer connection. If this attribute is set, a site of origin extended community path attribute is attached to the routes received from this peer unless the site of origin extended community path attribute is already included in the routes.
Mib	Bgp
Values	String (0..21, RFC2547RdRtSyntax)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Desc checkSiteOfOrigin (checkSoo)

Access	Read and write
Description	This attribute specifies the site of origin identifiers to check for this BGP Peer connection. If this attribute is set, a check is done when routes are received from this peer or advertised to this peer. If the site of origin extended community path attribute presents in received routes and matches any Site Of Origin in this attribute, the routes are not accepted. If the site of origin extended community path attribute presents in the advertised routes and matches any SOO in this

	attribute, the routes are not advertised to this peer. If this attribute is not set, no check and filtering is done.
Mib	Bgp
List of	String (3..21, RFC2547RdRtSyntax)
List Size	256
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Desc bgpPeerRouteLimit (bprl)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the maximum number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated. The default value of zero implies no protection. This limit is set based on the requirements of the network configuration and is optional but critical under the peer.
Mib	Bgp
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Vr Ip Bgp Peer Desc bgpPeerRouteDiscard (bprd)

Access	Read and write
Criticality	Component
Description	This attribute specifies a limit to control the number of BGP Ipv4 Unicast routes that will be processed until an alarm is generated and subsequent routes are discarded. The default value of zero signifies no protection. This limit is set based on the requirements of the network configuration and is optional but critical under the peer.
Mib	Bgp
Values	Decimal (0..4000000000)
Default	0

ATTRIBUTE Vr Ip Bgp Peer Desc addressFamily

Access	Read and write
Description	The attribute specifies the supported network layer protocols being carried in any BGP-4 UPDATE messages over this Peer session. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). To perform IP VPN auto discovery in a VPN, the value of ***ipv4Vpn*** must be added to this attribute on all VCGs' peer instances. To perform IP VPN multi-protocol BGP route distribution in a VPN, the value of ***mbgpVpn*** and ***ipv4Vpn*** must be in the *addressFamily* list of all the VCGs' Peer instances. To perform RFC 2547 VPN route distribution in a VPN using multi-protocol BGP extensions, the value of ***ipv4MplsVpn*** must be in the *addressFamily* list of all the VCGs' peer instances. To distribute IPv4 Unicast routes with labels, using multi-protocol BGP extensions, the value of ***ipv4Label*** must be in the *addressFamily* list of the peer instance. ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***ipv4Vpn*** represents AFI = 1 and SAFI = 140 (not for RFC 2547) ***mbgpVpn*** represents AFI = 1 and SAFI = 141 (not for RFC 2547) ***ipv4MplsVpn*** represents AFI = 1 and SAFI = 128 ***ipv4Label*** represents AFI=1 and SAFI=4
Mib	Bgp
List of	ipv4Unicast ipv4Vpn mbgpVpn ipv4MplsVpn ipv4Label
Default	(ipv4Unicast)

COMPONENT Vr Ip Bgp Peer Vpn

Instance	String (7, Dashed Hex)
Scope	Application
Description	*Vr*/<string> *Ip Bgp Peer*/<Ip Address> *Vpn*/<Vpn id> This component contains all VPN information that is learned by this BGP peer instance.
Mib	Bgp
Dyn. Subcomp.	"COMPONENT Vr Ip Bgp Peer Vpn Ipv4"
Common Verbs	Help List Display

COMPONENT Vr Ip Bgp Peer Vpn Ipv4

Instance	IP address
Groups	"GROUP Vr Ip Bgp Peer Vpn Ipv4 Operational (Oper)"
Scope	Application
Description	*Vr*/<string> *Ip Bgp Peer*/<Ip Address> *Vpn*/<Vpn id> *Ipv4* This component contains all IPv4 tunnel based VPN information gathered by this BGP peer for the specified VPN.
Mib	Bgp
Common Verbs	Help List Display

GROUP Vr Ip Bgp Peer Vpn Ipv4 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ipv4* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Peer Vpn Ipv4 publicIpAddress

Access	Read only
Description	This attribute indicates the public IP Address for the remote IP VPN tunnel endpoint. It is used to encapsulate IP packets from the local IP VPN site to the remote site.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Vpn Ipv4 asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments through which the IP VPN information arrives. The AS Path lists the ASs in reverse traversal order from the point of origin. This attribute is not applicable and is not displayed for locally - learned IP VPN information.
Mib	Bgp
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Vpn Ipv4 vpnPeeringTopology

Access	Read only
Description	This attribute indicates the peering mode of the remote customer BGP from which this VPN information is originated. This mode determines if a dynamic IBGP peer is instantiated between this *BGP* instance and the remote IP Tunnel endpoint on the remote customer VR. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers. Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value.

	In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.
Mib	Bgp
Values	none hub spoke
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Vpn Ipv4 asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator of this IP VPN information in the local AS. When the Route Reflector in the backbone distributes a discovered VPN information to other IBGP speakers, the value of this attribute in the discovered VPN information is used if one is present; otherwise, the Route Reflector's router-id is used. A value of 0.0.0.0 indicates this *Bgp* instance is not a Route Reflector. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Vpn Ipv4 redundant

Access	Read only
Description	This attribute indicates that the IP VPN information entry learned from more than one BGP peers in the carrier backbone. This attribute is not applicable and is not displayed for locally learned IP VPN information.

Mib	Bgp
Values	no yes
Default	No default

ATTRIBUTE Vr Ip Bgp Peer Vpn Ipv4 rrClusterList

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the sequence of cluster-ids that this discovered IP VPN information has traversed. When the Route Reflector in the backbone reflects a discovered VPN information to other non-client IBGP peers, the cluster ID of the Route Reflector is added to the cluster list of the received VPN information. A blank list indicates this attribute is not present in the received VPN information or if this *Bgp* instance is not a Route Reflector. This attribute is not applicable and is not displayed for locally learned IP VPN information.
Mib	Bgp
List of	IP address
List Size	256
Default	No default

COMPONENT Vr Ip Bgp ImportPolicy (Import)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Bgp Import Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Import/n* *Rtr/<string> Bgp Import/n* *Rtr/<string> Vrf/<string> Bgp Import/n* Each instance of this component describes a BGP import policy. A BGP import policy is used to decide if certain routing information learned from its peer is to be ignored or used. If no import policy is provisioned, BGP will accept all routes

received from its IBGP peers, but will not use any routing information received from its EBGP peers.
If multiple import policies are provisioned, the one with the most specific match will apply.
The keys are matched in the following order from the least specified to the most specified:
Network,
peerAs,
peerIpAddress,
originAs,
originProtocol,
matchAsPath,
matchCommunity.

Example1:
There are 2 import policies defined:
vr/0 ip bgp import/1, originProtocol = ***any***, originAs = ***20***, usageFlag = ***use***
vr/0 ip bgp import/2, originProtocol = ***igp***, usageFlag = ***ignore***
If a BGP NLRI contains a route originally learned from an igp with origin AS 20, it will be used.
Example2:
There are 2 import policies defined:
vr/0 ip bgp import/1, originProtocol = ***any***, matchAsPath = ***"1 2 3"***, usageFlag = ***ignore***
vr/0 ip bgp import/2, originProtocol = ***any***, usageFlag = use
If a BGP NLRI contains a route originally learned from an igp with the AsPath "1 2 3 4", it will be ignored.

For Router and Vrf, the example is similar with 'Vr/0 Ip' replaced with 'Router/0' and 'Router/0 Vrf/1' respectively.

Mib — Bgp

Opt. Subcomp. — "COMPONENT Vr Ip Bgp Import Network (Net)"

Common Verbs
- Help
- List
- Display
- Add
- DELete

GROUP Vr Ip Bgp Import Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes for the *Import* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Import peerAs

Access	Read and write
Description	This key attribute specifies the autonomous system number of the peer from which the routes are learned. A value of 0 for this attribute means that peer AS number will match any AS number.
Mib	Bgp
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Bgp Import peerIpAddress

Access	Read and write
Description	This key attribute specifies the IP address of the peer from which the routes are learned. A value of 0.0.0.0 for this attribute means that peer IP address will match any IP address.
Mib	Bgp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Bgp Import originAs

Access	Read and write
Description	This key attribute specifies the autonomous system number where the routes were originated. A value of 0 for this attribute means origin AS number will match any AS number.
Mib	Bgp
Values	Decimal (0..65535)

Default	0

ATTRIBUTE Vr Ip Bgp Import originProtocol

Access	Read and write
Description	This key attribute specifies the protocols that originated the routes. A value of ***incomplete*** for this attribute means this information is not available.
Mib	Bgp
Values	any igp egp incomplete
Default	any

ATTRIBUTE Vr Ip Bgp Import usageFlag (usage)

Access	Read and write
Description	This attribute specifies whether BGP will use or ignore information in received update if it meets criteria specified by the key attributes of this component.
Mib	Bgp
Values	use ignore
Default	use

ATTRIBUTE Vr Ip Bgp Import localPreference (locPrf)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's degree of preference for those routes that match the criteria of this import policy. A higher value indicates a more preferred route. A value of 0 for this attribute means that the default local preference value provisioned under the *Bgp* component should be used.
Mib	Bgp
Values	Decimal (0..4294967295)

Default 0

ATTRIBUTE Vr Ip Bgp Import asPathExpression (asExpr)

Access Read and write

Description This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the received update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280.
The basic syntax of a regular expression is a list of AS number separated by a space which making up a AS path.
The following characters has the special meaning:
'.' - Matches any AS number.
'^n' - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path.
'n$' - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path.
'[n1... n2]' - Matches any AS number that appeared in the set n1...
n2.
'n1 - n2' - Matches any AS number between the range of n1 and n2.
'()' - is supported to change the order of evaluation.
'n*' - Matches 0 or more occurrences of n, where n can be a set, range or AS number.
'n+' - Matches 1 or more occurrences of n, where n can be a set, range or AS number.
'n?' - Matches 0 or 1 occurrences of n, where n can be a AS set, range or number.
The following logical operators are evaluated in descending order:
'NOT' - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x.
'AND'- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x

and those are matched by y.
For example: The AS path “5 4 3 2 1”, where 1 is the origin AS, would be match by any one of the following regular expressions:
1$,
^5,
4 3,
5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4.* 1
Empty regular expression implies a match on all AS path.

Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Import communityExpression (comExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of Community number separated by a space which making up a Community attribute. The following characters have a special meaning: ‘[n1... n2]’ - Matches any Community number that appeared in the set n1...n2. ‘n1 - n2’ - Matches any Community number between the range of n1 and n2. ‘()’ - is supported to change the order of evaluation. ‘n*’ - Matches 0 or more occurrences of n, where n can be a set, range or Community number. ‘n+’ - Matches 1 or more occurrences of n, where n can be a set, range or Community number. ‘n?’ - Matches 0 or 1 occurrences of n, where n can be a set, range or number.

The following logical operators are evaluated in descending order:
'NOT' - Given a regular expression x, NOT x matches the Community attribute that is not matched by x.
'AND'- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y.
For example: The Community path "1 2 3 4 5" would be match by any one of the following regular expression:
1,
5,
4 3,
2 3 - 4*,
1 [3 4 2]+,
not (6 7 8 9 10) and 1 2
Empty regular expression implies a match on all Community path.

Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Import expressPreference (exprPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *expressAsPath* and *expressCommunity.* This attribute is ignored if attributes *expressAsPath* and *expressCommunity* are both empty. This attribute is used to break the tie when two import policies' expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy.
Mib	Bgp
Values	Decimal (0..255)
Default	128

ATTRIBUTE Vr Ip Bgp Import appendCommunity (appCom)

Access	Read and write
Description	This attribute indicates which community number this import policy will send along with the Path Attribute. Refer to RFC 1997 for the detailed description of how this attribute may be used to pass additional information to BGP peers. If the value is set to 0, no community is appended to the Community attribute.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Import ibgpRtePreference (ibgpPref)

Access	Read and write
Description	This attribute specifies the routing preference of IBGP routes matching this import policy. A lower value means the route is more preferred. If ***sameAsBgp*** is specified, the value of *defaultIbgpRtePref* set under the *Bgp* component is used. Otherwise the value of this attribute will be used as the routing preference**.** The default is to use sameAsBgp.
Mib	Bgp
Values	Decimal (1..253) sameAsBgp
Default	sameAsBgp

ATTRIBUTE Vr Ip Bgp Import ebgpRtePreference (ebgpPref)

Access	Read and write
Description	This attribute specifies the routing preference of EBGP routes matching this import policy. A lower value specifies the route is more preferred. If ***sameAsBgp*** is specified, the value of *defaultEbgpRtePref* set under the *Bgp* component is used. Otherwise the value of this attribute will be used as the routing preference**.** The default is to use sameAsBgp.
Mib	Bgp

Values	Decimal (1..253) sameAsBgp
Default	sameAsBgp

ATTRIBUTE Vr Ip Bgp Import addressFamily (af)

Access	Read and write
Description	This attribute specifies the Address Family of the routes this import policy should apply to. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). It can contain one of the following: ***ipv4Unicast*** represents AFI = 1 and SAFI = 1 ***mbgpVpn*** represents AFI = 1 and SAFI = 141 (Not for RFC 2547) ***all***
Mib	Bgp
Values	all ipv4Unicast mbgpVpn ipv4Label
Default	all

ATTRIBUTE Vr Ip Bgp Import description (desc)

Access	Read and write
Description	This attribute specifies the policy. For example, ‘to import BGP routes from AS 1’.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

COMPONENT Vr Ip Bgp Import Network (Net)

Instance	Decimal (0..65535)

Groups	"GROUP Vr Ip Bgp Import Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Import/n Network/n* *Rtr/<string> Bgp Import/n Network/n* *Rtr/<string> Vrf/<string> Bgp Import/n Network/n* This is an optional subcomponent of *Import* component and identifies destination networks that this BGP import policy applies to. This component is used as a key for the import policy. If no network list is provisioned, the import policy applies to all networks.
Mib	Bgp
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Bgp Import Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Import Net prefix

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Import Net length

Access	Read and write
Description	This attribute specifies the length of the network prefix.
Mib	Bgp
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Vr Ip Bgp ExportPolicy (Export)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Bgp Export Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Export/n* *Rtr/<string> Bgp Export/n* *Rtr/<string> Vrf/<string> Bgp Export/n* Each instance of this component describes a BGP export policy. A BGP export policy is used to decide if certain routing information should be blocked or advertised to its peers. If no export policy is provisioned, BGP will advertise all external BGP learned routes to its internal peers, but not advertise any routing information to its external peers. If multiple export policies are provisioned, the one with the most specific match will apply. The keys are matched in the following order from the least specified to the most specified: *peerAs*, *peerIpAddress*, *protocol*, *ripInterface* (if applicable), *egpAs*, *bgpAs*, *ripNeighbour*, or *ospfTag* (whichever is applicable), *Network*, *matchAsPath*, *matchCommunity*. Example1: (for Router and Vrf, the examples are similar by

replacing ‘vr/0 ip’ with ‘Router/a’ and ‘Router/a Vrf/b’ respectively)
There are 2 export policies defined:
vr/0 ip bgp export/1, protocol = ***all***, advertiseStatus = ***send***
vr/0 ip bgp export/2, protocol = ***rip***, advertiseStatus = ***block***
BGP will generate BGP updates for all routes except the routes learned from RIP.
Example2:
There are 2 export policies defined:
vr/0 ip bgp export/1, protocol = all, matchCommunity = ***303***, advertiseStatus = ***send***
vr/0 ip bgp export/2, protocol = ***all***, advertiseStatus = ***block***
BGP will generate BGP updates for all routes that belongs to Community 303.

Mib	Bgp
Opt. Subcomp.	"COMPONENT Vr Ip Bgp Export Network (Net)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Bgp Export Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisioned attributes for the *Export* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Export peerAs

Access	Read and write
Description	This key attribute specifies the autonomous system number of the peer where the routes are advertised to. A value of 0 for this attribute means this export policy applies to all peer ASes.
Mib	Bgp

Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Bgp Export peerIpAddress

Access	Read and write
Description	This key attribute specifies the IP address of the peer where the routes are advertised to. A value of 0.0.0.0 for this attribute means this export policy applies to all peers. This key attribute is used in export policies for AFI/SAFI = 1/128 only if the *addressFamily* attribute is set to ***ipv4MplsVpn***.
Mib	Bgp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Bgp Export protocol

Access	Read and write
Description	This key attribute specifies which protocol the export policy applies to. If it is set to ***all***, that means this export policy will apply all routes in the IP routing table. Example: vr/1 ip ospf export/1 with advertise Status = block protocol = bgpExternal bgpAsId = 3 peerAs = 5 This policy specifies that all routes learned from EBGP Peers that are originated from AS 3 should not be advertised to AS 5.
Mib	Bgp
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote

	bgpInternal bgpExternal bgpAggregate mbgp bgpMplsInternal
Default	all

ATTRIBUTE Vr Ip Bgp Export egpAsId (egpAs)

Access	Read and write
Description	This key attribute specifies the EGP autonomous system number that this export policy will apply to. When this value is non-zero, the *protocol* attribute must be set to ***egp***.
Mib	Bgp
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Bgp Export bgpAsId (bgpAs)

Access	Read and write
Description	This key attribute specifies the BGP autonomous system number that this export policy will apply to. When this value is non-zero, the *protocol* attribute must be set to either ***bgpInternal*** or ***bgpExternal***.
Mib	Bgp
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Bgp Export ospfTag

Access	Read and write
Description	This key attribute specifies the OSPF tag when the *protocol* attribute is set to either ***ospfInternal*** or ***ospfExternal***. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag not specified.

Mib	Bgp
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Vr Ip Bgp Export ripInterface (ripIf)

Access	Read and write
Description	This key attribute specifies the local RIP interface where the routes are learned from. The *ripInterface* attribute when non-zero should be equal to one of the IP addresses provisioned as a *logicalIf* component under *IpPort*, or the IP address of an *Interface* component. Otherwise, this policy will be ignored. The value of the *protocol* attribute must be set to ***rip*** if a value for the *ripInterface* attribute is non-zero.
Mib	Bgp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Bgp Export ripNeighbor (ripNbr)

Access	Read and write
Description	This key attribute specifies the RIP neighbor where the routes were learned from. The value of the *protocol* attribute must be set to ***rip*** if the *ripNeighbor* attribute is non-zero.
Mib	Bgp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Bgp Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies whether data will be exported if it meets criteria specified by the other key attributes of this component.

Mib	Bgp
Values	send block
Default	send

ATTRIBUTE Vr Ip Bgp Export multiExitDisc (med)

Access	Read and write
Description	This attribute specifies this *Bgp* component instance's metric to discriminate between multiple exit points to an adjacent autonomous system if the route meets the criteria specified by the key attributes of this component. A lower value indicates a more preferred route. A value of 0 for this attribute means the default MED value provisioned under the *Bgp* component should be used.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Export sendMultiExitDiscToEbgp (sendMed)

Access	Read and write
Description	This attribute specifies whether the Multi Exit Discriminator (MED) attribute should be included in an update message sent to an EBGP peer.
Mib	Bgp
Values	false true
Default	false

ATTRIBUTE Vr Ip Bgp Export asPathExpression (asExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the export update message. Note: the AS Path Attribute lists the ASs in reverse traversal

order. The syntax of the regular expression is a subset of the RFC 2280.
The basic syntax of a regular expression is a list of AS number separated by a space which making up a AS path.

The following characters have a special meaning:
'.' - Matches any AS number.
'^n' - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path.
'n$' - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path.
'[n1... n2]' - Matches any AS number that appeared in the set n1...
n2.
'n1 - n2' - Matches any AS number between the range of n1 and n2.
'()' - is supported to change the order of evaluation.
'n*' - Matches 0 or more occurrences of n, where n can be a set, range or AS number.
'n+' - Matches 1 or more occurrences of n, where n can be a set, range or AS number.
'n?' - Matches 0 or 1 occurrences of n, where n can be a set, range or number.
The following logical operators are evaluated in descending order:
'NOT' - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x.
'AND'- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y.
For example: The AS path "5 4 3 2 1", where 1 is the origin AS, would be match by any one of the following regular expressions:
1$,
^5,
4 3,
5 3 - 4*,

5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4.* 1
Empty regular expression implies a match on all AS path.

Mib: Bgp

Values: String (0..255, ASCII)

Default: No default

ATTRIBUTE Vr Ip Bgp Export communityExpression (comExpr)

Access: Read and write

Description: This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280.
The basic syntax of a regular expression is a list of Community number separated by a space which making up a Community attribute.
The following characters have a special meaning:
‘[n1... n2]’ - Matches any Community number that appeared in the
set n1...n2.
‘n1 - n2’ - Matches any Community number between the range of n1 and n2.
‘()’ - is supported to change the order of evaluation.
‘n*’ - Matches 0 or more occurrences of n, where n can be a set, range or Community number.
‘n+’ - Matches 1 or more occurrences of n, where n can be a set, range or Community number.
‘n?’ - Matches 0 or 1 occurrences of n, where n can be a set, range or number.
The following logical operators are evaluated in descending order:
‘NOT’ - Given a regular expression x, NOT x matches the Community attribute that is not matched by x.
‘AND’- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y.
‘OR’ - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are

matched by x and those are matched by y.
For example: The Community path “1 2 3 4 5” would be match by any one of the following regular expression:
1,
5,
4 3,
2 3 - 4*,
1 [3 4 2]+,
not (6 7 8 9 10) and 1 2
Empty regular expression implies a match on all Community path.

Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Export expressPreference (exprPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *expressAsPath* and *expressCommunity.* This attribute is ignored if attributes *expressAsPath* and *expressCommunity* are both empty. This attribute is used to break the tie when two export policies’ expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy.
Mib	Bgp
Values	Decimal (0..255)
Default	128

ATTRIBUTE Vr Ip Bgp Export sendCommunity (sendCom)

Access	Read and write
Description	This attribute indicates which community number this export policy will send along with the Path Attribute. Refer to RFC 1997 for the detailed description of how this attribute may be used to pass additional information to BGP peers. If the value is set to 0, no community is added to the Community attribute.

Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Export localPreference (locPrf)

Access	Read and write
Description	This attribute specifies the value of the LOCAL_PREFERENCE path attribute in routes sent to internal peers. A value of 0 means that the value specified in the import policy (if any) or the default local preference value should be used.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip Bgp Export virtualPrivateNetworkIdentifier (vpnId)

Access	Read and write
Description	This attribute specifies the Virtual Private Network (VPN) identifier of the routes this export policy should apply to. This attribute is only used if *addressFamily* has included ***mbgpVpn***. The value “00-00-00-00-00-00-00” identifies an unspecified VPN ID, meaning the VPN ID will not be used as a matching criteria in this export policy.
Mib	Bgp
Values	String (7, Dashed Hex)
Default	00-00-00-00-00-00-00

ATTRIBUTE Vr Ip Bgp Export addressFamily (af)

Access	Read and write
Description	This attribute specifies the Address Family of the routes this export policy should apply to. It consists of both the Address Family Identifier (AFI) and the Subsequent Address Family Identifier (SAFI). An export policy is applied for AFI/SAFI = 1/128 only when this attribute is set to ***ipv4MplsVpn***. In this case

only *peerIpAddress*, *routeTarget*, and *advertiseStatus* attributes and *Network* component and its related attributes are used for export policies.

It can contain one of the following:

ipv4Unicast represents AFI = 1 and SAFI = 1
mbgpVpn represents AFI = 1 and SAFI = 141
ipv4MplsVpn represents AFI = 1 and SAFI = 128
all

Mib	Bgp
Values	all ipv4Unicast mbgpVpn ipv4MplsVpn
Default	all

ATTRIBUTE Vr Ip Bgp Export description (desc)

Access	Read and write
Description	This attribute describes the policy. For example, ‘to export BGP routes to MCI’.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Export insertDummyAs (insertAs)

Access	Read and write
Description	This attribute specifies the AS number(s) to be inserted into the AS Path Attribute. The value is a sequence of AS number separated by period(.). For example, if the value is ***20.20.30***, the AS numbers 20, 20 and 30 would be inserted at the end of the AS Path Attribute just before the local AS number.
Mib	Bgp
Values	Integer Sequence

Default	No default

ATTRIBUTE Vr Ip Bgp Export routeTarget (rt)

Access	Read and write
Description	This attribute specifies the Route Target of the routes this export policy should apply to.
Mib	Bgp
List of	String (3..21, RFC2547RdRtSyntax)
List Size	256
Default	No default

COMPONENT Vr Ip Bgp Export Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Bgp Export Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Export/n Network/n* *Rtr/<string> Bgp Export/n Network/n* *Rtr/<string> Vrf/<string> Export/n Network/n* This is an optional subcomponent of the *Export* component and identifies a destination network that this BGP export policy will apply to. This component is used as a key for the export policy. If no network list is provisioned, the export policy applies to all networks. This component and its associated attributes are applied in an export policy for AFI/SAFI = 1/128 only if *addressFamily* attribute is set to ***ipv4MplsVpn***.
Mib	Bgp
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Bgp Export Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the set of provisionable attributes for the *Network* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Export Net prefix

Access	Read and write
Description	This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Export Net length

Access	Read and write
Description	This attribute specifies the length of the network prefix.
Mib	Bgp
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Vr Ip Bgp As

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Bgp As Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp As/n* *Rtr/<string> Bgp As/n*

	Rtr/<string> Vrf/<string> Bgp As/n This component associates attributes to an autonomous system.
Mib	Bgp
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Bgp As Provisioned (Prov)

Properties	Provisioned
Description	This group contains the attributes associated to each autonomous system for this *Bgp* component instance.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp As weight

Access	Read and write
Description	This attribute specifies the weight for an autonomous system. It allows users to prefer some ASes over others. It is used in route selection. Lowest weight is preferred. Setting the weight of an AS to 255 will make any route that traverses through that AS unpreferred.
Mib	Bgp
Values	Decimal (0..255)
Default	128

COMPONENT Vr Ip Bgp AggregatePolicy (Aggregate)

Instance	prefix [IP address] length [Decimal (0..32)]
Scope	Application
Description	*Vr/<string> Ip Bgp AggregatePolicy/<Ip Address>,<Decimal>* *Rtr/<string> Bgp AggregatePolicy/<Ip Address>,<Decimal>*

Rtr/<string> Vrf/<string> Bgp AggregatePolicy/<Ip Address>,<Decimal>

This component is used to perform aggregation of BGP routes for exporting. Aggregation is the process of combining the characteristics of several different routes in such a way that a single route can be advertised. Aggregation reduces the amount of information that a BGP speaker must store and exchange with other BGP speakers. Refer to RFC1771 for the set of rules regarding which routes can be aggregated.

A ***network*** subcomponent is automatically added with the same network range as the aggregation policy key and its action is set to ***aggregate***. So by default all subnets under the aggregation key range will be aggregated.

Examples (For *Router* and *Vrf*, the examples are similar by replacing 'vr/0 ip' with 'Router/a' and 'Router/a Vrf/b' respectively):

Example #1: aggregate all the networks covered by A.0.0.0/8
add vr/0 ip bgp aggregate/A.0.0.0,8
(Note: the following subcomponent vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.0.0.0, length 8, action aggregate will be automatically added)

Example #2: aggregate A.B.0.0/16 and A.C.0.0/16 as A.0.0.0/8 and advertise other networks
add vr/0 ip bgp aggregate/A.0.0.0,8
set vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.B.0.0, length 16, action aggregate
(Note: this set command will overwrite the default network subcomponent
vr/0 ip bgp aggregate/A.0.0.0,8 network/0 prefix A.0.0.0, length 8, action aggregate)
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.C.0.0, length 16, action aggregate

Example #3: aggregate A.B.0.0/16 and A.C.0.0/16 as A.0.0.0/8 and advertise other networks; also advertise A.B.C.0/24
add vr/0 ip bgp aggregate/A.0.0.0,8
set vr/0 ip bgp aggregate/A.0.0.0,8 networkl/0 prefix A.B.0.0, length 16, action aggregate
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1

set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.C.0.0, length 16, action aggregate
add vr/0 ip bgp aggregate/A.0.0.0,8 network/2
set vr/0 ip bgp aggregate/A.0.0.0,8 network/2 prefix A.B.C.0, length 24, action advertise

Example #4: aggregate all networks under A.0.0.0/8, meanwhile advertise A.B.0.0/16
add vr/0 ip bgp aggregate/A.0.0.0,8
add vr/0 ip bgp aggregate/A.0.0.0,8 network/1
set vr/0 ip bgp aggregate/A.0.0.0,8 network/1 prefix A.B.0.0, length 16, action advertise

Mib	Bgp
Opt. Subcomp.	"COMPONENT Vr Ip Bgp Aggregate Network (Net)"
Common Verbs	Help List Display Add DELete

COMPONENT Vr Ip Bgp Aggregate Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip Bgp Aggregate Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Bgp Aggregate/<IP address>,<n> Network/n* *Rtr/<string> Bgp Aggregate/<IP address>,<n> Network/n* *Rtr/<string> Vrf/<string> Bgp Aggregate/<IP address>,<n> Network/n* This is an optional subcomponent of *Aggregate* component and

identifies a set of more specific routes that this BGP will aggregate or advertise together with the aggregated route.

Mib: Bgp

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Ip Bgp Aggregate Net Provisioned (Prov)

Properties: Provisioned

Description: This group contains the set of provisionable attributes for the *Network* component.

Mib: Bgp

ATTRIBUTE Vr Ip Bgp Aggregate Net prefix

Access: Read and write

Description: This attribute specifies the network prefix whose length is determined by the *length* attribute under the same *Network* component.

Mib: Bgp

Values: IP address

Default: 0.0.0.0

ATTRIBUTE Vr Ip Bgp Aggregate Net length

Access: Read and write

Description: This attribute specifies the length of the network prefix.

Mib: Bgp

Values: Decimal (0..32)

Units: bits

Default: 0

ATTRIBUTE Vr Ip Bgp Aggregate Net protocol

Access	Read and write
Description	This attribute specifies the IP protocols to which this route should belong.
Mib	Bgp
Values	all egp rip ospfInternal ospfExternal staticLocal staticRemote bgpInternal bgpExternal
Default	all

ATTRIBUTE Vr Ip Bgp Aggregate Net egpAsId (egpAs)

Access	Read and write
Description	This attribute specifies an EGP autonomous system number. When this value is non-zero, the *protocol* attribute must be set to either ***egp*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if it is learned through egp and this attribute matches the EGP autonomous system number where the network is learned from. The default value 0 indicates that the EGP autonomous system number is not specified.
Mib	Bgp
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Bgp Aggregate Net bgpAsId (bgpAs)

Access	Read and write

Description	This attribute specifies the BGP autonomous system number. When this value is non-zero, the *protocol* attribute must be set to either ***bgp*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if it is learned through BGP and this attribute matches the BGP autonomous system number where the network is learned from. The default value 0 indicates that the BGP autonomous system number is not specified.
Mib	Bgp
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip Bgp Aggregate Net ospfTag

Access	Read and write
Description	This attribute specifies the OSPF tag. When this attribute is set to a value other than the default value FFFFFFFF in hex, the *protocol* attribute must be set to either ***ospf*** or to ***all***. And this more specific route will be advertised together with the aggregated route only if its OSPF tag matches this value. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag is not specified.
Mib	Bgp
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Vr Ip Bgp Aggregate Net ripInterface (ripIf)

Access	Read and write
Description	This attribute specifies a local RIP interface which should be equal to one of the IP addresses provisioned as a *logicalIf* component under *IpPort*, or one of the IP addresses provisioned as an *Interface* component.

	When this value is non-zero, the value of the *protocol* attribute must be either set to ***rip*** or to ***all.*** And this more specific route will be advertised together with the aggregated route only if it is learned through RIP and this RIP interface. The default value 0.0.0.0 indicates that the RIP interface is not specified.
Mib	Bgp
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Bgp Aggregate Net action

Access	Read and write
Description	This attribute specifies whether this network should be aggregated or advertised out.
Mib	Bgp
Values	aggregate advertise
Default	aggregate

COMPONENT Vr Ip Bgp IndbEntry (Indb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Vr Ip Bgp Indb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string>Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Vrf/<string> Bgp IndbEntry/<Ip Address>,<Decimal>,<Ip Address>*

	This component describes a BGP route received from one of its peers.
Mib	Bgp
Common Verbs	Help List Display

GROUP Vr Ip Bgp Indb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *IndbEntry* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Indb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.
Mib	Bgp
Values	igp egp incomplete
Default	No default

ATTRIBUTE Vr Ip Bgp Indb inLocaldb

Access	Read only
Description	This attribute indicates whether or not this route was chosen as the best BGP4 route.
Mib	Bgp
Values	false true

Default	No default

ATTRIBUTE Vr Ip Bgp Indb nextHop

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Indb localPreference

Access	Read only
Description	This attribute indicates our IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb calcLocalPref

Access	Read only
Description	This attribute indicates our degree of preference for this route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb multiExitDiscriminator (med)

Access	Read only

Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Vr Ip Bgp Indb aggregatorAs

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	Bgp

Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Indb asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	Bgp
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Indb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator in the local AS. A value of 0.0.0.0

	indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Indb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. A blank list indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	Bgp
List of	IP address
List Size	256
Default	No default

COMPONENT Vr Ip Bgp LocaldbEntry (Localdb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Vr Ip Bgp Localdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Vrf/<string> Bgp LocaldbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes an entry in the BGP local database. This database contains the routing information that the BGP

speaker has selected by applying its local import policies and decision process to the routing information stored in *IndbEntry*.

Mib: Bgp

Common Verbs: Help, List, Display

GROUP Vr Ip Bgp Localdb Operational (Oper)

Properties: Operational

Description: This group contains all the operational attributes of the *LocaldbEntry* component.

Mib: Bgp

ATTRIBUTE Vr Ip Bgp Localdb origin

Access: Read only

Description: This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.

Mib: Bgp

Values: igp, egp, incomplete

Default: No default

ATTRIBUTE Vr Ip Bgp Localdb nextHop

Access: Read only

Description: This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.

Mib: Bgp

Values: IP address

Default: No default

ATTRIBUTE Vr Ip Bgp Localdb localPreference

Access	Read only
Description	This attribute indicates our IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb aggregatorAs

Access	Read only

Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	Bgp
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	Bgp
Values	String (0..255, ASCII)

Default	No default

ATTRIBUTE Vr Ip Bgp Localdb communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator in the local AS. A value of 0.0.0.0 indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Localdb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. A blank list indicates this attribute is not present in the learned IBGP route or if this *Bgp* instance is not a Route Reflector.
Mib	Bgp
List of	IP address
List Size	256
Default	No default

COMPONENT Vr Ip Bgp OutdbEntry (Outdb)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Vr Ip Bgp Outdb Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* *Rtr/<string> Vrf/<string> Bgp OutdbEntry/<Ip Address>,<Decimal>,<Ip Address>* This component describes an entry in the BGP output database that BGP advertises to its peers. The database contents are selected by applying its local export policies to the routing information stored in the IP forwarding table.
Mib	Bgp
Common Verbs	Help List Display

GROUP Vr Ip Bgp Outdb Operational (Oper)

Properties	Operational
Description	This group contains all the operational attributes of the *OutdbEntry* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp Outdb origin

Access	Read only
Description	This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.

Mib	Bgp
Values	igp egp incomplete
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb nextHop

Access	Read only
Description	This attribute indicates the IP address of the border router that should be used as the next hop for the destination network.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb localPreference

Access	Read only
Description	This attribute indicates this *Bgp* instance's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route without selecting a more specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb aggregatorAs

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb asPath

Access	Read only

Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	Bgp
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb asOriginatorId

Access	Read only
Description	This attribute is associated with the Route Reflector. It indicates the router-id of the originator of a route in the local AS. When the Route Reflector distributes a learned IBGP route to other IBGP speakers, the value of this attribute in the learned route is used if one is present; otherwise, the Route Reflector's router-id is used. A value of 0.0.0.0 indicates this *Bgp* instance is not a Route Reflector.
Mib	Bgp

Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp Outdb rrClusterList

Access	Read only
Description	This attribute indicates a sequence of cluster-ids that the route has traversed. When the Route Reflector redistributes a learned IBGP to other IBGP speakers, the cluster id of this Route Reflector is appended to the cluster list of the learned IBGP route. If this *Bgp* instance is not a Route Reflector, this attribute is blank.
Mib	Bgp
List of	IP address
List Size	256
Default	No default

COMPONENT Vr Ip Bgp LocalVpn

Instance	String (7, Dashed Hex)
Scope	Application
Description	*Vr*/<string> *Ip Bgp LocalVpn*/<Vpn id> This component contains all VPN information from the specified VPN that is learned from customer VR on the local node.
Mib	Bgp
Dyn. Subcomp.	"COMPONENT Vr Ip Bgp LocalVpn Ipv4"
Common Verbs	Help List Display

COMPONENT Vr Ip Bgp LocalVpn Ipv4

Instance	IP address
Groups	"GROUP Vr Ip Bgp LocalVpn Ipv4 Operational (Oper)"

Scope	Application
Description	*Vr*/<string> *Ip Bgp LocalVpn*/<Vpn id> *Ipv4* This component contains all IPv4 tunnel based VPN information gathered by this BGP locally for the specified VPN.
Mib	Bgp
Common Verbs	Help List Display

GROUP Vr Ip Bgp LocalVpn Ipv4 Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Ipv4* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp LocalVpn Ipv4 publicIpAddress

Access	Read only
Description	This attribute indicates the public IP Address for the remote IP VPN tunnel endpoint. It is used to encapsulate IP packets from the local IP VPN site to the remote site.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp LocalVpn Ipv4 vpnPeeringTopology

Access	Read only
Description	This attribute indicates the peering mode of the remote customer BGP from which this VPN information is originated. This mode determines if a dynamic IBGP peer is instantiated between this *BGP* instance and the remote IP Tunnel endpoint on the remote customer VR. A ***none*** value specifies that BGP never instantiate dynamic IBGP peers.

Dynamic IBGP peer is instantiated between two customer VR in the same VPN if and only if at least one end is configured with a ***hub*** value and the other is either configured with a ***hub*** or a ***spoke*** value.

In any case; static BGP peers may be configured and overwrite the dynamic ones after auto-discovery has taken place. If auto-discovery is enabled when static peers already present between VPN sites, no dynamic peers with the same provisioned peer instance will be instantiated regardless of the configured value of the attribute.

Mib: Bgp

Values:
none
hub
spoke

Default: No default

COMPONENT Vr Ip Bgp MBgpRibEntry (MBgpRib)

Instance:
vpnId [String (7, Dashed Hex)]
prefix [IP address]
length [Decimal (0..32)]
peer [IP address]

Groups: "GROUP Vr Ip Bgp MBgpRib Operational (Oper)"

Scope: Application

Description:
Vr/<string> Ip Bgp MBgpRibEntry/ <vpnid>,<prefix>,<length>,<peer_ip_address>
This component represents a single MBGP routing database entry received from one of the BGP peers of this virtual router.

The instance values of this component have the following meanings:
- *vpnId:* the virtual private network identifier associated with the MBGP route.
- *prefix*: the destination IP address prefix of the MBGP route.
- *length:* the length of the IP address prefix of the MBGP route.
- *peer_ip_address:* the IP address prefix of the BGP peer that the

MBGP route has been learned from. A value of 0.0.0.0 indicates that the MBGP route is learned from a locally attaching customer VR.

This component only appears under a *VirtualRouter* component whose *vpnMode* attribute is set to ***carrier***.

Mib: Bgp

Common Verbs: Help, List, Display

GROUP Vr Ip Bgp MBgpRib Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *MBgpRibEntry* component.

Mib: Bgp

ATTRIBUTE Vr Ip Bgp MBgpRib origin

Access: Read only

Description: This attribute indicates the ultimate origin of the path information. A value of ***incomplete*** means this information is not available.

Mib: Bgp

Values: igp, egp, incomplete

Default: No default

ATTRIBUTE Vr Ip Bgp MBgpRib status

Access: Read only

Description: This attribute indicates whether the MBGP route has been distributed into the routing table of the customer VR corresponding to the VPN identifier value.

Mib	Bgp
Values	localVpnRoute inCvrRdb importBlocked importLimitExceeded unreachableNh
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib nextHop

Access	Read only
Description	This attribute indicates the IP address of the router that should be used as the next hop to reach the destination address prefix given by the instance value of this component.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib localPreference

Access	Read only
Description	This attribute indicates the local IBGP peer's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib aggregatorAs

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of zero (0) indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of 0.0.0.0 indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib asPath

Access	Read only
Description	This attribute indicates the sequence of AS path segments. The AS Path Attribute lists the ASs in reverse traversal order.
Mib	Bgp
Values	String (2..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp MBgpRib unknownAttributes (unknown)

Access	Read only
Description	This attribute indicates all the path attributes not understood by this *Bgp* component instance.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

COMPONENT Vr Ip Bgp MplsVpnRibEntry (MvRib)

Instance	routeDistinguisher [String (3..21, RFC2547RdRtSyntax)] prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Vr Ip Bgp MvRib Operational (Oper)"
Scope	Application

Description

Vr/<string> Ip Bgp MplsVpnRibEntry/
<routeDistinguisher>,<prefix>,<length>,<peerIpAddr>
Rtr/<string> Ip Bgp MplsVpnRibEntry/
<routeDistinguisher>,<prefix>,<length>,<peerIpAddr>
The *MplsVpnRibEntry* component represents a single entry in the MPLS VPN routing information database.This component is used to maintain the MPLS VPN routes learned both locally and from the BGP peers.

The instance values of this component have the following meaning:
- *routeDistinguisher:* a string associated with the MPLS VPN route.
The string is in the form of (1) AS:nn or (2) IPAddr:mm.
where
AS represents an autonomous system number,
nn represents an index value,
IPAddr represents an IP address,
mm represents an index value

- *prefix*: the destination IP address prefix of the MPLS VPN route. This is an IP address prefix as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute.

- *length:* the length of the IP address prefix of the MPLS VPN route. This is the IP address prefix length as specified in the Network Layer Reachability Information field.

- peerIpAddr: the IP address prefix of the BGP peer that the MPLS VPN route has been learned from.

This component is only applicable to the *Router* component or a virtual router whose *vpnMode* attribute is set to ***carrier***.

Mib: Bgp

Common Verbs:
- Help
- List
- Display
- LOCK
- Unlock

GROUP Vr Ip Bgp MvRib Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes of the *BgpMplsRibEntry* component.

Mib: Bgp

ATTRIBUTE Vr Ip Bgp MvRib serviceLabel (sl)

Access: Read only

Description: This attribute indicates the service label (the inner label in a two-level MPLS label stack) allocated by the Provider Edge (PE) node and distributed together with the routing information toward the remote end PE. The service label is then used by the remote PE node to encapsulate traffic of the same VPN to the local PE node. When the local PE node processes a received packet which has the service label at the top of the stack, the PE pops the stack, and sends the packet to the Customer Edge (CE) node from which the route leads. (See also transportLabel attribute description.)

Mib: Bgp

Values: Decimal (0..1048575)

Default: No default

ATTRIBUTE Vr Ip Bgp MvRib transportLabel (tl)

Access: Read only

Description	This attribute indicates the transport label (the outer label in a two-level MPLS label stack) allocated by the Provider Edge (PE) node. The transport label identifies the MPLS tunnel (Labeled Switched Path) used to transport the service label encapsulated VPN traffic, between two PE nodes, through the backbone. The transport label is applied on top of the service label at the source PE node, and used to direct the VPN traffic (travelling through the network core) to the destination PE. At the destination PE node the transport label is stripped, leaving the service label encapsulated packet to be processed and forwarded to a CE node based on the service label. A value of ***awaitingLabel*** indicates the MPLS tunnel is currently not available and waiting to be established. A value of ***notApplicable*** indicates this is a local route and hence doesn't have a transport label.
Mib	Bgp
Values	Decimal (0..1048575) awaitingLabel notApplicable
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib reachable (reach)

Access	Read only
Description	This attribute indicates whether a route is currently reachable through an LSP tunnel.
Mib	Bgp
Values	true false
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib bgpNextHop (bgpNh)

Access	Read only
Description	This attribute indicates the bgp next hop IP address that should be used to reach the destination address prefix.

Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib origin

Access	Read only
Description	This attribute indicates the value of the ORIGIN path attribute of the route. A value of ***incomplete*** means that this information is not available.
Mib	Bgp
Values	igp egp incomplete
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib localPreference (locPrf)

Access	Read only
Description	This attribute indicates the LOCAL_PREFERENCE path attribute of the route. The LOCAL_PREFERENCE path attribute is used by a BGP speaker to inform other BGP speakers in its own autonomous system of the originating speaker's degree of preference for an advertised route. A higher value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib asPath

Access	Read only
Description	This attribute indicates the AS_PATH path attribute of the route. The AS_PATH path attributes lists the sequence of AS path segments in reverse traversal order.

Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib aggregatorAs

Access	Read only
Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of ***0*** indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of ***0.0.0.0*** indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp MvRib siteOfOrigin (soo)

Access	Read only
Description	This attribute indicates the site of origin extended community path attribute.
Mib	Bgp
Values	String (0..21, ASCII)
Default	No default

COMPONENT Vr Ip Bgp Ipv4LabelRibEntry (LRib)

Instance	prefix [IP address] length [Decimal (0..32)] peer [IP address]
Groups	"GROUP Vr Ip Bgp LRib Operational (Oper)"
Scope	Application

Description	*Rtr/<string> Bgp ipv4LabelRibEntry/<prefix>,<length>,<peer>* The *ipv4LabelRibEntry* component represents a single entry in the routing information database which maintains the ipv4 labelled BGP routes learned both locally and remotely from the BGP peers. - *prefix*: the destination IP address prefix of the ipv4 labelled BGP route. This is an IP address prefix as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute. - *length*: the length of the IP address prefix of the ipv4 labelled BGP route. This is the IP address prefix length as specified in the Network Layer Reachability Information field of the MP_REACH_NLRI path attribute. - *peer*: the IP address of the BGP peer from which the ipv4 labelled BGP route was learned. This component is only applicable to the *Bgp* component whose *Bgp Peer Descriptor addressFamily* attribute is set to ***ipv4Label***.
Mib	Bgp
Common Verbs	Help List Display

GROUP Vr Ip Bgp LRib Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *ipv4LabelRibEntry* component.
Mib	Bgp

ATTRIBUTE Vr Ip Bgp LRib nextHop (nh)

Access	Read only
Description	This attribute indicates the IP address of the next hop that should be used to reach the destination address.

Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp LRib inLabel (il)

Access	Read only
Description	This attribute indicates the label (if any) assigned by this Bgp speaker. The default value will be '*notApplicable*'.
Mib	Bgp
Values	Decimal (0..1048575) notApplicable
Default	No default

ATTRIBUTE Vr Ip Bgp LRib outLabel (ol)

Access	Read only
Description	This attribute indicates the label (if any) assigned by the next hop Bgp speaker. The default value will be '*notApplicable*'.
Mib	Bgp
Values	Decimal (0..1048575) notApplicable
Default	No default

ATTRIBUTE Vr Ip Bgp LRib origin

Access	Read only
Description	This attribute indicates the value of the ORIGIN path attribute of the route. A value of ***incomplete*** means that this information is not available.
Mib	Bgp
Values	igp egp incomplete

Default	No default

ATTRIBUTE Vr Ip Bgp LRib asPath

Access	Read only
Description	This attribute indicates the AS_PATH path attribute of the route. The AS_PATH path attribute lists the sequence of AS path segments in reverse traversal order.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp LRib multiExitDiscriminator (med)

Access	Read only
Description	This attribute indicates a metric used to discriminate between multiple exit points to the same adjacent autonomous system. A lower value indicates a more preferred route.
Mib	Bgp
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Bgp LRib atomicAggregate

Access	Read only
Description	This attribute indicates whether or not the local system has selected a less specific route.
Mib	Bgp
Values	lessSpecificRouteNotSelected lessSpecificRouteSelected
Default	No default

ATTRIBUTE Vr Ip Bgp LRib aggregatorAs

Access	Read only

Description	This attribute indicates the AS number of the last BGP4 speaker that performed route aggregation. A value of ***0*** indicates the absence of this path attribute.
Mib	Bgp
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vr Ip Bgp LRib aggregatorAddr

Access	Read only
Description	This attribute indicates the IP address of the last BGP4 speaker that performed route aggregation. A value of ***0.0.0.0*** indicates the absence of this path attribute.
Mib	Bgp
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Bgp LRib communityPath

Access	Read only
Description	This attribute indicates the Community path attribute.
Mib	Bgp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip Bgp LRib siteOfOrigin (soo)

Access	Read only
Description	This attribute indicates the site of origin extended community path attribute.
Mib	Bgp
Values	String (0..21, ASCII)
Default	No default

COMPONENT Vr Ip SecurityPolicyDatabase (Spd)

Instance	String (1..20, ASCII)
Groups	"GROUP Vr Ip Spd Provisioned (Prov)" "GROUP Vr Ip Spd Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Ip SecurityPolicyDatabase/<string>* The *SecurityPolicyDatabase* component represents a set of policies collectively known as the security policy database (SPD), which is used for applying and bypassing IPSec services. At most one *Spd* instance is allowed for a virtual router. Only the management virtual router can have a security policy database.
Mib	IpSec
Opt. Subcomp.	"COMPONENT Vr Ip Spd Policy"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Spd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *SecurityPolicyDatabase* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd alarmOnViolation

Access	Read: All Write: System_admin
Description	This attribute specifies whether an alarm is generated when a security violation is detected by this security policy database.

	Examples of security violations include policy mismatch and authentication failure.
Mib	IpSec
Values	enabled disabled
Default	enabled

GROUP Vr Ip Spd Statistics (Stats)

Properties	Operational
Description	This group contains statistics for the *SecurityPolicyDatabase* component. These counts cannot be associated with individual SAs, so they are aggregated under the *SecurityPolicyDatabase* component. Counts that can be associated with a particular SA are defined under the *Sa* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd outDiscards

Access	Read only
Description	This attribute counts the packets discarded by an outbound security policy. This count includes packets that are discarded because they have no matching security policy; the default security policy action is always discard. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd inSaLookupFailures

Access	Read only
Description	This attribute counts the inbound packets for which an SA could not be found.

	The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd inDiscards

Access	Read only
Description	This attribute counts the packets discarded because the Security Parameter Index (SPI) in the packet is unknown, or no SA is found with matching selectors. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd inMismatch

Access	Read only
Description	This attribute counts the packets discarded due to a mismatch between the packet and what the security policy dictates. An example of a mismatch is when a packet is received on a security enabled management virtual router in the clear (no security services applied), but the security policy for that VR specifies that this packet should have an applied security service. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd outBytes

Access	Read only
Description	This attribute counts the bytes processed, including discarded packets. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd outPackets

Access	Read only
Description	This attribute counts the packets processed, including discarded packets. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd inBytes

Access	Read only
Description	This attribute counts the bytes processed, including discarded packets. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd inPackets

Access	Read only

Description	This attribute counts the packets processed, including discarded packets. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

COMPONENT Vr Ip Spd Policy

Instance	Decimal (1..65535)
Groups	"GROUP Vr Ip Spd Policy Selectors" "GROUP Vr Ip Spd Policy Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Spd/<string> Policy/n* The *Policy* component defines an IPSec policy to be applied for a virtual router. An IPSec policy is defined by the following parameters: 1. The selector criteria specifying packets to which the security policy is to be applied. 2. The action taken when a packet matches the security policy selectors. Up to 4096 policies are allowed for each instance of the *SecurityPolicyDatabase* component. The instance value of the *Policy* component specifies the policy's precedence. Policy lookup occurs in the order of increasing precedence value. If no match is found, the packet is discarded. It is recommended that the instance values of consecutive *Policy* components be separated by more than 1 (say 10). This allows a new *Policy* component to be added whose precedence value is intermediate between two existing policies. Each *Policy* component instance has an associated direction:

inbound or outbound.
- An inbound *Policy* instance corresponds to an entry in the inbound security policy database (SPD), as referred to in RFC 2401. IPSec traffic received on the management virtual router, is matched against inbound policies.
- An outbound *Policy* instance corresponds to an entry in the outbound SPD, as referred to in RFC 2401. Locally generated traffic is matched against outbound policies.

The *Policy* component allows the operator to distinguish a flow based on:
1. destination IP address,
2. source IP address,
3. layer 4 (transport) protocol, and
4. for TCP and UDP, the source and destination port numbers.

Mib: IpSec

Mib: "COMPONENT Vr Ip Spd Policy SecurityAssociation (Sa)"

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Ip Spd Policy Selectors

Properties: Provisioned

Description: This group contains the selector attributes of the *Policy* component. These attributes specify the criteria that a packet must match for the policy to be applied.

Mib: IpSec

ATTRIBUTE Vr Ip Spd Policy protocol (proto)

Access: Read: All
Write: System_admin

Description: This attribute specifies the layer 4 (transport) protocol to which the policy applies.

Mib	IpSec
Values	Decimal (2..3; 5; 7; 9..16; 18..49; 51..88; 90..255) any icmp ip tcp egp udp esp ospf
Default	any

ATTRIBUTE Vr Ip Spd Policy srcPort (sPort)

Access	Read: All Write: System_admin
Description	This attribute specifies the source TCP or UDP port number for traffic flows to which the policy applies. A value of ***any*** specifies that any port number matches the policy. If the *protocol* attribute value is not ***tcp***, ***udp*** or ***any***, then this attribute must be set to ***any***.
Mib	IpSec
Values	Decimal (1..19; 22; 24..122; 124..160; 162..519; 521..1811; 1813..5927; 5929..65535) any ftpdata ftp telnet ntp snmp rip radius fmip
Default	any

ATTRIBUTE Vr Ip Spd Policy dstPort (dPort)

Access	Read: All Write: System_admin
Description	This attribute specifies the destination TCP or UDP port number for traffic flows to which the policy applies. ***any*** specifies that any port number matches the policy. If the *protocol* attribute value is not ***tcp***, ***udp*** or ***any***, then this attribute must be set to ***any***.
Mib	IpSec
Values	Decimal (1..19; 22; 24..122; 124..160; 162..519; 521..1811; 1813..5927; 5929..65535) any ftpdata ftp telnet ntp snmp rip radius fmip
Default	any

ATTRIBUTE Vr Ip Spd Policy srcIpAddress (sAddr)

Access	Read: All Write: System_admin
Description	This attribute specifies the source IP address for traffic flows to which the policy applies. The address can be a host address, a range or a wildcard: - To specify a host address, specify one value, which is the host address. - To specify a range of IP addresses, specify two values, which are the lower and upper bounds of the range. The order does not matter. - To specify a wildcard, leave the list empty.

Mib	IpSec
List of	IP address
List Size	2
Default	No default

ATTRIBUTE Vr Ip Spd Policy dstIpAddress (dAddr)

Access	Read and write
Description	This attribute specifies the destination IP address for traffic flows to which the policy applies. The address can be a host address, a range or a wildcard: - To specify a host address, specify one value, which is the host address. - To specify a range of IP addresses, specify two values, which are the lower and upper bounds of the range. The order does not matter. - To specify a wildcard, leave the list empty.
Mib	IpSec
List of	IP address
List Size	2
Default	No default

GROUP Vr Ip Spd Policy Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Policy* component related to its treatment.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Policy direction

Access	Read: All Write: System_admin
Description	This attribute specifies the direction of the policy: - ***inbound***: this policy is to be matched against locally destined

traffic received on the management virtual router.
- *outbound*: this policy is to be matched against traffic that is generated by the management virtual router.

Mib: IpSec

Values: inbound (in)
outbound (out)

Default: No default

ATTRIBUTE Vr Ip Spd Policy action

Access: Read: All
Write: System_admin

Description: This attribute specifies the action to be taken when a packet is received that matches the selectors for this policy. The value can be one of the following:

- *discard*: the packet is to be discarded.
- *bypass*: no security is to be applied to the packet. Instead the packet is forwarded as usual.
- *apply*: the security service specified by the *Sa* subcomponent is applied to the packet. *Check Prov* will fail if the *action* is ***apply*** and there is no *Sa* subcomponent.

Mib: IpSec

Values: discard
bypass
apply

Default: apply

ATTRIBUTE Vr Ip Spd Policy description

Access: Read: All
Write: System_admin

Description: This attribute specifies a meaningful name or description for the *Policy* instance.

Mib: IpSec

Values: String (0..20, ASCII)

Default	""

COMPONENT Vr Ip Spd Policy SecurityAssociation (Sa)

Instance	secDestination [IP address] secProtocol [esp] spi [Decimal (256..4095)]
Groups	"GROUP Vr Ip Spd Policy Sa Operational (Oper)" "GROUP Vr Ip Spd Policy Sa Statistics (Stats)" "GROUP Vr Ip Spd Policy Sa Selectors"
Scope	Application
Description	*Vr/<string> Ip Spd/<string> Policy/<string> SecurityAssociation/<secDestination, secProtocol, spi>*
Mib	IpSec
Subcomponents	"COMPONENT Vr Ip Spd Policy Sa ManualEspSa (ManEspSa)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Spd Policy Sa Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for this *Sa* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Policy Sa direction

Access	Read only
Description	This attribute indicates the traffic direction for which this *Sa* component is used.
Mib	IpSec

Values	inbound outbound
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa upTime

Access	Read only
Description	This attribute indicates the time elapsed since this *Sa* component was created.
Mib	IpSec
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

GROUP Vr Ip Spd Policy Sa Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attributes of this *Sa*.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Policy Sa decryptErrors

Access	Read only
Description	This attribute counts the packets for which decryption errors were encountered for this *Sa* component. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa authErrors

Access	Read only
Description	This attribute counts the authentication errors encountered for this *Sa* component.

	The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa byteCount

Access	Read only
Description	This attribute counts the bytes processed for this *Sa* component. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Units	bytes
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa policyErrors

Access	Read only
Description	This attribute counts the security packets received on this *Sa* component which do not match the defined Security Policy selectors. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa otherErrors

Access	Read only
Description	This attribute counts the security packets received on this *Sa* component for which an error is encountered other than those described previously.

	The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa packetCount

Access	Read only
Description	This attribute counts the packets processed for this *Sa* component. The count wraps to zero when it reaches the value 2 to the power 64.
Mib	IpSec
Values	Long Integer
Default	No default

GROUP Vr Ip Spd Policy Sa Selectors

Properties	Operational
Description	This group contains the selectors used for the *SecurityAssociation* component.
Mib	IpSec

ATTRIBUTE Vr Ip Spd Policy Sa protocol (proto)

Access	Read only
Description	This attribute indicates the layer 4 (transport) protocol to which the policy applies.
Mib	IpSec
Values	Decimal (2..3; 5; 7; 9..16; 18..49; 51..88; 90..255) any icmp ip tcp egp

	udp esp ospf
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa srcPort (sPort)

Access	Read only
Description	This attribute indicates the source TCP or UDP port number selector for the security association.
Mib	IpSec
Values	Decimal (1..19; 22; 24..122; 124..160; 162..519; 521..1811; 1813..5927; 5929..65535) any ftpdata ftp telnet ntp snmp rip radius fmip
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa dstPort (dPort)

Access	Read only
Description	This attribute indicates the destination TCP or UDP port number selector for the security association.
Mib	IpSec
Values	Decimal (1..19; 22; 24..122; 124..160; 162..519; 521..1811; 1813..5927; 5929..65535) any ftpdata ftp telnet ntp

	snmp rip radius fmip
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa srcIpAddress (sAddr)

Access	Read only
Description	This attribute indicates the source IP address selector for the security association.
Mib	IpSec
List of	IP address
List Size	2
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa dstIpAddress (dAddr)

Access	Read only
Description	This attribute indicates the destination IP address selector for the security association.
Mib	IpSec
List of	IP address
List Size	2
Default	No default

COMPONENT Vr Ip Spd Policy Sa ManualEspSa (ManEspSa)

Groups	"GROUP Vr Ip Spd Policy Sa ManEspSa Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Spd/<string> Policy/<string> Sa/ <secDestination, secProtocol, spi> ManualEspSa* The *ManualEspSa* component specifies the security parameters for the ESP protocol, including keys, to use between two peers.

No negotiation is performed between the peers.

When using manual keying, both ends of the IPsec session must be configured to match each other. The SPI value on one end must be the same as the SPI value on the other end. The *key* attributes on both ends must also be the same.

Mib IpSec

Common Verbs
Help
List
Display

GROUP Vr Ip Spd Policy Sa ManEspSa Provisioned (Prov)

Properties Provisioned

Description This group contains the provisionable attributes for the *ManualEspSa* component.

Mib IpSec

ATTRIBUTE Vr Ip Spd Policy Sa ManEspSa encAlgorithm (encAlg)

Access
Read: All
Write: System_admin

Description This attribute specifies the encryption algorithm to be used for this Encryption Security Protocol (ESP) security association (SA).

The following encryption algorithms are supported:
- ***des***: data encryption standard (DES), which is the most widely used algorithm
- ***3des***: encryption using DES three times.

3DES is a stronger encryption algorithm than DES.

If no ESP encryption is desired, set this attribute to ***none***.

At least one of *encAlg* and *authAlg* attribute must be specified; they cannot both be set to ***none***.

Mib	IpSec
Values	none des 3des
Default	3des

ATTRIBUTE Vr Ip Spd Policy Sa ManEspSa authAlgorithm (authAlg)

Access	Read: All Write: System_admin
Description	This attribute specifies the authentication algorithm to be used for this ESP security association (SA). The following authentication algorithms are supported: - ***md5***: message digest - ***sha1***: secure hash algorithm SHA-1 is considered stronger than MD5. If no ESP authentication is desired, set this attribute to ***none***. At least one of *encAlg* and *authAlg* attribute must be specified; they cannot both be set to ***none***.
Mib	IpSec
Values	none sha1 md5
Default	none

ATTRIBUTE Vr Ip Spd Policy Sa ManEspSa encKey

Access	Read: Illegal Write: System_admin
Description	This attribute specifies the symmetric encryption key to be used in the ESP protocol. When the *encAlgorithm* attribute is set to ***des***, the length of the

key must be 16 hex digits. When the *encAlgorithm* attribute is set to ***3des***, the length of the key must be 48 hex digits.

The key itself is stored in an encrypted form.

A warning is issued if the key is weak according to RFC 2409 Appendix A.

Mib	IpSec
Values	String (0..24, Hex)
Default	No default

ATTRIBUTE Vr Ip Spd Policy Sa ManEspSa authKey

Access	Read: Illegal Write: System_admin
Description	This attribute specifies the symmetric key to use for the keyed-hash function of the ESP protocol. When the *authAlgorithm* attribute is set to ***md5***, the length of the key must be 32 hex digits. When *authAlgorithm* attribute is set to ***sha1***, the length of the key must be 40 hex digits. The key itself is stored in an encrypted form.
Mib	IpSec
Values	String (0..24, Hex)
Default	No default

COMPONENT Vr Ip Filter (Filt)

Instance	String (1..20, ASCII)
Groups	"GROUP Vr Ip Filt Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip* Filter/<string> The Filter component specifies which set of IP packet flows are admitted at a protocol port.

A Filter component can be assigned to the Ip component and any number of the Pp IpPort components under the same Vr component. A Filter assigned to a Vr Ip component is associated by default with all of the protocol ports on the virtual router. A Filter assigned to a Vr Pp IpPort component is associated with the protocol port only. A Filter assigned at the port overrides a Filter assigned at the virtual router.

A Filter associated with a protocol port is applied to all ingress IP traffic at that port; it is not applied to egress traffic at that port. Filtering is performed prior to making the forwarding decision that determines the egress port where the packet will be transmitted.
If no Filter component is associated with a port (because there is neither an assignment to the Vr Ip component, nor an assignment to the Vr Pp IpPort component) all IP packet flows are admitted at that port.

A Filter defined under one Vr cannot be assigned to components under another Vr.

A Filter component must have at least one *FilterFlow* subcomponent where the value of the *action* attribute is ***permit***.

Mib	IpFilt
Opt. Subcomp.	"COMPONENT Vr Ip Filt FilterFlow (Flow)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Filt Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *IpFilter* component.

Mib	IpFilt

ATTRIBUTE Vr Ip Filt linkToFilterUsers (users)

Access	Read and write
Description	This attributes specifies the *Ip* (per Virtual Router) and *IpPort* (per protocol port) components that this filter is assigned to.
Mib	IpFilt
List of	Link (Service, filterAssignment)
List Size	256
Default	No default

COMPONENT Vr Ip Filt FilterFlow (Flow)

Instance	Decimal (0..1023)
Groups	"GROUP Vr Ip Filt Flow Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Filter/<string> FilterFlow/n* This component specifies an IP packet flow and the filter action for that flow within an IP filter. A filter is defined by specifying one or more packet flows and the filter action for each flow. Each packet flow is defined in terms of source IP address and destination IP address. The filter action can be either ***permit*** or ***deny***. The filter action for any individual packet is determined by the flow which has the most specific match to the packet's header information. Any packet with header information that does not match any flow in the filter is dropped. If the filter action is ***permit*** the packet is processed and forwarded in the normal manner. If the filter action is ***deny*** the packet is dropped. When the source or destination address of an IP packet matches more than one of the specified flows under a filter, the following precedence rule is applied to determine which filter action to apply:

Given a set of flows with overlapping source addresses, the match made with the most precise source address specification (that is the one with the greatest prefix length) is always given the highest precedence over all the others; once the source address specification is selected in this manner, if there exists several overlapping destination addresses, the match made with the most precise destination address specification (that is the one with the greatest prefix length) is used.

Mib: IpFilt

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Ip Filt Flow Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the *FilterFlow* component.

Mib: IpFilt

ATTRIBUTE Vr Ip Filt Flow saPrefix

Access: Read and write

Description: This attribute specifies the IP source address prefix for this flow. Matching an actual source address to the prefix is done in conjunction with the *saPrefixLength* attribute.

A source address prefix of 0.0.0.0 means any source IP address is a match regardless of the prefix length.

When the source or destination address of an IP packet matches more than one of the specified flows under a filter, the following precedence rule is applied to determine which filter action to apply:

Given a set of flows with overlapping source addresses, the match

made with the most precise source address specification (that is the one with the greatest prefix length) is always given the highest precedence over all the others; once the source address specification is selected in this manner, if there exists several overlapping destination addresses, the match made with the most precise destination address specification (that is the one with the greatest prefix length) is used.

Mib: IpFilt

Values: IP address

Default: No default

ATTRIBUTE Vr Ip Filt Flow saPrefixLength (salen)

Access: Read and write

Description: This attribute specifies the number of most significant bits of the IP source address that are to be matched with the *saPrefix* attribute. A source prefix length of 0 means any IP source address is a match regardless of the prefix.

Mib: IpFilt

Values: Decimal (0..32)

Default: No default

ATTRIBUTE Vr Ip Filt Flow action

Access: Read and write

Description: This attribute specifies one of the following two filter actions to be taken for an IP packet that matches this flow:
permit : the packet is processed normally
deny : the packet is dropped.

A *Filter* component must have at least one *FilterFlow* subcomponent where the filter action is ***permit***.

Mib: IpFilt

Values: deny
permit

Default	permit

ATTRIBUTE Vr Ip Filt Flow daPrefix

Access	Read and write
Description	This attribute specifies the IP destination address prefix for this flow. Matching an actual destination address to the prefix is done in conjunction with the daPrefixLength attribute. A destination address prefix of 0.0.0.0 means any destination IP address is a match regardless of the prefix length. When the source or destination address of an IP packet matches more than one of the specified flows under a filter, the following precedence rule is applied to determine which filter action to apply: Given a set of flows with overlapping source addresses, the match made with the most precise source address specification (that is the one with the greatest prefix length) is always given the highest precedence over all the others; once the source address specification is selected in this manner, if there exists several overlapping destination addresses, the match made with the most precise destination address specification (that is the one with the greatest prefix length) is used.
Mib	IpFilt
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Filt Flow daPrefixLength (dalen)

Access	Read and write
Description	This attribute specifies the number of most significant bits of the IP destination address that are to be matched with the *daPrefix* attribute. A destination prefix length of 0 means any IP destination address is a match regardless of the prefix.
Mib	IpFilt

Values	Decimal (0..32)
Default	No default

COMPONENT Vr Ip Multicast (Mcast)

Groups	"GROUP Vr Ip Mcast AdministrativeControl (AdminControl)" "GROUP Vr Ip Mcast Provisioned (Prov)" "GROUP Vr Ip Mcast OsiState (State)" "GROUP Vr Ip Mcast OperationalStatus (OperStatus)"
Scope	Application
Description	*Vr/<string> Ip Multicast* This component provides support for IP Multicast. It does the inter semantic check for whether all cards are properly provisioned first.
Mib	IpMcast
Subcomponents	"COMPONENT Vr Ip Mcast Domain"
Opt. Subcomp.	"COMPONENT Vr Ip Mcast Igmp" "COMPONENT Vr Ip Mcast Static" "COMPONENT Vr Ip Mcast PolicyGroup (Pg)" "COMPONENT Vr Ip Mcast PimSparseMode (PimSm)"
Dyn. Subcomp.	"COMPONENT Vr Ip Mcast ForwardTable (Fwd)" "COMPONENT Vr Ip Mcast Cache" "COMPONENT Vr Ip Mcast NeighborEntry (Nbr)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Mcast AdministrativeControl (AdminControl)

Properties	Provisioned

Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	IpMcast
Values	up down testing
Default	up

GROUP Vr Ip Mcast Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Mcast* component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast borderRouterCapability (brc)

Access	Read and write
Description	This attributes specifies if this virtual router supports multicast border router functionality.
Mib	IpMcast
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Ip Mcast cacheTableSize (cacheSize)

Access	Read and write
Description	This attribute specifies the maximum number of entries supported in the IP multicast cache table on each *Lp*. The default is 100 for a CP and 200 for an FP. The value must be multiple of 100 and not more than 500 for FPs and not more than 200 for the CPs.
Mib	IpMcast
Vector of	Decimal (100..500)
Index	Decimal (0..15)
Default	([1] 100, [15] 200)

GROUP Vr Ip Mcast OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: IpMcast

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Ip Mcast operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: IpMcast

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip Mcast usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: IpMcast

Values:
idle
active (activ)
busy

Default: idle

GROUP Vr Ip Mcast OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: IpMcast

ATTRIBUTE Vr Ip Mcast snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: IpMcast

Values:
up
down
testing

Default: up

COMPONENT Vr Ip Mcast Igmp

Groups: "GROUP Vr Ip Mcast Igmp AdministrativeControl (AdminControl)"

	"GROUP Vr Ip Mcast Igmp OsiState (State)" "GROUP Vr Ip Mcast Igmp OperationalStatus (OperStatus)"
Scope	Application
Description	*Vr/<string> Ip Multicast Igmp* This component provides support for the IGMP protocol. The IGMP protocol is used between routers and locally attached hosts to communicate multicast group memebership information. A host sends a membership report in order to join a multicast group. A router periodically sends membership queries on a network to confirm the continued presence of interested hosts.
Mib	IpMcast
Dyn. Subcomp.	"COMPONENT Vr Ip Mcast Igmp Cache"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Mcast Igmp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Igmp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.

Mib	IpMcast
Values	up down testing
Default	up

GROUP Vr Ip Mcast Igmp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Igmp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	IpMcast

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Mcast Igmp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	IpMcast
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Mcast Igmp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	IpMcast

Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Mcast Igmp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Igmp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	IpMcast
Values	up down testing
Default	up

COMPONENT Vr Ip Mcast Igmp Cache

Instance	groupAddr (gAddr) [IP address] domain (dom) [Decimal (0..3)] protocolPortName (ppName) [String (1..20, ASCII)]
Groups	"GROUP Vr Ip Mcast Igmp Cache Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Multicast Igmp Cache <Group IP Address>, <Domain>, <ProtocolPort name>* This component represents an entry in the IGMP cache table. It is

	dynamically learned via IGMP. The keys to make an instance of this component are: gAddr : the IP address of the group domain: multicast domain ppName: protocol port name
Mib	IpMcast
Common Verbs	Help List Display

GROUP Vr Ip Mcast Igmp Cache Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Cache* component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Igmp Cache upTime

Access	Read only
Description	This attribute indicates the time elapsed since this entry was created.
Mib	IpMcast
Values	Time (DHMS)
Default	No default

ATTRIBUTE Vr Ip Mcast Igmp Cache expiryTime

Access	Read only
Description	This attribute indicates the minimum amount of time remaining before this entry will be aged out.
Mib	IpMcast
Values	Time (HMS)
Default	No default

ATTRIBUTE Vr Ip Mcast Igmp Cache lastReporter

Access	Read only
Description	This attribute indicates the IP address of the source of the last membership report received for this IP multicast group address on this *ProtocolPort*. If no membership report has been received, this attribute has the value 0.0.0.0.
Mib	IpMcast
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip Mcast Igmp Cache version1HostTimer

Access	Read only
Description	This attribute indicates the time remaining until the local router will assume that there are no longer any IGMPv1 members on the IP subnet attached to this *ProtocolPort*. Upon hearing any IGMPv1 Membership Report, this value is reset to the group membership timer.
Mib	IpMcast
Values	Decimal (0..4294967295)
Units	seconds
Default	0

COMPONENT Vr Ip Mcast Static

Groups	"GROUP Vr Ip Mcast Static OsiState (State)"
Scope	Application

Description	*Vr/<string> Ip Mcast Static* This component provides support for multicast static routes.
Mib	IpMcast
Opt. Subcomp.	"COMPONENT Vr Ip Mcast Static RouteEntry (Route)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Mcast Static OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Static adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it

is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: IpMcast

Values: locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Ip Mcast Static operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: IpMcast

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip Mcast Static usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: IpMcast

Values:
idle
active (activ)
busy

Default: idle

COMPONENT Vr Ip Mcast Static RouteEntry (Route)

Instance: gAddr (addr) [IP address]
domain (dom) [Decimal (0..3)]

Groups: "GROUP Vr Ip Mcast Static Route Provisioned (Prov)"

Scope: Application

Description: *Vr/<string> Ip Mcast Static RouteEntry*/<IP Address>,<Domain>
This component represents a multicast static route entry. For a *RouteEntry* to be valid, there should be at least one *outInterface* provisioned.

Mib: IpMcast

Common Verbs:
Help
List
Display
Add
DELete

GROUP Vr Ip Mcast Static Route Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for component *RouteEntry.*

Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Static Route outInterfaces (oifs)

Access	Read and write
Description	This attribute specifies a list of links to *LogicalInterfaces* representing the outgoing interfaces for this multicast static route entry. Each *RouteEntry* must be provisioned with at least one outgoing interface, and each *RouteEntry* can be provisioned with up to 256 outgoing interfaces.
Mib	IpMcast
List of	Link (Service, linkToMulticastStaticGroup)
List Size	256
Default	No default

COMPONENT Vr Ip Mcast PolicyGroup (Pg)

Instance	String (1..20, ASCII)
Groups	"GROUP Vr Ip Mcast Pg Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Mcast PolicyGroup/<string>* This component represents a multicast group join policy, which may be applied to one or more IpPorts.
Mib	IpMcast
Opt. Subcomp.	"COMPONENT Vr Ip Mcast Pg Group (Grp)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Mcast Pg Provisioned (Prov)

Properties	Provisioned

Description	This group contains the provisionable attributes for the *PolicyGroup* component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Pg action

Access	Read and write
Description	This attribute specifies the action to be taken if a join request is received for any of the multicast group addresses configured as part of this policy. The default action is to deny the join request.
Mib	IpMcast
Values	deny allow
Default	deny

ATTRIBUTE Vr Ip Mcast Pg linkToPolicyUser

Access	Read and write
Description	This attribute specifies a list of IpPorts on which this policy group is applied and all the IpPorts must belong to the same virtual router.
Mib	IpMcast
List of	Link (Service, mcastPolicyAssignment)
List Size	256
Default	No default

COMPONENT Vr Ip Mcast Pg Group (Grp)

Instance	gAddr (addr) [IP address] gMask (mask) [IP address]
Scope	Application
Description	Vr/*<string> Ip Mcast Pg/<string> Group/<IpAddress>, <IpAddress>* This component specifies a range of multicast addresses for which the policy group applies. The range is specified as an IP

address and mask combination. There is a limit of 100 *Group* components under the same *PolicyGroup*.

Mib IpMcast

Common Verbs
Help
List
Display
Add
DELete

COMPONENT Vr Ip Mcast Domain

Instance Decimal (0..3)

Groups "GROUP Vr Ip Mcast Domain Operational (Oper)"

Scope Application

Description *Vr/<string> Ip Multicast Domain*
This component represents a multicast domain. All routers participating in the domain use the same multicast protocol for all the intefaces in the domain.

Mib IpMcast

Common Verbs
Help
List
Display
Add
DELete

GROUP Vr Ip Mcast Domain Operational (Oper)

Properties Operational

Description This group contains the operational attributes for the *Domain* component.

Mib IpMcast

ATTRIBUTE Vr Ip Mcast Domain protocolActive

Access Read only

Description	This attribute indicates the multicast protocol active in this domain.
Mib	IpMcast
Values	none pimSparseMode local
Default	none

COMPONENT Vr Ip Mcast ForwardTable (Fwd)

Instance	gAddr (grp) [IP address] domain (dom) [Decimal (0..3)] srcAddr (src) [IP address] srcMask (mask) [IP address]
Groups	"GROUP Vr Ip Mcast Fwd Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Mcast ForwardTable/<IP Address>,<Connection Index>* This component represents an IP multicast forwarding entry.
Mib	IpMcast
Dyn. Subcomp.	"COMPONENT Vr Ip Mcast Fwd OutInterface (Oif)"
Common Verbs	Help List Display

GROUP Vr Ip Mcast Fwd Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes associated with a multicast forwarding entry.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Fwd age

Access	Read only

Description	This attribute indicates the number of seconds since this route was last updated.
Mib	IpMcast
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd inProtocolPortName (inPpName)

Access	Read only
Description	This attribute indicates the name of the (incoming) protocol port from which the route was learned.
Mib	IpMcast
Values	The name of the component
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd reversePathForwardingNeighbor (rpfNbr)

Access	Read only
Description	This attribute indicates the address of the upstream neighbor (RPF neighbor) from which IP datagrams from these sources to this multicast address are received.
Mib	IpMcast
Values	IP address
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd flags

Access	Read only
Description	This attribute indicates state concerning the forwarding entry. In particular, the flag state indicates wildcard, SPT, RPT, and Reg entries.
Mib	IpMcast

Values	String (3..20, ASCII)
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd protocol

Access	Read only
Description	This attribute indicates the multicast routing protocol via which this multicast forwarding entry was learned.
Mib	IpMcast
List of	none other local pimSparse pimDense dvmrp igmp igmpOnly
Default	No default

COMPONENT Vr Ip Mcast Fwd OutInterface (Oif)

Instance	outIfAddress (addr) [IP address] connectionIndex (index) [Decimal (0..65535)]
Groups	"GROUP Vr Ip Mcast Fwd Oif Operational (Oper)"
Scope	Application
Description	Vr/<string> Ip Mcast Fwd/ *<IpAddress>,<Decimal>,<IpAddress><IpAddress>* OutInterface/*<IpAddress>,<Decimal>* This component represents an outgoing interface for a multicast forwarding entry.
Mib	IpMcast
Common Verbs	Help List Display

GROUP Vr Ip Mcast Fwd Oif Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *OutInterface* component.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Fwd Oif ifIndex

Access	Read only
Description	This attribute indicates the *ifIndex* value of this outgoing interface entry.
Mib	IpMcast
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd Oif age

Access	Read only
Description	This attribute indicates the number of seconds since this route was last updated
Mib	IpMcast
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd Oif outProtocolPort (outPp)

Access	Read only
Description	This attribute indicates the name of the protocol port by which the next hop of this route should be reached.
Mib	IpMcast
Values	The name of the component
Default	No default

ATTRIBUTE Vr Ip Mcast Fwd Oif protocol

Access	Read only
Description	This attribute indicates the multicast routing protocol from which this outinterface entry was learned.
Mib	IpMcast
List of	none other local pimSparse pimDense dvmrp igmp igmpOnly
Default	No default

COMPONENT Vr Ip Mcast Cache

Instance	Decimal (0..15)
Groups	"GROUP Vr Ip Mcast Cache OsiState (State)" "GROUP Vr Ip Mcast Cache Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ip Mcast CacheStats/n* This component represents the IP MCAST cache table on an LP. This component is dynamically created. One per LP so there are 16 of them.
Mib	IpMcast
Common Verbs	Help List Display

GROUP Vr Ip Mcast Cache OsiState (State)

Properties	Operational

Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Cache adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	IpMcast
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Mcast Cache operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: IpMcast

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip Mcast Cache usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: IpMcast

Values: idle
active (activ)
busy

Default: idle

GROUP Vr Ip Mcast Cache Operational (Oper)

Properties: Operational

Description	This group houses all the operational attributes of an *Ip* cache table.
Mib	IpMcast

ATTRIBUTE Vr Ip Mcast Cache entriesFree (ef)

Access	Read only
Description	This attribute is indicative of the number of free *Ip* cache table entries. A consistently high value for this attribute indicates that there is a resource surplus of the memory requirements for cache table. This surplus could be utilized elsewhere if needed by adjusting the appropriate *cacheTableMaxEntries* attribute. For *Vr*, *cacheTableMaxEntries* is under the *Ip* component; for *Rtr* and *Vrf*, it is under the respective components.
Mib	IpMcast
Values	Decimal (0..8000)
Default	No default

ATTRIBUTE Vr Ip Mcast Cache totalLookups (tl)

Access	Read only
Description	This attribute indicates the total number of local cache lookups. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	IpMcast
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Mcast Cache lookupMisses (lm)

Access	Read only
Description	This attribute indicates the total number of local cache lookup misses. It wraps around to zero when it exceeds its maximum value of 4294967295.
Mib	IpMcast

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr Ip Mcast Cache cacheTableMaxEntries (ctme)

Access	Read only
Description	This attribute indicates the current maximum number of entries that can exist in the IP local cache table on each LP.
Mib	IpMcast
Values	Decimal (0..8000)
Default	No default

COMPONENT Vr Ip Mcast PimSparseMode (PimSm)

Groups	"GROUP Vr Ip Mcast PimSm AdministrativeControl (AdminControl)" "GROUP Vr Ip Mcast PimSm OsiState (State)" "GROUP Vr Ip Mcast PimSm OperationalStatus (OperStatus)"
Scope	Application
Description	*Vr/<string> Ip Mcast PimSm* The Protocol Independent Multicast Sparse Mode (PIM-SM) component represents a multicast protocol which can be used to efficiently route multicast traffic to multicast groups that may span wide-area internets. The PIM-SM is referred as protocol independent multicast because it is not dependent on any

	particular unicast routing protocol and it is designed to support groups which are sparsely located.
Mib	IpPim
Opt. Subcomp.	"COMPONENT Vr Ip Mcast PimSm Domain"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Mcast PimSm AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	IpPim
Values	up down testing
Default	up

GROUP Vr Ip Mcast PimSm OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	IpPim
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Mcast PimSm operationalState (osiOper)

Access	Read only

Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	IpPim
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Mcast PimSm usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	IpPim
Values	idle active (activ) busy
Default	idle

GROUP Vr Ip Mcast PimSm OperationalStatus (OperStatus)

Properties	Operational

Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	IpPim
Values	up down testing
Default	up

COMPONENT Vr Ip Mcast PimSm Domain

Instance	Decimal (0..3)
Groups	"GROUP Vr Ip Mcast PimSm Domain Provisioned (Prov)" "GROUP Vr Ip Mcast PimSm Domain Operational (Oper)" "GROUP Vr Ip Mcast PimSm Domain Statistics (Stats)"
Scope	Application
Description	Vr/<string> Ip Mcast PimSm domain/n The Domain component represents a logical link to the Domain component under Mcast component. A PIM domain is a set of contiguous routers which implement the PIM protocol configured to operate within a common boundary. Information relevant to a domain are included under the PimSm Domain component. The

	domain number is checked to ensure it exists under Mcast Domain component.
Mib	IpPim
Opt. Subcomp.	"COMPONENT Vr Ip Mcast PimSm Domain CandidateRendezvousPoint (CRP)" "COMPONENT Vr Ip Mcast PimSm Domain CandidateBootstrapRouter (CBsr)"
Dyn. Subcomp.	"COMPONENT Vr Ip Mcast PimSm Domain RendezvousPoint (RpSet)"
Common Verbs	Help List Display Add DELete

VERB RpHash Vr Ip Mcast PimSm Domain

Impact	Passive
Description	*RpHash -gAddr(Ip Address) Vr/<string> Ip Mcast PimSm Domain/n* The *RpHash* verb is intended for trouble-shooting RP address at the PIM protocol domain level. The verb takes a multicast group (IP) address as an argument and finds the corresponding RP for that group address. If the *RpHash* is successful, it outputs the IP Address of the RP.

GROUP Vr Ip Mcast PimSm Domain Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *Domain* component under the *PimSm* component.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm Domain joinPruneInterval (jp)

Access	Read and write

Description	This attribute specifies the frequency at which PIM Join/Prune messages are transmitted on this PIM domain.
Mib	IpPim
Values	Decimal (5..4292967295)
Units	seconds
Default	60

ATTRIBUTE Vr Ip Mcast PimSm Domain sptJoinThreshold (spt)

Access	Read and write
Description	The attribute specifies the threshold at which the last-hop router joins the shortest-path tree. If immediate is selected then the router immediately joins the shortest path tree upon receipt of the first data packet. If never is selected then the router never joins the shortest path tree.
Mib	IpPim
Values	immediate never
Default	never

GROUP Vr Ip Mcast PimSm Domain Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *Domain* component under the *PimSm* component.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm Domain bsrAddress (bsr)

Access	Read only
Description	This attribute indicates the IP address of the bootstrap router (BSR) for this PIM domain.
Mib	IpPim
Values	IP address

Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain bsrExpiryTimer (bsrExpiry)

Access	Read only
Description	This attribute indicates the minimum time remaining before the bootstrap router in this domain will be declared down.
Mib	IpPim
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

GROUP Vr Ip Mcast PimSm Domain Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attributes of the *Domain* component under the *PimSm* component.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm Domain txBsrMsgs

Access	Read only
Description	This attribute counts the Bootstrap Message transmitted by the BootStrap Router (BSR) for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain rxBsrMsgs

Access	Read only
Description	This attribute counts the Bootstrap Message received by this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim

Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain txCRpAdvMsgs

Access	Read only
Description	This attribute counts the Candidate-RP Advertisement Message transmitted by the configured C-RP for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain rxCRpAdvMsgs

Access	Read only
Description	This attribute counts the Candidate-RP Advertisement Message received by the BootStrap Router (BSR) for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain txHelloMsgs

Access	Read only
Description	This attribute counts the Hello Message transmitted from PimIf belonging to this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain rxHelloMsgs

Access	Read only

Description	This attribute counts the Hello Message received from PimIf belonging to this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain txRegisterMsgs

Access	Read only
Description	This attribute counts the Register Message transmitted by the Designated Router (DR) for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain rxRegisterMsgs

Access	Read only
Description	This attribute counts the Register Message received by the RP for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain txRegisterStopMsgs

Access	Read only
Description	This attribute counts the Register-Stop Message transmitted by the RP for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim

Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain rxRegisterStopMsgs

Access	Read only
Description	This attribute counts the Register-Stop Message received by the Designated Router (DR) for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain txAssertMsgs

Access	Read only
Description	This attribute counts the Assert Message transmitted from this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain rxAssertMsgs

Access	Read only
Description	This attribute counts the Assert Message received by this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain txJPMsgs

Access	Read only

Description	This attribute counts the JP Message transmitted for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain rxJPMsgs

Access	Read only
Description	This attribute counts the JP Message received by this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain discardBsrMsgs

Access	Read only
Description	This attribute counts the Bootstrap Message discarded by this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain discardCRpAdvMsgs

Access	Read only
Description	This attribute counts the Candidate-RP Advertisement Message discarded by the BootStrap Router (BSR) for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim

Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain discardHelloMsgs

Access	Read only
Description	This attribute counts the Hello Message discarded if it is not destined for this virtual router. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain discardRegisterMsgs

Access	Read only
Description	This attribute counts the Register Message discarded if this virtual router is not the RP for this PIM domain. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain discardRegisterStopMsgs

Access	Read only
Description	This attribute counts the Register-Stop Message discarded. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain discardAssertMsgs

Access	Read only

Description	This attribute counts the unexpected Assert Message discarded. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain discardJPMsgs

Access	Read only
Description	This attribute counts the JP Message discarded by this PIM domain if it is not destined for this virtual router. This counter wraps to zero when the maximum value is exceeded.
Mib	IpPim
Values	Decimal (0..4292967295)
Default	No default

COMPONENT Vr Ip Mcast PimSm Domain CandidateRendezvousPoint (CRP)

Groups	"GROUP Vr Ip Mcast PimSm Domain CRP Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip Mcast PimSm Domain/n CRP* This component specifies that this router should advertise itself as a Candidiate RP (C-RP).
Mib	IpPim
Opt. Subcomp.	"COMPONENT Vr Ip Mcast PimSm Domain CRP Group (Grp)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Mcast PimSm Domain CRP Provisioned (Prov)

Properties	Provisioned

Description	This group specifies all the attributes for component *CandidateRendezvousPoint*.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm Domain CRP address (addr)

Access	Read and write
Description	This attribute specifies a link to a logical interface component which specifies an IP address to be used as the local identifier in C-RP advertisement messages.
Mib	IpPim
Values	Link (Service, linkToPimSmCandidateRp)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain CRP preference (pref)

Access	Read and write
Description	This attribute specifies the preference value to be used in C-RP advertisement messages. Lower values indicate higher preference.
Mib	IpPim
Values	Signed (0..255)
Default	0

COMPONENT Vr Ip Mcast PimSm Domain CRP Group (Grp)

Instance	grpAddress (gAddr) [IP address] grpMask (gMask) [IP address]
Scope	Application
Description	*Vr/<string> Ip Mcast PimSm Domain/n CRP Group/ <gAddr>,<gMask>* This component specifies an IP multicast group address and mask

which when combined identifies a group prefix for which the local router will advertise itself as a Candidate RP.

Mib: IpPim

Common Verbs:
- Help
- List
- Display
- Add
- DELete

COMPONENT Vr Ip Mcast PimSm Domain RendezvousPoint (RpSet)

Instance: grpAddress (gAddr) [IP address]
grpMask (gMask) [IP address]
rpAddress (addr) [IP address]

Groups: "GROUP Vr Ip Mcast PimSm Domain RpSet Operational (Oper)"

Scope: Application

Description: Vr/<string> Ip Mcast PimSm Domain/n RpSet/ <gAddr>,<gMask>,<addr>. This component indicates the IP address of a router which advertises itself as a Candidate RP.

Mib: IpPim

Common Verbs:
- Help
- List
- Display

GROUP Vr Ip Mcast PimSm Domain RpSet Operational (Oper)

Properties: Operational

Description: This group contains the operational attributes for a Candidate RP.

Mib: IpPim

ATTRIBUTE Vr Ip Mcast PimSm Domain RpSet rpSetHoldTime (holdTime)

Access: Read only

Description: This attribute indicates the holdtime of a Candidate RP. If the local router is not the BSR, this value is 0.

Mib	IpPim
Values	Decimal (0..255)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain RpSet rpSetExpiryTime (expiry)

Access	Read only
Description	This attribute indicates the minimum time remaining before the Candidate RP will be declared down. If the local router is not the BSR, this value is 0.
Mib	IpPim
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain RpSet rpSetPriority (prio)

Access	Read only
Description	This attribute indicates the priority advertised by BSR for this C-RP. If the local router is the BSR, this value specifies the priority advertised by C-RP.
Mib	IpPim
Values	Signed (0..255)
Default	No default

COMPONENT Vr Ip Mcast PimSm Domain CandidateBootstrapRouter (CBsr)

Groups	"GROUP Vr Ip Mcast PimSm Domain CBsr Provisioned (Prov)"
Scope	Application

Description	*Vr/<string> Ip Mcast PimSm Domain/n CBsr* This component specifies that this router should advertise iteself as a Candidate BootStrap Router (C-BSR).
Mib	IpPim
Common Verbs	Help List Display Add DELete

GROUP Vr Ip Mcast PimSm Domain CBsr Provisioned (Prov)

Properties	Provisioned
Description	This group contains all the provisionable attributes for component *CandidateBootstrapRouter.*
Mib	IpPim

ATTRIBUTE Vr Ip Mcast PimSm Domain CBsr address (addr)

Access	Read and write
Description	This attribute specifies a link to a logical interface component which specifies an IP address to use as the local system identifier in bootstrap messages.
Mib	IpPim
Values	Link (Service, linkToPimSmCandidateBsr)
Default	No default

ATTRIBUTE Vr Ip Mcast PimSm Domain CBsr preference (pref)

Access	Read and write
Description	This attribute specifies the preference value used in bootstrap messages. Higher values indicate higher priority.
Mib	IpPim
Values	Signed (0..255)

Default	0

COMPONENT Vr Ip Mcast NeighborEntry (Nbr)

Instance	nbrAddress (addr) [IP address] domainIndex (domain) [Decimal (0..3)]
Groups	"GROUP Vr Ip Mcast Nbr Operational (Oper)"
Scope	Application
Description	Vr/<string> Ip Mcast NeighborEntry/<Ip Address>, <Decimal> This component identifies a neighbouring PIM-enabled router by its address and the PIM domain it belongs to.
Mib	IpPim
Common Verbs	Help List Display

GROUP Vr Ip Mcast Nbr Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes of the *PimNeighborEntry* componnent.
Mib	IpPim

ATTRIBUTE Vr Ip Mcast Nbr ifIndex

Access	Read only
Description	This attribute indicates the value of ifIndex for the interface used to reach this PIM neighbor.
Mib	IpPim
Values	Decimal (1..65535)
Default	No default

ATTRIBUTE Vr Ip Mcast Nbr upTime

Access	Read only

Description	This attribute indicates the time since this PIM neighbor became a neighbor of this local router.
Mib	IpPim
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

ATTRIBUTE Vr Ip Mcast Nbr expiryTimer

Access	Read only
Description	This attribute indicates the minimum time remaining before this PIM neighbor will be aged out.
Mib	IpPim
Values	Decimal (0..4294967295)
Units	seconds
Default	No default

COMPONENT Vr Ip MBgpRouteDistributionClient (MBgp)

Groups	"GROUP Vr Ip MBgp Provisioned (Prov)" "GROUP Vr Ip MBgp Operational (Oper)" "GROUP Vr Ip MBgp OsiState (State)"
Scope	Application
Description	*Vr/<string> Ip MBgpRouteDistributionClient* The *MBgpRouteDistributionClient* component is used to configure multi-protocol BGP route distribution for this virtual

	router. This component can be added only if the *vpnMode* attribute of this *VirtualRouter* is set to ***customer***.
Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip MBgp ImportPolicy (Import)" "COMPONENT Vr Ip MBgp ExportPolicy (Export)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip MBgp Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *MBgp* component.
Mib	Ip

ATTRIBUTE Vr Ip MBgp defaultMBgpRtePreference (pref)

Access	Read and write
Description	This attribute specifies the default routing preference assigned to MBGP routes for this virtual router. A lower value indicates a more preferred route.
Mib	Ip
Values	Decimal (1..253)
Default	123

ATTRIBUTE Vr Ip MBgp importRoutesLimit (importl)

Access	Read and write

Description	This attribute specifies the maximum number of MBGP routes to be imported to this virtual router's routing table from the associated VCG virtual router.
Mib	Ip
Values	Decimal (1..65535)
Default	300

ATTRIBUTE Vr Ip MBgp exportRoutesLimit (exportl)

Access	Read and write
Description	This attribute specifies the maximum number of routes to be exported from this virtual router's routing table to the MBGP routing database of the associated VCG virtual router.
Mib	Ip
Values	Decimal (1..65535)
Default	50

GROUP Vr Ip MBgp Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *MBgp* component.
Mib	Ip

ATTRIBUTE Vr Ip MBgp importRoutes

Access	Read only
Description	This attribute indicates the number of MBGP routes that have been imported to this virtual router's routing table from the associated VCG virtual router.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip MBgp exportRoutes

Access	Read only
Description	This attribute indicates the number of MBGP routes that have been exported from this virtual router's routing table to the MBGP routing database of the associated VCG virtual router. Only routes that are allowed to be exported by the export policies are included in this number.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

GROUP Vr Ip MBgp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip MBgp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ip

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Ip MBgp operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ip

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip MBgp usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Ip

Values:
idle
active (activ)
busy

Default: idle

COMPONENT Vr Ip MBgp ImportPolicy (Import)

Instance: Decimal (0..65535)

Groups: "GROUP Vr Ip MBgp Import Provisioned (Prov)"

Scope: Application

Description:
Vr/<string> Ip MBgp ImportPolicy/n
Each instance of this component defines a MBGP import policy. A MBGP import policy is used to decide whether certain routing information learned from the associated VCG BGP instance is to be used or ignored.

If no import policy is provisioned, MBGP accepts all routes received from the associated VCG BGP. If multiple import policies are provisioned, the policy with the most specific match to the received route is applied.

Example 1:
Two import policies are defined:
vr/0 ip mbgp import/1, *peer* = ***0.0.0.0***, *usageFlag* = ***use***
vr/0 ip mbgp import/2, *peer* = ***47.138.190.1***, *usageFlag* = ***ignore***
This example specifies that MBGP should import all routes from the MBGP routing database of the associated VCG virtual router, except routes learned from the VCG peer 47.138.190.1.

Example 2:
Two import policies are defined:

vr/0 ip mbgp import/1, *peer* = ***0.0.0.0***, *usageFlag* = ***use***
vr/0 ip mbgp import/2, *peer* = ***47.138.190.1***, *usageFlag* = ***ignore***
vr/0 ip mbgp import/2 network/1, *prefix* = ***50.0.0.0***, *length* = ***8***
This example specifies that MBGP should import all routes from the MBGP routing database of the associated VCG virtual router, except routes learned from the VCG peer 47.138.190.1 which match the network prefix address 50.0.0.0/8.

Mib	Ip
Opt. Subcomp.	"COMPONENT Vr Ip MBgp Import Network (Net)"
Common Verbs	Help List Display Add DELete

GROUP Vr Ip MBgp Import Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *ImportPolicy* component.
Mib	Ip

ATTRIBUTE Vr Ip MBgp Import vcgPeerIpAddress (vcgPeer)

Access	Read and write
Description	This attribute specifies the IP address of the peer from which MBGP routes are learned. A value of ***0.0.0.0*** matches any peer IP address.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip MBgp Import usageFlag (usage)

Access	Read and write

Description	This attribute specifies whether this virtual router uses or ignores MBGP routing entries which match the criteria for this import policy.
Mib	Ip
Values	use ignore
Default	use

ATTRIBUTE Vr Ip MBgp Import originAs

Access	Read and write
Description	This key attribute specifies the autonomous system number where the routes were originated. A value of 0 for this attribute means origin AS number will match any AS number.
Mib	Ip
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip MBgp Import originProtocol

Access	Read and write
Description	This key attribute specifies the protocols that originated the routes. A value of ***incomplete*** for this attribute means this information is not available. A value of ***any*** for this attribute means that any originating protocol will match this import policy.
Mib	Ip
Values	any igp egp incomplete
Default	any

ATTRIBUTE Vr Ip MBgp Import asPathExpression (asExpr)

Access	Read and write

Description

This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the received update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280.
The basic syntax of a regular expression is a list of AS number separated by a space which make up a AS path.
The following characters has the special meaning:
'.' - Matches any AS number.
'^n' - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path.
'n$' - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path.
'[n1 ... n2]' - Matches any AS number that appeared in the set n1 ...
n2.
'n1 - n2' - Matches any AS number between the range of n1 and n2.
'()' - is supported to change the order of evaluation.
'n*' - Matches 0 or more occurrences of n, where n can be a set, range or AS number.
'n+' - Matches 1 or more occurrences of n, where n can be a set, range or AS number.
'n?' - Matches 0 or 1 occurrences of n, where n can be a AS set, range or number.
The following logical operators are evaluated in decending order:
'NOT' - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x.
'AND'- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y.
'OR' - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y.
For example: The AS path "5 4 3 2 1", where 1 is the origin AS, would be match by any one of the following regular expressions:
1$,
^***5,***
4 3,

5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4 .* 1
Empty regular expression implies a match on all AS path.

Mib	Ip
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip MBgp Import communityExpression (comExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of Community number seperated by a space which make up a Community attribute. The following characters has the special meaning: ‘[n1 ... n2]’ - Matches any Community number that appeared in the set n1 ...n2. ‘n1 - n2’ - Matches any Community number between the range of n1 and n2. ‘()’ - is supported to change the order of evaluation. ‘n*’ - Matches 0 or more occurrences of n, where n can be a set, range or Community number. ‘n+’ - Matches 1 or more occurrences of n, where n can be a set, range or Community number. ‘n?’ - Matches 0 or 1 occurrences of n, where n can be a set, range or number. The following logical operators are evaluated in decending order: ‘NOT’ - Given a regular expression x, NOT x matches the Community attribute that is not matched by x. ‘AND’- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y. ‘OR’ - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are

matched by x and those are matched by y.
For example: The Community path “1 2 3 4 5” would be match by any one of the following regular expression:
1,
5,
4 3,
2 3 - 4*,
1 [3 4 2]+,
not (6 7 8 9 10) and 1 2
Empty regular expression implies a match on all Community path.

Mib: Ip

Values: String (0..255, ASCII)

Default: No default

ATTRIBUTE Vr Ip MBgp Import matchPreference (matchPref)

Access: Read and write

Description: This attribute specifies the relative preference of the policy which use the keys *asPathExpression* and *communityExpression*. This attribute is ignored if attributes *asPathExpression* and *communityExpression* are both empty. This attribute is used to break the tie when two import policies’ expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy. Two import policies having the same *matchPreference* are considered duplicate policies if the *asPathExpression* attribute and the *communityExpression* attribute are not both empty.

Mib: Ip

Values: Decimal (0..255)

Default: 128

ATTRIBUTE Vr Ip MBgp Import localPreference (locPrf)

Access: Read and write

Description: This attribute specifies the degree of preference for those routes that match the criteria of this import policy. A higher value

	indicates a more preferred route. A value of 0 for this attribute means that the local preference value remains unchanged.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip MBgp Import mbgpRtePreference (mbgpPref)

Access	Read and write
Description	This attribute specifies the routing preference of MBGP routes matching this import policy. A lower value means the route is more preferred. If ***sameAsMBgp*** is specified, the value of *defaultMbgpRtePref* set under the *MBgp* component is used. Otherwise the value of this attribute will be used as the routing preference.
Mib	Ip
Values	Decimal (1..253) sameAsMBgp
Default	sameAsMBgp

COMPONENT Vr Ip MBgp Import Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip MBgp Import Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip MBgp Import/n Network/n* *Vr/<string> Ip MBgp Export/n Network/n* Each *Network* component instance specifies a destination network address prefix that this MBGP import or export policy applies to. If no *Network* component is provisioned under the *Policy*

component, the policy applies to all destination network address prefixes.

Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip MBgp Import Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Network* component.
Mib	Ip

ATTRIBUTE Vr Ip MBgp Import Net prefix

Access	Read and write
Description	This attribute specifies the network address prefix. The prefix length is specified by the *length* attribute.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip MBgp Import Net length

Access	Read and write
Description	This attribute specifies the length of the network address prefix. The prefix is specified by the *prefix* attribute.
Mib	Ip
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Vr Ip MBgp ExportPolicy (Export)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip MBgp Export Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip MBgp ExportPolicy/n* Each instance of this component defines a MBGP export policy. A MBGP export policy is used to decide whether locally learned routing information is to be sent or blocked. If no export policy is provisioned, MBGP exports all routes into the MBGP routing database of the associated VCG virtual router, except those learned from IBGP and MBGP. If multiple export policies are provisioned, the policy with the most specific match to the route is applied. Example 1: Two export policies are defined: *vr/0 ip mbgp export/1*, *protocol* = ***all,*** *advertiseStatus* = ***send*** *vr/0 ip mbgp export/2*, *protocol* = ***rip***, *advertiseStatus* = ***block*** This example specifies that MBGP should export all routes in this virtual router's routing table, except routes learned from RIP. Example 2: Two export policies are defined: *vr/0 ip mbgp export/2*, *protocol* = ***all***, *advertiseStatus* = ***send*** *vr/0 ip mbgp export/3*, *protocol* = ***rip***, *advertiseStatus* = ***block*** *vr/0 ip mbgp export/3 network/1*, *prefix* = ***47.0.0.0***, *length* = ***8*** This example specifies that MBGP exports all routes in this

virtual router's routing table except routes learned from RIP which match the network address prefix 47.0.0.0/8.

Mib: Ip

Opt. Subcomp.: "COMPONENT Vr Ip MBgp Export Network (Net)"

Common Verbs:
Help
List
Display
Add
DELete

GROUP Vr Ip MBgp Export Provisioned (Prov)

Properties: Provisioned

Description: This group contains the provisionable attributes for the *Export* component.

Mib: Ip

ATTRIBUTE Vr Ip MBgp Export protocol

Access: Read and write

Description: This attribute specifies which protocol the export policy applies to. If the value is ***all***, the export policy is applied to routes from all protocols in the IP routing table.

Mib: Ip

Values:
all
rip
ospfInternal
ospfExternal
staticLocal
staticRemote
bgpInternal
bgpExternal
bgpAggregate

Default: all

ATTRIBUTE Vr Ip MBgp Export advertiseStatus (advertise)

Access	Read and write
Description	This attribute specifies whether routing data which match the criteria for this policy are exported.
Mib	Ip
Values	send block
Default	send

ATTRIBUTE Vr Ip MBgp Export bgpAsId (bgpAs)

Access	Read and write
Description	This key attribute specifies the adjacent autonomous system (AS) number of the routes as a matching criteria. This corresponds to the first AS number in the AS Path. When this value is non-zero, the *protocol* attribute must be set to either ***bgpInternal*** or ***bgpExternal***.
Mib	Ip
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Ip MBgp Export ospfTag

Access	Read and write
Description	This key attribute specifies the OSPF tag when the *protocol* attribute is set to either ***ospfInternal*** or ***ospfExternal***. The default tag value 4294967295 (FFFFFFFF in hex) indicates that the tag is not specified.
Mib	Ip
Values	Hex (H.0..H.ffffffff)
Default	H.ffffffff

ATTRIBUTE Vr Ip MBgp Export ripInterface (ripIf)

Access	Read and write

Description	This key attribute specifies the local RIP interface where the routes are learned from. The *ripInterface* attribute when non-zero should be equal to one of the IP addresses provisioned as a *LogicalIf* component under *IpPort*. Otherwise, this attribute will be ignored. The value of the *protocol* attribute must be set to ***rip*** if the value for the *ripInterface* attribute is non-zero.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip MBgp Export ripNeighbor (ripNbr)

Access	Read and write
Description	This key attribute specifies the RIP neighbor where the routes were learned from. The value of the *protocol* attribute must be set to ***rip*** if the value for the *ripNeighbor* attribute is non-zero.
Mib	Ip
Values	IP address
Default	0.0.0.0

ATTRIBUTE Vr Ip MBgp Export asPathExpression (asExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import AS Path Attribute of the export update message. Note: the AS Path Attribute lists the ASs in reverse traversal order. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of AS number separated by a space which make up a AS path. The following characters has the special meaning: ‘.’ - Matches any AS number.

‘^n’ - Matches the first AS item (n) in the AS Path Attribute, or in order words, matches the last AS (n) traversed in the AS path.
‘n$’ - Matches the last AS item (n) in the AS Path Attribute, or in order words, matches the first AS (n) traversed in the AS path.
‘[n1 ... n2]’ - Matches any AS number that appeared in the set n1 ...
n2.
‘n1 - n2’ - Matches any AS number between the range of n1 and n2.
‘()’ - is supported to change the order of evaluation.
‘n*’ - Matches 0 or more occurrences of n, where n can be a set, range or AS number.
‘n+’ - Matches 1 or more occurrences of n, where n can be a set, range or AS number.
‘n?’ - Matches 0 or 1 occurrences of n, where n can be a set, range or number.
The following logical operators are evaluated in decending order:
‘NOT’ - Given a regular expression x, NOT x matches the AS number pattern that is not matched by x.
‘AND’- Given two regular expressions x and y, x AND y matches the intersection of the AS path that are matched by x and those are matched by y.
‘OR’ - Given two regular expressions x and y, x OR y matches the union of the AS path that are matched by x and those are matched by y.
For example: The AS path “5 4 3 2 1”, where 1 is the origin AS, would be match by any one of the following regular expressions:
1$,
^5,
4 3,
5 3 - 4*,
5 [4 3 2] not10 2 1,
not (6 7 8 9 10) and 5 4 .* 1
Empty regular expression implies a match on all AS path.

Mib	Ip
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip MBgp Export communityExpression (comExpr)

Access	Read and write
Description	This key attribute allows the user to enter a regular expression to match the import Community Attribute of the received update message. The syntax of the regular expression is a subset of the RFC 2280. The basic syntax of a regular expression is a list of Community number separated by a space which make up a Community attribute. The following characters has the special meaning: ‘[n1 ... n2]’ - Matches any Community number that appeared in the set n1 ...n2. ‘n1 - n2’ - Matches any Community number between the range of n1 and n2. ‘()’ - is supported to change the order of evaluation. ‘n*’ - Matches 0 or more occurrences of n, where n can be a set, range or Community number. ‘n+’ - Matches 1 or more occurrences of n, where n can be a set, range or Community number. ‘n?’ - Matches 0 or 1 occurrences of n, where n can be a set, range or number. The following logical operators are evaluated in decending order: ‘NOT’ - Given a regular expression x, NOT x matches the Community attribute that is not matched by x. ‘AND’- Given two regular expressions x and y, x AND y matches the intersection of the Community attribute that are matched by x and those are matched by y. ‘OR’ - Given two regular expressions x and y, x OR y matches the union of the Community attribute that are matched by x and those are matched by y. For example: The Community path “1 2 3 4 5” would be match by any one of the following regular expression: ***1,*** ***5,*** ***4 3,*** ***2 3 - 4*,*** ***1 [3 4 2]+,*** ***not (6 7 8 9 10) and 1 2***

	Empty regular expression implies a match on all Community path.
Mib	Ip
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Ip MBgp Export matchPreference (matchPref)

Access	Read and write
Description	This attribute specifies the relative preference of the policy which use the keys *asPathExpression* and *communityExpression*. This attribute is ignored if attributes *asPathExpression* and *communityExpression* are both empty. This attribute is used to break the tie when two export policies' expression attributes match a specific AS Path or Community. A higher value indicates a more preferred policy. Two export policies having the same *matchPreference* are considered duplicate policies if the *asPathExpression* attribute and the *communityExpression* attribute are not both empty.
Mib	Ip
Values	Decimal (0..255)
Default	128

ATTRIBUTE Vr Ip MBgp Export localPreference (locPrf)

Access	Read and write
Description	This attribute specifies the value of the LOCAL_PREFERENCE path attribute in routes exported to the VCG. A value of 0 means that the local preference value remains unchanged.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ip MBgp Export insertDummyAs (insertAs)

Access	Read and write

Description	This attribute specifies the AS number(s) to be inserted into the AS Path Attribute. The value is a sequence of AS number separated by period(.). For example, if the value is ***20.20.30***, the AS numbers 20, 20 and 30 would be inserted at the end of the AS Path Attribute just before the local AS number. The number of AS(s) specified by the attribute can not exceed 25. And the value of each AS number must be within the range of 1 to 65535.
Mib	Ip
Values	Integer Sequence
Default	No default

ATTRIBUTE Vr Ip MBgp Export sendCommunity (sendCom)

Access	Read and write
Description	This attribute indicates which community number this export policy will pass to the VCG. If the value is set to 0, the Community value remains unchanged.
Mib	Ip
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ip MBgp Export Network (Net)

Instance	Decimal (0..65535)
Groups	"GROUP Vr Ip MBgp Export Net Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ip MBgp Import/n Network/n* *Vr/<string> Ip MBgp Export/n Network/n* Each *Network* component instance specifies a destination network address prefix that this MBGP import or export policy applies to. If no *Network* component is provisioned under the *Policy*

component, the policy applies to all destination network address prefixes.

Mib	Ip
Common Verbs	Help List Display Add DELete

GROUP Vr Ip MBgp Export Net Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Network* component.
Mib	Ip

ATTRIBUTE Vr Ip MBgp Export Net prefix

Access	Read and write
Description	This attribute specifies the network address prefix. The prefix length is specified by the *length* attribute.
Mib	Ip
Values	IP address
Default	No default

ATTRIBUTE Vr Ip MBgp Export Net length

Access	Read and write
Description	This attribute specifies the length of the network address prefix. The prefix is specified by the *prefix* attribute.
Mib	Ip
Values	Decimal (1..32)
Units	bits
Default	No default

COMPONENT Vr Ip Vrrp

Groups	"GROUP Vr Ip Vrrp AdministrativeControl (AdminControl)" "GROUP Vr Ip Vrrp OperationalStatus (OperStatus)" "GROUP Vr Ip Vrrp OsiState (State)"
Scope	Application
Description	*Vr/<string> Ip Vrrp* The Virtual Router Redundancy Protocol (VRRP) component enables the control protocol of VRRP, which provides the dynamic election of a master VRRP virtual router among multiple VRRP virtual routers on an Ethernet LAN. Locking this component will disable all *VrrpPort* components.
Mib	IpVrrp
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Vrrp AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	IpVrrp

ATTRIBUTE Vr Ip Vrrp snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.

Mib	IpVrrp
Values	up down testing
Default	up

GROUP Vr Ip Vrrp OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	IpVrrp

ATTRIBUTE Vr Ip Vrrp snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	IpVrrp
Values	up down testing
Default	up

GROUP Vr Ip Vrrp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	IpVrrp

ATTRIBUTE Vr Ip Vrrp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	IpVrrp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Vrrp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: IpVrrp

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ip Vrrp usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: IpVrrp

Values: idle
active (activ)
busy

Default: idle

COMPONENT Vr Ip Rtd

Groups: "GROUP Vr Ip Rtd Provisioned (Prov)"
"GROUP Vr Ip Rtd OsiState (State)"

"COLLECTED STATS VirtualRouter Ip Rtd"

Scope: Application

Description	*Vr/<string> Ip Rtd* The *Rtd* component is used to add, delete and modify Round Trip Delay measurement cycles.
Mib	Ip
Dyn. Subcomp.	"COMPONENT Vr Ip Rtd VcgDestAddr"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ip Rtd Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes for the *Rtd* component.
Mib	Ip

ATTRIBUTE Vr Ip Rtd rtdSize (size)

Access	Read and write
Description	This attribute specifies the size of the ICMP IP packets used to calculate the round trip delay measurements.
Mib	Ip
Values	Decimal (30..4096)
Default	64

ATTRIBUTE Vr Ip Rtd rtdSamples (samples)

Access	Read and write
Description	This attribute specifies the number of the ICMP packets which will be generated in one RTD session for each remote node in the backbone per Different Class of Service.

Mib	Ip
Values	Decimal (1..5)
Default	3

ATTRIBUTE Vr Ip Rtd rtdTimeInterval (time)

Access	Read and write
Description	This attribute specifies the time interval between the end of one round trip delay measurement session and the beginning of the next round trip delay measurement session
Mib	Ip
Values	Decimal (1..300)
Units	minutes
Default	5

ATTRIBUTE Vr Ip Rtd rtdCosList (cos)

Access	Read and write
Description	This attribute specifies the list of class of service values used to send the ICMP packets for all the VCG nodes in the current RTD session.
Mib	Ip
List of	Decimal (0..3)
Default	No default

ATTRIBUTE Vr Ip Rtd rtdDstAddrList (dst)

Access	Read and write
Description	This attribute specifies the list of the IP destination addresses for which the round trip delays will be calculated in the current round trip delay measurement session.
Mib	Ip
List of	IP address

Default	No default

GROUP Vr Ip Rtd OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ip

ATTRIBUTE Vr Ip Rtd adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Ip
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Ip Rtd operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	Ip
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Ip Rtd usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	Ip
Values	idle active (activ) busy

Default	idle

COLLECTED STATS VirtualRouter Ip Rtd

Description	The statistics record generated by the VirtualRouter Ip Rtd component.

ATTRIBUTE Vr Ip Rtd localNodeIdentifier

Description	This attribute identifies the node by a unique number assigned to each node. This value is provisioned in the attribute *namsId* of the component *ModuleData*.
Values	Decimal (256..49151)

ATTRIBUTE Vr Ip Rtd ipVcgInstance

Description	This attribute indicates which VCG VR generated the statistics record
Values	String (1..16, ASCII)

ATTRIBUTE Vr Ip Rtd localVcgIpAddress

Description	This attribute indicates the VCG loopback IP address of the VCG VR that generated the statistics record.
Values	IP address

ATTRIBUTE Vr Ip Rtd remoteVcgIpAddress

Description	This attribute indicates the remote VCG destination address that will have the delays measured.
Values	IP address

ATTRIBUTE Vr Ip Rtd framesSent

Description	This attribute contains the number of frames transmitted by the *Virtual Carrier Gateway* during the latest interval.
Vector of	Decimal (1..5)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd framesReceived

Description	This attribute contains the number of frames received by the *Virtual Carrier Gateway during* the collection interval.
Vector of	Decimal (1..5)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample1StartTime

Description	This attribute represents the timestamp when the first sample was sent to this remote *Virtual Carrier Gateway*.
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelays1

Description	This attribute indicates an array of round trip delays for the first sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3).
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample2StartTime

Description	This attribute represents the timestamp when the second sample of packets was sent to this remote *Virtual Carrier Gateway.*
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay2

Description	This attribute indicates an array of round trip delays for the second sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3)
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample3StartTime

Description	This attribute represents the timestamp when the third sample of packets was sent to this remote *Virtual Carrier Gateway*.

Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay3

Description	This attribute indicates an array of round trip delays for the third sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3)
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample4StartTime

Description	This attribute represents the timestamp when the fourth sample of packets was sent to this remote *Virtual Carrier Gateway*.
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay4

Description	This attribute indicates an array of round trip delays for the fourth sample of packets received by the *Virtual Carrier Gateway* during the last monitoring session, for each class of service (0 to 3).
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

ATTRIBUTE Vr Ip Rtd sample5StartTime

Description	This attribute represents the timestamp when the fifth sample of packets was sent to this remote *Virtual Carrier Gateway*.
Values	Time (DHMS)

ATTRIBUTE Vr Ip Rtd RoundTripDelay5

Description	This attribute indicates an array of round trip delays for the fifth sample of packets received by the *Virtual Carrier Gateway*

	during the last monitoring session, for each class of service (0 to 3).
Vector of	Decimal (0..65535)
Index	Decimal (0..3)

COMPONENT Vr Ip Rtd VcgDestAddr

Instance	addr [IP address] cos [0 1 2 3]
Groups	"GROUP Vr Ip Rtd VcgDestAddr Operational (Oper)" "GROUP Vr Ip Rtd VcgDestAddr Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Ip Rtd VcgDestAddr/IP, COS* This component is indexed by the IP address of the peer for which the round trip delay is measured. Each IP entry in the table is uniquely defined by its IP address and Class of Service (CoS) index
Mib	Ip
Common Verbs	Help List Display

GROUP Vr Ip Rtd VcgDestAddr Operational (Oper)

Properties	Operational
Description	This group contains the operational status attributes of the *VcgDestAddr* component. This component is a table that contains all destination addresses (both static and dynamic). Each IP entry in the table is uniquely defined by its IP address and Class of Service (CoS) index.
Mib	Ip

ATTRIBUTE Vr Ip Rtd VcgDestAddr time

Access	Read only
Description	This attribute indicates the start time of the latest RTD session for this remote VCG.
Mib	Ip
Values	Time (DHMS)
Default	No default

ATTRIBUTE Vr Ip Rtd VcgDestAddr size

Access	Read only
Description	This attribute specifies the size of the ICMP IP packets used to calculate the round trip delay measurement in the latest session.
Mib	Ip
Values	Decimal (30..4096)
Default	No default

GROUP Vr Ip Rtd VcgDestAddr Statistics (Stats)

Properties	Operational
Description	This group contains the statistics attributes of the *DstAddr* component. This component is a table that contains all destination addresses, both static and dynamic. Each IP entry in the table is uniquely defined by its IP address and Class of Service index.
Mib	Ip

ATTRIBUTE Vr Ip Rtd VcgDestAddr minRoundTripDelay (minRtd)

Access	Read and write
Description	This attribute specifies the minimum of the round trip delays measured in the last monitoring session.
Mib	Ip
Values	Decimal (0..4294967295)

Units	msec
Default	No default

ATTRIBUTE Vr Ip Rtd VcgDestAddr maxRoundTripDelay (maxRtd)

Access	Read and write
Description	This attribute specifies the maximum of the round trip delays measured in the last monitoring session.
Mib	Ip
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Vr Ip Rtd VcgDestAddr avgRoundTripDelay (avgRtd)

Access	Read and write
Description	This attribute specifies the average of the round trip delay measurements in the last monitoring session.
Mib	Ip
Values	Decimal (0..4294967295)
Units	msec
Default	No default

ATTRIBUTE Vr Ip Rtd VcgDestAddr framesTransmitted (frmTx)

Access	Read only
Description	This attribute indicates the number of RTD frames transmitted to this remote destination address. When this count reaches maximum, it wraps to zero.
Mib	Ip
Values	Decimal (1..5)
Default	No default

ATTRIBUTE Vr Ip Rtd VcgDestAddr framesReceived (frmRx)

Access	Read only
Description	This attribute indicates the number of frames that have been received and have the delays calculated in the last measurement session. When this count reaches maximum, it wraps to zero.
Mib	Ip
Values	Decimal (1..5)
Default	No default

COMPONENT Vr Ipx

Groups	"GROUP Vr Ipx AdministrativeControl (AdminControl)" "GROUP Vr Ipx Provisioned (Prov)" "GROUP Vr Ipx OsiState (State)" "GROUP Vr Ipx OperationalStatus (OperStatus)" "GROUP Vr Ipx Operational (Oper)" "GROUP Vr Ipx Statistics (Stats)"
Scope	Application

Description	*Vr/<string> Ipx* This component provides for routing of Novell IPX packets in Novell's NetWare environment.
Mib	Ipx
Subcomponents	"COMPONENT Vr Ipx Rip" "COMPONENT Vr Ipx Sap"
Opt. Subcomp.	"COMPONENT Vr Ipx NetSentry (Ns)"
Dyn. Subcomp.	"COMPONENT Vr Ipx Forwarding (Fwd)" "COMPONENT Vr Ipx Services (Srvc)" "COMPONENT Vr Ipx Adjacencies (Adj)"
Common Verbs	Help List Display Add DELete LOCK Unlock

VERB Ping Vr Ipx

Impact	Passive
Description	*Ping -network (<network number>) [-node (<node number>)]* The ping verb allows the user to test the ability of an interface to contact other nodes. The *-network* option is used to receive responses from all nodes on that network. The *-node* option is used to or specify a particular node to ping. The nodes are given two seconds to respond. All responses received within the two second wait period will be displayed to the user. Pinging a remote wan link or network will produce unexpected results. Pinging a local wan link or network is invalid.

GROUP Vr Ipx AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	Ipx

ATTRIBUTE Vr Ipx snmpAdminStatus

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed.
Mib	Ipx
Values	up down testing
Default	up

GROUP Vr Ipx Provisioned (Prov)

Properties	Provisioned
Description	IPX system provisionable attributes.
Mib	Ipx

ATTRIBUTE Vr Ipx networkNumber

Access	Read and write
Description	This attribute indicates the internal network number portion of the IPX address. This network number must be unique within the internetwork and is necessary to determine master/slave relationships during IPXWAN negotiations.
Mib	Ipx

Values	String (1..4, Dashed Hex)
Default	No default

ATTRIBUTE Vr Ipx maxPathSplits (maxPaths)

Access	Read and write
Description	This attribute indicates the maximum number of paths with equal routing metric value which this instance of IPX may split between when forwarding packets.
Mib	Ipx
Values	Decimal (1..4)
Default	1

ATTRIBUTE Vr Ipx maxHops (hops)

Access	Read and write
Description	This attribute indicates the maximum number of hops a packet may take.
Mib	Ipx
Values	Decimal (1..64)
Default	16

ATTRIBUTE Vr Ipx ripUpdateInterval (rUpd)

Access	Read and write
Description	The RIP periodic update interval, in seconds.
Mib	Ipx
Values	Decimal (1..255)
Units	seconds
Default	60

ATTRIBUTE Vr Ipx sapUpdateInterval (sUpd)

Access	Read and write

Description	The SAP periodic update interval, in seconds.
Mib	Ipx
Values	Decimal (1..255)
Units	seconds
Default	60

ATTRIBUTE Vr Ipx controlDelay (ctrlDelay)

Access	Read and write
Description	The delay, in microsecs, between receiving a request from a client and sending a response. This router is significantly faster than some Ipx clients. If a problem is being experienced between a router and an Ipx client, it might be resolved by changing the *controlDelay*.
Mib	Ipx
Values	Decimal (1..30)
Units	microsec
Default	1

ATTRIBUTE Vr Ipx updateDelay (updDelay)

Access	Read and write
Description	The delay, in milliseconds, between sending consecutive (RIP and/or SAP) packets. 55 milliseconds is the minimum specified in the Ipx Router Specification.
Mib	Ipx
Values	Decimal (55..500)
Units	msec
Default	55

ATTRIBUTE Vr Ipx ripAgeMultiplier (rAge)

Access	Read and write

Description	After this many Rip Update intervals unrefreshed Rip information is considered expired.
Mib	Ipx
Values	Decimal (1..10)
Default	3

ATTRIBUTE Vr Ipx sapAgeMultiplier (sAge)

Access	Read and write
Description	After this many SAP Update intervals unrefreshed SAP information is considered expired.
Mib	Ipx
Values	Decimal (1..10)
Default	3

ATTRIBUTE Vr Ipx damping (damp)

Access	Read and write
Description	This attribute specifies whether damping is applied. Damping refers to the damping of incoming RIP and SAP requests. It handles cases where a rogue client or server is making an extraodinary number of requests. With *damping* set to ***disabled***, the switch will reply to all requests with no check for rogue nodes.With *damping* set to ***enabled***, the switch will not reply to a request if the same node made more than the allowable number of requests within 10 seconds. The maximum number of requests to damp at is specified by the following provisionable attributes: *ripMaxDampedGeneralRequest*, *ripMaxDampedSpecificRequests*, *sapMaxDampedGeneralRequests*, *sapMaxDampedSpecificRequests*.
Mib	Ipx
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Ipx ripMaxDampedGeneralRequests (rDampGenReqs)

Access	Read and write
Description	This attribute is only used when the attribute *damping* is ***enabled***. It is used to limit the average rate at which the switch responds to general RIP requests. If more than this number are received within a ten second interval, the first *ripMaxDampedGeneralRequests* are responded to and the remainder are ignored.
Mib	Ipx
Values	Decimal (1..100)
Default	1

ATTRIBUTE Vr Ipx ripMaxDampedSpecificRequests (rDampSpecReqs)

Access	Read and write
Description	This attribute is only used when the attribute *damping* is ***enabled***. It is used to limit the average rate at which the switch responds to specific RIP requests. If more than this number are received within a ten second interval, the first *ripMaxDampedSpecificRequests* are responded to and the remainder are ignored.
Mib	Ipx
Values	Decimal (1..100)
Default	4

ATTRIBUTE Vr Ipx sapMaxDampedGeneralRequests (sDampGenReqs)

Access	Read and write
Description	This attribute is only used when the attribute *damping* is ***enabled***. It is used to limit the average rate at which the switch responds to general SAP requests. If more than this number are received within a ten second interval, the first *sapMaxDampedGeneralRequests* are responded to and the remainder are ignored.
Mib	Ipx

Values	Decimal (1..100)
Default	1

ATTRIBUTE Vr Ipx sapMaxDampedSpecificRequests (sDampSpecReqs)

Access	Read and write
Description	This attribute is only used when the attribute *damping* is ***enabled***. It is used to limit the average rate at which the switch responds to specific SAP requests. If more than this number are received within a ten second interval, the first *sapMaxDampedSpecificRequests* are responded to and the remainder are ignored.
Mib	Ipx
Values	Decimal (1..100)
Default	4

ATTRIBUTE Vr Ipx initialGeneralRequests (genReqs)

Access	Read and write
Description	This attribute specifies whether the RIP and SAP general requests are sent out a port when the port first comes up. If this attribute is ***enabled*** the initial requests will be made; whereas if the attribute is ***disabled*** the initial requests will not be made. This attribute may be disabled in order to avoid the traffic resulting within the network from these initial requests and the ensuing responses. With the initial request ***disabled***, the switch will learn about other network segments off of the IPX ports via the periodic broadcasts which are received on those port.
Mib	Ipx
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Ipx holdDownInterval (hold)

Access	Read and write

Description	This attribute specifies an interval, after a network is removed from the route table, during which other incoming route updates for the same network will be ignored. The use of this interval prevents the slow convergence which results when switches that receive late network down broadcasts advertise false routes.
Mib	Ipx
Values	Decimal (0..255)
Units	seconds
Default	10

GROUP Vr Ipx OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Ipx

ATTRIBUTE Vr Ipx adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: Ipx

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE Vr Ipx operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Ipx

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vr Ipx usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has

spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Ipx

Values:
idle
active (activ)
busy

Default: idle

GROUP Vr Ipx OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: Ipx

ATTRIBUTE Vr Ipx snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: Ipx

Values:
up
down
testing

Default: up

GROUP Vr Ipx Operational (Oper)

Properties: Operational

Description: This group contains IPX related operational attributes.

Mib	Ipx

ATTRIBUTE Vr Ipx protocolPortCount (ppCnt)

Access	Read only
Description	The number of portsknown to this instance of Ipx.
Mib	Ipx
Values	Decimal (0..255)
Default	0

ATTRIBUTE Vr Ipx destinationCount (destCnt)

Access	Read only
Description	The number of currently reachable destinations known to Ipx.
Mib	Ipx
Values	Decimal (0..65535)
Default	65535

ATTRIBUTE Vr Ipx servicesCount (srvCnt)

Access	Read only
Description	The number of Services known to Ipx.
Mib	Ipx
Values	Decimal (0..65535)
Default	65535

GROUP Vr Ipx Statistics (Stats)

Properties	Operational
Description	This group contains IPX related statistics on the CP.
Mib	Ipx

ATTRIBUTE Vr Ipx inReceives

Access	Read only

Description	This attribute counts the total number of IPX packets received, including those received in error. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inHeaderErrors

Access	Read only
Description	The number of IPX packets discarded due to errors in their headers, including any IPX packet with a size less than the minimum of 30 bytes. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inUnknownSocket

Access	Read only
Description	The number of IPX packets discarded because the destination socket was not open. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inDiscards

Access	Read only
Description	Number of packets received but discarded due to reasons other than those accounted for by *inHeaderErrors* and *inUnknownSocket*. This counter wraps around to zero after reaching the maximum value of 4294967295.

Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inBadChecksums

Access	Read only
Description	Number of packets received with incorrect checksums. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inDelivers

Access	Read only
Description	Number of IPX packets delivered locally, including packets from local applications. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx noRoutes

Access	Read only
Description	Number of times no route to a destination was found. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx outRequests

Access	Read only
Description	The number of IPX packets supplied locally for transmission, not including any packets counted in the *forwarded* attribute. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx outMalformedRequests

Access	Read only
Description	Number of outgoing packets supplied locally that contained errors in their structure. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx outDiscards

Access	Read only
Description	The number of outgoing IPX packets discarded due to reasons other than those accounted for in *outMalformedRequests* or *outFiltered*. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx outPackets

Access	Read only

Description	The total number of IPX packets transmitted. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inTooManyHops

Access	Read only
Description	Number of packets discarded due to exceeding the *maxHops* value. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inFiltered

Access	Read only
Description	The number of incoming IPX packets discarded due to filtering. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx inNetBIOS

Access	Read only
Description	The number of NetBIOS packets received. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Vr Ipx forwarded

Access	Read only
Description	The number of IPX packets forwarded. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx outFiltered

Access	Read only
Description	The number of outgoing packets discarded due to filtering. This also includes the number of forwarded packets filtered. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ipx Rip

Groups	"GROUP Vr Ipx Rip Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Ipx Rip* The Routing Information Protocol (RIP) exchanges IPX route information that is used to maintain the routing table. Routing information is added to the route table for all known networks whose hops count is equal to or less than the value provisioned

	for *maxHops*, and is propagated for networks less than *maxHops* away.
Mib	Ipx
Opt. Subcomp.	"COMPONENT Vr Ipx Rip RipFilter (RFltr)" "COMPONENT Vr Ipx Rip RipApplyEntry (RipApp)"
Common Verbs	Help List Display

GROUP Vr Ipx Rip Statistics (Stats)

Properties	Operational
Description	IPX statistics related to the RIP protocol.
Mib	Ipx

ATTRIBUTE Vr Ipx Rip ripIn

Access	Read only
Description	This attribute counts the total number of IPX RIP packets received. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx Rip ripOut

Access	Read only
Description	This attribute counts the total number of RIP packets locally generated and sent out. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)

Default	0

ATTRIBUTE Vr Ipx Rip ripIncorrectPackets

Access	Read only
Description	This attribute counts the number of times an incorrectly formatted RIP packet was received. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ipx Rip RipFilter (RFltr)

Instance	Decimal (1..4294967295)
Groups	"GROUP Vr Ipx Rip RFltr Provisioned (Prov)" "GROUP Vr Ipx Rip RFltr Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ipx Rip RipFilter* RIP filters remove the specified service advertisements from RIP packets passing through this IPX router instance thereby filtering knowledge of those network routes. This is done by telling the router to ignore certain advertised networks present in incoming RIP packet tuples and/or omit certain networks from outgoing RIP packet advertisements. The networks are indicated by the attributes *hops*, *ticks*, *networkNumber*, *node* and *port*. For a given filter, networks matching all the attributes of that filter are filtered or passed depending on the *disposition* of the filter. RIP filters are

applied as input or output filters via the *RipApplyEntry* component.

Mib: Ipx

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Ipx Rip RFltr Provisioned (Prov)

Properties: Provisioned

Description: This is the provisionable attribute group for *RipFilter*.

Mib: Ipx

ATTRIBUTE Vr Ipx Rip RFltr hops

Access: Read and write

Description: This attribute specifies the distance in terms of number of hops. Networks in RIP packets which are the specified distance away from the switch are filtered or passed depending on the *disposition* of the filter. A hops value preceded by an equality operator(=), less than operator(<) or greater than operator(>) should be interpreted as matching all RIP packet tuples which are an equal, smaller or greater distance, respectively, away from the switch than the hops value specified. For a given filter, only networks matching all the specified attributes of that filter are filtered or passed depending on the *disposition* of the filter. The number of hops is specified as a decimal number between 0 and 999.

Mib: Ipx

Values: String (0..4, ASCII)

Default: No default

ATTRIBUTE Vr Ipx Rip RFltr ticks

Access: Read and write

Description	This attribute specifies the distance in terms of delay in ticks. A tick is 1/18 of a second. Networks in RIP packets which are the specified distance away from the switch are filtered or passed depending on the *disposition* of the filter. A ticks value preceded by a equality operator(=), less than operator(<) or greater than operator(>) should be interpreted as matching all RIP packet tuples which are an equal, greater or lower delay, respectively, away from the switch than the ticks value specified. For a given filter, only networks matching all the specified attributes of that filter are filtered or passed depending on the *disposition* of the filter. The ticks value is specified as a decimal number between 0 and 999.
Mib	Ipx
Values	String (0..4, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Rip RFltr networkNumber (net)

Access	Read and write
Description	This attribute specifies the network number of matching networks in RIP packets to be filtered or passed depending on the *disposition* of the filter. The network number can be entered either as a dashed hex string or a string of hex digits entered in pairs of hex digits up to a maximum length of 8 digits; in addition to hex digits, use of the character '?' to indicate wildcarding is allowed. (For example a valid network number would be ff-ff-ff-?? or ffffff??). Wildcard characters may be used only in pairs to replace a pair of hex digits. Filters with a network number preceded by a caret (^) should be interpreted as matching all RIP packet tuples except for the tuples with this network number. For a given filter, only networks matching all the specified attributes of that filter are filtered or passed depending on the *disposition* of the filter.
Mib	Ipx
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Rip RFltr node

Access	Read and write
Description	This attribute specifies the node portion in the source IPX address (that is, the MAC address or circuit ID) of received RIP packets for which the contained network tuples should be filtered or passed depending on the *disposition* of the filter. This attribute is only valid for filters applied to a port in the ***input*** *direction* and will be ignored if the filter is applied in the ***output*** *direction*.The node number can be entered either as a dashed hex string or a string of hex digits entered in pairs of hex digits up to a maximum length of 12 digits; in addition to hex digits, use of the character '?' to indicate wildcarding is allowed. (For example a valid node number would be 00-20-??-??-??-?? or 0020????????). Wildcard characters may be used only in pairs to replace a pair of hex digits. A node number preceded by a caret (^) should be interpreted as matching all RIP packets' network tuples except for the RIP packets with this source node address. For a given filter, only networks matching all the specified attributes of that filter are filtered or passed depending on the *disposition* of the filter.
Mib	Ipx
Values	String (0..18, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Rip RFltr port

Access	Read and write
Description	This attribute specifies the name of a *protocol port* whereby networks learned over this port are to be filtered or passed depending on the *disposition* of the filter. This attribute is only valid for filters applied to a port in the ***output*** *direction* and will be ignored if the filter is applied in the ***input*** *direction*. This attribute is entered as an ascii string and must correspond to a name of a provisioned *protocol port*. A port name preceded by a caret (^) should be interpreted as matching all RIP packet tuples except for those learned on this port. For a given filter, only networks matching all the specified attributes of that filter are filtered or passed depending on the *disposition* of the filter.

Mib	Ipx
Values	String (0..18, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Rip RFltr disposition (disp)

Access	Read and write
Description	This attribute indicates a reversal of the filter pattern match. If the value is pass, then matching filters will cause the RIP packet tuple to be passed. If the value is filter, then matching filters will cause the RIP packet tuple to be filtered.
Mib	Ipx
Values	pass filter
Default	filter

GROUP Vr Ipx Rip RFltr Operational (Oper)

Properties	Operational
Description	This is the operational attribute group for *IpxRipFilter*.
Mib	Ipx

ATTRIBUTE Vr Ipx Rip RFltr numberOfApplyEntries (applied)

Access	Read only
Description	This attribute indicates the number of times this filter is referenced by a *RipApplyEntry*. If zero, this filter is not applied on any ports.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ipx Rip RipApplyEntry (RipApp)

Instance	protocolPortName (ppName) [String (1..20, ASCII)] filterIdentifier (fltrId) [Decimal (1..4294967295)]

Groups	"GROUP Vr Ipx Rip RipApp Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ipx Rip RipFilter RipApplyEntry/<protocol port name, filter ID>* This component contains a list of RIP filters that have been applied to each IPX port and information pertaining to each application of such RIP filters. Filters should be applied to ports such that the most specific filter has the lowest identifier while the least specific filter has the highest identifier. It should be kept in mind that the filter with the lowest filter identifier that matches will decide based on its *disposition* whether the network tuple is passed or filtered.
Mib	Ipx
Common Verbs	Help List Display Add DELete

GROUP Vr Ipx Rip RipApp Provisioned (Prov)

Properties	Provisioned
Description	This is the *RipApplyEntry* provisionable group of attributes.
Mib	Ipx

ATTRIBUTE Vr Ipx Rip RipApp direction (dir)

Access	Read and write
Description	This attribute specifies whether this RIP filter is applied as an ***input*** filter or an ***output*** filter. If set to ***none***, this indicates that the filter, though applied to the port, is not currently active in either direction.
Mib	Ipx

Values	none output input
Default	none

COMPONENT Vr Ipx Sap

Groups	"GROUP Vr Ipx Sap Statistics (Stats)"
Scope	Application
Description	*Vr/<string> Ipx Sap* The Service Advertising Protocol (SAP) exchanges information on the network about available network services (for example file services or print services). Service information is kept for services residing on networks which are known to the router via the routing table (RIP protocol). That is, services will be added to the services table only if a route to them has been previously discovered via RIP and entered in the route table.
Mib	Ipx
Opt. Subcomp.	"COMPONENT Vr Ipx Sap SapFilter (SFltr)" "COMPONENT Vr Ipx Sap SapApplyEntry (SapApp)"
Common Verbs	Help List Display

GROUP Vr Ipx Sap Statistics (Stats)

Properties	Operational
Description	IPX statistics specific to the SAP protocol.
Mib	Ipx

ATTRIBUTE Vr Ipx Sap sapIn

Access	Read only
Description	The total number of SAP packets received. This counter wraps around to zero after reaching the maximum value of 4294967295.

Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx Sap sapOut

Access	Read only
Description	The total number of SAP packets locally generated and sent out. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Ipx Sap sapIncorrectPackets

Access	Read only
Description	The number of times an incorrectly formatted SAP packet was received. This counter wraps around to zero after reaching the maximum value of 4294967295.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ipx Sap SapFilter (SFltr)

Instance	Decimal (1..4294967295)
Groups	"GROUP Vr Ipx Sap SFltr Provisioned (Prov)" "GROUP Vr Ipx Sap SFltr Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ipx Sap Sfltr* SAP filters remove the specified service advertisements from SAP packets passing through this IPX router instance thereby filtering knowledge of those services. This is done by telling the

router to ignore certain advertised services present in incoming SAP packet tuples and/or omit certain services from outgoing SAP packet advertisements. The services are indicated by the attributes *type*, *name*, *networkNumber*, and *node*. For a given filter, services matching all the attributes of that filter are filtered. SAP filters are applied as input or output filters via the *IpxSapApplyEntry* component.

Mib: Ipx

Common Verbs:
- Help
- List
- Display
- Add
- DELete

GROUP Vr Ipx Sap SFltr Provisioned (Prov)

Properties: Provisioned

Description: The provisionable attribute group for *SapFilter*.

Mib: Ipx

ATTRIBUTE Vr Ipx Sap SFltr type

Access: Read and write

Description: This attribute specifies the Novell Service type of the services to be filtered from the SAP packets. The type can be entered either as a dashed hex string or a string of hex digits entered in pairs of hex digits up to a maximum length of 4 digits. (For example a valid type would be ff-ff or ffff). A type preceded by a caret(^) should be interpreted as filtering all SAP packets except for those with this type.

Mib: Ipx

Values: String (0..6, ASCII)

Default: No default

ATTRIBUTE Vr Ipx Sap SFltr name

Access: Read and write

Description	This attribute specifies the readable name of the service to be filtered from SAP packets. The name can be 47 characters or less. This does not include the caret (^) character which precedes the name. A name preceded by a caret (^) should be interpreted as filtering all SAP packets except for the ones with this name.
Mib	Ipx
Values	String (0..48, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Sap SFltr networkNumber (net)

Access	Read and write
Description	This attribute specifies the network number of the service to be filtered from SAP packets. The network number can be entered either as a dashed hex string or a string of hex digits entered in pairs of hex digits up to a maximum length of 8 digits. (For example a valid network number would be ff-ff-ff-ff or ffffffff). A network number preceded by a caret (^) should be interpreted as filtering all SAP packets except for the ones with this network number.
Mib	Ipx
Values	String (0..12, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Sap SFltr node

Access	Read and write
Description	This attribute specifies the node portion of the IPX address of the service to be filtered from SAP packets. The node number can be entered either as a dashed hex string or a string of hex digits entered in pairs of hex digits up to a maximum length of 12 digits.. (For example a valid node number would be ff-ff-ff-ff-ff-ff or ffffffffffff). A node number preceded by a caret (^) should be interpreted as filtering all SAP packets except for the ones with this node number.
Mib	Ipx

Values	String (0..18, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Sap SFltr disposition (disp)

Access	Read and write
Description	Indicates a reversal of the filter pattern match.
Mib	Ipx
Values	pass filter
Default	filter

GROUP Vr Ipx Sap SFltr Operational (Oper)

Properties	Operational
Description	The operational attribute group for *IpxSapFilter*.
Mib	Ipx

ATTRIBUTE Vr Ipx Sap SFltr numberOfApplyEntries (applied)

Access	Read only
Description	The number of times this filter appears in *IpxSapApplyEntry*. If zero, this filter is not applied on any ports.
Mib	Ipx
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Ipx Sap SapApplyEntry (SapApp)

Instance	protocolPortName (ppName) [String (1..20, ASCII)] filterIdentifier (fltrId) [Decimal (1..4294967295)]
Groups	"GROUP Vr Ipx Sap SapApp Provisioned (Prov)"
Scope	Application

Description	*Vr/<string> Ipx Sap SapApp* This component contains a list of SAP filters that have been applied to each IPX port and information pertaining to each application of such SAP filters.
Mib	Ipx
Common Verbs	Help List Display Add DELete

GROUP Vr Ipx Sap SapApp Provisioned (Prov)

Properties	Provisioned
Description	The *IpxSapApplyEntry* provisionable group of attributes.
Mib	Ipx

ATTRIBUTE Vr Ipx Sap SapApp direction (dir)

Access	Read and write
Description	Indicates whether this SAP filter is applied as an input filter or an output filter.
Mib	Ipx
Values	none output input
Default	none

COMPONENT Vr Ipx Forwarding (Fwd)

Instance	String (1..4, Dashed Hex)
Groups	"GROUP Vr Ipx Fwd Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ipx Fwd* The forwarding component represents an entry of the forwarding

table. It contains forwarding information about all known destinations with each entry in the forwarding table being information pertaining to a unique IPX destination network number.

Mib	Ipx
Common Verbs	Help List Display

GROUP Vr Ipx Fwd Operational (Oper)

Properties	Operational
Description	*IpxForwarding* operational attributes.
Mib	Ipx

ATTRIBUTE Vr Ipx Fwd protocol

Access	Read only
Description	The routing protocol from which knowledge of this destination was obtained.
Mib	Ipx
Values	other local rip nlsp static
Default	No default

ATTRIBUTE Vr Ipx Fwd ticks

Access	Read only
Description	The delay, in ticks, to reach this destination.
Mib	Ipx
Values	Decimal (0..4294967295)

Default	No default

ATTRIBUTE Vr Ipx Fwd hopCount (hops)

Access	Read only
Description	The number of hops required to reach this destination.
Mib	Ipx
Values	Decimal (1..64)
Default	No default

ATTRIBUTE Vr Ipx Fwd protocolPortId (portId)

Access	Read only
Description	The unique identifier of the *ProtocolPort* used to reach the next hop.
Mib	Ipx
Values	String (1..20, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Fwd nextHopPhysAddress (nextPhys)

Access	Read only
Description	The physical address of the next hop
Mib	Ipx
Values	String (1..6, Dashed Hex)
Default	No default

ATTRIBUTE Vr Ipx Fwd nextHopNetworkNumber (nextNet)

Access	Read only
Description	The IPX network number of the next hop.
Mib	Ipx
Values	String (1..4, Dashed Hex)

Default	No default

COMPONENT Vr Ipx Services (Srvc)

Instance	networkNumber (net) [String (1..4, Dashed Hex)] node [String (1..6, Dashed Hex)] type [Hex (H.0..H.ffff)] name [String (1..48, ASCII)]
Groups	"GROUP Vr Ipx Srvc Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ipx Srvc* This is the top level component of the IPX services table, which is a list of the Novell services known to this IPX router instance.
Mib	Ipx
Common Verbs	Help List Display

GROUP Vr Ipx Srvc Operational (Oper)

Properties	Operational
Description	The Ipx Services Operational group.
Mib	Ipx

ATTRIBUTE Vr Ipx Srvc socket

Access	Read only
Description	Socket at which the service is available
Mib	Ipx
Values	Hex (H.0..H.ffff)
Default	No default

ATTRIBUTE Vr Ipx Srvc protocol (proto)

Access	Read only

Description	The protocol from which knowledge of this service was obtained.
Mib	Ipx
Values	other local nlsp static sap
Default	No default

ATTRIBUTE Vr Ipx Srvc hopCount (hops)

Access	Read only
Description	Number of hops to the service.
Mib	Ipx
Values	Decimal (0..64)
Default	No default

COMPONENT Vr Ipx Adjacencies (Adj)

Instance	protocolPortIdentifier (ppId) [String (1..20, ASCII)] networkNumber (net) [String (1..4, Dashed Hex)]
Groups	"GROUP Vr Ipx Adj Operational (Oper)"
Scope	Application
Description	*Vr/<string> Ipx Adj* This component provides adjacent node information available on a per *ProtocolPort* basis. This information is retrieved from, but formatted and displayed differently than, the information in the route table. It is useful for network configuration debugging.
Mib	Ipx
Common Verbs	Help List Display

GROUP Vr Ipx Adj Operational (Oper)

Properties	Operational
Description	The *Adjacencies* operational group.
Mib	Ipx

ATTRIBUTE Vr Ipx Adj physAddress (phyAddress)

Access	Read only
Description	The physical address of the adjacent router.
Mib	Ipx
Values	String (1..6, Dashed Hex)
Default	No default

ATTRIBUTE Vr Ipx Adj adjacencyState (adjState)

Access	Read only
Description	The state of the connection to the adjacent router.
Mib	Ipx
Values	initializing up failed down
Default	No default

COMPONENT Vr Ipx NetSentry (Ns)

Groups	"GROUP Vr Ipx Ns Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ipx NetSentry* NetSentry filters, defined in and compiled by NetSentry can be

applied to IPX packets. IPX packets can be filtered on source and destination network and node combinations.

Mib	Ipx
Opt. Subcomp.	"COMPONENT Vr Ipx Ns NetSentryApplyList (NetSentryApp)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ipx Ns Provisioned (Prov)

Properties	Provisioned
Description	The provisionable attribute group for the *IpxNetSentry* component.
Mib	Ipx

ATTRIBUTE Vr Ipx Ns firstFilter

Access	Read and write
Description	First NetSentry filter for Ipx. If specified this filter is applied before any other NetSentry filters applicable to the packet.
Mib	Ipx
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Ns lastFilter

Access	Read and write
Description	Last filter for Ipx. If specified this filter is applied after all other NetSentry filters applicable to the packet.
Mib	Ipx

Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Ns localInFilter

Access	Read and write
Description	The filter name of the NetSentry filter to be applied at the Local In filter point.
Mib	Ipx
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Ns localOutFilter

Access	Read and write
Description	The filter name of the NetSentry filter to be applied at the Local Out filter point.
Mib	Ipx
Values	String (0..32, ASCII)
Default	No default

COMPONENT Vr Ipx Ns NetSentryApplyList (NetSentryApp)

Instance	Decimal (1..4294967295)
Groups	"GROUP Vr Ipx Ns NetSentryApp Provisioned (Prov)"
Scope	Application
Description	*Vr/<string> Ipx NetSentry NetSentryApplyList* This component contains a list of NetSentry filters that have been

applied to IPX packets and information pertaining to each application of such NetSentry filters.

Mib	Ipx
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vr Ipx Ns NetSentryApp Provisioned (Prov)

Properties	Provisioned
Description	The Provisionable group for the *IpxNetSentryApplyList*.
Mib	Ipx

ATTRIBUTE Vr Ipx Ns NetSentryApp filter

Access	Read and write
Description	The name of the filter to be applied to packets matching the conditions in this entry of the *IpxNetSentryApplyList*.
Mib	Ipx
Values	String (0..32, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Ns NetSentryApp networkNumber1 (net1)

Access	Read and write
Description	The first IPX network Number used to compare. This network number can be entered either as a dashed hex string or a string of hex digits. (For example a valid network number would be ff-ff-ff-ff or ffffffff). In addition a value of * will be accepted as a wildcard for all networks.
Mib	Ipx

Values	String (1..11, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Ns NetSentryApp node1

Access	Read and write
Description	This attribute is the first IPX node address used to compare. This node number can be entered either as a dashed hex string or a string of hex digits. (For example a valid node number would be ff-ff-ff-ff-ff-ff or ffffffffffff). In addition a value of * will be accepted as a wildcard for all nodes.
Mib	Ipx
Values	String (1..17, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Ns NetSentryApp direction (dir)

Access	Read and write
Description	Indicates the direction a packet must be moving between the first and second apply list entries in order for the entries to match. First “to” second, first “from” second, or first “tofrom” second (either direction).
Mib	Ipx
Values	to from tofrom
Default	No default

ATTRIBUTE Vr Ipx Ns NetSentryApp networkNumber2 (net2)

Access	Read and write
Description	The second IPX network Number used to compare. This network number can be entered either as a dashed hex string or a string of hex digits. (For example a valid network number would be ff-ff-ff-ff or ffffffff). In addition a value of * will be accepted as a wildcard for all networks.

Mib	Ipx
Values	String (1..11, ASCII)
Default	No default

ATTRIBUTE Vr Ipx Ns NetSentryApp node2

Access	Read and write
Description	This attribute is the second IPX node address used to compared. This node can be entered either as a dashed hex string or a string of hex digits. (For example a valid network number would be ff-ff-ff-ff-ff-ff or ffffffffffff). In addition a value of * will be accepted as a wildcard for all nodes.
Mib	Ipx
Values	String (1..17, ASCII)
Default	No default

COMPONENT Vr Snmp

Groups	"GROUP Vr Snmp Provisioned (Prov)" "GROUP Vr Snmp OsiState (State)" "GROUP Vr Snmp Statistics (Stats)"
Scope	Device
Description	*Vr/<string> Snmp* This component contains all provisionable and operational data relating to the SNMP Management of a Virtual Router. SNMP management defined for the Virtual Router having managementAccess, has access to shelf-wide enterprise MIBs and standard MIBs applicable to the Virtual Router. SNMP management defined for all other Virtual Routers have

	access only to standard MIBs applicable to the particular Virtual Router.
Mib	BaseSnmp
Subcomponents	"COMPONENT Vr Snmp System (Sys)"
Opt. Subcomp.	"COMPONENT Vr Snmp Community (Com)" "COMPONENT Vr Snmp View"
Dyn. Subcomp.	"COMPONENT Vr Snmp MibIIStats"
Common Verbs	Help List Display Add : System_admin DELete : System_admin LOCK Unlock

GROUP Vr Snmp Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes defining the SNMP management entity's capabilities, particularly in regards to standard SNMPv1 and SNMPv2 traps.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp enableAuthenTraps (authen)

Access	Read: System_admin Write: System_admin
Description	This attribute controls whether the *Snmp* component generates authentication failure traps. The attribute is derived from RFC 1907.
Mib	BaseSnmp
Values	enabled disabled
Default	enabled

ATTRIBUTE Vr Snmp alarmsAsTraps

Access	Read: System_admin Write: System_admin
Description	This attribute specifies whether the *Snmp* component sends alarms to SNMPv1, SNMPv2, and SNMPv3 managers. If ***enabled***, alarms are sent as SNMPv1 Traps to managers with SNMPv1 Trap privilege allowed, as SNMPv2 Traps to managers with SNMPv2 Trap privilege allowed and as notifications to SNMPv3 managers based on the provisioning of the *V3* sub-components *NotificationCapability* and *Manager.*
Mib	BaseSnmp
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Snmp ipStack

Access	Read: System_admin Write: System_admin
Description	This attribute controls which IP stack the *Snmp* component will use to send and receive SNMP traffic. If the value of this attribute is ***vrIp*** then SNMP Udp traffic is sent and received using *Ip* as provisioned under the *VirtualRouter.* This requires provisioning of the ***ip*** feature. If the value of this attribute is ***ipiFrIpiVc*** then SNMP Udp traffic is sent and received using *IpiFr* (Ip over Frame Relay) or *IpiVc* (Ip over Vc), whichever is provisioned. This requires provisioning of one of the ***ipiVc*** or ***ipiFr*** features.
Mib	BaseSnmp
Values	vrIp ipiFrIpiVc
Default	vrIp

ATTRIBUTE Vr Snmp cidInEntTraps

Access	Read: System_admin Write: System_admin
Description	This attribute controls whether the Customer Identifier (CID) is included in the SNMP Enterprise Traps. If ***enabled***, the CID is included in the SNMP Enterprise traps.
Mib	BaseSnmp
Values	enabled disabled
Default	disabled

ATTRIBUTE Vr Snmp supportedVersions

Access	Read: System_admin Write: System_admin
Description	This attribute specifies which SNMP message versions are accepted and sent by the SNMP agent. Messages with unsupported version are dropped and the corresponding statistics are incremented.
Mib	BaseSnmp
Set of	snmpV1 (v1) snmpV2c (v2c)
Default	No default

GROUP Vr Snmp OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.

Mib	BaseSnmp

ATTRIBUTE Vr Snmp adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BaseSnmp
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Snmp operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib	BaseSnmp
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Snmp usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	BaseSnmp
Values	idle active (activ) busy
Default	idle

ATTRIBUTE Vr Snmp availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: BaseSnmp

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Vr Snmp proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	BaseSnmp
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Vr Snmp controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib: BaseSnmp

Set of:
subjectToTest (subTst)
partOfServicesLocked (partLk)
reservedForTest (rsrvd)
suspended (suspnd)

Default: No default

ATTRIBUTE Vr Snmp alarmStatus (osiAlarm)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***underRepair*** indicates the component is currently

being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib: BaseSnmp

Set of:
underRepair (repair)
critical (crit)
major
minor
alarmOutstanding (outst)

Default: No default

ATTRIBUTE Vr Snmp standbyStatus (osiStby)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Standby status of the component.

The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	BaseSnmp
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Vr Snmp unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	BaseSnmp
Values	false true
Default	false

GROUP Vr Snmp Statistics (Stats)

Properties	Operational
Description	This attribute group contains miscellaneous SNMP management entity operational attributes which includes statistics for processing traps as well as attributes to assist with identifying authentication failures generated by SNMPv1 managers.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp trapsProcessed (trapsPr)

Access	Read only
Description	This attribute indicates the number of Standard and Enterprise notifications (traps) processed by the SNMP Agent. This total includes the number discarded by the *Snmp* component when it is ***locked*** or ***disabled***. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp trapsDiscarded (trapsDisc)

Access	Read only
Description	This attribute indicates the number of notifications (traps) discarded since the processor last restarted. They are discarded when the *Snmp* component is ***locked*** or ***disabled***. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Snmp System (Sys)

Groups	"GROUP Vr Snmp Sys Provisioned (Prov)" "GROUP Vr Snmp Sys Operational (Op)"
Scope	Device
Description	*Vr/<string> Snmp System* This component represents the SNMP System Group. The component attributes are derived from RFC 1907.
Mib	BaseSnmp
Dyn. Subcomp.	"COMPONENT Vr Snmp Sys ObjectResource (Or)"
Common Verbs	Help List Display

GROUP Vr Snmp Sys Provisioned (Prov)

Properties	Provisioned
Description	The group contains provisionable attributes relating to the SNMP System Group. The attributes are derived from RFC 1907.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp Sys contact (con)

Access	Read and write
Description	This attribute identifies the contact person for this managed node, together with information on how to contact this person.
Mib	BaseSnmp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Snmp Sys name

Access	Read and write

Description	This attribute identifies the administratively assigned name for this managed node. By convention, it is the node's fully qualified domain name.
Mib	BaseSnmp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Snmp Sys location (loc)

Access	Read and write
Description	This attribute identifies the physical location of this node. For example, 'telephone closet, third floor'.
Mib	BaseSnmp
Values	String (0..255, ASCII)
Default	No default

GROUP Vr Snmp Sys Operational (Op)

Properties	Operational
Description	The group contains operational attributes relating to the SNMP System Group. The attributes are derived from RFC 1907.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp Sys description (desc)

Access	Read only
Description	This attribute presents a textual description of the entity. This value should include the full name and version identification of the system's hardware type, software operating-system, and networking software.
Mib	BaseSnmp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Snmp Sys objectId (oid)

Access	Read only
Description	This attribute identifies the vendor's authoritative identification of the network management subsystem contained in the entity. This value is allocated within the Structure of Management Information (SMI) enterprises subtree (1.3.6.1.4.1) and provides an easy and unambiguous means for determining 'what kind of box' is being managed.
Mib	BaseSnmp
Values	Integer Sequence
Default	No default

ATTRIBUTE Vr Snmp Sys upTime

Access	Read only
Description	This attribute represents the time (in hundredths of a second) since the network management portion of the system was last re-initialized.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Units	centiseconds
Default	No default

ATTRIBUTE Vr Snmp Sys services (serv)

Access	Read only
Description	This attribute indicates the set of services that this entity primarily offers. The value is a sum. This sum initially takes the value zero, then, for each layer, L, in the range 1 through 7, that this node performs transactions for, 2 raised to (L-1) is added to the sum. For example, a node which performs primarily routing functions would have a value of 4 (2^(3-1)). In contrast, a node which is a host offering application services would have a value of 72 ((2^4-

	1) + 2^(7-1)). Note that in the context of the Internet suite of protocols, values should be calculated accordingly: layer 1 - physical (for example, repeaters) layer 2 - datalink/subnetwork (for example, bridges) layer 3 - internet (for example, IP gateways) layer 4 - end-to-end (for example, IP hosts) layer 7 - applications (for example, mail relays) For systems including OSI protocols, layers 5 and 6 may also be counted.
Mib	BaseSnmp
Values	Decimal (0..127)
Default	6

ATTRIBUTE Vr Snmp Sys sysORLastChange

Access	Read only
Description	This attribute indicates the value of *sysUpTime* at the time of the most recent change to any *ObjectResource* component.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Snmp Sys ObjectResource (Or)

Instance	Decimal (1..1024)
Groups	"GROUP Vr Snmp Sys Or Or"
Scope	Device
Description	*Vr/<string> Snmp System ObjectResource/n* This component represents an entry in the SNMPv2 Object

	Resources Table (RFC 1907). It lists the MIBs currently supported by the SNMP management entity.
Mib	BaseSnmp
Common Verbs	Help List Display

GROUP Vr Snmp Sys Or Or

Properties	Operational
Description	The attributes of this group describe a MIB currently supported by the SNMP agent. This group of attributes is derived from RFC 1907.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp Sys Or id

Access	Read only
Description	This attribute indicates the authoritative identification of a dynamically-configurable management entity object resource. This is a MIB Object Identifier.
Mib	BaseSnmp
Values	Integer Sequence
Default	No default

ATTRIBUTE Vr Snmp Sys Or description (desc)

Access	Read only
Description	This attribute indicates the textual description of a dynamically-configurable management entity object resource. This is an ASCII description of a supported MIB.
Mib	BaseSnmp
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr Snmp Sys Or upTime

Access	Read only
Description	This attribute indicates the value of *sysUpTime* of the *Snmp System* component at the time this *ObjectResource* component was instantiated.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	No default

COMPONENT Vr Snmp Community (Com)

Instance	Decimal (1..1024)
Groups	"GROUP Vr Snmp Com Provisioned (Prov)"
Scope	Device
Description	*Vr/<string> Snmp Community/<decimal>* This component represents an SNMPv1 or SNMPv2c community. A community represents a pairing of an SNMP Agent with an arbitrary set of application entities. The combination of *communityString* and *tDomain* attributes must be unique across all *Community* components.
Mib	BaseSnmp
Opt. Subcomp.	"COMPONENT Vr Snmp Com Manager (Man)"
Common Verbs	Help List Display Add : System_admin DELete : System_admin

GROUP Vr Snmp Com Provisioned (Prov)

Properties	Provisioned

Description	This group contains provisionable attributes relating to SNMPv1 or SNMPv2c communities. The *Check Prov* command verifies that *viewIndex* corresponds to the first index of one of the *View* components.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp Com communityString (string)

Access	Read: System_admin Write: System_admin
Description	This attribute is the SNMPv1 or SNMPv2c community name. The value of this attribute is used to authenticate SNMP messages received from SNMPv1 or SNMPv2c management entities, and is placed in SNMP messages sent out by the SNMPv1 or SNMPv2c network management entity. The string “public” is commonly used. When an SNMPv1 or SNMPv2c message is received, the community name in the message is checked to ensure that it matches a *communityString*. If there are no *Manager* subcomponents for that *Community* then the level of access is determined by the *accessMode* attribute. If there are *Manager* subcomponents for the *Community* then the originating transport address in the message must match the *transportAddress* of one of the *Manager* subcomponents, and the level of access of the sending entity is determined by the *privileges* attribute for that *Manager.* The combination of *communityString* and *tDomain* attributes must be unique across all *Community* components.
Mib	BaseSnmp
Values	String (1..255, ASCII)
Default	public

ATTRIBUTE Vr Snmp Com accessMode (acMode)

Access	Read: System_admin Write: System_admin

Description	Once the sending SNMP entity is authenticated as a member of a community, the community access mode determines what level of access it has for each object in its view.
Mib	BaseSnmp
Values	readOnly readWrite
Default	readOnly

ATTRIBUTE Vr Snmp Com tDomain (tDom)

Access	Read: System_admin Write: System_admin
Description	This attribute indicates the kind of transport service by which the community receives and sends network management traffic. The combination of *communityString* and *tDomain* attributes must be unique across all *Communities.*
Mib	BaseSnmp
Values	snmpUdpDomain
Default	snmpUdpDomain

ATTRIBUTE Vr Snmp Com viewIndex (vIndex)

Access	Read: System_admin Write: System_admin
Description	This attribute specifies the *View* component for this community. This index must correspond to the first index of one of the *View* components.
Mib	BaseSnmp
Values	String (1..32, ASCII)
Default	No default

COMPONENT Vr Snmp Com Manager (Man)

Instance	Decimal (0..100)
Groups	"GROUP Vr Snmp Com Man Provisioned (Prov)"

Scope	Device
Description	*Vr/<string> Snmp Community/<decimal> Manager/<decimal>* This component defines the access privileges for an SNMPv1 or SNMPv2c Manager within the Community. If a *Community* has no *Manager* components, SNMPv1 or SNMPv2 messages are accepted from all source addresses using the proper *communityString*, and no Traps are sent out using the *communityString*. If at least one *Manager* component exists for a *Community* then SNMPv1 or SNMPv2 messages containing that *Community string* are only accepted if they originate from a transport address which matches the *transportAddress* of one of the *Manager* components. The value of *transportAddress* must be unique for all *Manager* components under the same *Community.*
Mib	BaseSnmp
Common Verbs	Help List Display Add : System_admin DELete : System_admin

GROUP Vr Snmp Com Man Provisioned (Prov)

Properties	Provisioned
Description	The group contains provisionable attributes relating to an SNMPv1 or SNMPv2c Community Manager. The *Check Prov* command verifies that the value of the *privileges* attribute is correctly set: **-** Setting ***v1trap*** bit and setting ***v2trap*** bit are not allowed simultaneously. **-** Setting ***set*** bit is allowed if the *Community accessMode* is ***readWrite***. **-** Setting ***get*** bit is only allowed if the *Community accessMode* is

readOnly or ***readWrite***.

Mib BaseSnmp

ATTRIBUTE Vr Snmp Com Man transportAddress (tAddress)

Access
Read: System_admin
Write: System_admin

Description
This attribute is the transport service address of the SNMPv1 or SNMPv2c Manager, formatted according to the value of *Community tDomain*.
The only currently supported format is that of a UDP Transport Address. It must be of the form “IpAddress-UDP Port”, where UDP Port = 162. For example, 23.45.67.89-162 is a suitable UDP Transport Address.

The value of *transportAddress* must be unique for all *Manager* components under the same *Community.*

Mib BaseSnmp

Values String (1..100, ASCII)

Default No default

ATTRIBUTE Vr Snmp Com Man privileges (priv)

Access
Read: System_admin
Write: System_admin

Description
This attribute identifies the access privileges which govern what management operations the SNMPv1/SNMPv2c Manager may perform.

set and ***get*** operations are allowed if the *Community accessMode* is ***readWrite***.

get operations are only allowed if the *Community accessMode* is ***readOnly*** or ***readWrite***.

The ***v1trap*** bit and ***v2trap*** bit can not be set at same time.

Mib	BaseSnmp
Set of	sets gets v1trap v2trap
Default	(gets)

COMPONENT Vr Snmp MibIIStats

Groups	"GROUP Vr Snmp MibIIStats Statistics (Stats)"
Scope	Device
Description	*Vr/<string> Snmp MibIIStats* This component contains statistics based upon the MIB II Snmp group (RFC 1213).
Mib	BaseSnmp
Common Verbs	Help List Display

GROUP Vr Snmp MibIIStats Statistics (Stats)

Properties	Operational
Description	This attribute group contains the collection of statistics as defined by MIB II providing basic instrumentation of a SNMP Agent. The group is derived from RFC 1213. Statistics which are only relevant for SNMP managers do not appear.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp MibIIStats inPackets

Access	Read only
Description	This attribute indicates the total number of SNMP messages received by the SNMP management entity. This attribute wraps to zero when its maximum value is exceeded.

Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inBadCommunityNames

Access	Read only
Description	This attribute indicates the number of SNMPv1 or SNMPv2c messages received by the SNMP management entity which had an unknown SNMPv1 or SNMPv2c Community string. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inBadCommunityUses

Access	Read only
Description	This attribute indicates the number of SNMPv1 or SNMPv2c messages received by the SNMP management entity which attempted to perform an operation not allowed for the indicated SNMPv1 or SNMPv2c Community. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inAsnParseErrs

Access	Read only

Description	This attribute indicates the number of SNMP messages received by the SNMP management entity which were improperly BER encoded or had an invalid ASN.1 syntax. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats outPackets

Access	Read only
Description	This attribute indicates the number of SNMP messages transmitted by the SNMP management entity. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inBadVersions

Access	Read only
Description	This attribute indicates the number of SNMP messages received by the SNMP management entity with an invalid SNMP version number. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inTotalReqVars

Access	Read only
Description	This attribute indicates the number of MIB objects successfully retrieved by SNMP Get and Get-Next requests. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inTotalSetVars

Access	Read only
Description	This attribute indicates the number of MIB objects successfully set by SNMP Set requests. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inGetRequests

Access	Read only
Description	This attribute indicates the number of SNMP Get requests accepted and processed by the SNMP management entity. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inGetNexts

Access	Read only
Description	This attribute indicates the number of SNMP Get-Next requests accepted and processed by the SNMP management entity. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats inSetRequests

Access	Read only
Description	This attribute indicates the number of SNMP Set requests accepted and processed by the SNMP management entity. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats outTooBigs

Access	Read only
Description	This attribute indicates the number of SNMP responses generated by the SNMP management entity with an error-status field of tooBig.

	This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats outNoSuchNames

Access	Read only
Description	This attribute indicates the number of SNMP responses generated by the SNMP management entity with an error status field of noSuchName. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats outBadValues

Access	Read only
Description	This attribute indicates the number of SNMP responses generated by the SNMP management entity with an error status field of badValue. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats outGenErrs

Access	Read only
Description	This attribute indicates the number of SNMP responses generated by the SNMP management entity with an error-status field of genErr. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats outGetResponses

Access	Read only
Description	This attribute indicates the number of SNMP Get responses generated by the SNMP management entity. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats outTraps

Access	Read only
Description	This attribute indicates the number of SNMP Traps generated by the SNMP management entity. This attribute wraps to zero when its maximum value is exceeded.

Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats silentDrops

Access	Read only
Description	This attribute indicates the total number of GetRequests, GetNextRequests, GetBulkRequests, SetRequests, and InformRequests delivered to the SNMP entity which were silently dropped because the size of a reply containing an alternate Response-PDU with an empty variable-bindings field was greater than either a local constraint or the maximum message size associated with the originator of the request. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vr Snmp MibIIStats proxyDrops

Access	Read only
Description	This attribute indicates the total number of GetRequests, GetNextRequests, GetBulkRequests, SetRequests, and InformRequests delivered to the SNMP entity which were silently dropped because the transmission of the (possibly translated) message to a proxy target failed in a manner (other than a time-out) such that no Response-PDU could be returned. This attribute wraps to zero when its maximum value is exceeded.
Mib	BaseSnmp
Values	Decimal (0..4294967295)

Default	0

COMPONENT Vr Snmp View

Instance	name [String (1..32, ASCII)] subtree [Integer Sequence]
Groups	"GROUP Vr Snmp View Provisioned (Prov)"
Scope	Device
Description	*Vr/<string> Snmp View/<string, Int_Sequence>* This component represents an entry in the SNMP View Table of RFC 2575. The indices of the *View* component are: - *name* index that is used to identify a family (or a set) of *View* components - *subTree* index that identifies a MIB subTree to be included or excluded in this view The component attributes are derived from RFC 2575.
Mib	BaseSnmp
Common Verbs	Help List Display Add : System_admin DELete : System_admin

GROUP Vr Snmp View Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisionable attributes relating to SNMP View Table subTrees. The attributes are derived from RFC 2575.
Mib	BaseSnmp

ATTRIBUTE Vr Snmp View mask

Access	Read: System_admin Write: System_admin
Description	This attribute in combination with the *subTree* replication value specifies a family of view subtrees. Each bit of this bit mask corresponds to a sub-identifier of *subTree*. The most significant bit of the n-th octet of this octet string value (extended if necessary, see below) corresponds to the (8*n- 7)-th sub-identifier, and the least significant bit of the n-th octet of this octet string corresponds to the (8*n)-th sub-identifier, where n is in the range 1 through 16. Each bit of this bit mask specifies whether or not the corresponding sub-identifiers must match when determining if an OBJECT IDENTIFIER is in this family of view subtrees; a ‘1’ indicates that an exact match must occur; a ‘0’ indicates ‘wild card’, meaning that any sub-identifier value matches. Thus, the OBJECT IDENTIFIER X of an object instance is contained in a family of view subtrees if the following criteria are met: For each sub-identifier of the value of *View subTree*, either the n-th bit of *mask* is 0, or the n-th sub-identifier of X is equal to the n-th sub-identifier of the value of *subTree.* If the value of this bit mask is M bits long and there are more than M sub-identifiers in the *subTree* value, then the bit mask is extended with 1’s to be the required length. Note that when the value of this object is the zero-length string, this extension rule results in a mask of all 1’s being used (no wild card) and the family of *subTrees* is the one uniquely identified by the *subTree* value.
Mib	BaseSnmp
Values	String (0..16, Hex)
Default	""

ATTRIBUTE Vr Snmp View type

Access	Read: System_admin Write: System_admin
Description	This attribute specifies whether the particular family of view subtrees is included or excluded in the SNMPv3 context's or SNMPv1 or SNMPv2c community's MIB view. The value ***includedSubtree*** indicates that the corresponding instances of *subTree* and *mask* define a family of view subtrees included in the MIB view. The value ***excludedSubtree*** indicates that the corresponding instances of *subTree* and *mask* define a family of view subtrees excluded in the MIB view.
Mib	BaseSnmp
Values	includedSubtree excludedSubtree
Default	includedSubtree

COMPONENT Vr IfTableEntry

Instance	Decimal (1..65535)
Groups	"GROUP Vr IfTableEntry IfTable (Ift)" "GROUP Vr IfTableEntry AdditionalInfo"
Scope	Application
Description	*Vr/<string> IfTableEntry/n* Each instance of this component represents one row in the IfTable as defined in rfc1213. One entry will exist for each *ProtocolPort*
Mib	VirtualRouter
Common Verbs	Help List Display

GROUP Vr IfTableEntry IfTable (Ift)

Properties	Operational
Description	This group represents the SNMP interface table entry.
Mib	VirtualRouter

ATTRIBUTE Vr IfTableEntry ifAdminStatus (admStatus)

Access	Read only
Description	This attribute provides the current administration status of the interface. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	VirtualRouter
Values	up down testing
Default	up

ATTRIBUTE Vr IfTableEntry ifOperStatus (opStatus)

Access	Read only
Description	This attribute provides the current operational status of the interface. The ***testing*** state indicates that no operational packets can be passed.
Mib	VirtualRouter
Values	up down testing
Default	down

ATTRIBUTE Vr IfTableEntry ifLastChange (lastChange)

Access	Read only
Description	This attribute provides the value of sysUpTime at the time the interface entered its current operational state. If the current state

	was entered prior to the last re- initialization of the local network management subsystem, then this object contains a zero value.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifInOctets (inOctets)

Access	Read only
Description	This attribute reports the total number of octets received on the interface, including framing characters. The 64-bit version may be available in the *ifHCInOctets* attribute.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifOutOctets (outOctets)

Access	Read only
Description	This attribute reports the total number of octets transmitted out of the interface, including framing characters. The 64-bit version may be available in the *ifHCOutOctets* attribute.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifInDiscards (inDiscard)

Access	Read only
Description	This attribute reports the number of inbound packets which were chosen to be discarded even though no errors had been detected to prevent their being deliverable to a higher layer protocol. One possible reason for discarding such a packet could be to free up buffer space.

Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifOutDiscards (outDiscard)

Access	Read only
Description	This attribute reports the number of outbound packets which were chosen to be discarded even though no errors had been detected to prevent their being transmitted. One possible reason for discarding such a packet could be to free up buffer space.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifInErrors (inErr)

Access	Read only
Description	This attribute reports the number of inbound packets that contained errors preventing them from being deliverable to a higher layer protocol.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifOutErrors (outErr)

Access	Read only
Description	This attribute reports the number of outbound packets that could not be transmitted because of errors.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifInUcastPkts (inUcast)

Access	Read only
Description	This attribute reports the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer. The 64-bit version may be available in the *ifHCInUcastPkts* attribute.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifOutUcastPkts (outUcast)

Access	Read only
Description	This attribute reports the total number of packets that higher level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. The 64-bit version may be available in the *ifHCOutUcastPkts* attribute.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifInNuCastPkts (inNucast)

Access	Read only
Description	This attribute reports the number of non-unicast (i.e., subnetwork- broadcast or subnetwork-multicast) packets delivered to a higher-layer protocol. The corresponding 64-bit versions may be available in the *ifInMulticastPkts* attribute and the *ifInBroadcastPkts* attribute.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifOutNuCastPkts (outNuCast)

Access	Read only
Description	This attribute reports the total number of packets that higher level protocols request be transmitted to a non-unicast address, including those that were discarded or not sent. The corresponding 64-bit versions may be available in the *ifOutMulticastPkts* and *ifOutBroadcastPkts* attributes.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifInUnknownProtos (inUknownProt)

Access	Read only
Description	This attribute reports the number of packets received via the interface which were discarded because of an unknown or unsupported protocol.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifOutQlength (outQlen)

Access	Read only
Description	This attribute represents the length of the output packet queue (in packets).
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifDescription (desc)

Access	Read only

Description	This attribute provides a textual string containing information about the interface. This string includes the name of the manufacturer, the product name and the version of the hardware interface.
Mib	VirtualRouter
Values	String (0..255, ASCII)
Default	No default

ATTRIBUTE Vr IfTableEntry ifType (type)

Access	Read only
Description	This attribute describes the type of interface, distinguished according to the physical/link protocol(s) immediately below the network layer in the protocol stack
Mib	VirtualRouter
Values	other ddnX25 rfc877x25 ethernetCsmacd ethernet8023 tokenBus8024 tokenring8025 man802 starLan hyperChannel fddi lapb sdlc ds1 e1 basicIsdn primaryIsdn propPointToPointSerial ppp bnx ds3 smds

	frameRelay sonetSdh frameRelayService v35 hssi sonetPath aflane8023 aflane8025 v11 channel atmMpeVcEncap atmMpeLlcEncap ilsForwarder ipTunnel virtualMedia localMedia
Default	No default

ATTRIBUTE Vr IfTableEntry ifMtu (mtu)

Access	Read only
Description	This attribute represents the size of the largest datagram which can be sent/received on the interface, specified in octets. For interfaces that are used for transmitting network datagrams, this is the size of the largest network datagram that can be sent on the interface.
Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifSpeed (speed)

Access	Read only
Description	This attribute provides an estimate of the interface's current bandwidth in bits per second. For interfaces which do not vary in bandwidth or for those where no accurate estimation can be made, this object should contain the nominal bandwidth.

Mib	VirtualRouter
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vr IfTableEntry ifPhysicalAddress (phys)

Access	Read only
Description	This attribute represents the interface's address at the protocol layer immediately `below' the network layer in the protocol stack. For interfaces which do not have such an address (e.g., a serial line), this object should be an octet string of zero length.
Mib	VirtualRouter
Values	String (0..17, ASCII)
Default	No default

ATTRIBUTE Vr IfTableEntry ifSpecific (spec)

Access	Read only
Description	This attribute provides a reference to MIB definitions specific to the particular media being used to realize the interface. For example, if the interface is realized by an ethernet, then the value of this object refers to a document defining objects specific to ethernet. If this information is not present, its value should be set to the OBJECT IDENTIFIER 0.0, which is a syntactically valid object identifier, and any conformant implementation of ASN.1 and BER must be able to generate and recognize this value.
Mib	VirtualRouter
Values	Integer Sequence
Default	No default

GROUP Vr IfTableEntry AdditionalInfo

Properties	Operational
Description	This group contains additional information associated with this ifEntry, including SNMP ifXTable entry information.

Mib	VirtualRouter

ATTRIBUTE Vr IfTableEntry componentName (compName)

Access	Read only
Description	This attribute provides a component name associated with this ifEntry. This component is the source of the data stored in this entry. More data may be determined about this entry by looking at the component associated with this component name.
Mib	VirtualRouter
Values	The name of the component
Default	No default

ATTRIBUTE Vr IfTableEntry ifHCInOctets (inHCOctets)

Access	Read only
Description	This attribute reports the total number of octets received on the interface, including framing characters. This High Capacity counter is a 64-bit version of the *ifInOctets* attribute.
Mib	VirtualRouter
Values	Long Integer
Default	No default

ATTRIBUTE Vr IfTableEntry ifHCInUcastPkts (inHCUcast)

Access	Read only
Description	This attribute reports the number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer. This High Capacity counter is a 64-bit version of the *ifInUcastPkts* attribute.
Mib	VirtualRouter
Values	Long Integer
Default	No default

ATTRIBUTE Vr IfTableEntry ifHCOutOctets (outHCOctets)

Access	Read only
Description	This attribute reports the total number of octets transmitted out of the interface, including framing characters. This High Capacity counter is a 64-bit version of the *ifOutOctets* attribute.
Mib	VirtualRouter
Values	Long Integer
Default	No default

ATTRIBUTE Vr IfTableEntry ifHCOutUcastPkts (outHCUcast)

Access	Read only
Description	This attibutes reports the total number of packets that higher-level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent. This High Capacity counter is a 64-bit version of the *ifOutUcastPkts* attribute.
Mib	VirtualRouter
Values	Long Integer
Default	No default

COMPONENT Vr SourceRouteEndStation (Sres)

Groups	"GROUP Vr Sres AdministrativeControl (AdminControl)" "GROUP Vr Sres Provisioned (Prov)" "GROUP Vr Sres OperationalStatus (OperStatus)" "GROUP Vr Sres OsiState (State)" "GROUP Vr Sres Operational (Oper)"
Scope	Application

Description	*Vr/<string> SourceRouteEndStation* This component defines source routing for source routing end stations.
Mib	SourceRouteEndStation
Dyn. Subcomp.	"COMPONENT Vr Sres RouteEntry (Re)"
Common Verbs	Help List Display Add DELete

VERB Clear Vr Sres

Impact	Service
Description	*Clear Vr/<string> Sres* This clears all entries in the *RouteEntry* table. This will in effect delete all *RouteEntry* subcomponents of *Sres*. Routes will then be relearned and the *RouteEntry* subcomponents will be recreated.

GROUP Vr Sres AdministrativeControl (AdminControl)

Properties	Provisioned
Description	This group includes the Administrative Control attribute. This attribute defines the current administrative state of this component.
Mib	SourceRouteEndStation

ATTRIBUTE Vr Sres snmpAdminStatus

Access	Read only
Description	This attribute is used to set the desired state of the interface. The ***up*** state indicates the interface is operational and packet forwarding is allowed. The ***down*** state indicates the interface is not operational and packet forwarding is unavailable. The ***testing*** state indicates that no operational packets can be passed. Changing this attribute from its default value of ***up*** is not allowed at this time.

Mib	SourceRouteEndStation
Values	up down testing
Default	up

GROUP Vr Sres Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisioned attributes for the *SourceRouteEndStation* component.
Mib	SourceRouteEndStation

ATTRIBUTE Vr Sres routeTableNumEntries (rtNe)

Access	Read and write
Criticality	Component
Description	This attribute identifies the maximum number of entries in the *SourceRouteEndStation* routing table. Before you change it, check the network configuration to see how many protocol ports, such as *IpPort* or *IpxPort*, under *Vr Pp* have *endStationSupport* set to ***enable***. The value of *routeTableNumEntries* also depends on the *VirtualRouter* attribute *sresMaxHeapSpace*. Consider the following attributes of the *SourceRouteEndStation* component when adjusting this number: - *rtEntriesUsed* - *rtEntriesFree* - *rtEntriesDenied*
Mib	SourceRouteEndStation
Values	Decimal (0..65535)
Default	5000

ATTRIBUTE Vr Sres agingTime (at)

Access	Read and write

Description	This attribute specifies the time period used in seconds, to age out learned entries in the routing table.
Mib	SourceRouteEndStation
Values	Decimal (200..1000000)
Units	seconds
Default	900

ATTRIBUTE Vr Sres routeDescriptorLength (rdLength)

Access	Read only
Description	This attribute indicates the maximum number of route descriptors supported by this implementation. The maximum number of hops will be one less because one route descriptor is always required for the destination. This attribute affects the amount of memory used by the route entry table. The larger this attribute is, the more memory the route entry table will use.
Mib	SourceRouteEndStation
Values	Decimal (8..14)
Default	14

GROUP Vr Sres OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	SourceRouteEndStation

ATTRIBUTE Vr Sres snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib	SourceRouteEndStation
Values	up down testing
Default	up

GROUP Vr Sres OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	SourceRouteEndStation

ATTRIBUTE Vr Sres adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	SourceRouteEndStation

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vr Sres operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	SourceRouteEndStation
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vr Sres usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	SourceRouteEndStation
Values	idle active (activ) busy
Default	idle

GROUP Vr Sres Operational (Oper)

Properties	Operational
Description	This group contains the operational attributes for the *SourceRouteEndStation* component.
Mib	SourceRouteEndStation

ATTRIBUTE Vr Sres rtEntriesUsed (rteU)

Access	Read only
Description	This attribute specifies the total number of *SourceRouteEndStation* routing table entries. The value is limited by the attribute *routeTableNumEntries*, which is a provisionable attribute. If the value is consistently approaching the value of *routeTableNumEntries*, it is advisable to increase the value provisioned for *routeTableNumEntries*. It indicates a potential shortage of routing table entries in the future.
Mib	SourceRouteEndStation
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Sres rtEntriesFree (rteF)

Access	Read only
Description	This attribute is indicative of the number of *Sres* routing table entries free. A consistently high value for this attribute indicates that there is a resource surplus here, in terms of the memory requirements of the routing table. This surplus could be utilized elsewhere if need be. The value of this attribute is directly influenced by the value of the attribute *routeTableNumEntries.*

Mib	SourceRouteEndStation
Values	Decimal (0..65535)
Default	0

ATTRIBUTE Vr Sres rtEntriesDenied (rteD)

Access	Read only
Description	This attribute counts the number of times a *SourceRouteEndStation* routing table entry was unavailable. Each count indicates an instance of a new route which could not be learned because of a lack of routing table entries. A rapid increase indicates a shortage of routing table entries. To rectify this, increase the number of routing table entries through the provisioned attribute *routeTableNumEntries* under the *SourceRouteEndStation* component. This counter wraps around its maximum value of 4294967295.
Mib	SourceRouteEndStation
Values	Decimal (0..4294967295)
Default	0

COMPONENT Vr Sres RouteEntry (Re)

Instance	destMacAddress (dma) [String (6, Dashed Hex)] protocolPortName (port) [String (1..20, ASCII)]
Groups	"GROUP Vr Sres Re Operational (Oper)"
Scope	Application
Description	*Vr/<string> Sres RouteEntry/xx-xx-xx-xx-xx-xx,<string>* This component is used to contain the data associated with a source routing destination address. Each entry represents one row

in the Route Table. The table is indexed by the route destination MAC address in canonical format and *ProtocolPort* name.

Mib: SourceRouteEndStation

Common Verbs: Help, List, Display

VERB Clear Vr Sres Re

Impact: Service

Description: *Clear Vr/<string> Sres RouteEntry/xx-xx-xx-xx-xx-xx,<string>* This clears this entry in the *RouteEntry* table. This will in effect delete this *RouteEntry* subcomponent of *Sres*. The route may then be relearned and the *RouteEntry* subcomponent will be recreated.

GROUP Vr Sres Re Operational (Oper)

Properties: Operational

Description: This group contains information relating to a source routing destination address.

Mib: SourceRouteEndStation

ATTRIBUTE Vr Sres Re routeControl (rc)

Access: Read only

Description: This is the value of the routing control field for this route.

Mib: SourceRouteEndStation

Values: String (2, Hex)

Default: No default

ATTRIBUTE Vr Sres Re rifLength

Access: Read only

Description: This attribute is used to display the length of the routing information field in the routing control field.

Mib	SourceRouteEndStation
Values	Decimal (2..30)
Default	No default

ATTRIBUTE Vr Sres Re rdDirection

Access	Read only
Description	This attribute indicates the direction to use routing descriptors (RDs). If set to ***leftToRight*** the routing descriptors, displayed in *routeDescr*, will be interpreted from left to right. If set to ***rightToLeft*** they will be interpreted from right to left. If *rifLength* is zero, this attribute will be set to ***noRif*** to indicate that there are no routing descriptors to be read.
Mib	SourceRouteEndStation
Values	leftToRight rightToLeft noRif
Default	No default

ATTRIBUTE Vr Sres Re routeDescr (rd)

Access	Read only
Description	This is the embedded sequence of bridge and ring IDs for this route. For destinations on the local ring, the value of this attribute is the zero-length string. Refer to *rdDirection* for the direction in which to read the route descriptors. The format of the hexadecimal data displayed is as follows: 12 bit Ring Number - 4 bit Bridge Number... XXX-X XXX-X XXX-X...
Mib	SourceRouteEndStation
Values	String (0..90, ASCII)
Default	No default

COMPONENT Vr CustomizationSpecification (CustSpec)

Groups	"GROUP Vr CustSpec Provisioned (Prov)"
Scope	Application
Description	*Vr/n CustomizationSpecification* This component represents the type of customized behavior which will be provided by the parent *VirtualRouter* component when this component is present. This component can only be provisioned when the ***ip*** feature is added to at least one of the following card types: ***Vsp2*** ***2pGeMmSrVsp3*** ***2pOC3ChSmIrVsp3***
Mib	CustSpec
Common Verbs	Help List Display Add DELete

GROUP Vr CustSpec Provisioned (Prov)

Properties	Provisioned
Description	This group contains provisioning data for the *CustSpec* component.
Mib	CustSpec

ATTRIBUTE Vr CustSpec customizationType (custType)

Access	Read and write
Description	This attribute specifies the type of customized behavior which will be provided by the parent *VirtualRouter* component. The

	following customizations are supported: ***pvg*** - It supports *IfTable* stats for the port linked to *VirtualMedia* and CG for *VirtualMedia* for a generic Packet Voice Gateway. ***cdma*** - It is customized for CDMA wireless application over a Packet Voice Gateway.
Mib	CustSpec
Values	pvg cdma
Default	pvg

Nortel Networks Multiservice Switch 7400/15000/20000

Component Vr

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Vsr

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Vsr

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COMPONENT VoiceSubroute (Vsr)

Instance	Decimal (1..1534)
Groups	"GROUP Vsr CustomerIdentifierData (CidData)" "GROUP Vsr IfEntryProv (IfEntry)" "GROUP Vsr Provisioned (Prov)" "GROUP Vsr OsiState (State)" "GROUP Vsr OperationalStatus (OperStatus)" "GROUP Vsr Statistics (Stats)" "GROUP Vsr Operational (Oper)"

"COLLECTED STATS VoiceSubroute"

Scope	Application
Description	*VoiceSubroute/n* A *VoiceSubroute* component defines the characteristics of the connection to a Private Branch Exchange (PBX). A *VoiceSubroute* is a collection of 64 kbit/s channels on the same

	physical DS1 or E1 interface. Typically there is one *VoiceSubroute* per physical link.
Mib	VoiceNetworking
Opt. Subcomp.	"COMPONENT Vsr SwitchedVoiceService (Svs)"
Dyn. Subcomp.	"COMPONENT Vsr DebugStatus (Debug)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vsr CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	VoiceNetworking

ATTRIBUTE Vsr customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

	An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	VoiceNetworking
Values	Decimal (0; 1..8191)
Default	0

GROUP Vsr IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	VoiceNetworking

ATTRIBUTE Vsr ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing
Default	up

ATTRIBUTE Vsr ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.

Mib	VoiceNetworking
Values	Decimal (1..65535)
Default	No default

GROUP Vsr Provisioned (Prov)

Properties	Provisioned
Description	This group represents the provisionable attributes of a *VoiceSubroute*.
Mib	VoiceNetworking

ATTRIBUTE Vsr commentText

Access	Read: All Write: All
Description	Use of this attribute is at the discretion of the system administrator. Typically, it specifies the name of the customer that is using this *VoiceSubroute*. Typical use of this attribute is to store customer name.
Mib	VoiceNetworking
Values	String (0..40, ASCII)
Default	No default

ATTRIBUTE Vsr voiceRoute (vRoute)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the *VoiceRoute* component that this *VoiceSubroute* belongs to.
Mib	VoiceNetworking
Values	Link (Service, subroutes)
Default	No default

ATTRIBUTE Vsr signallingChannel (sigChan)

Access	Read: All Write: All
Criticality	Process
Description	This attribute specifies the signalling channel to be used by the *VoiceSubroute*.
Mib	VoiceNetworking
Values	Link (Service, subroutes)
Default	No default

GROUP Vsr OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE Vsr adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

	The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vsr operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vsr usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: VoiceNetworking

Values:
idle
active (activ)
busy

Default: idle

GROUP Vsr OperationalStatus (OperStatus)

Properties: Operational

Description: This group includes the Operational Status attribute. This attribute defines the current operational state of this component.

Mib: VoiceNetworking

ATTRIBUTE Vsr snmpOperStatus

Access: Read only

Description: The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.

Mib: VoiceNetworking

Values:
up
down
testing

Default: up

GROUP Vsr Statistics (Stats)

Properties: Operational

Description	This group provides the operational statistics for the *VoiceSubroute* component.
Mib	VoiceNetworking

ATTRIBUTE Vsr totalCallsFromIf

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of calls that have been received by this *VoiceSubroute* from the PBX. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr totalFailedCallsFromIf

Access	Read: All Write: Illegal
Description	This attribute counts indicates the total number of calls that have been received by this *VoiceSubroute* from the PBX which failed to be successfully routed through the subnet for various reasons. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr invalidNumberingPlanCalls

Access	Read: All Write: Illegal
Description	This attribute counts the calls from the interface for which the type of number and the numbering plan identification was not associated to an access code. The numbering plan types *noAccessCode*, *accessCode1* and *accessCode2* are provisioned in

	the *VoiceRoute*. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr addressResolutionFailedCalls

Access	Read: All Write: Illegal
Description	This attribute counts the calls from the interface which had dialled numbers that had no entry in the *VoiceNetworkingCallServer* data base. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr addressIncompleteCalls

Access	Read: All Write: Illegal
Description	This attribute counts the calls from the interface which had dialled numbers with insufficient digits to resolve to a unique entry in the *VoiceNetworkingCallServer* data base. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr pathAttributesNotMetCalls

Access	Read: All Write: Illegal

Description	This attribute counts the calls from the interface for which a path to the end point could not be established based on the attributes specified in the *VoiceProfile*. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr pathSetupTimeOutCalls

Access	Read: All Write: Illegal
Description	This attribute counts the calls from the interface for which a path to the end point could not be established due to a subnet path setup time-out. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr callsRejectedLocally

Access	Read: All Write: Illegal
Description	This attribute counts the calls from the interface which were rejected by the originating end because it was: 1) a data call on a voice only *VoiceRoute*, or 2) a voice call on a data only *VoiceRoute*, or 3) a data call to an end-point whose *VoiceProfile* prevents data calls from being made. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr callsRejectedByFarEnd

Access	Read: All Write: Illegal
Description	This attribute counts the calls from the interface which were rejected by the far-end. This rejection could be due to: 1) no free channels at the end-point, or 2) a voice call going to a data only *VoiceRoute*, or 3) a data call going to a voice only *VoiceRoute*, or 4) a signalling protocol incompatibility between end-points. The value wraps to zero when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

GROUP Vsr Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the *VoiceSubroute* component.
Mib	VoiceNetworking

ATTRIBUTE Vsr activeChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of B-channels that currently have active calls.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr peakActiveChannels

Access	Read: All Write: Illegal

Description	This attribute indicates the peak number of B-channels that were active.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr activeVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of B-channels that are currently carrying voice.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr activeModemChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of B-channels that are currently active, where a 2100Hz tone was detected.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr activeDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of B-channels that are currently active carrying data.
Mib	VoiceNetworking

Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr peakActiveVoiceChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the peak number of B-channels that were active carrying voice traffic.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr peakActiveModemChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the peak number of active B-channels that a 2100Hz tone was detected during the previous polling period.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr peakActiveDataChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the maximum number of B-channels that were active carrying data during the previous polling period.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr activeFaxRelayChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of B-channels that are currently performing fax relay.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr activeTptChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the number of B-channels that are currently performing tandem pass through.
Mib	VoiceNetworking
Values	Decimal (0..32)
Default	No default

ATTRIBUTE Vsr peakActiveFaxRelayChannels

Access	Read: All Write: Illegal
Description	This attribute indicates the peak number of B-channels that performed fax relay during the previous polling period.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

ATTRIBUTE Vsr peakActiveTptChannels

Access	Read: All Write: Illegal

Description	This attribute indicates the peak number of B-channels that performed tandem pass through during the previous polling period.
Mib	VoiceNetworking
Values	Decimal (0..30)
Default	No default

COLLECTED STATS VoiceSubroute

Description	The statistics record generated by the VoiceSubroute component.

ATTRIBUTE Vsr totalCallsFromIf

Description	This spooled statistic counts the number of calls that have been received by this *VoiceSubroute* from the PBX in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Vsr totalFailedCallsFromIf

Description	This spooled statistic counts the number of calls that have been received by this *VoiceSubroute* from the PBX which failed to be successfully routed through the subnet in the last statistics collection interval.
Values	Decimal (0..65535)

ATTRIBUTE Vsr invalidNumberingPlanCalls

Description	This spooled statistic counts the calls from the interface for which the type of number and the numbering plan identification was not associated with a diallingPlan in the last statistics collection interval. The numbering plan types *diallingPlan0, diallingPlan1, diallingPlan2* are provisioned in the *VoiceRoute*.
Values	Decimal (0..65535)

ATTRIBUTE Vsr addressResolutionFailedCalls

Description	This spooled statistic counts the calls from the interface which had dialled numbers that had no entry in the

VoiceNetworkingCallServer data base in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Vsr addressIncompleteCalls

Description This spooled statistic counts the calls from the interface which had dialled numbers with insufficient digits to resolve to a unique entry in the *VoiceNetworkingCallServer* data base in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Vsr pathAttributesNotMetCalls

Description This spooled statistic counts the calls from the interface for which a path to the end point could not be established based on the attribute specified in the *VoiceProfile* in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Vsr pathSetupTimeOutCalls

Description This spooled statistic counts the calls from the interface for which a path to the end point could not be established due to a subnet path setup time-out in the last statistics collection interval.

Values Decimal (0..65535)

ATTRIBUTE Vsr callsRejectedLocally

Description This spooled statistic counts the calls from the interface which were rejected by the originating end in the last statistics collection interval because it was:
1) a data call on a voice only *VoiceRoute*, or
2) a voice call on a data only *VoiceRoute*, or
3) a data call to an end-point whose *VoiceProfile* prevents data calls from being made.

Values Decimal (0..65535)

ATTRIBUTE Vsr callsRejectedByFarEnd

Description	This spooled statistic counts the calls from the interface which were rejected by the far-end in the last statistics collection interval.This rejection could be due to: 1) no free channels at the end-point, or 2) a voice call going to a data only *VoiceRoute*, or 3) a data call going to a voice only *VoiceRoute*, or 4) a signalling protocol incompatibility between end-points.
Values	Decimal (0..65535)

ATTRIBUTE Vsr peakActiveChannels

Description	This spooled statistic counts the peak number of B-channels that were active in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveVoiceChannels

Description	This spooled statistic counts the peak number of B-channels that were active carrying voice in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveModemChannels

Description	This spooled statistic counts the peak number of active B-channels that a 2100Hz tone was detected in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveDataChannels

Description	This spooled statistic counts the maximum number of B-channels that were active carrying data in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr peakActiveFaxRelayChannels

Description	This spooled statistic counts the maximum number of B-channels that were active carrying fax relay calls in the last statistics collection interval.
Values	Decimal (0..30)

ATTRIBUTE Vsr totalCalls

Description	This spooled statistic counts the call attempts processed on this channel (in both directions) in the last statistics collection interval. This counter includes the number of unsuccessful as well as successful call attempts.
Vector of	Decimal (0..65535)
Index	Decimal (1..32)

ATTRIBUTE Vsr totalCallSeconds

Description	This spooled statistic counts the number of seconds that each channel is handling a call in the last statistics collection interval. This is regardless of whether the call is successful or not. In other words, this is the amount of time that the channel is not in the idle state.
Vector of	Decimal (0..65535)
Units	seconds
Index	Decimal (1..32)

ATTRIBUTE Vsr voiceRouteInstance

Description	This spooled statistic is the value of the *VoiceRoute* linked to this *VoiceSubRoute*.
Values	Decimal (1..16)

COMPONENT Vsr SwitchedVoiceService (Svs)

Instance	Decimal (1..32)
Groups	"GROUP Vsr Svs IfEntryProv (IfEntry)" "GROUP Vsr Svs Operational (Oper)"

	"GROUP Vsr Svs Statistics (Stats)" "GROUP Vsr Svs OsiState (State)" "GROUP Vsr Svs OperationalStatus (OperStatus)"
Scope	Application
Description	*Vsr/n SwitchedVoiceService/n* The *SwitchedVoiceService* component defines the operational characteristics of the connection to a Private Branch Exchange (PBX). One instance of this component must be required for each channel (that is, time slot) which is part of the *VoiceSubroute*.
Mib	VoiceNetworking
Subcomponents	"COMPONENT Vsr Svs Framer (Framer)"
Dyn. Subcomp.	"COMPONENT Vsr Svs LogicalConnection (LCo)" "COMPONENT Vsr Svs VnetSvsDebug (Debug)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vsr Svs IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.

Mib	VoiceNetworking
Values	up down testing
Default	up

ATTRIBUTE Vsr Svs ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	VoiceNetworking
Values	Decimal (1..65535)
Default	No default

GROUP Vsr Svs Operational (Oper)

Properties	Operational
Description	This group provides the operational attributes for the *SwitchedVoiceService* component.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs status

Access	Read: All Write: Illegal
Description	This attribute indicates the current state of the channel. ***idle*** means that there is no call currently active on this channel. ***seized*** means that the channel is currently setting up a call, but a connect message has not been received. ***answered*** means that a connect message has been received. ***clearing*** means that the call is being taken down. ***lockout*** means that due to glare or channel rejection, the channel is available for ingress calls only. That is, either the PBX and the

node tried to seize the channel for a call at the same time (glare), or the PBX rejected the node seizure.
idleMaintenance means that due to explicit channel maintenance messages, the channel is not available for egress calls. This can only happen when the protocol control places the channel into a maintenance state, and only happens if the node receives a message causing the channel state change such as the SERVICE maintenance message.

Mib: VoiceNetworking

Values:
idle
seized
answered
clearing
lockout
idleMaintenance (maint)

Default: No default

ATTRIBUTE Vsr Svs profileNumber (pn)

Access: Read: All
Write: Illegal

Description: This attribute indicates the *VoiceProfile* number that is being used for this call. If no call is active, then it displays the value of the last profile used.

Mib: VoiceNetworking

Values: Decimal (0..128)

Default: 0

ATTRIBUTE Vsr Svs callType (ct)

Access: Read: All
Write: Illegal

Description: This attribute indicates the type of call that this channel is currently carrying. If no call is active, then it displays the value for the last call.

Mib: VoiceNetworking

Values	voice data modem
Default	No default

ATTRIBUTE Vsr Svs calledNumber (cldn)

Access	Read: All Write: Illegal
Description	This attribute indicates the dialled number that is active on this channel. If no call is active, then it displays the dialled number from the last call.
Mib	VoiceNetworking
Values	BCD (1..32)
Default	No default

ATTRIBUTE Vsr Svs callingNumber (clgdn)

Access	Read: All Write: Illegal
Description	This attribute indicates the originator's number for the currently active call. If no call is active, then it displays the originator's number from the last call.
Mib	VoiceNetworking
Values	BCD (1..16)
Default	No default

ATTRIBUTE Vsr Svs clearCauseCode (ccc)

Access	Read: All Write: Illegal
Description	This attribute indicates the clear cause code of the call. This code is always the Q.931 code, regardless of the access protocol.
Mib	VoiceNetworking
Values	Hex (H.0..H.7f)

Default	No default

GROUP Vsr Svs Statistics (Stats)

Properties	Operational
Description	This group provides the operational attributes for the *SwitchedVoiceService* component.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs totalCalls (tc)

Access	Read: All Write: Illegal
Description	This attribute counts the call attempts processed on this channel (in both directions). This counter includes the number of unsuccessful as well as successful call attempts. The value wraps when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE Vsr Svs totalCallSeconds (tcs)

Access	Read: All Write: Illegal
Description	This attribute indicates the total number of seconds that this channel is handling a call. This is regardless of whether the call is successful or not. In other words, this is the amount of time that the channel is not in the idle state. The value wraps when it reaches its maximum.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Units	seconds
Default	0

GROUP Vsr Svs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vsr Svs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vsr Svs usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	VoiceNetworking
Values	idle active (activ) busy

Default	idle

GROUP Vsr Svs OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	VoiceNetworking
Values	up down testing
Default	up

COMPONENT Vsr Svs Framer (Framer)

Groups	"GROUP Vsr Svs Framer Provisioned (Prov)" "GROUP Vsr Svs Framer OsiState (State)" "GROUP Vsr Svs Framer Statistics (Stats)" "GROUP Vsr Svs Framer Operational (Oper)" "GROUP Vsr Svs Framer Negotiation (Neg)"

"COLLECTED STATS VoiceSubroute SwitchedVoiceService Framer"

Scope	Device
Description	*Vsr/n Svs/n Framer* The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *E1* or *DS1*).
The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.
The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts).

Mib: VoiceNetworking

Dyn. Subcomp.: "COMPONENT Vsr Svs Framer VfpDebug"
"COMPONENT Vsr Svs Framer MvpDebug"
"COMPONENT Vsr Svs Framer PcmCapture (PcmCapture)"

Common Verbs: Help
List
Display

GROUP Vsr Svs Framer Provisioned (Prov)

Properties: Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib: VoiceNetworking

ATTRIBUTE Vsr Svs Framer interfaceName

Access: Read and write

Criticality: Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This

	defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	VoiceNetworking
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Vsr Svs Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	VoiceNetworking

Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vsr Svs Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	VoiceNetworking
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE Vsr Svs Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib	VoiceNetworking
Values	idle active (activ) busy
Default	idle

GROUP Vsr Svs Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs Framer totalCells

Access	Read only
Description	This attribute counts the cells received from the interface. Each cell contains 44 bytes of data from the DS0 channel. Since a DS0 provides data at 64kbit/s, each cell contains 5.5 ms of audio data. This data flow is measured before compression is performed on the channel. The counter wraps to zero when it exceeds its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer audioCells

Access	Read only
Description	This attribute counts the total number of cells containing audio data received from the interface while the channel was seized. A CCS channel is always considered to be seized. Audio data includes cells containing voice as well modem audio, but not

	silence. A cell contains 44 bytes of data from the DS0 channel(5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer silenceCells

Access	Read only
Description	This attribute counts the total number of cells containing silence data received from the interface which was not forwarded into the network, thus saving bandwidth. A channel may go into silence due to the operation of the silence suppression feature or for CAS channels when the ABCD signalling bits go idle. A cell contains 44 bytes of data from the DS0 channel(5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer lrcErrors

Access	Read only
Description	This attribute counts the number of frames received from the network with LRC errors.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer frmLostInNetwork

Access	Read only
Description	This attribute counts the number of frames which the service knows it did not receive from the network although they were sent in to the network from the far end.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer frmUnderRuns

Access	Read only
Description	This attribute counts the number of times that a frame was needed but was not available because it had been delayed too long in the network. This error may occur repeatedly if the interface clocks at the two access points to the network are operating at different rates.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer frmDumped

Access	Read only
Description	This attribute counts the number of frames which have been dumped because the output queue grew too large. This can occur if the clock rate on the incoming interface is faster than the clock rate on the outgoing interface and there are no silence periods to absorb the difference, or when a compression rate change occurs. This count wraps to zero after reaching its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer faxRelayCells

Access	Read only
Description	This attribute counts the total number of fax relay cells sent to the network. This counter wraps to zero after reaching its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer modemFaxCells

Access	Read only
Description	This attribute counts the total number of cells containing modem data received from the interface while the channel was seized. A CCS channel is always considered to be seized. Cells are considered to be modem data if a constant energy level above -25 dBmO is detected for more than 900 ms. An energy level below -36 dBmO for more than 650 ms is required to detect that the modem is no longer present. A cell contains 44 bytes of data from the DS0 channel (5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer faxIdleCells

Access	Read only
Description	This attribute counts the total number of cells containing silent fax data received from the interface which were not forwarded into the network, thus saving bandwidth. A channel may go into silence due to the silence Suppression feature or for CAS channels when the ABCD signalling bits go idle.

	A cell contains 44 bytes of data from the DS0 channel (5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vsr Svs Framer frmToNetwork

Access	Read only
Description	This attribute counts the number of frames sent to the network at each encoding rate. Fax relay cells are not included.
Mib	VoiceNetworking
Vector of	Decimal (0..4294967295)
Index	64 kbit/s 32 kbit/s 24 kbit/s 16 kbit/s 8 kbit/s
Default	No default

ATTRIBUTE Vsr Svs Framer frmFromNetwork

Access	Read only
Description	This attribute counts the number of frames received from the network at each encoding rate.

Mib	VoiceNetworking
Vector of	Decimal (0..4294967295)
Index	64 kbit/s 32 kbit/s 24 kbit/s 16 kbit/s 8 kbit/s
Default	No default

GROUP Vsr Svs Framer Operational (Oper)

Properties	Operational
Description	This group contains the operational data for a *Svs Framer.*
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs Framer currentEncoding

Access	Read only
Description	This attribute indicates the encoding currently being performed on this channel. ***g711*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 is being performed. ***g726*** indicates that adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726 is being performed. ***g728*** indicates that the Low Delay Coded Excited Linear Predictive Coder (LD-CELP) algorithm defined by ITU-T G.728 is being performed. ***g729*** indicates that the Conjunctive Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) algorithm defined by ITU-T G.729 is being performed. ***v27*** indicates that the algorithm defined by ITU-T V.27 is being performed. ***v29*** indicates that the algorithm defined by ITU-T V.29 is being performed.
Mib	VoiceNetworking
Values	none g729 g728 g723 g726

	g711 v22 v22bis faxRelay v27 v29 v17
Default	No default

ATTRIBUTE Vsr Svs Framer currentRate

Access	Read only
Description	This attribute indicates the current encoding rate for frames being sent to the network.
Mib	VoiceNetworking
Values	0 0.3 1.2 2.4 4.8 5.3 6.3 7.2 8.0 9.6 12.0 14.4 16.0 24.0 32.0 64.0
Units	kbit/s
Default	No default

ATTRIBUTE Vsr Svs Framer tptStatus

Access	Read only

Description	This attribute indicates the current status of the tandem pass through algorithm. If *tptStatus* is ***operating,*** the tandem pass through algorithm is cutting through a voice switch. If *tptStatus* is ***monitoring***, *negotiatedTandemPassThrough* is ***enabled***, but the tandem pass through algorithm is not cutting through a voice switch. If *tptStatus* is ***disabled***, *negotiatedTandemPassThrough* is ***disabled***.
Mib	VoiceNetworking
Values	operating monitoring disabled
Default	No default

GROUP Vsr Svs Framer Negotiation (Neg)

Properties	Operational
Description	This group contains the attributes indicating the results of voice networking end to end negotiation.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs Framer negotiatedSilenceSuppression (nSilenceSuppression)

Access	Read and write
Description	This attribute indicates the result of negotiating silence suppression with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp silenceSuppression*. If *negotiatedSilenceSuppression* is ***off***, silence suppression is never performed. If *negotiatedSilenceSuppression* is ***on***, silence suppression is always performed. If *negotiatedSilenceSuppression* is ***congested***, silence suppression is performed only when the network is congested. If *negotiatedSilenceSuppression* is ***slow***, silence suppression begins after 10 to 20 seconds without any speech or audio being detected.

If *negotiatedSilenceSuppression* is ***slowAndCongested***, both the ***slow*** and ***congested*** options are applied.

Mib: VoiceNetworking

Values:
off
on
congested
slow
slowAndCongested

Default: No default

ATTRIBUTE Vsr Svs Framer negotiatedFisG711G726 (nFisG711G726)

Access: Read and write

Description: This attribute indicates the result of negotiating G.711/G.726 fax idle suppression with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp faxIdleSuppressionG711G726*.

Mib: VoiceNetworking

Values:
off
on

Default: No default

ATTRIBUTE Vsr Svs Framer negotiatedDtmfRegeneration (nDtmfRegeneration)

Access: Read and write

Description: This attribute indicates the result of negotiating DTMF regeneration with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp dtmfRegeneration*.

If *negotiatedDtmfRegeneration* is ***on***, DTMF tones received from the link are first converted to digits before being sent to the subnet. When a digit is received from the subnet, its respective DTMF tone is generated before being sent to the link.

If *negotiatedDtmfRegeneration* is ***off***, DTMF tones are transported transparently.

Mib	VoiceNetworking
Values	off on
Default	No default

ATTRIBUTE Vsr Svs Framer negotiatedV17AsG711G726 (nV17AsG711G726)

Access	Read only
Description	This attribute indicates how this *SwitchedVoiceService* negotiates with V.17 fax machines, as determined by negotiation with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp v17EncodedAsG711G726*. If *negotiatedV17AsG711G726* is ***no,*** V.17 fax machines are instructed to use V.29, and V.29 fax traffic sent by fax machines is demodulated and encoded using fax relay. If *negotiatedV17AsG711G726* is ***yes***, V.17 fax machines are permitted to use V.17 and V.17 fax traffic sent by fax machines is encoded using G.711 or G.726, at the rates given in *negotiatedRates*.
Mib	VoiceNetworking
Values	yes no
Default	No default

ATTRIBUTE Vsr Svs Framer negotiatedTandemPassThrough (nTpt)

Access	Read only
Description	This attribute indicates the result of negotiating tandem pass through with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *Vncs Vp tandemPassThrough*.
Mib	VoiceNetworking

Values	enabled disabled
Default	No default

ATTRIBUTE Vsr Svs Framer negotiatedEncoding (nEncoding)

Access	Read and write
Description	This attribute indicates the results of negotiating audio call encodings for ***voice***, ***modemFax*** and ***fax*** traffic with the remote end across the subnet. The parameters used for negotiating with the remote end are provisioned in *Vncs Vp voiceEncodingChoice* and *Vncs Vp modemFaxEncodingChoice*. ***voice*** traffic is all traffic from the start of a call or speech until a 2100 Hz tone or call release. ***modemFax*** traffic is all traffic after a 2100 Hz tone but before a fax preamble, speech or call release. ***fax*** traffic is all traffic after a fax preamble but before speech or call release. ***g711*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 is the negotiated encoding. ***g726*** indicates that Adaptive Differential Pulse Code Modulation (ADPCM) defined by ITU-T G.726 is the negotiated encoding. ***g711G726*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 and Adaptive Differential Pulse Code Modulation (ADPCM) defined by ITU-T G.726 are both negotiated encodings. If *negotiatedEncoding* is ***g711G726***, the actual encoding performed can be either G.711 or G.726, depending on network congestion. ***g728*** indicates that Low Delay Coded Excited Linear Predictive Coder (CS-ACELP) defined by ITU-T G.728 is the negotiated encoding. ***g729*** indicates that Conjunctive Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) defined by ITU-T G.729 is the negotiated encoding. ***v29V27Relay*** indicates that fax relay using ITU-T V.29 or ITU-T V.27 is the negotiated encoding. ***v17V29V27Relay*** indicates that fax relay using ITU-T V.17, ITU-T V.29, or ITU-T V.27 is the negotiated encoding.

	If all negotiated encodings are ***none***, the negotiation of audio call encodings is not complete.
Mib	VoiceNetworking
Vector of	g711 g726 g711G726 g728 g729 v29V27Relay v17V29V27Relay none
Index	voice modemFax fax
Default	No default

ATTRIBUTE Vsr Svs Framer negotiatedRates (nRates)

Access	Read and write
Description	This attribute indicates the results of negotiating minimum and maximum rates for ***voice***, ***modemFax*** and ***fax*** traffic with the remote end across the subnet. The parameters used for negotiating with the remote end are provisioned in *Vncs Vp voiceRates* and *Vncs Vp modemFaxRates*.

Mib	VoiceNetworking
Array of	8.0 16.0 24.0 32.0 64.0 0.0 0.3 1.2 2.4 4.8 7.2 9.6 12.0 14.4
Units	kbit/s
Row	traffic [voice modemFax fax]
Column	rate [min max]
Default	No default

COLLECTED STATS VoiceSubroute SwitchedVoiceService Framer

Description	The statistics record generated by the VoiceSubroute SwitchedVoiceService Framer component.

ATTRIBUTE Vsr Svs Framer rxBytes

Description	This attribute provides the number of bytes received on the link by the Framer in the last collection interval.
Values	Long Integer

ATTRIBUTE Vsr Svs Framer rxFrames

Description	This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE Vsr Svs Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Vsr Svs Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE Vsr Svs Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT Vsr Svs Framer VfpDebug

Scope Application

Description *Vsr/m Svs/n Framer VfpDebug*
This component contains debugging attributes for a voice service running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** functional processor.

Mib VoiceNetworking

Common Verbs
Help
List
Display

COMPONENT Vsr Svs Framer MvpDebug

Scope Application

Description	*Vsr/m Svs/n Framer MvpDebug* This component contains debugging attributes on a voice service's framer running on a ***1pE1Mvp***, ***1pDS1Mvp*** or ***1pTTC2mMvp*** functional processor.
Mib	VoiceNetworking
Common Verbs	Help List Display

COMPONENT Vsr Svs Framer PcmCapture (PcmCapture)

Scope	Application
Description	*Vsr/n Svs/m Framer PcmCapture* This component contains attributes for PCM data capture.
Mib	VoiceNetworking
Common Verbs	Help List Display

COMPONENT Vsr Svs LogicalConnection (LCo)

Groups	"GROUP Vsr Svs LCo PathData" "GROUP Vsr Svs LCo Statistics (Stats)"
Scope	Application
Description	...*Lc* This component contains all of the operation attributes for a Path Oriented Logical Connection.
Mib	VoiceNetworking
Common Verbs	Help List Display

VERB RERoute Vsr Svs LCo

Impact	Service
Description	RERoute ..Lc This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *RERoute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified. This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively. When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path. If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP Vsr Svs LCo PathData

Properties	Operational
Description	This group contains all operational attributes for the path oriented LCo.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs LCo state

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs

while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.

Mib: VoiceNetworking

Values:
pathDown
selectingRoute
connecting
pathUp
pathDownRetrying

Default: No default

ATTRIBUTE Vsr Svs LCo overrideRemoteName (orn)

Access: Read: All
Write: All

Description: If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.

Mib: VoiceNetworking

Values: String (0..40, ASCII)

Default: ""

ATTRIBUTE Vsr Svs LCo end

Access: Read only

Description: This attribute identifies whether this is the calling or called end of the path.

Mib: VoiceNetworking

Values	calling called
Default	No default

ATTRIBUTE Vsr Svs LCo costMetric (cost)

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	VoiceNetworking
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vsr Svs LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.
Mib	VoiceNetworking
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE Vsr Svs LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to

	this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	VoiceNetworking
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE Vsr Svs LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	VoiceNetworking
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Vsr Svs LCo holdingPriority (hpri)

Access	Read only

Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	VoiceNetworking
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Vsr Svs LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Vsr Svs LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value
Mib	VoiceNetworking
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Vsr Svs LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType***,** will be candidates for this connection.
Mib	VoiceNetworking
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Vsr Svs LCo permittedTrunkTypes (pttyp)

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.

Mib	VoiceNetworking
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Vsr Svs LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	VoiceNetworking
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vsr Svs LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks

	whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	VoiceNetworking
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vsr Svs LCo emissionPriority (epri)

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority. EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	VoiceNetworking
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Vsr Svs LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority.* One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).
Mib	VoiceNetworking
Values	Decimal (1..3)
Default	No default

ATTRIBUTE Vsr Svs LCo pathType (pType)

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	VoiceNetworking
Values	normal manual forced
Default	No default

ATTRIBUTE Vsr Svs LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of an un-segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path

	reconnects and stops counting when it reaches its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vsr Svs LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	VoiceNetworking
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vsr Svs LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This reason is also issued when there is no physical connectivity between two end nodes.
Mib	VoiceNetworking
Values	none destinationNameTooLong

destinationNotSpecified
unknownDestinationName
incorrectDestination
incorrectDestinationEndPoint
unknownSource
unknownDestination
sameNode
routeCostTooMuch
routesDelayTooLong
attributesNotMet
anError
attributeProfileProblem
manualPathIndexProblem

Default none

ATTRIBUTE Vsr Svs LCo lastTearDownReason

Access Read only

Description This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons:
none - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up.
normalShutDown - This path has gone down due to normal call termination.
insufficientTxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction.
insufficientRxLcOrBandwidth - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction.
trunkFailure- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute.
trunkCardFailure- A trunk FP card has failed along the path.
accessCardFailure- The FP on which the peer access service was

running has failed.
operatorForced- The path has terminated due to the operator locking a trunk along the path.
lostLcnClash- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.
optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path

changed.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib VoiceNetworking

Values
none
normalShutDown
insufficientTxLcOrBandwidth
insufficientRxLcOrBandwidth
trunkFailure
trunkCardFailure
operatorForced
lostLcnClash
networkCongestion
trunkNotFound
farEndNotFound
wrongModuleReached
farEndBusy
callLoopedBack
unknownReason
farEndNotReady
remoteNameMismatch
serviceTypeMismatch
reconnectFromFarEnd
bumped
accessCardFailure
optimized
overrideRemoteName
trunkOrFarEndDidNotSupportMode

Default none

ATTRIBUTE Vsr Svs LCo pathFailureAction

Access	Read only
Description	This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends
Mib	VoiceNetworking
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE Vsr Svs LCo bumpPreference (bpref)

Access	Read only
Description	This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is lower (numerically higher) than the connection's *setupPriority*. A connection may also always bump in order to obtain the best route.
Mib	VoiceNetworking
Values	bumpWhenNecessary bumpToObtainBestRoute

Default	No default

ATTRIBUTE Vsr Svs LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	VoiceNetworking
Values	disabled enabled
Default	No default

ATTRIBUTE Vsr Svs LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	VoiceNetworking
Values	Time (DHMS)
Default	No default

ATTRIBUTE Vsr Svs LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.

Mib	VoiceNetworking
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP Vsr Svs LCo Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	VoiceNetworking

ATTRIBUTE Vsr Svs LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	VoiceNetworking
Values	Long Integer
Default	No default

ATTRIBUTE Vsr Svs LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	VoiceNetworking
Values	Long Integer
Default	No default

ATTRIBUTE Vsr Svs LCo pktsFromNetwork

Access	Read only

Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	VoiceNetworking
Values	Long Integer
Default	No default

ATTRIBUTE Vsr Svs LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	VoiceNetworking
Values	Long Integer
Default	No default

COMPONENT Vsr Svs VnetSvsDebug (Debug)

Scope	Application
Description	*Vsr/n Svs/n Debug* The *Debug* component defines the debug operational characteristics of the *svs* component.
Mib	VoiceNetworking
Common Verbs	Help List Display

COMPONENT Vsr DebugStatus (Debug)

Scope	Application
Description	*Vsr/n Debug* The *Debug* component defines the debug operational characteristics of the VoiceSubroute component. There are three main areas of interest, the VoiceSubroute itself, the call state machines (CSM), and the call channel manager (CCM).

	These debug groups can be reached by typing: d Vsr/n debug d Vsr/n debug sr d Vsr/n debug csm d Vsr/n debug ccm
Mib	VoiceNetworking
Common Verbs	Help List Display

Nortel Networks Multiservice Switch 7400/15000/20000

Component Vsr

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component Vs

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component Vs

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COMPONENT VoiceService (Vs)

Instance	Decimal (1..65535)
Groups	"GROUP Vs CustomerIdentifierData (CidData)" "GROUP Vs IfEntryProv (IfEntry)" "GROUP Vs OperationalStatus (OperStatus)" "GROUP Vs OsiState (State)" "GROUP Vs Operational"
Scope	Application
Description	*VoiceService/n* The *VoiceService* (*Vs*) component specifies the characteristics of an instance of the voice service.

	One instance of this component is required for each channel offering voice traffic. The instance number is arbitrary.
Mib	Voice
Subcomponents	"COMPONENT Vs Framer (Framer)" "COMPONENT Vs PermanentLogicalConnection (Plc)"
Dyn. Subcomp.	"COMPONENT Vs LogicalConnection (LCo)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP Vs CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	Voice

ATTRIBUTE Vs customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those

	components which have a matching CID. An operator CID of 0 is used to identify the Network Manager (referred to as “NetMan” in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to “basic CIDs” in DPN) may be assigned to specific customers.
Mib	Voice
Values	Decimal (0; 1..8191)
Default	0

GROUP Vs IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	Voice

ATTRIBUTE Vs ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	Voice
Values	up down testing
Default	up

ATTRIBUTE Vs ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component

Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	Voice
Values	Decimal (1..65535)
Default	No default

GROUP Vs OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	Voice

ATTRIBUTE Vs snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	Voice
Values	up down testing
Default	up

GROUP Vs OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes and the six OSI Status attributes. The descriptions generically indicate what each attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific

	information and the valid state combinations, refer to the appropriate NTP.
Mib	Voice

ATTRIBUTE Vs adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component. The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.
Mib	Voice
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vs operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Voice

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vs usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

The OSI Status attributes, if supported by the component, may provide more details, qualifying the state of the component.

Mib: Voice

Values: idle
active (activ)
busy

Default: idle

ATTRIBUTE Vs availabilityStatus (osiAvail)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Availability status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***inTest*** indicates that the resource is undergoing a test procedure. If *adminState* is ***locked*** or ***shuttingDown***, the normal users are precluded from using the resource and *controlStatus* is ***reservedForTest***. Tests that do not exclude additional users can be present in any operational or administrative state but the ***reservedForTest*** condition should not be present. The value ***failed*** indicates that the component has an internal fault that prevents it from operating. The *operationalState* is ***disabled***. The value ***dependency*** indicates that the component cannot operate because some other resource on which it depends is unavailable. The *operationalState* is ***disabled***. The value ***powerOff*** indicates the resource requires power to be applied and it is not powered on. The *operationalState* is ***disabled***. The value ***offLine*** indicates the resource requires a routine operation (either manual, automatic, or both) to be performed to place it on-line and make it available for use. The *operationalState* is ***disabled***. The value ***offDuty*** indicates the resource is inactive in accordance with a predetermined time schedule. In the absence of other disabling conditions, the *operationalState* is ***enabled*** or ***disabled***.

The value ***degraded*** indicates the service provided by the component is degraded in some way, such as in speed or operating capacity. Usually, the resource remains available for service. The *operationalState* is almost always ***enabled***. There is one exception where an *operationalState* of ***disabled*** is used in conjunction with ***degraded*** for a component which represents a rolled up view of a set of other components.

The value ***notInstalled*** indicates the resource is not present. The *operationalState* is ***disabled***.

The value ***logFull*** is not used.

The value ***migrating*** indicates that a software migration activation is in progress, making the component unavailable for other activities until the migration is complete.

Mib: Voice

Set of:
inTest
failed
dependency (depend)
powerOff (pwrOff)
offLine
offDuty
degraded (degrad)
notInstalled (notIn)
logFull
migrating

Default: No default

ATTRIBUTE Vs proceduralStatus (osiProc)

Access: Read only

Description: If supported by the component, this attribute indicates the OSI Procedural status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions

described below is present.

The value ***initializationRequired*** indicates (for a resource which doesn't initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* is ***disabled***.

The value ***notInitialized*** indicates (for a resource which does initialize autonomously) that initialization is required before it can perform its normal functions, and this procedure has not been initiated. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***initializing*** indicates that initialization has been initiated but is not yet complete. The *operationalState* may be ***enabled*** or ***disabled***.

The value ***reporting*** indicates the resource has completed some processing operation and is notifying the results. The *operationalState* is ***enabled***.

The value ***terminating*** indicates the component is in a termination phase. If the resource doesn't reinitialize autonomously, *operationalState* is ***disabled***; otherwise it is ***enabled*** or ***disabled***.

Mib	Voice
Set of	initializationRequired (initRq) notInitialized (notInit) initializing (init) reporting (report) terminating (term)
Default	No default

ATTRIBUTE Vs controlStatus (osiCntrl)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Control status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user.

When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present.

The value ***subjectToTest*** indicates the resource is available but tests may be conducted simultaneously at unpredictable times, which may cause it to exhibit unusual characteristics.

The value ***partOfServicesLocked*** indicates that part of the service is restricted from users of a resource. The *adminState* is ***unlocked***.

The value ***reservedForTest*** indicates that the component is administratively unavailable because it is undergoing a test procedure. The *adminState* is ***locked***.

The value ***suspended*** indicates that the service has been administratively suspended.

Mib	Voice
Set of	subjectToTest (subTst) partOfServicesLocked (partLk) reservedForTest (rsrvd) suspended (suspnd)
Default	No default

ATTRIBUTE Vs alarmStatus (osiAlarm)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Alarm status of the component. Note that, even though it is defined as a multi-valued set, at most one value is shown to the user. When no values are in the set, this indicates that either the attribute is not supported or that none of the status conditions described below is present. The value ***underRepair*** indicates the component is currently

being repaired. The *operationalState* is ***enabled*** or ***disabled***.

The value ***critical*** indicates one or more critical alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***major*** indicates one or more major alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***minor*** indicates one or more minor alarms are outstanding against the component. Other, less severe, alarms may also be outstanding. The *operationalState* is ***enabled*** or ***disabled***.

The value ***alarmOutstanding*** generically indicates that an alarm of some severity is outstanding against the component.

Mib	Voice
Set of	underRepair (repair) critical (crit) major minor alarmOutstanding (outst)
Default	No default

ATTRIBUTE Vs standbyStatus (osiStby)

Access	Read only
Description	If supported by the component, this attribute indicates the OSI Standby status of the component. The value ***notSet*** indicates that either the attribute is not supported or that none of the status conditions described below is present. Note that this is a non-standard value, used because the original specification indicated this attribute was set-valued and thus, did not provide a value to indicate that none of the other three are applicable.

The value ***hotStandby*** indicates that the resource is not providing service but will be immediately able to take over the role of the resource to be backed up, without initialization activity, and containing the same information as the resource to be backed up.

The value ***coldStandby*** indicates the resource is a backup for another resource but will not be immediately able to take over the role of the backed up resource and will require some initialization activity.

The value ***providingService*** indicates that this component, as a backup resource, is currently backing up another resource.

Mib	Voice
Values	hotStandby (hot) coldStandby (cold) providingService (serv) notSet (nSet)
Default	notSet

ATTRIBUTE Vs unknownStatus (osiUnknw)

Access	Read only
Description	This attribute indicates the OSI Unknown status of the component. The value ***false*** indicates that all of the other OSI State and Status attribute values can be considered accurate. The value ***true*** indicates that the actual state of the component is not known for sure.
Mib	Voice
Values	false true
Default	false

GROUP Vs Operational

Properties	Operational
Description	This group contains operational attributes related to a *Vs*.
Mib	Voice

ATTRIBUTE Vs serviceFailureReason

Access	Read: Passive Write: Illegal
Description	This attribute indicates the result of end to end negotiation with the remote end across the subnet. If *serviceFailureReason* is ***undetermined***, this *Vs* has not performed end to end negotiation with the remote end, and may or may not be up. *serviceFailureReason* is ***undetermined*** if this *Vs* just became enabled, if there is not enough available bandwidth to perform negotiation or if the remote end cannot perform negotiation with this *Vs*. If *serviceFailureReason* is ***none***, end to end negotiation passed. If *serviceFailureReason* is ***mismatchedService***, end to end negotiation failed because the remote end service is not a *Vs*. If *serviceFailureReason* is ***mismatchedVoiceEncoding***, end to end negotiation failed because the local *Vs Framer voiceEncoding* does not match the remote *Vs Framer voiceEncoding*. If *serviceFailureReason* is ***mismatchedVoiceRates***, end to end negotiation failed because the local provisioned ingress voice rates are not compatible with the remote end's egress capabilities or the remote provisioned ingress voice rates are not compatible with the local egress capabilities. If *serviceFailureReason* is ***mismatchedModemFaxEncoding***, end to end negotiation failed because the local *Vs Framer modemFaxEncoding* does not match the remote *Vs Framer modemFaxEncoding*. If *serviceFailureReason* is ***mismatchedModemFaxRates***, end to end negotiation failed because the local provisioned ingress modem and fax rates are not compatible with the remote end's egress capabilities or the remote provisioned ingress modem and fax rates are not compatible with the local egress capabilities.

If *serviceFailureReason* is ***mismatchedCasSignalling***, end to end negotiation failed because the local *Vs Framer casSignalling* does not match the remote *Vs Framer casSignalling*.
If *serviceFailureReason* is ***mismatchedSignalBits***, end to end negotiation failed because the local *Vs Framer signalBits* does not match the remote *Vs Framer signalBits*.
serviceFailureReason is ***mismatchedSignalBits*** only if the local *Vs Framer casSignalling* is ***transparent***.
If *serviceFailureReason* is ***compDecodeFailed***, end to end negotiation failed because the information received from the remote end was not recognized as valid data.

Mib: Voice

Set of:
none
undetermined
logicalConnection
mismatchedService
mismatchedVoiceEncoding
mismatchedVoiceRates
mismatchedModemFaxEncoding
mismatchedModemFaxRates
mismatchedCasSignalling
mismatchedSignalBits
mismatchedSilenceSuppression
mismatchedFaxIdleSuppression
compDecodeFailed

Default: No default

COMPONENT Vs Framer (Framer)

Groups:
"GROUP Vs Framer Provisioned (Prov)"
"GROUP Vs Framer CoderOptions (Coder)"
"GROUP Vs Framer SignalOptions (Signal)"
"GROUP Vs Framer OsiState (State)"
"GROUP Vs Framer Statistics (Stats)"
"GROUP Vs Framer Negotiation (Neg)"
"GROUP Vs Framer Operational (Oper)"

"COLLECTED STATS VoiceService Framer"

Scope: Application

Description	*Vs/n Framer* The *Framer* component provides provisionable attributes related to datapath aspects of the hardware interface rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *Lp E1/n* or *Lp DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component. The *Framer* component contains operational attributes for statistics and the results of end to end negotiation with the remote end across the subnet.
Mib	Voice
Dyn. Subcomp.	"COMPONENT Vs Framer VfpDebug" "COMPONENT Vs Framer MvpDebug" "COMPONENT Vs Framer PcmCapture (PcmCapture)"
Common Verbs	Help List Display

GROUP Vs Framer Provisioned (Prov)

Properties	Provisioned
Description	This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.
Mib	Voice

ATTRIBUTE Vs Framer interfaceName

Access	Read and write
Criticality	Process
Description	This attribute contains a hardware component name.

	The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.
Mib	Voice
Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP Vs Framer CoderOptions (Coder)

Properties	Provisioned
Description	This group contains attributes which specify how audio data on a channel is encoded and decoded.
Mib	Voice

ATTRIBUTE Vs Framer maxVoiceG711G726Rate (maxVoiceBitRate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum desired ingress bit rate used during voice traffic when *voiceEncoding* is ***g711G726***. The negotiated maximum ingress ***voice*** rate is available in *negotiatedIgRates.* *maxVoiceG711G726Rate* can be set to ***16*** only if this *Voice Service* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card.
Mib	Voice
Values	64 32 24 16
Units	kbit/s

Default	64

ATTRIBUTE Vs Framer minVoiceG711G726Rate (minVoiceBitRate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum desired ingress bit rate used during voice traffic when *voiceEncoding* is ***g711G726***. The negotiated minimum ingress ***voice*** rate is available in *negotiatedIgRates.* *minVoiceG711G726Rate* defaults to ***24*** if the ***voiceCompressor*** or ***vtds*** feature is present. Otherwise, *minVoiceG711G726Rate* defaults to ***64***.
Mib	Voice
Values	64 32 24 16
Units	kbit/s
Default	No default

ATTRIBUTE Vs Framer maxModemFaxG711G726Rate (maxModemBitRate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum desired ingress rate used during modemFax and/or fax traffic. Voice traffic is all traffic from the start of a call or speech until a 2100 Hz tone or call release. ModemFax traffic is all traffic after a 2100 Hz tone but before a fax preamble, speech or call release. Fax traffic is all traffic after a fax preamble but before speech or call release. If *modemFaxEncoding* is ***g711G726***,

maxModemFaxG711G726Rate specifies the maximum rate used during modemFax traffic and fax traffic.
If *modemFaxEncoding* is ***faxRelayG711G726***, *maxModemFaxG711G726Rate* specifies the maximum rate used during modemFax traffic only.
If *modemFaxEncoding* is ***faxRelayOnly*** or ***useVoiceEncoding***, *maxModemFaxG711G726Rate* is ignored.

The negotiated maximum ingress ***modemFax*** and ***fax*** rates are available in *negotiatedIgRates.*

maxModemFaxG711G726Rate can be set to ***16*** or ***24*** only if this voice service is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card.

Mib	Voice
Values	64 32 24 16
Units	kbit/s
Default	64

ATTRIBUTE Vs Framer minModemFaxG711G726Rate (minModemBitRate)

Access	Read and write
Criticality	Process
Description	This attribute specifies the minimum desired ingress rate used during modemFax and/or fax traffic. Voice traffic is all traffic from the start of a call or speech until a 2100 Hz tone or call release. ModemFax traffic is all traffic after a 2100 Hz tone but before a fax preamble, speech or call release. Fax traffic is all traffic after a fax preamble but before speech or call release. If *modemFaxEncoding* is ***g711G726***, *minModemFaxG711G726Rate* specifies the minimum desired

rate used during modemFax traffic and fax traffic.
If *modemFaxEncoding* is ***faxRelayG711G726***, *minModemFaxG711G726Rate* specifies the minimum desired rate used during modemFax traffic only.
If *modemFaxEncoding* is ***faxRelayOnly*** or ***useVoiceEncoding***, *minModemFaxG711G726Rate* is ignored.

The negotiated minimum ingress ***modemFax*** and ***fax*** rates are available in *negotiatedIgRates.*

minModemFaxG711G726Rate defaults to ***32*** if the ***voiceCompressor*** or ***vtds*** feature is present. Otherwise, *minModemFaxG711G726Rate* defaults to ***64***.

Mib	Voice
Values	64 32 24 16
Units	kbit/s
Default	No default

ATTRIBUTE Vs Framer silenceSuppression

Access	Read and write
Criticality	Process
Description	This attribute specifies when ingress silence suppression is desired during voice traffic. If *silenceSuppression* is ***off***, silence suppression is never desired. If *silenceSuppression* is ***on***, silence suppression is always desired. If *silenceSuppression* is ***congested***, silence suppression is desired only when the network is congested. If *silenceSuppression* is ***slow***, silence suppression is desired only after 20 seconds without audio. If *silenceSuppression* is ***slowAndCongested***, both the ***slow*** and ***congested*** options are desired. If *silenceSuppression* is ***casIdleCod***e, the silence suppression is

only desired when the *idleCode* is active for 20 to 40 seconds. *casSignalling* must be set to ***interpret*** if *silenceSuppression* is set to ***casIdleCode***. *silenceSuppression* can be set to ***casIdleCode*** only if this *VoiceService* is running on a ***DS1V, E1V, 1pDS1V, 1pE1V*** or ***J2MV*** card.

The negotiated ingress silence suppression is available in *negotiatedIgSilenceSuppression.*

If the ***silenceSuppressor*** or ***vtds*** feature is present, *silenceSuppression* defaults to ***on***. Otherwise, *silenceSuppression* defaults to ***off***.

Mib	Voice
Values	off on congested slow slowAndCongested casIdleCode
Default	No default

ATTRIBUTE Vs Framer echoCancellation

Access	Read and write
Criticality	Process
Description	This attribute specifies whether echo cancellation is performed on this *VoiceService*. If *echoCancellation* is ***on***, the internal echo canceler is enabled and echo cancellation is performed. If *echoCancellation* is ***off***, the internal echo canceler is placed in transparent bypass mode and echo cancellation is never performed. If the ***echoCancellor*** or ***vtds*** feature is present, *echoCancellation* defaults to ***on***. Otherwise *echoCancellation* defaults to ***off***.
Mib	Voice
Values	off on

Default	No default

ATTRIBUTE Vs Framer aLawConversion

Access	Read and write
Criticality	Process
Description	This attribute specifies whether mu-law to A-law PCM conversion is performed. *aLawConversion* only needs to be set to ***on*** when this voice service is running on a ***DS1V*** or ***1pDS1V*** FP and the *VoiceService* at the remote end of the connection is running on an ***E1V*** or ***1pE1V*** FP using a software release prior to 5.0. If the remote end software release is 5.0 or later, end to end negotiation determines the compander law to use at each end of the connection. In this case, the value of *aLawConversion* is ignored.
Mib	Voice
Values	off on
Default	off

ATTRIBUTE Vs Framer voiceEncoding

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies how ingress voice traffic is encoded. If *voiceEncoding* is ***g711G726***, ingress voice traffic is encoded using either pulse code modulation (PCM) defined by ITU-T G.711 or adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726. The actual encoding and rates performed depends on congestion in the network and the minimum and maximum negotiated ingress ***voice*** rates in *negotiatedIgRates*. If *voiceEncoding* is ***g728at16***, ingress voice traffic is encoded using the Low Delay Coded Excited Linear Predictive Coder

(LD-CELP) algorithm defined by ITU-T G.728. If *voiceEncoding* is ***g728at16***, the bit rate of all voice traffic is fixed at 16 kbit/s. *minVoiceG711G726Rate* and *maxVoiceG711G726Rate* do not apply if *voiceEncoding* is ***g728at16***.

If *voiceEncoding* is ***g729at8***, ingress voice traffic is encoded using the Conjugated Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) algorithm defined by ITU-T G.729. If *voiceEncoding* is ***g729at8***, the bit rate of all voice traffic is fixed at 8 kbit/s. *minVoiceG711G726Rate* and *maxVoiceG711G726Rate* do not apply if *voiceEncoding* is ***g729at8***.

The current ingress encoding and encoding rate are available in *currentEncoding* and *currentRate*.

voiceEncoding cannot be set to ***g728at16*** or ***g729at8*** if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card. Also, *voiceEncoding* can only be set to ***g728at16*** or ***g729at8*** if the corresponding feature exists in the *featureList* of the *Sw Lpt*.

The negotiated ingress ***voice*** encoding is available in *negotiatedIgEncoding*.

voiceEncoding must have the same value at both ends of a *VoiceService*. If *voiceEncoding* does not have the same value at both ends of a *VoiceService*, the *VoiceService* will be out of service. In this case, *serviceFailureReason* is ***mismatchedVoiceEncoding***.

Mib	Voice
Values	g711G726 g728at16 g729at8
Default	g711G726

ATTRIBUTE Vs Framer modemFaxEncoding (faxEncoding)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies how ingress modemFax and fax traffic are encoded. Voice traffic is all traffic from the start of a call or speech until a 2100 Hz tone or call release. ModemFax traffic is all traffic after a 2100 Hz tone but before a fax preamble, speech or call release. Fax traffic is all traffic after a fax preamble but before speech or call release. If *modemFaxEncoding* is ***useVoiceEncoding***, all ingress traffic is treated like voice traffic and encoded according to *voiceEncoding*. If *voiceEncoding* is ***g728at16*** or ***g729at8***, modem and fax calls are not supported. If *modemFaxEncoding* is ***g711G726***, ingress modemFax traffic and fax traffic are both encoded using pulse code modulation (PCM) defined by ITU-T G.711 or adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726. The actual encoding and rates performed depends on congestion in the network and the minimum and maximum ingress ***modemFax*** rates in *negotiatedIgRates*. If *modemFaxEncoding* is ***faxRelayG711G726***, ingress modemFax traffic is encoding using G.711 or G.726, exactly as it is if *modemFaxEncoding* is ***g711G726***. Until a fax preamble is detected, the rate may fluctuate between the minimum and maximum ***modemFax*** rates in *negotiatedIgRates* due to network congestion, exactly as it does if *modemFaxEncoding* is ***g711G726***. If a fax preamble is detected, all subsequent traffic during a call is demodulated and sent through the network as cells at the base rate of the sending machine. Supported demodulation methods are V.29 (up to 9.6 kbit/s) and V.27 (up to 4.8 kbit/s). The modulation and demodulation of fax traffic is called “fax relay”.

If *modemFaxEncoding* is ***faxRelayOnly***, “fax relay” is entered immediately upon 2100 Hz tone detection and modemFax traffic is treated like fax traffic. If *modemFaxEncoding* is ***faxRelayOnly***, modem calls are not supported.

The negotiated ingress ***modemFax*** and ***fax*** encodings are available in *negotiatedIgEncoding*.

modemFaxEncoding cannot be set to ***faxRelayG711G726*** or ***faxRelayOnly*** if this voice service is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card. The ***faxRelay*** feature is required to set *modemFaxEncoding* to ***faxRelayG711G726*** or ***faxRelayOnly***.

modemFaxEncoding must have the same value at both ends of a *VoiceService*. If *modemFaxEncoding* does not have the same value at both ends of a *VoiceService*, the *VoiceService* will be out of service. In this case, *serviceFailureReason* is ***mismatchedModemFaxEncoding***.

Mib	Voice
Values	g711G726 faxRelayOnly faxRelayG711G726 useVoiceEncoding
Default	g711G726

ATTRIBUTE Vs Framer tandemPassThrough (tpt)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies whether tandem pass through is desired. If *tandemPassThrough* is ***enabled***, tandem pass through is used if possible. If *tandemPassThrough* is ***disabled***, tandem pass through is not used under any circumstances. The negotiated tandem pass through is available in *negotiatedTandemPassThrough.*

The actual state of tandem pass through is available in *tptStatus*.

tandemPassThrough can be set to ***enabled*** only if the *tandemPassThrough* feature exists in the *featureList* of the *Sw Lpt*.

Mib: Voice

Values: enabled
disabled

Default: disabled

ATTRIBUTE Vs Framer insertedOutputDelay

Access: Read: Passive
Write: Service

Criticality: Process

Description: This attribute specifies the amount of added output delay used to compensate for cross network delay variations. It applies to voice, modem and fax traffic. It is required to add output delay so that the statistical variation in the transit time of cells crossing the network does not cause gaps in speech. Backbone networks where high priority traffic consumes a high percentage of trunk bandwidth will require a higher *insertedOutputDelay* to compensate for the greater cell delay variation (CDV).

insertedOutputDelay must be ***default*** if this voice service is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card. On all other cards, *insertedOutputDelay* can be set to any value. On these cards, ***default*** is equivalent to ***22***.

Mib: Voice

Values: default
5
15
22
30
35
40

	45 50 75 100 125 150
Units	msec
Default	default

ATTRIBUTE Vs Framer faxIdleSuppressionG711G726

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies whether ingress fax idle suppression is desired during G.711 and G.726 fax traffic. It applies only if *modemFaxEncoding* is ***g711G726*** or ***faxRelayG711G726.*** The negotiated ingress G.711/G.726 fax idle suppression is available in *negotiatedIgFisG711G726.* If the ***silenceSuppressor*** or ***vtds*** feature is present, *faxIdleSuppressionG711G726* defaults to ***on***. Otherwise, *faxIdleSuppressionG711G726* defaults to ***off***.
Mib	Voice
Values	off on
Default	No default

ATTRIBUTE Vs Framer endOfCallPattern

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the pattern that indicates the end of CCS and CAS calls. The pattern is specified as a hexadecimal byte. If

this pattern is detected for one second, the echo canceler is reset and prepares itself to start a new call. If 1000 consecutive samples consisting of the pattern defined by the *endOfCallPattern* attribute are detected, during a modem or fax call, this *VoiceService* assumes the call is over and switches to the encoding specified in *voiceEncoding*. When there is no call, this pattern replaces the PCM data that would normally be sent to the link.

endOfCallPattern is not used if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** card.

To determine the correct setting of *endOfCallPattern*, view the operational attribute *recentIngressLineSamples* while no calls are up.

If *endOfCallPattern* is ***standard***, the actual pattern used depends on the card this voice service is running on. If this voice service is running on a ***1pDs1Mvp***, ***1pDS1Mvpe***, ***1pTTC2mMvp*** or ***1pTTC2mMvpe*** card, the actual pattern used is ***7f***. If this voice service is running on a ***1pE1Mvp*** or ***1pE1Mvpe*** card, the actual pattern used is ***54***.

The default value for *endOfCallPattern* is ***standard***.

Mib

Voice

Values

standard
01
02
03
04
05
06
07
08
09
0a
0b
0c
0d

0e
0f
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d9
da

	db dc dd de df e0 e1 e2 e3 e4 e5 e6 e7 e8 e9 ea eb ec ed ee ef f0 f1 f2 f3 f4 f5 f6 f7 f8 f9 fa fb fc fd fe ff
Default	standard

ATTRIBUTE Vs Framer ingressAudioGain

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the gain in dB that is applied to data coming from outside the network before it is transferred across the network. It applies to voice, modem and fax traffic. For example, ingress gain is applied to audio data coming from a PBX. If *ingressAudioGain* is negative, a loss is applied. If this voice service is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card, *ingressAudioGain* must be set to ***0***. If this voice service is running on any other *cardtype*, *ingressAudioGain* can be set to any integral value from ***-12*** to ***+12***. *ingressAudioGain* and *egressAudioGain* are used in loss planning, which is the configuration of the devices in the network to ensure that the signal level from any point in the network to any other point is correct.
Mib	Voice
Values	Signed (-12..12)
Units	dB
Default	0

ATTRIBUTE Vs Framer egressAudioGain

Access	Read and write
Criticality	Process
Description	This attribute specifies the gain in dB that is applied to data before it leaves the network. It applies to voice, modem and fax traffic. For example, egress gain is applied to audio data going to a PBX. If *egressAudioGain* is negative, a loss is applied. If this voice service is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card, *egressAudioGain* can be set to ***-6***, ***-4***, ***-2***, ***0***, ***2***, ***4*** or

6. If this voice service is running on any other *cardType*, *egressAudioGain* can be set to any integral value from ***-12*** to ***+12***.

ingressAudioGain and *egressAudioGain* are used in loss planning, which is the configuration of the devices in the network to ensure that the signal level from any point in the network to any other point is correct.

Mib	Voice
Values	-12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12
Units	dB
Default	0

ATTRIBUTE Vs Framer comfortNoiseCap

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the maximum level at which comfort noise is generated. The comfort noise is limited by *comfortNoiseCap* before *egressAudioGain* is applied. The default value of ***-40*** dBm0 equates to the maximum level of comfort noise available and effectively disables the *comfortNoiseCap*.
Mib	Voice
Values	Signed (-78; -65; -60; -54; -52; -50; -48; -46; -44; -42; -40)
Units	dBm0
Default	-40

ATTRIBUTE Vs Framer echoTailDelay

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum echo canceler tail delay coverage. It should be selected higher than the summation of the round trip delay of echo and hybrid response time. A ***32*** msec setting is good for a radius of 2700 km, assuming that the signal is going through 4 exchanges and the hybrid response time is 6 msec. A ***64*** msec setting offers even greater coverage (more distance or more switches), with comparable convergence time. The recommended setting is ***64*** msec. This attribute is not used if this VoiceService is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V***, ***J2MV***, ***1pE1Mvp***, ***1pDS1Mvp,*** or ***1pTTC2mMvp*** cards.
Mib	Voice
Values	Decimal (32; 64)
Units	msec
Default	64

ATTRIBUTE Vs Framer echoReturnLoss

Access	Read and write
Criticality	Process
Description	This attribute specifies the echo return loss parameter of the echo canceler. If the line quality is poor, in terms of echo, selecting a higher value may allow the echo canceler to perform better. A side effect is that the voice level is attenuated by the same amount, which may not always be acceptable. This attribute is not used if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V***, ***J2MV***, ***1pE1Mvp***, ***1pDS1Mvp***, or ***1pTTC2mMvp*** card.
Mib	Voice
Values	Decimal (0; 3; 6)
Units	dB
Default	6

ATTRIBUTE Vs Framer dtmfRegeneration (detGen)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the DTMF regeneration parameter used during negotiation with the remote end across the subnet. If *dtmfRegeneration* is ***on***, it is desired that DTMF tones received from the link are first converted to digits before being sent to the subnet. When a digit is received from the subnet, its respective DTMF tone is desired to be generated before being sent to the link. If *dtmfRegeneration* is ***off***, DTMF tones are transported transparently. DTMF regeneration is not supported on ***1pDS1V***, ***1pE1V***, and ***J2MV*** cards. *dtmfRegeneration* must be ***off*** if this *VoiceService* is

	running on one of these cards. The negotiated DTMF regeneration is available in *negotiatedDtmfRegeneration*.
Mib	Voice
Values	off on
Default	off

ATTRIBUTE Vs Framer speechHangoverTime

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the time after the end of speech before silence suppression starts. It applies only to voice traffic. It is not used unless *negotiatedIgSilenceSuppression* is ***on***, ***congested*** *or* ***slowAndCongested***. Higher values of *speechHangoverTime* reduce undesirable clipping but increase bandwidth usage. *speechHangoverTime* is not used if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** card.
Mib	Voice
Values	Signed (10..500)
Units	msec
Default	150

ATTRIBUTE Vs Framer faxHangoverTimeG711G726

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the time after the end of fax traffic before ingress G.711/G.726 fax idle suppression starts. It applies only if *modemFaxEncoding* is ***g711G726*** or ***faxRelayG711G726*** and

	negotiatedIgFisG711G726 is ***on***. *faxHangoverTimeG711G726* is not used if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** card.
Mib	Voice
Values	Signed (300..20000)
Units	msec
Default	1000

ATTRIBUTE Vs Framer modemFaxSpeechDiscrim (fsd)

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies whether this *VoiceService* differentiates modemFax traffic and speech. If *modemFaxSpeechDiscrim* is ***on*** and a false 2100 Hz tone is detected, this *VoiceService* reverts to speech mode when speech is detected. *modemFaxSpeechDiscrim* is not used if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** card.
Mib	Voice
Values	on off
Default	on

ATTRIBUTE Vs Framer v17EncodedAsG711G726

Access	Read and write
Criticality	Process
Description	This attribute specifies the desired negotiation between this *VoiceService* and V.17 fax machines when *modemFaxEncoding* is ***faxRelayG711G726***. This attribute is not used unless *modemFaxEncoding* is ***faxRelayG711G726***.

The actual negotiation between this *VoiceService* and V.17 fax machines is available in *negotiatedV17AsG711G726*.

If *v17EncodedAsG711G726* is ***no,*** it is desired that V.17 fax machines be instructed to use V.29 so that V.29 fax traffic sent by fax machines can be demodulated and encoded using fax relay.

If *v17EncodedAsG711G726* is ***yes***, it is desired that V.17 fax machines be permitted to use V.17 so that V.17 fax traffic sent by fax machines can be encoded using G.711 or G.726. The actual encoding performed depends on network congestion and the negotiated ingress ***modemFax*** rates, available in *negotiatedIgRates*.

Mib	Voice
Values	no yes
Default	no

ATTRIBUTE Vs Framer ecanBypassMode

Access	Read and write
Criticality	Process
Description	This attribute specifies when version 2 internal echo cancelers are placed in bypass mode on this *VoiceService*. This attribute only applies if *echoCancellation* is ***on***. If *ecanBypassMode* is ***g165***, the internal echo canceler is placed in bypass mode as per ITU-T G.165. If *ecanBypassMode* is ***g164***, the internal echo canceler is placed in bypass mode as per ITU-T G.164. If *ecanBypassMode* is ***never***, the internal echo canceler is never placed in bypass mode. This mode should only be used for debugging. This attribute does not apply to ***1pE1V***, ***1pDS1V***, ***J2MV***, ***1pE1Mvp***, ***1pDS1Mvp***, or ***1pTTC2mMvp*** cards.
Mib	Voice
Values	g164 g165 never

Default	g165

ATTRIBUTE Vs Framer maxFaxRelayRate

Access	Read: Passive Write: Service
Criticality	Process
Description	This attribute specifies the maximum desired fax relay rate. This attribute only applies if *modemFaxEncoding* is ***faxRelayOnly*** or ***faxRelayG711G726***. The maximum fax relay rate is negotiated and depends on the setting of *maxFaxRelayRate* and the fax relay capabilities on the origination side and destination side. If the negotiated ***fax*** encoding in *negotiatedIgEncoding* is ***relay***, the negotiated maximum fax relay rate is available in the ***fax*** row of *negotiatedIgRates*.
Mib	Voice
Values	Decimal (2.4; 4.8; 7.2; 9.6; 12.0; 14.4)
Units	kbit/s
Default	14.4

GROUP Vs Framer SignalOptions (Signal)

Properties	Provisioned
Description	This group contains attributes which define the means for transporting channel associated signaling through the network.
Mib	Voice

ATTRIBUTE Vs Framer transmitBusyYellow

Access	Read and write
Criticality	Process
Description	When this attribute is set to ***yes*** and the DS1 or E1 line is set to Channel Associated Signaling (CAS) mode, a “busy-out” signaling condition is transmitted onto the voice timeslot associated with this Framer when its path across the network is down. The busy-out code transmitted is given by the *seizeCode*

attribute. If *transmitBusyYellow* is set to ***yes*** on a CAS-based interface, *seizeCode* must be set. When *transmitBusyYellow* is set to ***yes*** and the DS1 or E1 line is set to Common Channel Signaling (CCS) mode, a yellow alarm condition is transmitted onto the DS1/E1 line when the path across the network associated with this Framer is down. Note that in CCS mode, a yellow alarm condition is transmitted when the path is down for **any** of the Framers with this attribute set to ***yes***.

Mib	Voice
Values	no yes
Default	no

ATTRIBUTE Vs Framer invertBits

Access	Read and write
Criticality	Process
Description	This attribute specifies whether the ABCD bits are inverted before being output onto the link.
Mib	Voice
Values	no yes
Default	no

ATTRIBUTE Vs Framer signalBits

Access	Read and write
Criticality	Process
Description	This attribute identifies the combination of ABCD bits used for channel associated signaling. If *casSignalling* is ***transparent***, *signalBits* must have the same value at both ends of a *Vs*. If *casSignalling* is ***transparent*** and *signalBits* does not have the same value at both ends of a *Vs*, the

Vs will be out of service. In this case, *Vs serviceFailureReason* is ***mismatchedSignalBits***.

Mib: Voice

Values:
A
AB
ABCD

Default: A

ATTRIBUTE Vs Framer transmitCasYellow

Access: Read and write

Criticality: Process

Description: When the associated DS1 or E1 line is operating in CCS mode, this attribute is not applicable, and must be set to ***no***.

Normally, all the *VoiceService Framer*s associated with the same DS1 or E1 line should have the same value for this attribute. When the value is ***yes*** on all *VoiceService Framer*s, a yellow alarm will be asserted on the port whenever loss of subnet connectivity occurs for all these *VoiceService*s. This will prevent the external equipment from using this port for call attempts.

If this attribute is set to ***no*** for all *VoiceService Framer*s associated with a DS1 or E1 line, a yellow alarm will never be asserted on the line for subnet connectivity reasons, agreeing with DS1/E1 port standards.

If some *VoiceService Framer*s associated with the same DS1 or E1 line have this value set to ***yes***, and some ***no***, a yellow alarm will be asserted on the line only if there are subnet connectivity problems for all the *VoiceService Framer*s with the attribute *transmitCasYellow* set to ***yes***. The *VoiceService Framer*s with this attribute set to ***no*** will have no effect on whether a yellow alarm should be asserted on the line.

Mib: Voice

Values:
no
yes

Default	no

ATTRIBUTE Vs Framer casSignalling

Access	Read and write
Criticality	Process
Description	This attribute specifies how channel associated signaling information is transported through the network. ***none*** specifies that channel associated signaling information is not transported through the network. ***transparent*** specifies signaling information is transported transparently through the network. ***transparent*** can be used when both sides are using equivalent signaling tables. ***interpret*** specifies signaling information is interpreted for idle and seize codes. ***interpret*** can be used when both sides are not using equivalent signaling tables but only require two unique codes (seize and idle) for signaling. Using a value of ***interpret*** requires correct *idleCode* and *seizeCode* attributes. ***interpret*** mode must be used if *silenceSuppression* is set to ***casIdleCode***.
Mib	Voice
Values	none transparent interpret
Default	none

ATTRIBUTE Vs Framer idleCode

Access	Read and write
Criticality	Process
Description	This attribute specifies the ABCD idle line signaling code. This attribute must be set correctly when *casSignalling* is ***interpret***.

Mib	Voice
Vector of	Decimal (0..1)
Index	A B C D
Default	(0, 0, 0, 0)

ATTRIBUTE Vs Framer seizeCode

Access	Read and write
Criticality	Process
Description	This attribute specifies the ABCD seized line signaling code. This attribute must be set correctly when *casSignalling* is ***interpret***.
Mib	Voice
Vector of	Decimal (0..1)
Index	A B C D
Default	(1, 1, 1, 1)

GROUP Vs Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	Voice

ATTRIBUTE Vs Framer adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	Voice
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE Vs Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: Voice

Values: enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE Vs Framer usageState (osiUsage)

Access: Read only

Description: This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib: Voice

Values: idle
active (activ)
busy

Default: idle

GROUP Vs Framer Statistics (Stats)

Properties: Operational

Description: This group contains the operational statistics data for a Framer component.

Mib: Voice

ATTRIBUTE Vs Framer totalCells

Access: Read only

Description	This attribute counts total cells received from the interface. Each cell contains 44 bytes of data from the DS0 channel. Since a DS0 provides data at 64 kbit/s, each cell contains 5.5 ms of audio data. This data flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer audioCells

Access	Read only
Description	This attribute counts total cells containing audio data received from the interface. Audio data includes cells containing voice as well as modem audio but not silence. A cell contains 44 bytes of data from the DS0 channel(5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer silenceCells

Access	Read only
Description	This attribute counts total cells containing silence (speech or modem/fax) data received from the interface which was not forwarded into the network, thus saving bandwidth. A channel may go into silence due to the operation of the silence suppression feature (refer to the *silenceSuppression* attribute) or for CAS channels when the ABCD signaling bits go idle. A cell contains 44 bytes of data from the DS0 channel(5.5 ms). This flow is measured before compression is performed on the

	channel. This counter wraps to zero after reaching its maximum value.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer lrcErrors

Access	Read only
Description	This attribute counts the number of frames with LRC errors that are received from the network.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer frmLostInNetwork

Access	Read only
Description	This attribute counts the number of frames which the service knows it did not receive from the network although they were sent in to the network from the remote end.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer frmUnderRuns

Access	Read only
Description	This attribute counts the number of times that a frame was needed but was not available because it had been delayed too long in the network. This error may occur repeatedly if the interface clocks at the two access points to the network are operating at different rates.
Mib	Voice

Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer frmDumped

Access	Read only
Description	This attribute counts the number of frames which have been dumped because the output queue grew too large. This can occur if the clock rate on the incoming interface is faster than the clock rate on the outgoing interface and there are no silence periods to absorb the difference or when a compression rate change occurs. This count wraps to zero after reaching its maximum value.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer faxRelayCells

Access	Read only
Description	This attribute counts total fax relay cells sent to the network.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer modemFaxCells

Access	Read only
Description	This attribute counts total cells containing modem or fax data received from the interface. A cell contains 44 bytes of data from the DS0 channel (5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.

Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer faxIdleCells

Access	Read only
Description	This attribute counts total cells containing silent modem or fax data received from the interface which was not forwarded into the network, thus saving bandwidth. A channel may go into silence due to the silence Suppression feature (refer to the *silenceSuppression* attribute) or for CAS channels when the ABCD signaling bits go idle. A cell contains 44 bytes of data from the DS0 channel (5.5 ms). This flow is measured before compression is performed on the channel. This counter wraps to zero after reaching its maximum value.
Mib	Voice
Values	Decimal (0..4294967295)
Default	No default

ATTRIBUTE Vs Framer frmToNetwork

Access	Read only
Description	This attribute counts the number of frames sent to the network at each encoding rate. Fax relay cells are not included.
Mib	Voice
Vector of	Decimal (0..4294967295)
Index	64 kbit/s 32 kbit/s 24 kbit/s 16 kbit/s 8 kbit/s
Default	No default

GROUP Vs Framer Negotiation (Neg)

Properties	Operational
Description	This group contains attributes indicating the results of end to end negotiation.
Mib	Voice

ATTRIBUTE Vs Framer negotiatedIgSilenceSuppression (nSilenceSuppression)

Access	Read only
Description	This attribute indicates the result of negotiating ingress silence suppression with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *silenceSuppression*. *negotiatedIgSilenceSuppression* can be different on either side of a *VoiceService*. If *negotiatedIgSilenceSuppression* is ***off***, ingress silence suppression is never performed. If *negotiatedIgSilenceSuppression* is ***on***, ingress silence suppression is always performed. If *negotiatedIgSilenceSuppression* is ***congested***, ingress silence suppression is performed only when the network is congested. If *negotiatedIgSilenceSuppression* is ***slow***, ingress silence suppression begins after 20 seconds without any speech or audio being detected. If *negotiatedIgSilenceSuppression* is ***slowAndCongested***, both the ***slow*** and ***congested*** options are applied. If *negotiatedIgSilenceSuppression* is ***casIdleCode***, ingress silence suppression is only performed when the *idleCode* is active for 20 to 40 seconds. Both *transportSignalling* and *interpretSignalling* must be set to ***yes*** if *silenceSuppression* is set to ***casIdleCode***.
Mib	Voice
Values	off on congested slow

	slowAndCongested casIdleCode
Default	No default

ATTRIBUTE Vs Framer negotiatedIgFisG711G726 (nFisG711G726)

Access	Read only
Description	This attribute indicates the result of negotiating ingress G.711/G.726 fax idle suppression with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *faxIdleSuppressionG711G726*. The value of *negotiatedIgFisG711G726* can be different on either side of the connection.
Mib	Voice
Values	off on
Default	No default

ATTRIBUTE Vs Framer negotiatedDtmfRegeneration (nDtmfRegeneration)

Access	Read only
Description	This attribute indicates the result of negotiating DTMF regeneration with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *dtmfRegeneration.* If *negotiatedDtmfRegeneration* is ***on***, DTMF tones received from the link are first converted to digits before being sent to the subnet. When a digit is received from the subnet, its respective DTMF tone is generated before being sent to the link. If *negotiatedDtmfRegeneration* is ***off***, DTMF tones are transported transparently.
Mib	Voice
Values	off on

Default	No default

ATTRIBUTE Vs Framer negotiatedV17AsG711G726 (nV17AsG711G726)

Access	Read only
Description	This attribute indicates how this *VoiceService* negotiates with V.17 fax machines, as determined by negotiation with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *v17EncodedAsG711G726*. This attribute is irrelevant unless *modemFaxEncoding* is ***faxRelayG711G726***. If *negotiatedV17AsG711G726* is ***no,*** V.17 fax machines are instructed to use V.29, and V.29 fax traffic sent by fax machines is demodulated and encoded using fax relay. If *negotiatedV17AsG711G726* is ***yes***, V.17 fax machines are permitted to use V.17 and V.17 fax traffic sent by fax machines is encoded using G.711 or G.726, at the rates given in *negotiatedIgRates*.
Mib	Voice
Values	yes no
Default	No default

ATTRIBUTE Vs Framer negotiatedTandemPassThrough (nTpt)

Access	Read only
Description	This attribute indicates the result of negotiating tandem pass through with the remote end across the subnet. The parameter used for negotiating with the remote end is provisioned in *tandemPassThrough*.
Mib	Voice
Values	enabled disabled
Default	No default

ATTRIBUTE Vs Framer negotiatedIgEncoding (nEncoding)

Access	Read only
Description	This attribute indicates the results of negotiating ingress audio call encodings for ***voice***, ***modemFax*** and ***fax*** traffic with the remote end across the subnet. The parameters used for negotiating with the remote end are provisioned in *voiceEncoding* and *modemFaxEncoding*. ***voice*** traffic is all traffic from the start of a call or speech until a 2100 Hz tone or call release. ***modemFax*** traffic is all traffic after a 2100 Hz tone but before a fax preamble, speech or call release. ***fax*** traffic is all traffic after a fax preamble but before speech or call release. ***g711*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 is the negotiated encoding. ***g726*** indicates that Adaptive Differential Pulse Code Modulation (ADPCM) defined by ITU-T G.726 is the negotiated encoding. ***g711G726*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 and Adaptive Differential Pulse Code Modulation (ADPCM) defined by ITU-T G.726 are both negotiated encodings. If *negotiatedIgEncoding* is ***g711G726***, the actual encoding performed can be either G.711 or G.726, depending on network congestion. ***g728*** indicates that Low Delay Coded Excited Linear Predictive Coder (CS-ACELP) defined by ITU-T G.728 is the negotiated encoding. ***g729*** indicates that Conjunctive Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) defined by ITU-T G.729 is the negotiated encoding. ***v29V27Relay*** indicates that fax relay is performed using ITU-T V.29 or ITU-T V.27. ***v17V29V27Relay*** indicates that fax relay using ITU-T V.17, ITU-T V.29, or ITU-T V.27 is the negotiated encoding. If all negotiated encodings are ***none***, the negotiation of audio call encodings is not complete.

Mib	Voice
Vector of	g711 g726 g711G726 g728 g729 v29V27Relay v17V29V27Relay none
Index	voice modemFax fax
Default	No default

ATTRIBUTE Vs Framer negotiatedIgRates (nRates)

Access	Read only
Description	This attribute indicates the results of negotiating ingress minimum and maximum rates for ***voice***, ***modemFax*** and ***fax*** traffic with the remote end across the subnet. The parameters used for negotiating with the remote end are provisioned in *maxVoiceG711G726Rate, minVoiceG711G726Rate, maxModemFaxG711G726Rate* and *minModemFaxG711G726Rate*. *negotiatedIgRates* can be different on either side of a *VoiceService*.

Mib	Voice	
Array of	8.0 16.0 24.0 32.0 64.0 0.0 0.3 1.2 2.4 4.8 7.2 9.6 12.0 14.4	
Units	kbit/s	
Row	traffic modemFax fax]	[voice
Column	rate max]	[min
Default	No default	

GROUP Vs Framer Operational (Oper)

Properties	Operational
Description	This group contains the operational data for a *Vs Framer.*
Mib	Voice

ATTRIBUTE Vs Framer currentEncoding

Access	Read only
Description	This attribute indicates the encoding currently being performed. ***g711*** indicates that pulse code modulation (PCM) defined by ITU-T G.711 is being performed. ***g726*** indicates that adaptive differential pulse code modulation (ADPCM) defined by ITU-T G.726 is being performed. ***g728*** indicates that the Low Delay

	Coded Excited Linear Predictive Coder (LD-CELP) algorithm defined by ITU-T G.728 is being performed. ***g729*** indicates that the Conjunctive Structure Algebraic Code Excited Linear Predictive Coder (CS-ACELP) algorithm defined by ITU-T G.729 is being performed. ***v27*** indicates that the algorithm defined by ITU-T V.27 is being performed. ***v29*** indicates that the algorithm defined by ITU-T V.29 is being performed.
Mib	Voice
Values	none g729 g728 g723 g726 g711 v22 v22bis faxRelay v27 v29 v17
Default	No default

ATTRIBUTE Vs Framer currentRate

Access	Read only
Description	This attribute indicates the current encoding rate for frames being sent to the network.
Mib	Voice
Values	0 0.3 1.2 2.4 4.8 5.3 6.3 7.2 8.0

	9.6 12.0 14.4 16.0 24.0 32.0 64.0
Units	kbit/s
Default	No default

ATTRIBUTE Vs Framer tptStatus

Access	Read only
Description	This attribute indicates the current status of the tandem pass through algorithm. If *tptStatus* is ***operating,*** the tandem pass through algorithm is cutting through a voice switch. If *tptStatus* is ***monitoring***, *negotiatedTandemPassThrough* is ***enabled***, but the tandem pass through algorithm is not cutting through a voice switch. If *tptStatus* is ***disabled***, *negotiatedTandemPassThrough* is ***disabled***.
Mib	Voice
Values	operating monitoring disabled
Default	No default

ATTRIBUTE Vs Framer recentIngressLineSamples

Access	Read only
Description	This attribute indicates two recent ingress line samples, represented as four hex digits. The first two hex digits give one sample. The last two hex digits give the other sample. If no call is up on this voice service's channel, each sample indicates the idle pattern sent by the adjoining PBX. Therefore, the two samples should be the same if no call is up on this voice service's channel. These samples should also be consistent each time *recentIngressLineSamples* is displayed, as long as no call is up on

this voice service's channel. It indicates a fault on the PBX if the samples are not consistent when no call is up on this voice service's channel.

If no call is up on this *VoiceService*'s channel and the two samples are the same, each sample gives the correct setting of the provisionable attribute *endOfCallPattern*. Note that *endOfCallPattern* is not used if this *VoiceService* is running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** and ***J2MV*** card. On these cards, *recentIngressLineSamples* is always ***0000***.

Mib: Voice

Values: String (2, Hex)

Default: No default

COLLECTED STATS VoiceService Framer

Description: The statistics record generated by the VoiceService Framer component.

ATTRIBUTE Vs Framer rxBytes

Description: This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values: Long Integer

ATTRIBUTE Vs Framer rxFrames

Description: This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values: Long Integer

ATTRIBUTE Vs Framer txBytes

Description: This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values: Long Integer

ATTRIBUTE Vs Framer txFrames

Description	This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.
Values	Long Integer

ATTRIBUTE Vs Framer rxTotalLinkUtil

Description	This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.
Values	Decimal (0..100)

COMPONENT Vs Framer VfpDebug

Scope	Application
Description	*Vs/n Framer VfpDebug* This component contains debugging attributes for a voice service running on a ***DS1V***, ***E1V***, ***1pDS1V***, ***1pE1V*** or ***J2MV*** functional processor.
Mib	Voice
Common Verbs	Help List Display

COMPONENT Vs Framer MvpDebug

Scope	Application
Description	*Vs/n Framer MvpDebug* This component contains debugging attributes on a voice service's framer running on a ***1pE1Mvp***, ***1pDS1Mvp***,

1pTTC2mMvp, 1pE1Mvpe, ***1pDS1Mvpe*** or ***1pTTC2mMvpe*** functional processor.

Mib: Voice

Common Verbs:
- Help
- List
- Display

COMPONENT Vs Framer PcmCapture (PcmCapture)

Scope: Application

Description: *Vs/n Framer PcmCapture*
This component contains attributes for PCM data capture.

Mib: Voice

Common Verbs:
- Help
- List
- Display

COMPONENT Vs PermanentLogicalConnection (Plc)

Groups: "GROUP Vs Plc Provisioning (Prov)"

Scope: Application

Description: *Vs/n PLC*
This is the description of the PLC Component for the voice service.

Mib: Voice

Common Verbs:
- Help
- List
- Display

GROUP Vs Plc Provisioning (Prov)

Properties: Provisioned

Description	This group contains all provisionable attributes for a permanent logical connection. Note that all of the attributes are valid and provisionable on both ends of a connection. However with the exception of *remoteName*, all operational attributes are derived from the originating end provisioning, which may be either end unless *remoteName* is not provisioned on one end.
Mib	Voice

ATTRIBUTE Vs Plc remoteName (rName)

Access	Read and write
Criticality	Process
Description	This attribute is the *PLC*'s remote end point's address in the format of a component name. The syntax of a component is: "em/node type/instance". For an alternative representation of end point's addresses, see *addressToCall* and l*ocalAddress PLC* attributes. When using component name representation, end points are identified using a node name and a service name. As an example, the end point component for a third voice service on node MoonBase is: "*EM/MoonBase VS/3*". If the *remoteName* is provisioned, it must match the name of the remote end or the connection will not be established even if the remote end is provisioned correctly. If no *remoteName* is provisioned, then this *LC* will accept connections from any other remote *LC* and it will not originate calls. Connections establish faster and are unique if both ends are provisioned with *remoteName*. *RemoteName* should be used when the remote end of the connection resides within the same topology region. If it resides in a different topology region, then *addressToCall* and *localAddress PLC* attributes should be used. When both *remoteName* and *addressToCall* are provisioned, *addressToCall* takes precedence. That is, connection will be established to the service specified by *addressToCall*. These strings are case insensitive, but the complete component name must be input.
Mib	Voice
Values	String (0..40, ASCII)

Default	""

ATTRIBUTE Vs Plc setupPriority (spri)

Access	Read and write
Criticality	Process
Description	This attribute gives the priority at which a path is established. Zero is the highest priority and four is the lowest. When PORS establishes a path through the network, it uses the *setupPriority* attribute to determine its potential for bumping established paths to acquire their bandwidth. The *holdingPriority*, a complementary attribute of this attribute, indicates the priority a path maintains once it is established. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority.*
Mib	Voice
Values	Decimal (0..4)
Default	2

ATTRIBUTE Vs Plc holdingPriority (hpri)

Access	Read and write
Criticality	Process
Description	This attribute gives the priority that a path holds once it is established. Zero is the highest priority and four is the lowest. A path's *holdingPriority* determines its likelihood of being bumped by a new path to acquire its bandwidth. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time. A new path can bump an existing path if the new path's *setupPriority* is higher (numerically less) than the existing path's *holdingPriority.*
Mib	Voice
Values	Decimal (0..4)
Default	2

ATTRIBUTE Vs Plc requiredTxBandwidth (tbw)

Access	Read and write
Criticality	Process
Description	This attribute gives the bandwidth (in bits per second) reserved by a path on each of the trunks of its route.This attribute represents the bandwidth for traffic outgoing to the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced and is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that transmit at this end represents receive at the remote end. Note that when the values do not correspond, the originating end of the connection determines the value.
Mib	Voice
Values	Decimal (0..2048000)
Units	bit/s
Default	32000

ATTRIBUTE Vs Plc requiredRxBandwidth (rbw)

Access	Read and write
Criticality	Process
Description	This attribute gives the bandwidth (in bits per second) reserved by a path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. This value should be chosen to achieve the amount of statistical bandwidth sharing that is desired by the network administration. This reservation is not enforced and is used to determine how many paths can be supported on a trunk. Both ends should be provisioned with the correct values allowing for the fact that transmit at this end represents receive at the remote end. Note that when the values do not correspond, the originating end of the connection determines the value.
Mib	Voice

Values	Decimal (0..2048000)
Units	bit/s
Default	32000

ATTRIBUTE Vs Plc requiredTrafficType (rttyp)

Access	Read and write
Criticality	Process
Description	This attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1,*** then only trunks that include ***trafficType1*** in *supportedTrafficType* will be candidates for this connection.
Mib	Voice
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	voice

ATTRIBUTE Vs Plc permittedTrunkTypes (pttyp)

Access	Read and write
Criticality	Process

Description	This attribute lists up to eight(8) types of trunk that can be used on the route. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six(6) remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.
Mib	Voice
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	(terrestrial, satellite, trunkType1, trunkType2, trunkType3)

ATTRIBUTE Vs Plc requiredSecurity (rsec)

Access	Read and write
Criticality	Process
Description	This attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1,*** then only trunks that include ***trafficType1*** in *supportedTrafficType* will be candidates for this connection.
Mib	Voice
Values	Decimal (0..7)

Default	4

ATTRIBUTE Vs Plc requiredCustomerParm (rcparm)

Access	Read and write
Criticality	Process
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route. Its value, a number from zero to seven, is chosen by network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	Voice
Values	Decimal (0..7)
Default	4

ATTRIBUTE Vs Plc pathAttributeToMinimize (pamin)

Access	Read and write
Criticality	Process
Description	This attribute indicates whether a route is selected on the basis of minimizing the cost or the delay. Each trunk has a cost and a delay metric associated with it. The cost of a selected route is the sum of the trunk cost metrics for all trunks included in the route. The delay of a selected route is the sum of the trunk delay metric for all trunks included in the route.
Mib	Voice
Values	cost delay
Default	cost

ATTRIBUTE Vs PIc maximumAcceptableCost (maxCost)

Access	Read and write
Criticality	Process
Description	This attribute indicates an upper bound on the cost metric of a route, which is the sum of the cost metrics of all trunks on the route. The cost metric is the *trunkCost* attribute of the Trunk component. If for any trunk the *trunkCost* is larger than the *maximumAcceptableCost*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route cost is being compared with the *maximumAcceptableCost* attribute, and this is done for any minimization criterion. No route is selected if the cost metric of the shortest route is larger than the *maximumAcceptableCost*.
Mib	Voice
Values	Decimal (0..65535)
Default	1280

ATTRIBUTE Vs PIc maximumAcceptableDelay (maxDelay)

Access	Read and write
Criticality	Process
Description	This attribute indicates an upper bound on the delay of a route, which is the sum of the delay of all trunks on the route. It should be provisioned with a reasonable maximum acceptable delay for the end to end one way delay of a 512-byte packet. Remember, that the trunk during its staging measures a *measuredRoundTripDelay.* This delay is divided by two and truncated to an integer number of milliseconds to provide a one way delay which is used to populate the delay in this trunk object in the topological database. The value includes emission, propagation, and queuing delays. A 512-byte packet is used to perform the measurement. If for any trunk the half of the trunk's *measuredRoundTripDelay* is larger than the *maximumAcceptableDelay*, then that trunk is not considered during the route selection. While a shortest route is being selected, the route delay is being

	compared with the *maximumAcceptableDelay* attribute, and this is done for any minimization criterion. No route is selected if the delay metric of the shortest route is larger than the *maximumAcceptableDelay.*
Mib	Voice
Values	Decimal (0..100000)
Units	msec
Default	100000

ATTRIBUTE Vs Plc emissionPriority (epri)

Access	Read and write
Criticality	Process
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. *EmissionPriority* of Zero(0) indicates the highest emission priority, while two (2) indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	Voice
Values	Decimal (0..2)
Default	0

ATTRIBUTE Vs Plc discardPriority (dpri)

Access	Read and write
Criticality	Process
Description	This attribute indicates the importance of the packets on the path. One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority* (numerically) are discarded after packets with a higher *discardPriority* (numerically).
Mib	Voice

Values	Decimal (1..3)
Default	1

ATTRIBUTE Vs Plc pathType (pType)

Access	Read and write
Criticality	Process
Description	This attribute specifies if the path for this PLC is determined automatically or by static provisioning. The default (***normal***) is to automatically choose a route with Route Selection. ***Normal*** *pathTypes* require less provisioning and can dynamically handle path failures. The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	Voice
Values	normal manual forced
Default	normal

ATTRIBUTE Vs Plc pathFailureAction (pfa)

Access	Read and write
Criticality	Process

Description	This attribute is used to specify whether the application can tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is chosen, the application is informed as soon as possible about a failure by disconnection. If the attribute is set to ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends.
Mib	Voice
Values	reRoutePath disconnectConnection
Default	reRoutePath

ATTRIBUTE Vs PIc bumpPreference (bpref)

Access	Read and write
Criticality	Process
Description	This attribute controls when bumping occurs in the route selection process. A connection with higher (numerically less) *setupPriority* may bump a connection with lower (numerically higher) *holdingPriority* in order to acquire its bandwidth and be established. By default, bumping occurs only when it is necessary. That is, a connection will bump another connection only if there is no other way for the connection to be established. A connection may be set to always bump in order to find the best route it may have.
Mib	Voice
Values	bumpWhenNecessary bumpToObtainBestRoute

Default	bumpWhenNecessary

ATTRIBUTE Vs Plc optimization (opt)

Access	Read and write
Criticality	Process
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	Voice
Values	disabled enabled
Default	enabled

ATTRIBUTE Vs Plc addressToCall (addrToCall)

Access	Read and write
Criticality	Process
Description	This attribute is the *PLC*'s remote end point's address in the format of a NSAP address. As such it must consist of a string of hex digits although not all 40 digits must be specified. For an alternative representation of end point's addresses, see *remoteName* attribute. If the *addressToCall* is provisioned, it must match *localAddress* provisioned on the remote end or the connection will not be established. Connections establish faster and are unique if both ends are provisioned with *addressToCall*. *AddressToCall* must be used when the remote end of the connection resides in different topology region. If it resides in the same topology region, then *remoteName* may be used. When both *remoteName* and *addressToCall* are provisioned, *addressToCall* takes precedence. That is, connection will be established to the service specified by *addressToCall*.
Mib	Voice

Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Vs Plc localAddress (localAddr)

Access	Read and write
Criticality	Process
Description	This attribute is the *PLC*'s end point address in the format of an NSAP address. As such it must consist of a string of hex digits although not all 40 digits must be specified. *LocalAddress* must share a prefix with MOD nodePrefix or one of MOD alternatePorsPrefixes for this node, otherwise PORS will not be able to route calls to this service. *LocalAddress* is used in conjunction with *addressToCall*. That is, the end responsible for originating calls must have *addressToCall* provisioned, while the end responsible for terminating calls must have *localAddress* provisioned. In such a case, *addressToCall* on the originating end must match exactly the *localAddress* of the terminating end. Note that both ends may be originating and terminating at the same time. That is, both ends may have *addressToCall* and *localAddress* provisioned as long as *addressToCall* and *localAddress* on different ends are identical.
Mib	Voice
Values	String (0..40, ASCII)
Default	""

ATTRIBUTE Vs Plc maximumAcceptableGatewayCost (maxGateCost)

Access	Read and write
Criticality	Process
Description	This attribute indicates an upper bound on the gateway cost metric of a route, which is the sum of the gateway cost metrics of all gateway links on the route. It has the same semantics as the *maximumAcceptableCost* except that gateway cost metrics are used instead of trunk cost metrics. Gateway cost metrics are provisioned under *Trunk Address* component of a gateway link

	specifying a gateway costs of reaching an address through the link.
Mib	Voice
Values	Decimal (0..65535)
Default	2048

ATTRIBUTE Vs Plc manualPath (mpath)

Access	Read and write
Criticality	Process
Description	This attribute is optional and specifies the sequence of trunks to be used as the route for the path, thus bypassing PORS' automatic route selection. If the path fails the validation, no other path can be selected[1]. This attribute should only be used in special cases since the route selection algorithm is able to find and maintain the best routes. A related path attribute, the *pathType*, determines if this route will be used as a manual or forced path type. As an example, the trunk component name for the third trunk on node MoonBase is "*EM/MoonBase Trk/3*". Note that only the first end of the trunk that the packet would encounter is provisioned. These strings are case insensitive but the complete component name must be input. Note 1: the trunk designation must be a 3-letter form, e.g., 'trk'. Note 2: only the outbound trunks component names are used to provision the ***manualPath***. Note 3: It is recommended to have two independent routes specified for a manual path by specifying a different ***manualPath*** (non-symmetric) for each end. In this case, there is no way to select which route will be used (first up wins) but if one path is torn down due to a failure then the other ***manualPath*** may be used to reroute the path.

Mib	Voice
Vector of	String (0..40, ASCII)
Index	Decimal (0..9)
Default	([10] "")

COMPONENT Vs LogicalConnection (LCo)

Groups	"GROUP Vs LCo PathData" "GROUP Vs LCo Statistics (Stats)"
Scope	Application
Description	...*Lc* This component contains all of the operation attributes for a Path Oriented Logical Connection.
Mib	Voice
Common Verbs	Help List Display

VERB RERoute Vs LCo

Impact	Service
Description	RERoute ..Lc This command is used to request a *LogicalConnection (LCo)* to attempt a reroute. A new path will be established if it is better than the current path. The current path will not be interrupted if the *RERoute* command is not completely successful. The connection must not be attempting rerouting at present. This command is only valid on components with the *PLC remoteName* specified. This command is intended to be used on the calling end of a connection. For a single region call, it may be used on the called end of a connection if all the *PLC* parameters match. Note that the calling end or the called end of a connection means the *end* attribute of an *LCo* is equal to the value of ***calling*** or ***called*** respectively. When used on an *LCo* with *pathType* attribute set to ***manual*** or ***forced,*** this command can be used to re-setup the path. If this command is attempted on a connection that is not up but its *state* attribute is equal to ***pathDownRetrying,*** an immediate route request is sent.

GROUP Vs LCo PathData

Properties	Operational
Description	This group contains all operational attributes for the path oriented LCo.
Mib	Voice

ATTRIBUTE Vs LCo state

Access	Read only
Description	This attribute reflects the current state of the connection. The ***pathDown*** state indicates a connection that has no remote end provisioned or the application has not yet signaled for a path. The ***selectingRoute*** state occurs when a request has been sent to route selector and it has not yet responded. The ***connectingState*** occurs

while a path is being established. The ***pathUp*** state is the normal operational state of a path. The ***pathDownRetrying*** state indicates a path that attempted route selection but received no route and is now waiting to retry route selection again.

Mib: Voice

Values:
pathDown
selectingRoute
connecting
pathUp
pathDownRetrying

Default: No default

ATTRIBUTE Vs LCo overrideRemoteName (orn)

Access: Read: All
Write: All

Description: If set ***and*** the current PLC remoteName is blank this remoteName will override the blank PLC remoteName. Usually you would set this attribute and then lock/unlock the service component which will result in this new overrideRemoteName being used as if it had been provisioned into the PLC remoteName. The advantage of this attribute is that the connection's remoteName can be changed immediately without having to "activate prov" but the disadvantage is that the overrideRemoteName is not permanent and if the card or switch is reset the override will be lost.

Mib: Voice

Values: String (0..40, ASCII)

Default: ""

ATTRIBUTE Vs LCo end

Access: Read only

Description: This attribute identifies whether this is the calling or called end of the path.

Mib: Voice

Values	calling called
Default	No default

ATTRIBUTE Vs LCo costMetric (cost)

Access	Read only
Description	This attribute gives the route's total cost metric. It is calculated as the sum of the cost metric of all trunks in the path at the time the connection was established. The cost metric of a trunk is defined by the *trunkCost* attribute of the Trunk component. The *costMetric* for an LCo that is originated and terminated on the same module is 0.
Mib	Voice
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vs LCo delayMetric (delay)

Access	Read only
Description	This attribute gives the total delay of the route as the one way delay for a 512 byte packet. It is calculated as the sum of the delays of all trunks in the path stored in topology at the time the connection was established. The delay for an LCo that is originated and terminated on the same module is 0.
Mib	Voice
Values	Decimal (0..100000)
Units	msec
Default	No default

ATTRIBUTE Vs LCo roundTripDelay (rtd)

Access	Read only
Description	This attribute indicates the time taken for a packet (cell) of 44 bytes to be transmitted inband to the remote *LCo* and return to

	this LCo. The value reported is rounded to the nearest millisecond. For Unack PORS trunks and AAL5 MUX PORS trunks, the test packet is sent inband and receives the same treatment as regular data packets, giving a round trip delay which corresponds to regular data traffic. For SPO MUX PORS trunks and MAP PORS trunks, the test packet is sent along the parent trunk's VCC, giving a round trip delay which corresponds to the parent trunk's round trip delay. The round trip delay does not directly reflect the round trip delay of data packets travelling on the non-parent VCC. When the *LCo* is originated and terminated on the same module, a value of 1 millisecond is reported. The value of 1 millisecond is the minimum reported time even though the delay may be less than 1 millisecond.
Mib	Voice
Values	Decimal (0..200000)
Units	msec
Default	No default

ATTRIBUTE Vs LCo setupPriority (spri)

Access	Read only
Description	This attribute gives the priority at which the current path is established. Zero is the highest priority and four is the lowest. The *holdingPriority*, a complementary attribute of this component, indicates the priority a path maintains once it is established.
Mib	Voice
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Vs LCo holdingPriority (hpri)

Access	Read only

Description	This attribute gives the priority at which a path holds its current path once the path is established. Zero is the highest priority and four is the lowest. The *setupPriority*, a complementary attribute, indicates the priority of a path at establishment time.
Mib	Voice
Values	Decimal (0..4)
Default	No default

ATTRIBUTE Vs LCo requiredTxBandwidth (tbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of the trunks of its route. This attribute represents the bandwidth for traffic outgoing to the remote end point. The originating end of the connection determines this value.
Mib	Voice
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Vs LCo requiredRxBandwidth (rbw)

Access	Read only
Description	This attribute gives the actual bandwidth (in bits per second) reserved by this path on each of trunks of its route. This attribute represents the bandwidth for traffic incoming from the remote end point. The originating end of the connection determines this value
Mib	Voice
Values	Decimal (0..4294967295)
Units	bit/s
Default	No default

ATTRIBUTE Vs LCo requiredTrafficType (rttyp)

Access	Read only
Description	This operational attribute indicates the type of traffic transmitted over the path. There are eight possible traffic types, and the path can transmit only one of them. The originating end of the connection determines the type. These are arbitrary designations for traffic type. The ***voice***, ***data*** and ***video*** traffic types are defined, and five other arbitrary traffic types can be defined by the network administration. This attribute is used in the route selection process to restrict the route to trunks that support this traffic type. The *supportedTrafficType* trunk attribute lists all the types of traffic allowed on the trunk. For example, if *requiredTrafficType* is specified as ***trafficType1*** then only trunks that include ***trafficType1*** in *supportedTrafficType***,** will be candidates for this connection.
Mib	Voice
Values	voice data video trafficType1 (tt1) trafficType2 (tt2) trafficType3 (tt3) trafficType4 (tt4) trafficType5 (tt5)
Default	No default

ATTRIBUTE Vs LCo permittedTrunkTypes (pttyp)

Access	Read only
Description	This operational attribute lists up to eight types of trunk that can be used on the route. The originating end of the connection determines the types. The ***terrestrial*** and ***satellite*** trunk types have been defined, leaving six remaining arbitrary types that can be defined by the network administration. The trunk's type is indicated in the *trunkType* attribute of the Trunk component. When selecting a route, PORS only chooses trunks whose *trunkType* are in the *permittedTrunkTypes* for the path.

Mib	Voice
Set of	terrestrial satellite trunkType1 (tt1) trunkType2 (tt2) trunkType3 (tt3) trunkType4 (tt4) trunkType5 (tt5) trunkType6 (tt6)
Default	No default

ATTRIBUTE Vs LCo requiredSecurity (rsec)

Access	Read only
Description	This attribute indicates the required minimum level of security of the trunks on the route. Zero represents the most secure and seven represents the least secure. The trunk's security is indicated by the *trunkSecurity* attribute of the Trunk component, and has values identical in range and meaning to the *requiredSecurity* attribute. PORS ensures that any route selected does not contain a trunk whose *trunkSecurity* attribute is numerically greater than the *requiredSecurity.*
Mib	Voice
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vs LCo requiredCustomerParameter (rcparm)

Access	Read only
Description	This attribute indicates the allowed customer defined parameter of the trunks on the route.The originating end of the connection determines the customer defined parameter. Its value, a number from zero to seven, is chosen by a network administration to have a meaning specific to their network, thus allowing them to customize the use of their trunks. A complementary trunk attribute, *customerParameter*, also has a value from zero to seven. The route selection process does not consider trunks

	whose *customerParameter* is greater than the *requiredCustomerParameter* of the path.
Mib	Voice
Values	Decimal (0..7)
Default	No default

ATTRIBUTE Vs LCo emissionPriority (epri)

Access	Read only
Description	This attribute indicates the urgency with which packets on the path are emitted by the trunks on the route. The originating end of the connection selects the *emissionPriority. EmissionPriority* of zero indicates the highest emission priority, while two indicates the lowest emission priority. Packets with a higher *emissionPriority* (or numerically less) are serviced and sent out before the packets of lower *emissionPriority* (or numerically higher).
Mib	Voice
Values	Decimal (0..2)
Default	No default

ATTRIBUTE Vs LCo discardPriority (dpri)

Access	Read only
Description	This attribute indicates the importance of the packets on the path. The originating end of the connection sets *discardPriority.* One is used for paths carrying the most important traffic, and three is used for paths carrying the least important traffic. Packets with lower *discardPriority*(numerically) are discarded after packets with a higher *discardPriority*(numerically).
Mib	Voice
Values	Decimal (1..3)
Default	No default

ATTRIBUTE Vs LCo pathType (pType)

Access	Read only
Description	This attribute indicates whether the path for this PLC was determined automatically or by static provisioning. ***Normal*** *pathTypes* are selected automatically by Route Selector.The other *pathTypes* are both manual *pathTypes* where the operator must specify, through provisioning, a static route termed the *manualPath*. A manual *pathType* connection is nearly identical to a normal path type connection with the exception that the route is pre-provisioned. For a manual *pathType*, bandwidth reservations are respected along the path exactly as in a normal path. The last type, the ***forced*** *pathType*, is also a manual path but regardless of the bandwidth available the route is granted provided the trunks are operational and there are sufficient Logical Channels (LChs). The ***forced*** *pathType* could result in over committing the reserved bandwidth allowed on a trunk. A better way to achieve the effects of a ***forced*** *pathType* is to use a ***manual*** *pathType* with *setupPriority* = ***0*** and *holdingPriority* = ***0***. In this manner the path will reserve correct bandwidth and it will bump other paths if required while not being bumped itself.
Mib	Voice
Values	normal manual forced
Default	No default

ATTRIBUTE Vs LCo retryCount (rcount)

Access	Read only
Description	This attribute is the count of the number of times the path chosen during route selection could not be instantiated. This count should be three or below if the network is performing adequately. A high value indicates that the route selection is often performed using an out-of-date view of available network bandwidth and/or topology. This attribute will only increase at the calling end of an un-

	segmented connection. The attribute should be ignored for segmented connections.This attribute is reset each time a path reconnects and stops counting when it reaches its maximum value.
Mib	Voice
Values	Decimal (0..255)
Default	No default

ATTRIBUTE Vs LCo pathFailureCount (pfcount)

Access	Read only
Description	This attribute is the count of the number of times the path has successfully connected. It is set to zero the first time the path is up. If a path fails anytime after connecting this count will be incremented when the path is up again. Failed route requests do not count in this statistic. See *retryCount* above. This attribute stops counting at its maximum value.
Mib	Voice
Values	Decimal (0..65535)
Default	No default

ATTRIBUTE Vs LCo reasonForNoRoute (rnr)

Access	Read only
Description	This attribute is the route selection's *reasonForNoRoute* and provides a brief reason for which a route was not selected. The reasons are essentially self-explanatory. Perhaps two reasons for no route require some explanation. The reason ***unknownRemoteNodeName*** is issued when the remote node name is not in the topological database. The reason ***plcAttributesNotMet*** is issued when there is no network connectivity at a level specified by the PLC attributes. This reason is also issued when there is no physical connectivity between two end nodes.
Mib	Voice

Values	none destinationNameTooLong destinationNotSpecified unknownDestinationName incorrectDestination incorrectDestinationEndPoint unknownSource unknownDestination sameNode routeCostTooMuch routesDelayTooLong attributesNotMet anError attributeProfileProblem manualPathIndexProblem
Default	none

ATTRIBUTE Vs LCo lastTearDownReason

Access	Read only
Description	This attribute reflects the last tear down reason for a connection (LCo). In many cases this displays the reason for a momentary service interruption. This attribute applies to the last path failure only. If a path is no longer up, this may give an indication to the reason that the path has failed. In many cases an alarm will also be generated with more specific information. The following is a brief description of the reasons: ***none*** - This path has no information for the teardown this is typical of a path provisioned with no *remoteName* that has not been up. ***normalShutDown*** - This path has gone down due to normal call termination. ***insufficientTxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the transmit direction. ***insufficientRxLcOrBandwidth*** - At present there is either no available bandwidth or logical channel numbers available on one or more of the trunks for this path in the receive direction. ***trunkFailure***- A trunk on the path has failed or has gone down due to a provisioning change of a critical attribute.

trunkCardFailure- A trunk FP card has failed along the path.
accessCardFailure- The FP on which the peer access service was running has failed.
operatorForced- The path has terminated due to the operator locking a trunk along the path.
lostLcnClash- The path has terminated because the PA's at both ends of an intermediate trunk have allocated the same LC to different calls. When this happens both calls must go down and then try to come up again a fraction of a second later (effectively ensuring that they will now be assigned different LC's). It is normal to get the odd clash especially when the PA's usedLC is approaching the PA's maxLC.
networkCongestion - The path has failed due to control information being lost and not recoverable.
trunkNotFound - Occurs on a ***manual*** path usually. Check for trunks not up or names provisioned incorrectly.
farEndNotFound - The far end is not provisioned or is not up. Check remote Name.
wrongModuleReached - This may occur on a ***manual*** path. Check provisioning for correct trunk and service names. For a ***normal*** path, the network Topology may be changing check *remoteName*.
farEndBusy - The far end has been reached but it is busy. Check *remoteName* and remote end provisioning.
callLoopedBack - This LCo is provisioned to call itself. Re-provision since this is invalid.
unknownReason - The failure was not resolved.
farEndNotReady - The remote end was reached but the connection was refused due to the remote end not being enabled.
remoteNameMismatch - The remote end has alarmed and rejected this setup due to remoteName provisioning.
serviceTypeMismatch - The remote Service Type does not match this service type. Check provisioning.
reconnectFromFarEnd - The remote end re-established this connection. Check the remote end *lastTearDownReason* to determine the real reason.
bumped - Another call bumped this path from a trunk to get bandwidth (or an LC) which it required to come up. This other path had a higher *setupPriority* than this path's *holdingPriority* hence it was allowed to steal the bandwidth (or LC) from this path.

optimized - This call has been rerouted due to the optimization feature. The call is still active this just indicates why the path changed.
trunkOrFarEndDidNotSupportMode - This call was unable to complete because a mode required by the service was not supported by one of the trunks the route went through or by the far end service it connected to. Currently the only mode that this applies to is the map/mux mode on TRUNK PA ATM component. Map mode was required by the application (CES/FrAtm etc.) but was not available on the TRUNK PA ATM component through which the call was routed or the far end CES/FrAtm component did not specify the same mode.

Mib	Voice
Values	none normalShutDown insufficientTxLcOrBandwidth insufficientRxLcOrBandwidth trunkFailure trunkCardFailure operatorForced lostLcnClash networkCongestion trunkNotFound farEndNotFound wrongModuleReached farEndBusy callLoopedBack unknownReason farEndNotReady remoteNameMismatch serviceTypeMismatch reconnectFromFarEnd bumped accessCardFailure optimized overrideRemoteName trunkOrFarEndDidNotSupportMode
Default	none

ATTRIBUTE Vs LCo pathFailureAction

Access	Read only
Description	This attribute displays whether the application is set to tolerate momentary interruption of a path while a new path is selected. If ***disconnectConnection*** is displayed, the application is informed as soon as possible about a failure by disconnection. If the attribute displays ***reRoutePath***, the path may attempt an immediate reroute, provided the failure is a recoverable failure. If rerouting fails the application is informed of the failure. With this option set to ***reRoutePath*** the LCo may wait up to 30 seconds before informing the service of complete disconnection in order to allow both ends to attempt to reconnect. Note that if PLC components are different at both ends only the calling end is allowed to reconnect. All *pathTypes* respect this attribute. Also on a *manualPath* with both ends provisioned with independent paths (at least with respect to the failure) this option will have the desired effect that the path is rerouted without complete disconnection at both ends
Mib	Voice
Values	reRoutePath disconnectConnection
Default	No default

ATTRIBUTE Vs LCo bumpPreference (bpref)

Access	Read only
Description	This attribute specifies when bumping will occur during route selection process. Bumping may occur when necessary or always. It will be necessary for a connection to bump if there is not enough resources for the connection to be established and these resources are occupied by a connection whose *setupPriority* is lower (numerically higher) than the connection's *setupPriority*. A connection may also always bump in order to obtain the best route.
Mib	Voice

Values	bumpWhenNecessary bumpToObtainBestRoute
Default	No default

ATTRIBUTE Vs LCo optimization (opt)

Access	Read only
Description	This attribute is used to specify whether this connection should attempt to optimize its path when requested by the routing PORS component. Every path is as optimal as it can be when it is established, but as network traffic patterns and configurations change this path may no longer be as optimal as it could be. The PORS connection manager on a module requests circuits to optimize at the optimization interval.
Mib	Voice
Values	disabled enabled
Default	No default

ATTRIBUTE Vs LCo pathUpDateTime

Access	Read: Service Write: Illegal
Description	This is the time stamp when the current path was established or reestablished.
Mib	Voice
Values	Time (DHMS)
Default	No default

ATTRIBUTE Vs LCo path

Access	Read only
Description	This attribute contains the trunk component names over which the path has been instantiated and the remote end point name terminating the path.

Mib	Voice
List of	String (0..40, ASCII)
List Size	21
Default	No default

GROUP Vs LCo Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics attributes for the path oriented LCo.
Mib	Voice

ATTRIBUTE Vs LCo pktsToNetwork

Access	Read only
Description	This attribute counts the number of packets transmitted to the network over this Logical Connection.
Mib	Voice
Values	Long Integer
Default	No default

ATTRIBUTE Vs LCo bytesToNetwork

Access	Read only
Description	This attribute counts the number of bytes sent to the network over this Logical Connection.
Mib	Voice
Values	Long Integer
Default	No default

ATTRIBUTE Vs LCo pktsFromNetwork

Access	Read only

Description	This attribute counts the number of packets received from the remote LCo via the network.
Mib	Voice
Values	Long Integer
Default	No default

ATTRIBUTE Vs LCo bytesFromNetwork

Access	Read only
Description	This attribute counts the number of bytes received from the remote LCo via the network.
Mib	Voice
Values	Long Integer
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component Vs

Release 6.1

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Nortel Networks Multiservice Switch

7400/15000/20000

Component X25Dte

NN10600-060

Nortel Networks Multiservice Switch 7400/15000/20000

Component X25Dte

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COMPONENT X25Dte

Instance	Decimal (1..65535)
Groups	"GROUP X25Dte CustomerIdentifierData (CidData)" "GROUP X25Dte Interface (If)" "GROUP X25Dte LcnConfig (LcnC)" "GROUP X25Dte DefaultCallParam (Dcp)" "GROUP X25Dte IfEntryProv (IfEntry)" "GROUP X25Dte OsiState (State)" "GROUP X25Dte OperationalStatus (OperStatus)" "GROUP X25Dte Operational (Op)" "GROUP X25Dte Statistics (Stats)"
Scope	Application
Description	*X25Dte/n*

The *X25Dte* component defines the general parameters for implementing the X.25 DTE interface.

Mib	X25Dte
Subcomponents	"COMPONENT X25Dte Lapb" "COMPONENT X25Dte PacketLayerEntity (Ple)" "COMPONENT X25Dte RemoteGroup (Rg)"
Opt. Subcomp.	"COMPONENT X25Dte Peer" "COMPONENT X25Dte PermLcn (PLcn)"
Dyn. Subcomp.	"COMPONENT X25Dte Lcn (Lcn)"
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP X25Dte CustomerIdentifierData (CidData)

Properties	Provisioned
Description	This group contains the attribute for a component's Customer Identifier (CID). Refer to the attribute description for a detailed explanation of CIDs.
Mib	X25Dte

ATTRIBUTE X25Dte customerIdentifier (cid)

Access	Read and write
Description	This attribute holds the Customer Identifier (CID). Every component has a CID. If a component has a *cid* attribute, the component's CID is the provisioned value of that attribute; otherwise the component inherits the CID of its parent. The top-level component has a CID of 0. Every operator session also has a CID, which is the CID

provisioned for the operator's user ID. An operator will see only the stream data for components having a matching CID. Also, the operator will be allowed to issue commands for only those components which have a matching CID.

An operator CID of 0 is used to identify the Network Manager (referred to as "NetMan" in DPN). This CID matches the CID of any component. Values 1 to 8191 inclusive (equivalent to "basic CIDs" in DPN) may be assigned to specific customers.

Mib: X25Dte

Values: Decimal (0; 1..8191)

Default: 0

GROUP X25Dte Interface (If)

Properties: Provisioned

Description

This group provides the administrative set of parameters for the X.25 interface.

Mib: X25Dte

ATTRIBUTE X25Dte interfaceMode (ifM)

Access: Read only

Description

This attribute specifies the packet mode in which the X.25 interface operates. When this attribute is set to ***dte***, interface on the other side of the physical link must be configured as a ***dce***.

Mib: X25Dte

Values: dte
dce

Default: dte

ATTRIBUTE X25Dte maxActiveChannels (maxAc)

Access	Read and write
Criticality	Process
Description	This attribute specifies the maximum number of channels that can be active on this interface including the Permanent Lcns and the Switched Lcns. In total *maxActiveChannel* will determine the maximum number of *Lcn* components which may exist at a given time. This should be set to a value greater or equal to the *numberOfPLcn* provisioned.
Mib	X25Dte
Values	Decimal (0..4095)
Default	10

ATTRIBUTE X25Dte numberOfPLcn (numOPLcn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the number of Permanent Logical Channels that are supported on this X.25 interface (that is, the number of *PermLcn* components that may be provisioned at this interface). The *PermLcn* components use channel numbers starting from 1 and up to *lowestILChannelNumber.* A value of ***0*** for this attribute indicates that no Permanent Logical channels are supported on this X.25 interface.
Mib	X25Dte
Values	Decimal (0..4095)
Default	0

ATTRIBUTE X25Dte packetSequencing (pS)

Access	Read and write
Criticality	Process

Description

This attribute specifies the sequence numbering of packets for the X.25 interface. The value of this attribute must be the same as the packet sequencing configured at the X.25 interface on the other side of the physical link.

Mib X25Dte

Values modulo8
modulo128

Default modulo8

ATTRIBUTE X25Dte t20RestartTimer (t20)

Access Read and write

Description

This attribute provides the period in milliseconds within which a restart request packet should be confirmed.

Mib X25Dte

Values Decimal (1000..65536000)

Units msec

Default 60000

ATTRIBUTE X25Dte t21CallTimer (t21)

Access Read and write

Description

This attribute provides the period in milliseconds within which a call request packet should be confirmed.

Mib X25Dte

Values Decimal (1000..65536000)

Units msec

Default 180000

ATTRIBUTE X25Dte t22ResetTimer (t22)

Access	Read and write
Description	This attribute provides the period in milliseconds within which a reset request packet should be confirmed.
Mib	X25Dte
Values	Decimal (1000..65536000)
Units	msec
Default	60000

ATTRIBUTE X25Dte t23ClearTimer (t23)

Access	Read and write
Description	This attribute provides the period in milliseconds within which a clear request packet should be confirmed.
Mib	X25Dte
Values	Decimal (1000..65536000)
Units	msec
Default	60000

GROUP X25Dte LcnConfig (LcnC)

Properties	Provisioned
Description	This group contains the provisionable attributes for the Logical Channel configuration of the X.25 Interface. The logical channel range table is ordered as follows: Permanent Logical Channels(PLC), One-way Incoming Channels (IC), Two-way Channels(TC) and One-way Outgoing Channels (OC),

in a consecutive manner.

Mib X25Dte

ATTRIBUTE X25Dte lowestILChannelNumber (lILcn)

Access Read and write

Criticality Process

Description

This attribute specifies the lowest Lcn number of the One-way Incoming Channel range for this X.25 interface. The value for this attribute must be greater than the *numberOfPLcn* attribute.

Mib X25Dte

Values Decimal (0..4095)

Default 0

ATTRIBUTE X25Dte highestILChannelNumber (hILcn)

Access Read and write

Criticality Process

Description

This attribute specifies the highest Lcn number of the One-way Incoming Channel range for this X.25 interface. A value of ***0*** indicates that there are no channels in this range.

Mib X25Dte

Values Decimal (0..4095)

Default 0

ATTRIBUTE X25Dte lowestTLChannelNumber (lTLcn)

Access Read and write

Criticality Process

Description

This attribute specifies the lowest Lcn number of the Two-way

	Channel range for this X.25 interface. The value for this attribute must be greater than the *highestILChannelNumber* attribute.
Mib	X25Dte
Values	Decimal (0..4095)
Default	1

ATTRIBUTE X25Dte highestTLChannelNumber (hTLcn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the highest Lcn number of the Two-way Channel range for this X.25 interface. A value of ***0*** indicates that there are no channels in this range.
Mib	X25Dte
Values	Decimal (0..4095)
Default	20

ATTRIBUTE X25Dte lowestOLChannelNumber (lOLcn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the lowest Lcn number of the One-way Outgoing Channel range for this X.25 interface. The value for this attribute must be greater than the *highestTLChannelNumber* attribute.
Mib	X25Dte
Values	Decimal (0..4095)
Default	0

ATTRIBUTE X25Dte highestOLChannelNumber (hOLcn)

Access	Read and write
Criticality	Process
Description	This attribute specifies the highest Lcn number of the One-way Outgoing Channel range for this X.25 interface. A value of ***0*** indicates that there are no channels in this range.
Mib	X25Dte
Values	Decimal (0..4095)
Default	0

GROUP X25Dte DefaultCallParam (Dcp)

Properties	Provisioned
Description	This group contains the provisionable attributes giving the default call parameters used by all the logical channels during call setup. It is possible that different default call parameters will be used for a particular call, based on the *Peer* component for the given call. The actual call parameters operational for a given call are found in the *Lcn* component.
Mib	X25Dte

ATTRIBUTE X25Dte inPacketSize (iPktSz)

Access	Read and write
Description	This attribute specifies the maximum receive packet size in octets for the X.25 interface.
Mib	X25Dte
Values	Decimal (16; 32; 64; 128; 256; 512; 1024; 2048; 4096)
Default	128

ATTRIBUTE X25Dte outPacketSize (oPktSz)

Access	Read and write

Description

This attribute specifies the maximum transmit packet size in octets for the X.25 interface.

Mib X25Dte

Values Decimal (16; 32; 64; 128; 256; 512; 1024; 2048; 4096)

Default 128

ATTRIBUTE X25Dte inWindowSize (iWdwSz)

Access Read and write

Description

This attribute specifies the maximum receive window size for the X.25 interface. A window size greater than ***7*** is only valid when the *packetSequencing* attribute is set to ***modulo128***.

Mib X25Dte

Values Decimal (1..127)

Default 2

ATTRIBUTE X25Dte outWindowSize (oWdwSz)

Access Read and write

Description

This attribute specifies the maximum transmit window size for the X.25 interface. A window size greater than ***7*** is only valid when the *packetSequencing* is set to ***modulo128***.

Mib X25Dte

Values Decimal (1..127)

Default 2

ATTRIBUTE X25Dte acceptReverseCharging (aRC)

Access Read and write

Description

This attribute specifies whether local end will accept or refuse charges for a call. A value of ***neverAccept*** is only used at the

X.25 interface level and indicates that this interface will never accept reverse charging (that is no *Peer* component can override this parameter, allowing reverse charged calls to be accepted).

Mib X25Dte

Values accept
refuse
neverAccept

Default refuse

ATTRIBUTE X25Dte proposeReverseCharging (pRC)

Access Read and write

Description

This attribute specifies whether ***local***/***reverse*** charging is signalled in the call request packet.

Mib X25Dte

Values reverse
local

Default local

ATTRIBUTE X25Dte outThroughputClassSize (oTpCSz)

Access Read and write

Description

This attribute specifies the value of the transmit throughput class to be negotiated. A value of ***notSpecified*** means the facility is not signalled.

Mib X25Dte

Values 75
150
300
600
1200
2400
4800

	9600 19200 48000 64000 notSpecified
Default	notSpecified

ATTRIBUTE X25Dte inThroughputClassSize (iTpCSz)

Access	Read and write
Description	This attribute specifies the value of the receive throughput class to be negotiated. A value of ***notSpecified*** means the facility is not signalled.
Mib	X25Dte
Values	75 150 300 600 1200 2400 4800 9600 19200 48000 64000 notSpecified
Default	notSpecified

ATTRIBUTE X25Dte cugIndex (cI)

Access	Read and write
Description	This attribute specifies the index of the Closed User Group facility to signal. The index consists of two or four octets each representing a digit in the range of 0 to 9. A value of null (empty string) at the X.25 interface means no CUG facility is signalled.

If a *cugIndex* is provisioned to be signalled, the *cugoaIndex* attribute must be null.

Mib X25Dte

Values String (0..4, ASCII)

Default ""

ATTRIBUTE X25Dte cugoaIndex (coal)

Access Read and write

Description

This attribute specifies the index of the Close User Group with Outgoing Access facility to signal. The index consists of two or four octets each representing a digit in the range of 0 to 9. A value of null (empty string) at the X.25 interface means no CUGOA facility is signalled. If a *cugoaIndex* is provisioned to be signalled, the *cugIndex* attribute must be null.

Mib X25Dte

Values String (0..4, ASCII)

Default ""

ATTRIBUTE X25Dte chargingInformation (cInfo)

Access Read and write

Description

This attribute specifies whether the charging information facility is to be signalled in a call request packet. A value of ***notSpecified*** means the facility is not signalled. A value of ***notRequested*** means the facility is signalled but charging information is not requested (that is, the charging info field of the facility is set Off). A value of ***requested*** means the facility is signalled to explicitly request charging information.

Mib X25Dte

Values notSpecified
notRequested
requested

Default	notSpecified

ATTRIBUTE X25Dte rpoa (rp)

Access	Read and write
Description	This attribute specifies the value of the RPOA facility to signal in a call request packet. The value of null (empty string) at the X.25 interface means no RPOA facility is signalled.
Mib	X25Dte
Values	String (0..108, ASCII)
Default	""

ATTRIBUTE X25Dte trnstDlySlctnAInd (tdsai)

Access	Read and write
Description	This attribute specifies the value of the Transit Delay Selection and Indication facility to signal in a call request packet. A value of ***65536*** at the X.25 interface level means no TDSAI facility is signalled.
Mib	X25Dte
Values	Decimal (0..65536)
Default	65536

ATTRIBUTE X25Dte callingNetworkFax (clgNFax)

Access	Read and write
Description	This attribute specifies the Calling Network facilities to be signalled in a call request packet. A value of null (empty string) at the X.25 interface means no facilities are signalled.
Mib	X25Dte
Values	String (0..108, Hex)
Default	""

ATTRIBUTE X25Dte calledNetworkFax (cldNFax)

Access	Read and write
Description	This attribute specifies the called network facilities to be signalled in a call request packet. A value of null (empty string) at the X.25 interface means no facilities are signalled.
Mib	X25Dte
Values	String (0..108, Hex)
Default	""

ATTRIBUTE X25Dte callUserData (cud)

Access	Read only
Description	This attribute specifies the user data to be signalled in the call request packet. A value of null (empty string) means no user data is signalled.
Mib	X25Dte
Values	String (0..128, Hex)
Default	""

GROUP X25Dte IfEntryProv (IfEntry)

Properties	Provisioned
Description	This group contains the provisionable attributes for the ifEntry.
Mib	X25Dte

ATTRIBUTE X25Dte ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	X25Dte

Values	up down testing
Default	up

ATTRIBUTE X25Dte ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	X25Dte
Values	Decimal (1..65535)
Default	No default

GROUP X25Dte OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	X25Dte

ATTRIBUTE X25Dte adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***.

The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down.

The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib: X25Dte

Values:
locked (lck)
unlocked (unlck)
shuttingDown (shut)

Default: unlocked

ATTRIBUTE X25Dte operationalState (osiOper)

Access: Read only

Description: This attribute indicates the OSI Operational State of the component.

The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service.

The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib: X25Dte

Values:
enabled (ena)
disabled (dis)

Default: disabled

ATTRIBUTE X25Dte usageState (osiUsage)

Access: Read only

Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	X25Dte
Values	idle active (activ) busy
Default	idle

GROUP X25Dte OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	X25Dte

ATTRIBUTE X25Dte snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	X25Dte
Values	up down testing
Default	up

GROUP X25Dte Operational (Op)

Properties	Operational
Description	This group contains the operational status of the X.25 interface.
Mib	X25Dte

ATTRIBUTE X25Dte interfaceState (intfState)

Access	Read only
Description	This attribute specifies the state of the interface. The ***notReady*** state, is the initial state of the service, when it is being initialized. The ***localRestarting*** state is entered when a Restart packet is sent to the link and the interface is waiting for a response. The ***remoteRestarting*** state is entered when a Restart packet is received from the link, and is being processed. In ***ready*** state, the service is operational and ready to provide service.
Mib	X25Dte
Values	notReady localRestarting remoteRestarting ready
Default	No default

GROUP X25Dte Statistics (Stats)

Properties	Operational
Description	This component contains the statistics for the X.25 interface.
Mib	X25Dte

ATTRIBUTE X25Dte inCalls (iC)

Access	Read only

Description

This attribute counts the number of call packets received from link.

Mib X25Dte

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE X25Dte inCallRefusals (iCR)

Access Read only

Description

This attribute counts the number of calls received from the link which have been cleared. This includes calls cleared by the X.25 interface and calls cleared by the higher level.

Mib X25Dte

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE X25Dte inPrvdrInitiatedClrs (iPIC)

Access Read only

Description

This attribute counts the number of clear packets received from the link with a cause code other than DTE initiated.

Mib X25Dte

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE X25Dte inRmtInitiatedRsts (iRIRsts)

Access Read only

Description

This attribute counts the number of reset packets received from the link with the cause code DTE initiated.

Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inPrvdrInitiatedRsts (iPIRsts)

Access	Read only
Description	This attribute counts the number of reset packets received from the link with the cause code other than DTE initiated.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inRestarts (iRstrts)

Access	Read only
Description	This attribute counts the number of restart packets received from the link while the service is in ready state.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inDataPackets (iDPkts)

Access	Read only
Description	This attribute counts the number of data packets received from link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inPktsAcusdOfPrtclErr (iPktsPErr)

Access	Read only
Description	This attribute counts the number of clear, reset, restart and diagnostic packets received from link containing a procedure error cause code.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inInterruptPackets (iIntPkts)

Access	Read only
Description	This attributes counts the number of interrupt packets received from link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte outCallAttempts (oCAtt)

Access	Read only
Description	This attribute counts the number of call packets sent from this interface.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte outCallFailures (oCFlrs)

Access	Read only

Description

This attribute counts the number of call attempts from this interface that failed. This includes calls that were cleared because of restrictive fast select.

Mib X25Dte

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE X25Dte outInterruptPackets (oIntPkts)

Access Read only

Description

This attribute counts the number of interrupt packets sent to the link.

Mib X25Dte

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE X25Dte outDataPackets (oDPkts)

Access Read only

Description

This attribute counts the number of data packets sent to the link.

Mib X25Dte

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE X25Dte outActiveChannels (oActCh)

Access Read only

Description

This attribute indicates the number of One-way Outgoing Channels that are currently in use. This counter includes the call requests that have not been accepted.

Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte inActiveChannels (iActCh)

Access	Read only
Description	This attribute indicates number of One-way Incoming Channels that are currently active.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte twowayActiveChannels (tWActCh)

Access	Read only
Description	This attribute indicates the number of Two-way Channels that are in use. This includes call requests sent but not yet accepted.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte t20RestartTimeouts (t20Tmo)

Access	Read only
Description	This attribute counts the number of times the T20 restart timer has expired.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte t21CallTimeouts (t21Tmo)

Access	Read only
Description	This attribute counts the number of times the T21 call timer has expired.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte t22ResetTimeouts (t22Tmo)

Access	Read only
Description	This attribute counts the number of times the T22 reset timer has expired.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte t23ClearTimeouts (t23Tmo)

Access	Read only
Description	This attribute counts the number of times the T23 clear timer has expired.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

COMPONENT X25Dte Peer

Instance	Decimal (1..4095)

Groups
"GROUP X25Dte Peer Interface (If)"
"GROUP X25Dte Peer Encapsulation (Enc)"
"GROUP X25Dte Peer CallParameter (Cp)"
"GROUP X25Dte Peer Operational (Op)"

Scope
Application

Description

X25Dte/n Peer/n

This optional component defines the parameters to be used in setting up a switched circuit call to a particular remote destination. Multiple instances of this component can co-exist under the same *X25Dte* component.
An instance of this component is needed for each remote host with which the X.25 Dte is to communicate (that is, each peer to which it may establish calls or from which it is to accept calls).

Mib
X25Dte

Common Verbs
Help
List
Display
Add
DELete

GROUP X25Dte Peer Interface (If)

Properties
Provisioned

Description

This group provides the administrative set of parameters for the *Peer* interface.

Mib
X25Dte

ATTRIBUTE X25Dte Peer encAddressType (eAddrT)

Access
Read and write

Criticality
Component

Description

This attribute specifies the encapsulation type for the address of

the remote host with which this *Peer* component allows communication.

Mib X25Dte

Values ip

Default ip

ATTRIBUTE X25Dte Peer encAddress (eAddr)

Access Read and write

Criticality Component

Description

This attribute specifies the encapsulation address of the remote host with which this *Peer* component allows communication. This address must correspond with the encapsulation address type. Thus in the case of IP, it will contain a IP address.

Mib X25Dte

Values String (0..128, ASCII)

Default No default

ATTRIBUTE X25Dte Peer x25Address (x25Addr)

Access Read and write

Criticality Component

Description

This attribute specifies the X.25 address that identifies the remote host with which this *Peer* component allows communication. The remote X.25 interface could be subdivided through the use of *RemoteGroup* components; in which case this *x25Address* is the X.25 address of the destination's *RemoteGroup* (not to be confused with the *RemoteGroup* indicated by the *linkToRemoteGroup* attribute of THIS *Peer* component).

Mib X25Dte

Values BCD (1..15)

Default No default

ATTRIBUTE X25Dte Peer linkToRemoteGroup (lTRg)

Access Read and write

Criticality Component

Description

This is a link to a *RemoteGroup* component. The *RemoteGroup* components logically divide up the X.25 Interface such that a number of Protocol Ports (and consequently a number of Virtual Routers) may share the same X.25 Interface into a Wide Area Network. In particular, the remote host identified by this *Peer* component is designated as belonging to the *RemoteGroup* linked by this attribute. The set of all *Peer* components and *PermLcn* components which link to a given *RemoteGroup* determine the subset of remote hosts which are accessible to a particular Protocol Port (and ultimately a Virtual Router).

Mib X25Dte

Values Link (Service, linkToPeer)

Default No default

GROUP X25Dte Peer Encapsulation (Enc)

Properties Provisioned

Description

This group contains the protocol encapsulation types supported for communicating over an lcn to the remote host identified by this *Peer* component. An lcn may be established to the remote host for each of the supported protocol encapsulation types. For each lcn an *Lcn* dynamic component is created under the *X25Dte*.

Mib X25Dte

ATTRIBUTE X25Dte Peer protocolEncType (pEnc)

Access Read and write

Description

Each instance of this replicated attribute describes an

encapsulation method permitted for encapsulating the protocol data units (PDUs) of an upper layer protocol when communicating with the remote host identified by this *Peer* component. The index of a given replicated instance of this attribute represents the relative priority of the encapsulation method specified by the given attribute instance. An attribute with index “1” has the highest priority, so the encapsulation method described by it will be the first one attempted when signaling a call to the link. If the *protocolEncType* is set to ***IP*** to encapsulate IP traffic according to RFC1356, the *callUserData* for this *Peer* component and the *X25Dte* component must both be null, so that ***H.CC*** will be signaled as the call user data of the call request. This indicates that the protocol encapsulation type of IP is to be used for the channel.
A call received from the link will be accepted as long as the encapsulation method indicated in the call user data of the incoming call packet is included in one of these replicated attributes. (This presupposes that the incoming call has been directed to the *RemoteGroup* to which this *Peer* is linked through the *linkToRemoteGroup* attribute.)

Mib	X25Dte
Values	ip
Replication	Decimal (1..1)
Default	No default

GROUP X25Dte Peer CallParameter (Cp)

Properties	Provisioned
Description	This group contains the call parameters used to establish a call to/from the remote host identified by this *Peer* component
Mib	X25Dte

ATTRIBUTE X25Dte Peer inPacketSize (iPktSz)

Access	Read and write

Description

This attribute specifies the default maximum receive packet size in octets. A setting of ***0*** indicates the *inPacketSize* setting for the X.25 interface (in *X25Dte* component) is used during call setup to the remote host identified by this *Peer* component.

Mib X25Dte

Values Decimal (0; 16; 32; 64; 128; 256; 512; 1024; 2048; 4096)

Default 128

ATTRIBUTE X25Dte Peer outPacketSize (oPktSz)

Access Read and write

Description

This attribute specifies the default maximum transmit packet size in octets. A setting of ***0*** indicates the *outPacketSize* setting for the X.25 interface (in the *X25Dte* component) is used during call setup to the remote host identified by this *Peer* component.

Mib X25Dte

Values Decimal (0; 16; 32; 64; 128; 256; 512; 1024; 2048; 4096)

Default 128

ATTRIBUTE X25Dte Peer inWindowSize (iWdwSz)

Access Read and write

Description

This attribute specifies the default receive window size. A window size of ***0*** indicates the *inWindowSize* setting for the X.25 interface (in the *X25Dte* component) is used during call setup to the remote host identified by this *Peer* component. A window size greater than ***7*** is only valid when the *packetSequencing* attribute of the *X25Dte* component is set to ***modulo128***.

Mib X25Dte

Values Decimal (0..127)

Default 2

ATTRIBUTE X25Dte Peer outWindowSize (oWdwSz)

Access Read and write

Description

This attribute specifies the default transmit window size. A window size of 0 indicates the *outWindowSize* setting for the X.25 interface is used during call setup to the *Peer* identified by this component. A window size greater than ***7*** is only valid when the *packetSequencing* attribute of the *X25Dte* component is set to ***modulo128***.

Mib X25Dte

Values Decimal (0..127)

Default 2

ATTRIBUTE X25Dte Peer acceptReverseCharging (aRC)

Access Read and write

Description

This attribute specifies whether the local end will ***accept*** or ***refuse*** charges for a call from the remote host identified by this *Peer* component. A value of ***default*** indicates the use of the *acceptReverseCharging* value from the *X25Dte* component. If the value at the *X25Dte* level is ***neverAccept***, a value of ***accept*** in this *Peer* component will be ignored because no reverse charge calls are to be accepted by this X.25 Dte.

Mib X25Dte

Values default
accept
refuse

Default refuse

ATTRIBUTE X25Dte Peer proposeReverseCharging (pRC)

Access Read and write

Description

This attribute specifies whether local/reverse charging is signaled

in a call request packet. A value of ***default*** indicates the use of the value from the *proposeReverseCharging* attribute of the *X25Dte* component.

Mib X25Dte

Values
default
reverse
local

Default local

ATTRIBUTE X25Dte Peer outThroughputClassSize (oTpCSz)

Access Read and write

Description

This attribute specifies the value of the transmit throughput class to be negotiated. A value of ***default*** indicates the use of the value from the *outThroughputClassSize* attribute of the *X25Dte* component. A value of ***notSpecified*** means the facility is not signaled.

Mib X25Dte

Values
75
150
300
600
1200
2400
4800
9600
19200
48000
64000
notSpecified
default

Default notSpecified

ATTRIBUTE X25Dte Peer inThroughputClassSize (iTpCSz)

Access Read and write

Description

This attribute specifies the value of the receive throughput class to be negotiated. A value of ***default*** indicates the use of the value from the *inThroughputClassSize* attribute of the *X25Dte* component. A value of ***notSpecified*** means the facility is not signaled.

Mib X25Dte

Values
75
150
300
600
1200
2400
4800
9600
19200
48000
64000
notSpecified
default

Default notSpecified

ATTRIBUTE X25Dte Peer cugIndex (cI)

Access Read and write

Description

This attribute specifies the index of the Closed User Group facility to signal. A value of "***DEF***" indicates the use of the value from the *cugIndex* attribute of the *X25Dte* component. A value of null (empty string) indicates no CUG facility is to be signaled. If a *cugIndex* is provisioned to be signaled, the *cugoaIndex* attribute must be null.

Mib X25Dte

Values String (0..4, ASCII)

Default ""

ATTRIBUTE X25Dte Peer cugoaIndex (coal)

Access	Read and write
Description	This attribute specifies the index of the Closed User Group with Outgoing Access facility to signal. A value of "***DEF***" indicates the use of the value from the *cugoaIndex* attribute of the *X25Dte* component. A value of null (empty string) indicates no CUGOA facility is to be signaled. If a *cugoaIndex* is provisioned to be signaled, the *cugIndex* attribute must be null.
Mib	X25Dte
Values	String (0..4, ASCII)
Default	""

ATTRIBUTE X25Dte Peer networkUserIdentifier (nui)

Access	Read and write
Description	This attribute specifies the Network User Identifier facility to signal. A value of null (empty string) indicates no NUI facility is to be signaled.
Mib	X25Dte
Values	String (0..108, Hex)
Default	""

ATTRIBUTE X25Dte Peer chargingInformation (cInfo)

Access	Read and write
Description	This attribute specifies whether the charging information facility is signaled in the call request packet. A value of ***default*** indicates the use of the value from the *chargingInformation* attribute of the *X25Dte* component. A value of ***notSpecified*** means the facility is not signaled. A value of ***notRequested*** means the facility is signaled but charging information is not requested (that is, the charging info field of the facility is set Off). A value of ***requested***

means the facility is signaled to explicitly request charging information.

Mib X25Dte

Values default
notSpecified
notRequested
requested

Default notSpecified

ATTRIBUTE X25Dte Peer rpoa (rp)

Access Read and write

Description

This attribute specifies the RPOA facility to signal in a call request packet. A value of "***DEF***" indicates the use of the value from the *rpoa* attribute of the *X25Dte* component. A value of null (empty string) indicates no RPOA facility is to be signaled.

Mib X25Dte

Values String (0..108, ASCII)

Default ""

ATTRIBUTE X25Dte Peer trnstDlySlctnAInd (tdsai)

Access Read and write

Description

This attribute specifies the value of the Transit Delay Selection and Indication facility to signal in a call request packet. A value of ***65536*** indicates no facility is signaled. A value of 65537 indicates the use of the value from the *trnstDlySlctnAInd* attribute of the *X25Dte* component.

Mib X25Dte

Values Decimal (0..65537)

Default 65536

ATTRIBUTE X25Dte Peer callingNetworkFax (clgNFax)

Access	Read and write
Description	This attribute specifies the Calling Network facilities to signal in a call request packet. The facilities are encoded here exactly as they are encoded in the call packet. These facilities do not include the marker facility code. A value of null (empty string) indicates the *callingNetworkFax* from the *X25Dte* are to be signaled. If that value is also null, no Calling Network Facilities are signaled.
Mib	X25Dte
Values	String (0..108, Hex)
Default	""

ATTRIBUTE X25Dte Peer calledNetworkFax (cldNFax)

Access	Read and write
Description	This attribute specifies the Called Network facilities to signal in a call request packet. The facilities are encoded here exactly as they are encoded in the call packet. These facilities do not include the marker facility code. A value of null (empty string) indicates the *calledNetworkFax* from the *X25Dte* are to be signaled. If that value is also null, no Called Network Facilities are signaled.
Mib	X25Dte
Values	String (0..108, Hex)
Default	""

ATTRIBUTE X25Dte Peer callUserData (cud)

Access	Read only
Description	This attribute specifies the user data to signal in a call request packet. A value of null (empty string) indicates that the *callUserData* from the *X25Dte* is to be signaled. If *callUserData* of the *X25Dte* component is also null and *protocolEncType* of

	this *Peer* has the value ***IP***, H.CC will be signaled as the call user data of a call request packet. Thus for IP encapsulation according to RFC1356, both the *callUserData* from the *Peer* and *X25Dte* components must be null and the *protocolEncType* set to ***IP***.
Mib	X25Dte
Values	String (0..128, Hex)
Default	""

GROUP X25Dte Peer Operational (Op)

Properties	Operational
Description	This group provides the operational parameters for the *Peer* interface.
Mib	X25Dte

ATTRIBUTE X25Dte Peer lcnList (lcn)

Access	Read only
Description	This attribute specifies the local logical channel numbers (*Lcn*) in use for the X.25 calls to the remote host identified by this *Peer* component.
Mib	X25Dte
List of	Decimal (1..4095)
List Size	4095
Default	No default

COMPONENT X25Dte PermLcn (PLcn)

Instance	Decimal (1..4095)
Groups	"GROUP X25Dte PLcn Provisioned (Prov)"
Scope	Application

Description

X25Dte/n PermLcn/n

This component defines the parameters required for the Permanent logical channels of an X.25 interface.

Mib X25Dte

Common Verbs

Help
List
Display
Add
DELete

GROUP X25Dte PLcn Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisionable parameters for the permanent logical channels (PLcns) on the X.25 interface (corresponding to Permanent Virtual Circuits (PVCs) provisioned on the Wide Area Network).

Mib X25Dte

ATTRIBUTE X25Dte PLcn encAddressType (eAddrT)

Access Read and write

Criticality Component

Description

This attribute specifies the encapsulation type for the address of the remote host with which this *Peer* component allows communication.

Mib X25Dte

Values none
ip

Default ip

ATTRIBUTE X25Dte PLcn encAddress (eAddr)

Access	Read and write
Criticality	Component
Description	This attribute specifies the encapsulation address of the remote host with which this *PermLcn* component defines a connection
Mib	X25Dte
Values	String (0..128, ASCII)
Default	No default

ATTRIBUTE X25Dte PLcn protocolEncType (pEnc)

Access	Read and write
Criticality	Component
Description	This attribute specifies the encapsulation method to use when exchanging protocol data units (PDUs) over this channel. ***IP*** and ***Null*** *protocolEncTypes* are as defined in RFC1356. ***NscNull*** is an encapsulation method for carrying IP datagrams which requires removing 3 padding octets of zeroes and the protocol identifier H.CC from the front of each data packet received from the link in order to obtain the PDU. PDUs sent to the link are propounded by a the protocol identifier H.CC. ***NscNull*** should only be set when the remote host is following this same encapsulation method.
Mib	X25Dte
Values	ip null nscNull
Default	ip

ATTRIBUTE X25Dte PLcn linkToRemoteGroup (lTRg)

Access	Read and write
Criticality	Component
Description	This attribute specifies the link to the *RemoteGroup*, indicating the *RemoteGroup* component with which this *PermLcn* component is associated. The *RemoteGroup* components logically divide up the X.25 Interface such that a number of Protocol Ports (and consequently a number of Virtual Routers) may share the same X.25 Interface into a Wide Area Network. In particular, the remote host identified by this *PermLcn* component is designated as belonging to the *RemoteGroup* linked by this attribute. The set of all *PermLcn* and *Peer* components which link to a given *RemoteGroup* determine the subset of remote hosts which are accessible to a particular Protocol Port (and ultimately a Virtual Router).
Mib	X25Dte
Values	Link (Service, linkToPermLcn)
Default	No default

ATTRIBUTE X25Dte PLcn inPacketSize (iPktSz)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum receive packet size in octets.
Mib	X25Dte
Values	Decimal (16; 32; 64; 128; 256; 512; 1024; 2048; 4096)
Default	128

ATTRIBUTE X25Dte PLcn outPacketSize (oPktSz)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum transmit packet size in octets.
Mib	X25Dte
Values	Decimal (16; 32; 64; 128; 256; 512; 1024; 2048; 4096)
Default	128

ATTRIBUTE X25Dte PLcn inWindowSize (iWdwSz)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum receive window size. A *inWindowSize* greater than ***7*** is only valid when the *packetSequencing* attribute of the *X25Dte* component is set to ***modulo128***.
Mib	X25Dte
Values	Decimal (1..127)
Default	2

ATTRIBUTE X25Dte PLcn outWindowSize (oWdwSz)

Access	Read and write
Criticality	Component
Description	This attribute specifies the maximum transmit window size. A *outWindowSize* greater than ***7*** is only valid when the *packetSequencing* attribute of the *X25Dte* component is set to ***modulo128***.
Mib	X25Dte

Values	Decimal (1..127)
Default	2

COMPONENT X25Dte Lcn (Lcn)

Instance	Decimal (1..4095)
Groups	"GROUP X25Dte Lcn OsiState (State)" "GROUP X25Dte Lcn CallParameter (Cp)" "GROUP X25Dte Lcn LcnStatus" "GROUP X25Dte Lcn Statistics (Stats)"
Scope	Application
Description	*X25Dte/x Lcn/x* This component contains information about a specific logical channel of an X.25 interface.
Mib	X25Dte
Common Verbs	Help List Display

VERB CLEAR X25Dte Lcn

Impact	Service
Description	*CLEAR X25Dte/n Lcn/n* This verb will cause the specified logical channel to close by signaling a clear packet to the link. It only affects SVCs.

VERB RESET X25Dte Lcn

Impact	Service
Description	*RESET X25Dte/n Lcn/n* This verb will cause the specified logical channel to reset, by sending a reset packet to the link. A reset will cause the data path to be flushed, so data packets in transition will be lost.

GROUP X25Dte Lcn OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	X25Dte

ATTRIBUTE X25Dte Lcn adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.

Mib	X25Dte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE X25Dte Lcn operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	X25Dte
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE X25Dte Lcn usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib X25Dte

Values idle
active (activ)
busy

Default idle

GROUP X25Dte Lcn CallParameter (Cp)

Properties Operational

Description

This group contains the call parameters that are in use for this logical channel. For a PVC only the packet size and the window size attributes are meaningful.

Mib X25Dte

ATTRIBUTE X25Dte Lcn inPacketSize (iPktSz)

Access Read only

Description

This attribute indicates the maximum receive packet size in octets.

Mib X25Dte

Values Decimal (16; 32; 64; 128; 256; 512; 1024; 2048; 4096)

Default No default

ATTRIBUTE X25Dte Lcn outPacketSize (oPktSz)

Access Read only

Description

This attribute indicates the maximum transmit packet size in octets.

Mib X25Dte

Values Decimal (16; 32; 64; 128; 256; 512; 1024; 2048; 4096)

Default No default

ATTRIBUTE X25Dte Lcn inWindowSize (iWdwSz)

Access Read only

Description

This attribute indicates the receive window size.

Mib X25Dte

Values Decimal (1..127)

Default No default

ATTRIBUTE X25Dte Lcn outWindowSize (oWdwSz)

Access Read only

Description

This attribute indicates the transmit window size.

Mib X25Dte

Values Decimal (1..127)

Default No default

ATTRIBUTE X25Dte Lcn proposeReverseCharging (pRC)

Access Read only

Description

Specifies whether local/reverse charging was negotiated for this logical channel. To determine which end of the channel is paying for the call, this attribute must be examined in combination with the *callDirection* attribute. For example, if this attribute is set to ***reverse*** and the *callDirection* attribute indicates ***incoming***, it means the incoming call signaled reverse charging, so the local end of the channel is being charged. On the other, if the value of this attribute is ***reverse*** and the *callDirection* is ***outgoing***, it means that the call request sent to the link signaled reverse charging; so the remote end is charged. Similarly, a value of ***local*** must also be interpreted in combination with the *callDirection* to determine which end is being charged. If the value of the

callDirection attribute is ***plcn***, the *proposeReverseCharging* attribute is meaningless.

Mib X25Dte

Values
reverse
local

Default local

ATTRIBUTE X25Dte Lcn fastSelect (fSel)

Access Read only

Description
This attribute indicates whether the fast select was used in establishing this logical channel.

Mib X25Dte

Values
unrestricted
restricted
no

Default no

ATTRIBUTE X25Dte Lcn outThroughputClassSize (oTpCSz)

Access Read only

Description
This attribute specifies the transmit throughput class.

Mib X25Dte

Values
75
150
300
600
1200
2400
4800
9600
19200
48000

	64000 notSpecified
Default	notSpecified

ATTRIBUTE X25Dte Lcn inThroughputClassSize (iTpCSz)

Access	Read only
Description	This attribute specifies the receive throughput class.
Mib	X25Dte
Values	75 150 300 600 1200 2400 4800 9600 19200 48000 64000 notSpecified
Default	notSpecified

ATTRIBUTE X25Dte Lcn cugIndex (cI)

Access	Read only
Description	This attribute indicates the index of the Closed User Group facility used in establishing this logical channel.
Mib	X25Dte
Values	String (0..4, ASCII)
Default	""

ATTRIBUTE X25Dte Lcn cugoaIndex (coa)

Access	Read only

Description

This attribute indicates the index of the Closed User Group with Outgoing Access facility used in establishing this logical channel.

Mib X25Dte

Values String (0..4, ASCII)

Default ""

ATTRIBUTE X25Dte Lcn networkUserIdentifier (nui)

Access Read only

Description

Specifies the Network User Identifier used for this logical channel.

Mib X25Dte

Values String (0..108, Hex)

Default ""

ATTRIBUTE X25Dte Lcn chargingInformation (cInfo)

Access Read only

Description

This attribute indicates whether or not the charging information facility was used in establishing this logical channel. A value of ***notSpecified*** means the facility was not signaled. A value of ***notRequested*** means the facility was signaled but charging information was not requested (that is, the charging info field of the facility was set Off). A value of ***requested*** means the facility was signaled to explicitly request charging information.

Mib X25Dte

Values notSpecified
notRequested
requested

Default notSpecified

ATTRIBUTE X25Dte Lcn rpoa (rp)

Access	Read only
Description	This attribute indicates the RPOA facility which was signaled in establishing this logical channel.
Mib	X25Dte
Values	String (0..108, ASCII)
Default	""

ATTRIBUTE X25Dte Lcn trnstDlySlctnAInd (tdsai)

Access	Read only
Description	This attribute indicates the Transit Delay Selection and Indication value used for this logical channel. A value of ***65536*** means no facility was signaled.
Mib	X25Dte
Values	Decimal (0..65536)
Default	65536

ATTRIBUTE X25Dte Lcn callingNetworkFax (clgNFax)

Access	Read only
Description	This attribute indicates the Calling Network facilities which were signaled in the call packet. A value of null (empty string) means no calling network facilities were signaled.
Mib	X25Dte
Values	String (0..108, Hex)
Default	""

ATTRIBUTE X25Dte Lcn calledNetworkFax (cldNFax)

Access	Read only

Description

This attribute indicates the called network facilities which were signaled in the call packet. A value of null (empty string) means no called network facilities were signaled.

Mib X25Dte

Values String (0..108, Hex)

Default ""

ATTRIBUTE X25Dte Lcn callUserData (cud)

Access Read only

Description

This attribute indicates the user data which was signaled in the call packet. A value of null (empty string) means no user data was signaled.

Mib X25Dte

Values String (0..128, Hex)

Default ""

GROUP X25Dte Lcn LcnStatus

Properties Operational

Description

This group contains the status for an X.25 Logical Channel.

Mib X25Dte

ATTRIBUTE X25Dte Lcn status

Access Read only

Description

This attribute indicates the current state of the logical channel.

Mib X25Dte

Values closed
calling
dataTransfer

	clearing resetting
Default	No default

ATTRIBUTE X25Dte Lcn callDirection (cDir)

Access	Read only
Description	This attribute indicates the direction of the call that caused the establishment of this channel.
Mib	X25Dte
Values	incoming outgoing permanentLcn
Default	No default

ATTRIBUTE X25Dte Lcn calledAddress (cldAddr)

Access	Read only
Description	This attribute indicates the called X.25 address to which the call is established.
Mib	X25Dte
Values	BCD (0..15)
Default	No default

ATTRIBUTE X25Dte Lcn callingAddress (clgAddr)

Access	Read only
Description	This attribute indicates the calling X.25 address from which the call originated
Mib	X25Dte
Values	BCD (0..15)

Default No default

ATTRIBUTE X25Dte Lcn originalCalledAddress (oCldAddr)

Access Read only

Description

This attribute indicates the X.25 address of the originally called DTE to which the call was attempted. This could be different from the value of the *calledAddress* attribute in the case where the original call was redirected.

Mib X25Dte

Values BCD (0..15)

Default No default

GROUP X25Dte Lcn Statistics (Stats)

Properties Operational

Description

This group contains the operational statistics for an X.25 Logical Channel.

Mib X25Dte

ATTRIBUTE X25Dte Lcn inUknownProtocols (iUP)

Access Read only

Description

This attribute counts the number packets received from link which were discarded because of an unknown or unsupported protocols.

Mib X25Dte

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE X25Dte Lcn inDataOctets (iDOct)

Access Read only

Description	This attribute counts the number of octets of user data received from the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn inDataPackets (iDPkts)

Access	Read only
Description	This attribute counts the number of data packets received from the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn inRmtInitiatedRsts (iRIRsts)

Access	Read only
Description	This attribute counts the number of reset packets, with a cause code of “DTE initiated”, which were received from the link
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn inPrvdrInitiatedRsts (iPIRsts)

Access	Read only
Description	This attribute counts the number of reset packets, with a cause code other than “DTE initiated”, which were received from the link.
Mib	X25Dte

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn inInterruptPackets (iIntPkts)

Access	Read only
Description	This attribute counts the number of interrupt packets received from the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn outDataOctets (oDOct)

Access	Read only
Description	This attribute counts the number of octets of user data sent to the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn outDataPackets (oDPkts)

Access	Read only
Description	This attribute counts the number of data packets sent to link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn outInterruptPackets (oIntPkts)

Access	Read only

Description	This attribute counts the number of interrupt packets sent to link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lcn t22ResetTimeouts (t22Tmo)

Access	Read only
Description	This attribute counts the number of times the t22 reset timer has expired.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

COMPONENT X25Dte Lapb

Groups	"GROUP X25Dte Lapb ControlParam (Cp)" "GROUP X25Dte Lapb OsiState (State)" "GROUP X25Dte Lapb Status" "GROUP X25Dte Lapb Statistics (Stats)"
Scope	Application
Description	This component defines the LAPB protocol and its related service options.
Mib	X25Dte
Subcomponents	"COMPONENT X25Dte Lapb Framer"
Common Verbs	Help List Display

GROUP X25Dte Lapb ControlParam (Cp)

Properties	Provisioned
Description	X25Dte/n Lapb This group contains the set of configuration parameters for the LAPB interface.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb stationType (type)

Access	Read and write
Description	This attribute specifies the DCE or the DTE role of operation for the LAPB interface. Changing this attribute will cause the lapb link to Reset.
Mib	X25Dte
Values	dte dce
Default	dte

ATTRIBUTE X25Dte Lapb frameSequencing (fs)

Access	Read and write
Description	This attribute specifies the modulo of the frame sequence numbering of the LAPB interface. Changing this attribute will cause the lapb link to Reset.
Mib	X25Dte
Values	modulo8 modulo128
Default	modulo8

ATTRIBUTE X25Dte Lapb n1FrameSize (n1)

Access	Read and write

Description

This attribute specifies the maximum frame size in bits that can be transmitted or received. This value must be greater than or equal to the maximum packet size across the interface(in bits)+ max level 3 header size(in bits)+ max level 2 header size(in bits)+ crc in bits.

(max Pkt size + ----------> 4096*8
max level 3 header size + ---> 4*8
level 2 header size + --------> 5*8
crc ----------> 2*8)

Mib X25Dte

Values Decimal (40..32856)

Units bits

Default 32856

ATTRIBUTE X25Dte Lapb kWindowSize (k)

Access Read and write

Description

This attribute specifies the window size. This is the maximum number of unacknowledged sequenced frames that may be outstanding from or to this interface at any one time. A window size of greater than 7 is only valid when the sequence numbering of frames is modulo 128.

Mib X25Dte

Values Decimal (1..127)

Default 7

ATTRIBUTE X25Dte Lapb n2TransmitLimit (n2)

Access Read and write

Description

This attribute specifies the maximum number of times a frame can be transmitted before appropriate recovery action is taken.

Mib	X25Dte
Values	Decimal (1..20)
Default	10

ATTRIBUTE X25Dte Lapb t1AckTimer (t1)

Access	Read and write
Description	This attribute specifies the period in milliseconds within which an acknowledgment of a sent frame must be received. The value set for t1 ack timer must be less than the value set for the t4 idle probe timer.
Mib	X25Dte
Values	Decimal (1000..10000)
Units	msec
Default	3000

ATTRIBUTE X25Dte Lapb t2AckDelayTimer (t2)

Access	Read and write
Description	This attribute specifies the maximum period in milliseconds permissible to wait before sending an acknowledgment for a received in sequenced I-frame. A value of 0 means there will be no delay in acknowledgment.
Mib	X25Dte
Values	Decimal (0..10000)
Units	msec
Default	0

ATTRIBUTE X25Dte Lapb t4IdleProbeTimer (t4)

Access	Read and write

Description	This attribute specifies the time period in milliseconds the link will be permitted to remain idle (that is, no frames are exchanged on the data link). Upon expiry of this timer, LAPB will poll its peer for status. The value set for t4 idle probe timer must be greater than the value set for the t1 ack timer.
Mib	X25Dte
Values	Decimal (1000..65535000)
Units	msec
Default	60000

ATTRIBUTE X25Dte Lapb actionInitiate (ai)

Access	Read and write
Description	This attribute specifies the action to be taken by the LAPB interface to initiate link setup.
Mib	X25Dte
Values	sendSABM sendDM none
Default	sendSABM

ATTRIBUTE X25Dte Lapb actionRecvDM (ardm)

Access	Read and write
Description	This attribute specifies the action to be taken by the LAPB interface when it receives a DM response.
Mib	X25Dte
Values	sendSABM
Default	sendSABM

ATTRIBUTE X25Dte Lapb txQDegradeThreshold (txdt)

Access	Read and write
Description	This attribute specifies the threshold of the number of higher layer packets queued, beyond which LAPB should initiate a service degrade alarm. A value of 65536 means no threshold.
Mib	X25Dte
Values	Decimal (1..65536)
Default	65536

ATTRIBUTE X25Dte Lapb txQResetThreshold (txrt)

Access	Read and write
Description	This attribute specifies the threshold of the number of higher layer packets queued, beyond which LAPB should initiate an overload alarm and reset the link. A value of 65536 means no threshold.
Mib	X25Dte
Values	Decimal (1..65536)
Default	65536

GROUP X25Dte Lapb OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	X25Dte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE X25Dte Lapb operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the

component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.

Mib X25Dte

Values enabled (ena)
disabled (dis)

Default disabled

ATTRIBUTE X25Dte Lapb usageState (osiUsage)

Access Read only

Description This attribute indicates the OSI Usage State of the component.

The value ***idle*** indicates that the component is not currently in use.

The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users.

The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.

Mib X25Dte

Values idle
active (activ)
busy

Default idle

GROUP X25Dte Lapb Status

Properties Operational

Description
This group contains the status for the LAPB interface.

Mib X25Dte

ATTRIBUTE X25Dte Lapb currentState (cs)

Access Read only

Description

This attribute specifies the current state of the LAPB interface.

Mib X25Dte

Values
disconnected
linkSetup
frameReject
disconnectRequest
informationTransfer
waitingAck

Default No default

ATTRIBUTE X25Dte Lapb lastStateChangeReason (lscr)

Access Read only

Description

This attribute specifies the reason for the most recent state change.

Mib X25Dte

Values
notStarted
abmEntered
abmeEntered
abmReset
abmeReset
dmReceived
dmSent
discReceived
discSent
frmrReceived
frmrSent
n2TimeOut
other

Default No default

ATTRIBUTE X25Dte Lapb frmrTransmit (frmrtx)

Access Read only

Description	This attribute specifies the Information field of the FRMR most recently sent.
Mib	X25Dte
Values	String (0..7, Hex)
Default	""

ATTRIBUTE X25Dte Lapb frmrReceive (frmrrx)

Access	Read only
Description	This attribute specifies the Information field of the FRMR most recently received.
Mib	X25Dte
Values	String (0..7, Hex)
Default	""

ATTRIBUTE X25Dte Lapb currentQueueSize (cqs)

Access	Read only
Description	This attribute specifies the number of packets on the lapb transmit queue.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	No default

GROUP X25Dte Lapb Statistics (Stats)

Properties	Operational
Description	This group contains the statistics for the LAPB interface.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb stateChanges (sc)

Access	Read only
Description	This attribute counts the number of times LAPB state has changed. Refer to the attribute “linkState” for the set of possible states.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb remoteBusy (rb)

Access	Read only
Description	This attribute counts the number of times transmission of an I-frame was un-successful due to a perceived remote busy condition (window closed or remote busy).
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb transmitRejectFrames (txrejs)

Access	Read only
Description	This attribute counts the number of REJ frames sent by the interface.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb receiveRejectFrames (rxrejs)

Access	Read only

Description

This attribute counts the number of REJ frames received by the interface.

Mib X25Dte

Values Decimal (0..4294967295)

Default 0

ATTRIBUTE X25Dte Lapb t1AckTimeout (t1Tmo)

Access Read only

Description

This attribute counts the number of times the T1 timer has expired.

Mib X25Dte

Values Decimal (0..4294967295)

Default 0

COMPONENT X25Dte Lapb Framer

Groups "GROUP X25Dte Lapb Framer Provisioned (Prov)"
"GROUP X25Dte Lapb Framer LinkOptions (Link)"
"GROUP X25Dte Lapb Framer OsiState (State)"
"GROUP X25Dte Lapb Framer Statistics (Stats)"
"GROUP X25Dte Lapb Framer LinkUtilization (Util)"

"COLLECTED STATS X25Dte Lapb Framer"

Scope Application

Description

X25Dte/n Lapb Framer

The *Framer* component controls link layer framing for application components sending and receiving data on a link interface. It is also through *Framer*, that an application component is associated with a specific hardware link interface.

The *Framer* component provides provisionable attributes related

to datapath aspects of the hardware interface (such as crc and frame length) rather than interface specific attributes (such as modem leads and clocking) which are associated with specific hardware components (such as *V35/n* or *DS1/n*). The *Framer* component also provides a provisionable attribute which binds the application component to a specific hardware component.

The *Framer* component contains operational attributes for link interface datapath statistics (such as frame counts and aborts).

Mib X25Dte

Common Verbs

Help
List
Display

GROUP X25Dte Lapb Framer Provisioned (Prov)

Properties Provisioned

Description

This group contains the base provisioning data for the *Framer* component. Application or hardware interface specific provisioning data is contained in other provisionable *Framer* groups.

Mib X25Dte

ATTRIBUTE X25Dte Lapb Framer interfaceName

Access Read and write

Criticality Process

Description

This attribute contains a hardware component name.

The attribute associates the application with a specific link. This defines the module processor on which *Framer*'s parent component (as well as *Framer* itself) will run.

Mib X25Dte

Values	Link (Hardware, applicationFramerName)
Default	No default

GROUP X25Dte Lapb Framer LinkOptions (Link)

Properties	Provisioned
Description	This group contains attributes defining the framing of data on the link interface.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb Framer flagsBetweenFrames

Access	Read and write
Description	This attribute defines the number of flags that are inserted between frames sent to the link interface.
Mib	X25Dte
Values	Decimal (1..16)
Default	1

GROUP X25Dte Lapb Framer OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb Framer adminState (osiAdmin)

Access	Read only

Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	X25Dte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE X25Dte Lapb Framer operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	X25Dte

Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE X25Dte Lapb Framer usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	X25Dte
Values	idle active (activ) busy
Default	idle

GROUP X25Dte Lapb Framer Statistics (Stats)

Properties	Operational
Description	This group contains the operational statistics data for a Framer component.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb Framer aborts

Access	Read only
Description	This attribute is the total number of aborts received.
Mib	X25Dte

Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb Framer crcErrors

Access	Read only
Description	This attribute is the total number of frames with CRC errors, occurring in the receive direction from the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb Framer lrcErrors

Access	Read only
Description	This attribute is the total number of frames with LRC errors, occurring in the Tx link prior to transmission onto the link.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb Framer nonOctetErrors

Access	Read only
Description	This attribute is the total number of frames that were non octet aligned.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb Framer overruns

Access	Read only
Description	This attribute is the total number of frames received from the link for which overruns occurred.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb Framer underruns

Access	Read only
Description	This attribute is the total number of frames transmitted to the link for which underruns occurred.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Lapb Framer frmToIf

Access	Read only
Description	The number of frames transmitted to the link interface by Framer. Note: This does not include the number of frames transmitted directly to the hardware queue, thus bypassing the Framer component.
Mib	X25Dte
Values	Long Integer
Default	No default

ATTRIBUTE X25Dte Lapb Framer frmFromIf

Access	Read only

Description	The number of frames received from the link interface by Framer.
Mib	X25Dte
Values	Long Integer
Default	No default

ATTRIBUTE X25Dte Lapb Framer octetFromIf

Access	Read only
Description	The number of bytes received from the link interface by Framer.
Mib	X25Dte
Values	Long Integer
Default	No default

GROUP X25Dte Lapb Framer LinkUtilization (Util)

Properties	Operational
Description	This group contains the link utilization operational data for a Framer component.
Mib	X25Dte

ATTRIBUTE X25Dte Lapb Framer normPrioLinkUtilToIf

Access	Read only
Description	This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) sent to the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.
Mib	X25Dte
Values	Decimal (0..100)
Units	%

Default 0

ATTRIBUTE X25Dte Lapb Framer normPrioLinkUtilFromIf

Access Read only

Description

This attribute is the utilization of the normal and high priority data traffic (interruptible traffic) received from the link as a percentage of the available bandwidth on the link. Note that this includes traffic with Transfer Priorities of 0, 6 and 9 and/or Emission Priority of 2 and 3. The utilization is the average for the last minute.

Mib X25Dte

Values Decimal (0..100)

Units %

Default 0

COLLECTED STATS X25Dte Lapb Framer

Description The statistics record generated by the X25Dte Lapb Framer component.

ATTRIBUTE X25Dte Lapb Framer rxBytes

Description This attribute provides the number of bytes received on the link by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE X25Dte Lapb Framer rxFrames

Description This attribute provides the number of frames received on the link interface by the Framer in the last collection interval.

Values Long Integer

ATTRIBUTE X25Dte Lapb Framer txBytes

Description This attribute provides the number of bytes transmitted to the link by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE X25Dte Lapb Framer txFrames

Description This attribute provides the number of frames transmitted to the link interface by the Framer in the last collection interval. This value could be zero if the application sends the frames directly to the link.

Values Long Integer

ATTRIBUTE X25Dte Lapb Framer rxTotalLinkUtil

Description This attribute provides the average total link utilization computed based on the total number of bytes received on the link in the last collection interval.

Values Decimal (0..100)

COMPONENT X25Dte PacketLayerEntity (Ple)

Groups "GROUP X25Dte Ple Provisioned (Prov)"
"GROUP X25Dte Ple Operational (Op)"

Scope Application

Description

X25Dte/n PacketLayerEntity

This component provides information that applies to multiprotocol interconnect over an X.25 service.

Mib X25Dte

Common Verbs
Help
List
Display

GROUP X25Dte Ple Provisioned (Prov)

Properties Provisioned

Description

This group contains the provisionable attributes relevant to an

	interface used to carry Multiprotocol Interconnect traffic over X.25.
Mib	X25Dte

ATTRIBUTE X25Dte Ple inactivityTimer (iTmr)

Access	Read and write
Description	This attribute specifies the period in milliseconds this interface will keep an idle connection open before closing it.
Mib	X25Dte
Values	Decimal (0..65536000)
Default	180000

GROUP X25Dte Ple Operational (Op)

Properties	Operational
Description	This group contains the Operational attributes relevant to an interface used to carry Multiprotocol Interconnect traffic over X.25.
Mib	X25Dte

ATTRIBUTE X25Dte Ple encAddrToX25LkupFlrs (enAddrTX25Flr)

Access	Read only
Description	This attribute indicates the number of times a translation attempt from an Encapsulation address to an X.25 address failed to find a corresponding X.25 address. Such a failure could occur when a Protocol Port, linked to a *RemoteGroup* via the *linkToProtocolPort* attribute of the *RemoteGroup*, requests through the software that a X.25 call be established to a particular Encapsulation address. If the *RemoteGroup* does not have a *Peer* component linked in its *linkToPeer* attribute list, with the *encAddress* attribute equal to the Encapsulation address specified, this counter will be incremented, because the corresponding *Peer* component needed to establish an X.25 connection was not found.

Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Ple lastFailedEncAddr (lFEnaddr)

Access	Read only
Description	This attribute indicates the last Encapsulation address for which no corresponding X.25 address was found and thus caused *encAddressToX25LkupFlrs* to be incremented.
Mib	X25Dte
Values	String (2..128, Hex)
Default	No default

ATTRIBUTE X25Dte Ple x25AddrToEncLkupFlrs (x25AddrTEnFlr)

Access	Read only
Description	This attribute indicates the number of times a translation attempt from an X.25 address to an Encapsulation address failed to find a corresponding Encapsulation address. Such a failure could occur when a incoming call received from the link by the X.25 DTE is directed to a specific *RemoteGroup* because the called address matches the *localAddress* attribute of the *RemoteGroup* component. If the *RemoteGroup* component does not have a *Peer* component linked in its *linkToPeer* attribute list, with the *x25Address* attribute equal to the calling address from the incoming call packet, there is no appropriate *Peer* component, so the call is cleared and this counter is incremented.
Mib	X25Dte
Values	Decimal (0..4294967295)
Default	0

ATTRIBUTE X25Dte Ple lastFailedX25Addr (lFX25Addr)

Access	Read only

Description	This field specifies the last X.25 address that caused *x25AddressToEncLkupFlrs* to be incremented.
Mib	X25Dte
Values	BCD (0..15)
Default	No default

COMPONENT X25Dte RemoteGroup (Rg)

Instance	Decimal (1..1023)
Groups	"GROUP X25Dte Rg IfEntryProv (IfEntry)" "GROUP X25Dte Rg Provisioned (Prov)" "GROUP X25Dte Rg OsiState (State)" "GROUP X25Dte Rg OperationalStatus (OperStatus)" "GROUP X25Dte Rg Operational (Op)"
Scope	Application
Description	*X25Dte/n RemoteGroup/n* At least one *RemoteGroup* is required for each *X25Dte* component. The *RemoteGroup* allows the X.25 DTE interface to be shared amongst a number of Protocol Ports. This allows separate Virtual Routers to share the same physical X.25 connection into a Wide Area Network.
Mib	X25Dte
Common Verbs	Help List Display Add DELete LOCK Unlock

GROUP X25Dte Rg IfEntryProv (IfEntry)

Properties	Provisioned

Description	This group contains the provisionable attributes for the ifEntry.
Mib	X25Dte

ATTRIBUTE X25Dte Rg ifAdminStatus (ifState)

Access	Read and write
Description	The desired state of the interface. The ***up*** state indicates the interface is operational. The ***down*** state indicates the interface is not operational. The ***testing*** state indicates that no operational packets can be passed.
Mib	X25Dte
Values	up down testing
Default	up

ATTRIBUTE X25Dte Rg ifIndex (ifI)

Access	Read: Passive Write: Debug
Criticality	Component
Description	This is the index for the IfEntry. Its value is automatically initialized during the provisioning process.
Mib	X25Dte
Values	Decimal (1..65535)
Default	No default

GROUP X25Dte Rg Provisioned (Prov)

Properties	Provisioned
Description	This group contains the provisionable attributes of the *RemoteGroup* component.
Mib	X25Dte

ATTRIBUTE X25Dte Rg linkToProtocolPort

Access	Read and write
Criticality	Component
Description	This attribute contains a protocol port component name. The attribute associates the application with a protocol port.
Mib	X25Dte
Values	Link (Service, linkToMedia)
Default	No default

ATTRIBUTE X25Dte Rg localAddress (lAddr)

Access	Read and write
Criticality	Component
Description	This attribute contains the unique X.25 address which identifies this *RemoteGroup*. It should correspond to the called address in X.25 incoming call packets which are to be directed to this *RemoteGroup*. This allows calls received from the link to be directed to the appropriate *RemoteGroup* based on the called address in the X.25 call packet. The *RemoteGroup* components allow the X.25 interface to be shared amongst a number of Protocol Ports (and ultimately Virtual Routers) because each *RemoteGroup* is coupled with a specific *ProtocolPort* through its *linkToProtocolPort* attribute.
Mib	X25Dte
Values	BCD (1..15)
Default	No default

ATTRIBUTE X25Dte Rg mtuSize (mtuSz)

Access	Read and write
Description	This attribute specifies the Maximum Transmit Unit (MTU); that

	is, the size of the largest datagram (in octets) which can be sent/ received on the interface.
Mib	X25Dte
Values	Decimal (576..9188)
Units	octets
Default	1600

ATTRIBUTE X25Dte Rg linkToPermLcn (lTPlcn)

Access	Read and write
Description	This attribute is a list of links to *PermLcn* components. The set of all *Peer* and *PermLcn* components which link to a given *RemoteGroup* determine the subset of remote hosts which are accessible to a particular Protocol Port (and ultimately a Virtual Router).
Mib	X25Dte
List of	Link (Service, linkToRemoteGroup)
List Size	4095
Default	No default

ATTRIBUTE X25Dte Rg linkToPeer (ltPeer)

Access	Read and write
Description	This attribute gives a list of links to *Peer* components. The set of all *Peer* and *PermLcn* components which link to a given *RemoteGroup* determine the subset of remote hosts which are accessible to a particular Protocol Port (and ultimately a Virtual Router).
Mib	X25Dte
List of	Link (Service, linkToRemoteGroup)
List Size	4095

Default	No default

GROUP X25Dte Rg OsiState (State)

Properties	Operational
Description	This group contains the three OSI State attributes. The descriptions generically indicate what each state attribute implies about the component. Note that not all the values and state combinations described here are supported by every component which reuses this group. For component-specific information and the valid state combinations, refer to the appropriate NTP.
Mib	X25Dte

ATTRIBUTE X25Dte Rg adminState (osiAdmin)

Access	Read only
Description	This attribute indicates the OSI Administrative State of the component. The value ***locked*** indicates that the component is administratively prohibited from providing services for its users. A *Lock -force* or *Lock* command has been previously issued for this component. When the value is ***locked***, the value of *usageState* must be ***idle***. The value ***shuttingDown*** indicates that the component is administratively permitted to provide service to its existing users only. A *Lock* command was issued against the component and it is in the process of shutting down. The value ***unlocked*** indicates that the component is administratively permitted to provide services for its users. To enter this state, issue an *Unlock* command to this component.
Mib	X25Dte
Values	locked (lck) unlocked (unlck) shuttingDown (shut)
Default	unlocked

ATTRIBUTE X25Dte Rg operationalState (osiOper)

Access	Read only
Description	This attribute indicates the OSI Operational State of the component. The value ***enabled*** indicates that the component is available for operation. Note that if *adminState* is ***locked***, it would still not be providing service. The value ***disabled*** indicates that the component is not available for operation. For example, something is wrong with the component itself, or with another component on which this one depends. If the value is ***disabled***, the *usageState* must be ***idle***.
Mib	X25Dte
Values	enabled (ena) disabled (dis)
Default	disabled

ATTRIBUTE X25Dte Rg usageState (osiUsage)

Access	Read only
Description	This attribute indicates the OSI Usage State of the component. The value ***idle*** indicates that the component is not currently in use. The value ***active*** indicates that the component is in use and has spare capacity to provide for additional users. The value ***busy*** indicates that the component is in use and has no spare operating capacity for additional users at this time.
Mib	X25Dte
Values	idle active (activ) busy

Default	idle

GROUP X25Dte Rg OperationalStatus (OperStatus)

Properties	Operational
Description	This group includes the Operational Status attribute. This attribute defines the current operational state of this component.
Mib	X25Dte

ATTRIBUTE X25Dte Rg snmpOperStatus

Access	Read only
Description	The current state of the interface. The ***up*** state indicates the interface is operational and capable of forwarding packets. The ***down*** state indicates the interface is not operational, thus unable to forward packets. ***testing*** state indicates that no operational packets can be passed.
Mib	X25Dte
Values	up down testing
Default	up

GROUP X25Dte Rg Operational (Op)

Properties	Operational
Description	This group gives the operational attributes of the *RemoteGroup* component.
Mib	X25Dte

ATTRIBUTE X25Dte Rg lcnList (lcn)

Access	Read only
Description	This attribute lists the *Lcn* components for the *X25Dte*, which belong to this *RemoteGroup*. There is an *Lcn* component listed

	here for every lcn connection belonging to this *RemoteGroup*. The lcns were established using either a *Peer* component linked to this *RemoteGroup* (in response to a switched call) or using a *PermLcn* component linked to this *RemoteGroup* (a permanent connection).
Mib	X25Dte
List of	Decimal (1..4095)
List Size	4095
Default	No default

Nortel Networks Multiservice Switch 7400/15000/20000

Component X25Dte

Release 6.1

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